

Physical EDUCATION

Class XI

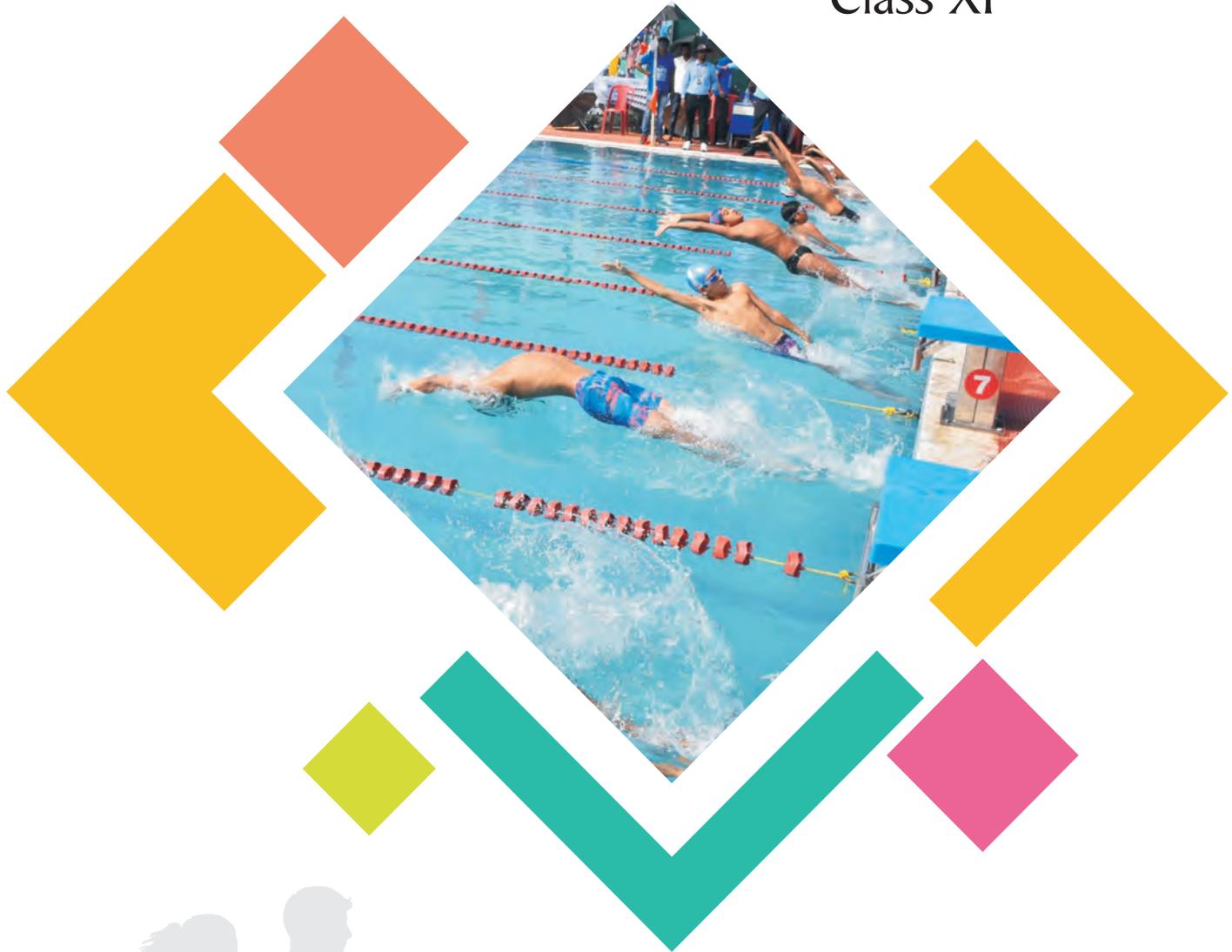


CENTRAL BOARD OF SECONDARY EDUCATION
Academic Unit, Shiksha Sadan, 17, Rouse Avenue, New Delhi-110 002



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Class XI



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Physical Education

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THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a ¹**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the² [unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

THE CONSTITUTION OF INDIA

Chapter IV A

FUNDAMENTAL DUTIES

ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- ¹(k) who is a parent or guardian to provide opportunities for education to his/her child or, as the case may be, ward between age of six and fourteen years.

1. Ins. by the constitution (Eighty - Sixth Amendment) Act, 2002 S.4 (w.e.f. 12.12.2002)

भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण¹ प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म
और उपासना की स्वतंत्रता,
प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए
तथा उन सब में व्यक्ति की गरिमा

²और राष्ट्र की एकता और अखंडता
सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य” के स्थान पर प्रतिस्थापित।
2. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “राष्ट्र की एकता” के स्थान पर प्रतिस्थापित।

भाग 4 क

मूल कर्तव्य

51 क. मूल कर्तव्य - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणी मात्र के प्रति दयाभाव रखे;
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- ¹(ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

1. संविधान (छयासीवां संशोधन) अधिनियम, 2002 की धारा 4 द्वारा प्रतिस्थापित।



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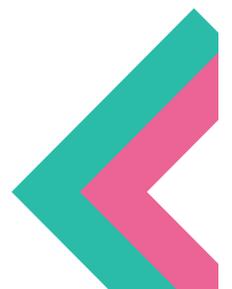
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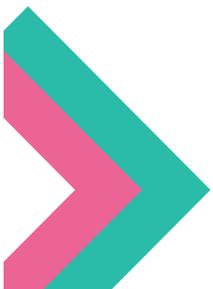
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PREFACE

Let us, at the outset, determine what Physical Education means. Physical Education refers to Education through physical activities “to achieve all round development of an individual”. And for achieving this aim, the objectives must include -

- physical development
- cognitive development
- social development
- emotional development and
- development of motor skills of the learner.

Physical Education has moved from being an extra-curricular part of school syllabus to being an integral part of the curriculum since UN convention on the rights of the child on May 1st 2012, brought in through article 31 “The child’s right to play”. In India, too, with the focus on “Swasth Bharat”, the primary thrust is on wellness, preventive health care and awareness. This makes it essential that physical fitness issues are addressed at different levels of schooling. With this objective, CBSE has made Physical Education compulsory in schools and is in the process of developing textbooks on Physical Education for Classes XI and XII to train children for a healthier lifestyle.

A sound Sports Policy must regulate the implementation of school sport consistently for all learners, irrespective of ability, across all schools in an age appropriate way based on the principle of equity. This policy applies to all the schools affiliated to CBSE. Keeping in mind the need for inclusion and the right for each child to good health, there is a chapter on Physical Education and Sports for Children with Special Needs that deals with the meaning and importance of adapted physical education and the role of special educators for Children with Special Needs (CWSN).

As an essential part of education, Physical Education helps the learners acquire skills that improve their performance, sharpens knowledge of strategy and tactics, and helps them to transfer knowledge from one context to another, including sport and recreational and outdoor activities. Participation in Sports and Games builds confidence, teaches the necessary knowledge and skills for working with and relating to others, and provides the learning opportunities to develop skills like qualities of leadership and teamwork skills. This learning is transferred to other learning areas, when, for example, students cooperate and work together in groups in other subjects in the school setting and in their lives outside school. As students learn ‘in, through, and about’ movement, they gain an understanding that movement is integral to human expression and can enhance their lives. By demonstrating the benefits of an active life style, they encourage others to participate in sports, dance, exercise, recreation, and adventure pursuits.

Physical Education provides a solid foundation for preparing our citizens to live healthy life by involving in active lifestyle and also helps to prepare a base of a pyramid where excellence is at the top. It provides a pathway into the many careers that involve working with people, such as education, health, justice, and the social services.

As a subject of study, this textbook of Physical Education highlights a holistic understanding of health, focussing on the importance of exercise, games and sports, nutrition and the environment. This book also discusses the psycho-social and mental



health related issues of not just sportspersons, but also children at large and collective responsibilities for healthy community living.

About the Book

The Textbook of Physical Education has a **goal-oriented, activity-based and investigative approach**. Learning Outcomes are laid out before each chapter listing the desired goals the learner must imbibe in each lesson. Learning Outcomes are assessment standards indicating the expected levels of learning that children should achieve for that Lesson. These outcomes can be used as check points to assess learning and would help teachers to understand the learning levels of children in their respective classes individually as well as collectively.

Holistic Learning refers not only to an all-round development of the learner, but also to a cross-curricular approach. It also means learning must be related to life. The **Discussion section** that precedes each chapter encourages the learner to examine existing knowledge and to relate what he is learning to his/her life. The learning thereby becomes more meaningful to the child.

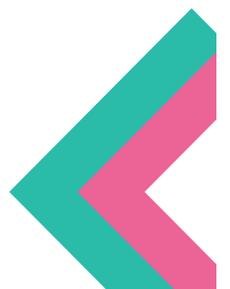
Physical education engages and energises students. It provides authentic contexts in which to learn. Given the **multidisciplinary nature of this subject**, cross references have also been integrated into the curriculum. There is a chapter on Anatomy and Physiology and on Psychology. Students challenge themselves to develop their physical and interpersonal skills.

The approach towards learning is **Experiential or learning through experience**. This is distinct from rote or didactic learning, in which the learner plays a comparatively passive role. Experiential learning entails a hands-on approach to learning that moves away from just the teacher at the front of the room imparting and transferring their knowledge to students. It makes learning an experience that moves beyond the classroom and strives to bring a more involved way of learning. **Extension Activities** are an integral part of the Book and students learn as they research, conduct surveys, debate, discuss, write and draw cartoons and design posters. They experience movement and understand the role that it plays in their lives.

Additional information has been given in a box in the **Do You Know** Section which provides some input, thereby encouraging students to research and acquire additional information.

The **Art Integration** Section suggests certain activities that will entice the students to construct knowledge, and explore novel ways at expressing their learning thereby developing their understanding and problem-solving abilities.

The **Extension Activities** and Activities in the **Art Integration** Section are suggestions. They could be modified or adapted to suit classroom situations and needs.





Unit 1 : Changing Trends and Careers in Physical Education

Content

- Meaning and Definition of Physical Education
- Aims and Objectives of Physical Education
- Career Options in Physical Education
- Competitions in Various Sports at National and International Level
- Khelo India Programme

Learning Outcomes

At the end of this unit, you will be able to:

- recognize the concept of Physical Education
- identify the aims and objectives of Physical Education
- explore different career options in the field of Physical Education
- classify various sports competitions at National and International level
- understand Khelo India Programme

DISCUSSION : READ THE NEWSPAPER CLIPPING GIVEN BELOW.

CBSE Makes Physical Education Compulsory in Schools

New Delhi: Central Board of Secondary Education (CBSE) has introduced a streamlined and well-designed Health and Physical Education Programme to mainstream health and physical education in schools especially for students of classes 9 to 12. This Programme will be introduced from next session and will be compulsory for all affiliated schools of the Board.

"CBSE has decided to main stream Health and Physical Education for classes IX to XII with the aim of holistic development of the child, leading to a well-balanced individual in all walks of life," said a statement from the board.

"The aim of main streaming Health and Physical Education is also to enable the students to attain an optimum state of health. Therefore, CBSE aims to provide a focussed curriculum for Health and Physical Education imbued with Life Skills in all its affiliated schools," the statement added.

Keeping this in view, CBSE has asked schools that while preparing timetable for session 2018-19, one period every day may be reserved for Health and Physical Education especially for class 9 to 12 from session 2018-19 onwards.

Discuss in your group

- What do you think CBSE's Health and Physical Education Programme includes?
- Why has CBSE decided to make Health and Physical Education Programme compulsory for schools?
- Do you think school students are in need of such a Programme? Why/Whynot?
- Why is the Programme aimed especially for class 9 to 12?
- If you were to design the Programme, what features would it include? Why?

Present your ideas to the class.



1.1.1 MEANING OF PHYSICAL EDUCATION

If a survey was to be conducted and individuals asked what they understood when they heard the term Physical Education, the response could possibly be that physical education is knowledge related to sports activity, sports education, sports coaching, health education, education about yoga or anything related to individual fitness.

But is this really Physical Education? Not totally. Physical Education is all of the above and something more. While the above-mentioned activities are associated with Physical Education, they are not all that Physical Education is about. In an essence Physical Education uses physical activity or movement to bring about positive changes in the physical, mental, and emotional make-up of an individual. It is a broad field of education which deals with the relationship between physical wellbeing and movement and other domains of education.

Physical Education is a combination of two separate words, *physical* and *education*. The first word is **physical** which means *related to body* or *related to any one or all of the bodily characteristics, that include physical strength, physical endurance, physical fitness, physical appearance and physical health*. And, the second word is **education** which means *preparation for life* or *systematic instruction and training*.

When we look at the combined meaning of these two words, we can understand that **physical education** is a *systematic training of an individual by using his/her own body to achieve the objectives of developing and maintaining the body, developing motor skills, physical abilities, making a habit of living a healthy lifestyle, developing the ability to control emotions for a fuller living*.

1.1.2 DEFINITION OF PHYSICAL EDUCATION

Physical Education is more than sports education. Let us see how some eminent scholars have defined Physical Education.

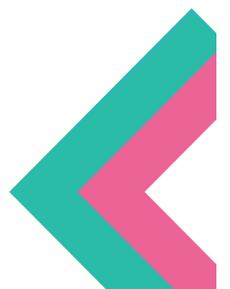
Physical Education is the sum of those experiences which come to the individual through movement.
-Delbert Oberteuffer

Physical Education is an integral part of the total educational process. It is a field of endeavour that has as its aim the improvement of human performance through the medium of physical activities that have been selected with a view to realizing this outcome.
- Charles A. Bucher

Physical Education is the sum of man's physical activities selected as to kind, and conducted as to outcomes.
-Jesse Feiring Williams

Physical Education is that phase of the whole field of education that deals with the big muscle activities and their related responses.
-Jay B. Nash

To sum up, Physical Education is a process of education which aims at the holistic development of an individual by using physical activity or body movement.



So, in a broader context, Physical Education may be defined as a teaching-learning process where physical activities are used as medium of instruction, and these physical activities are redesigned in such a manner as to improve physical fitness, motor skills, knowledge, sportsmanship, emotional stability and healthy behaviour.

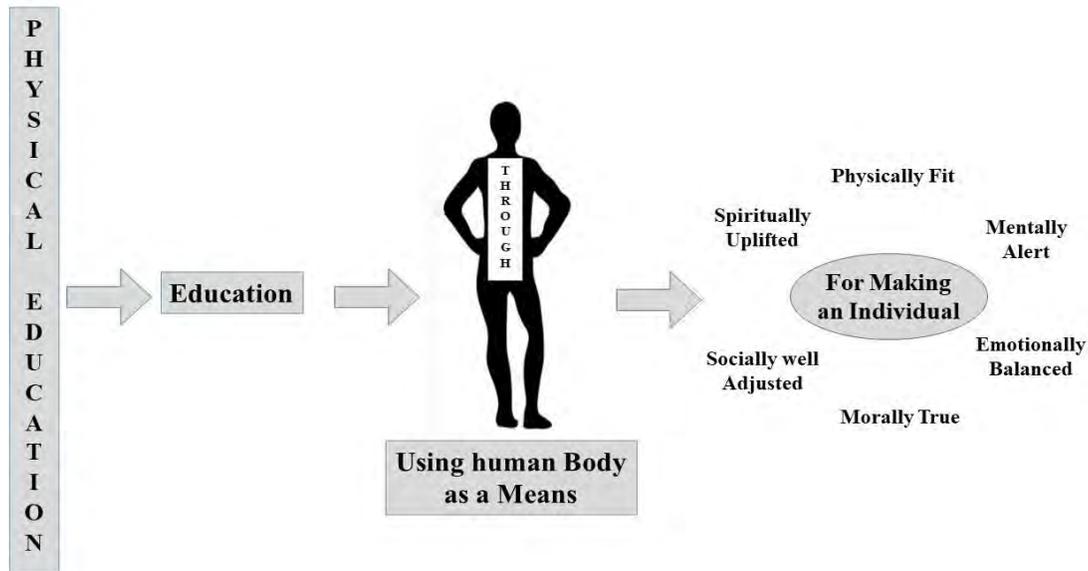


Figure: An illustration of Physical Education

1.1.3 CURRENT TRENDS IN PHYSICAL EDUCATION

The evolution of Physical Education as a discipline has covered a long journey. In the past it has been known by many other labels. Most of them are now considered too narrow and restricted to cover the entire scope of Physical Education.

Physical Education evolved from **gymnastics** (during 1800s) to **hygiene** to **physical culture** to **physical training** and now is known as **Physical Education**.

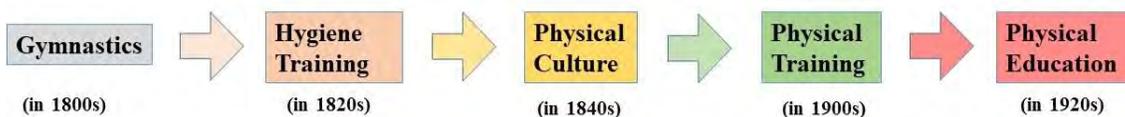


Figure: Evolution of Physical Education

As we know, the needs of the youth today are different from those of the youth of yester years. This holds true in the field of education more than in any other sphere. Changes in the society are reflected in the education system, and education system of yesterday will not meet the needs of today's students.

In the modern context, Physical Education lays a strong emphasis on achieving overall fitness and wellbeing rather than only physical fitness through body movement. In fact, Physical Education is now called movement education. It indicates how the body moves to develop efficient motoractivity.

Movement is basically governed by mechanical principles. A person must know the forces that act on the body in movement so that the movement is meaningful. Movement is affected by diverse factors such as physical fitness, emotional aspects pertaining to fear and anxiety and, even, atmospheric changes.



Movement is integral to all human beings. It includes both locomotor movement skills, such as running, jumping etc., which are necessary movements, and non-locomotor movements like twisting, turning etc. Movement is also a means of communication. In movement education, individuals have the freedom of self-exploration and are encouraged to find their own solutions to problems involving movements. They choose methods that are best suited to their abilities and perform movements that they desire. In movement education classes, students are given the freedom to follow their own methods of movement.

It is, therefore, essential the curriculum followed in the Physical Education Programme focuses on the overall fitness of a human being which is the need of today's youth and of the country as well, educating individuals to value their overall fitness by suggesting to them how can they improve and assess it.

Do you know?

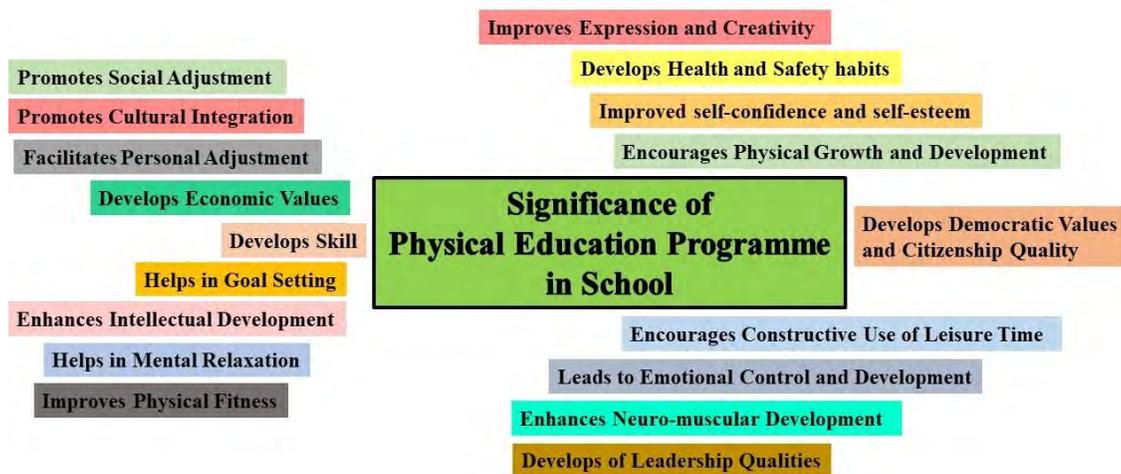
There are two types of movements **Locomotor and Non-locomotor**.

- Movement such as walking, running, hopping, leaping, skipping, galloping are examples of **locomotor movements**.
- Movements such as stretching, twisting, turning, pushing, pulling and swinging are **non-locomotor movements**.

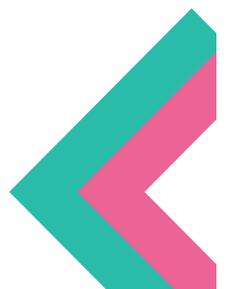
1.1.4 SIGNIFICANCE OF PHYSICAL EDUCATION PROGRAMME IN SCHOOLS

Total education of a child cannot be imagined without Physical Education being an integral part of the curriculum. A well-structured and well-implemented Physical Education Programme is the burning need of the current education system. Study the following diagram to learn what a quality Physical Education Programme can offer to students.

1. **Improves Physical Fitness:** Regular physical activity contributes immensely to students' overall physical fitness and wellbeing through development of muscular strength and improvement of cardiovascular health.



2. **Develops Skill:** Regular participation in the Physical Education Programme is essential to the development of motor skills and the enhancement of reflexes.





Improvement in hand-eye coordination and body movement, which helps in the development of a healthy body posture.

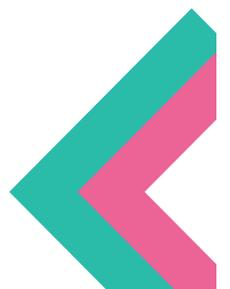
3. **Encourages Physical Growth and Development:** For proper growth and developments it is important all our organs and systems function optimally. Regular participation in physical activity leads to an improvement in the absorption of nutrients by the body, thereby improving digestive processes and increasing physiological processes.
4. **Enhances Intellectual Development:** On the sports field one has to take very quick and smart decisions, at times instantaneously. Participation in physical activity and sports helps us reach that level of intelligence where problem-solving becomes part of nature.
5. **Leads to Emotional Control and Development:** While participating in sports and games, different situations arise where participants learn the art of controlling their emotions and overcoming negative emotions like anger and frustration.
6. **Promotes Social Adjustment:** Physical activities such as games and sports provide ample opportunities for interaction between fellow participants and others which enable participants to learn social qualities and values like sportsmanship, cooperation, honesty, friendship, fellowship, courtesy, self-discipline, and respect for authority which promote social adjustment.
7. **Facilitates Personal Adjustment:** Physical Education provides a worthwhile experience for self-expression in varied situations, which facilitates personal adjustment in society. Students involved in sports show higher self-esteem and are more socially competent and less shy and withdrawn.
8. **Enhances Neuro-muscular Development:** Physical activities lead to neuro-muscular coordination, especially if various types of skills and exercises are carried out repeatedly over a long period of time. For carrying out a task accurately or learning a skill, a good neuromuscular control is indispensable.
9. **Promotes Cultural Integration:** Sports and physical activities play an important role in the cultures of all peoples. During such competitive activity, individuals from different cultures mingle with each other and come to know about the customs, traditions, and way of life of others, thereby promoting cultural development.
10. **Develops Leadership Qualities:** Self-concept, intelligence, loyalty, honesty, dedication, and resourcefulness are some of the qualities of a good leader. Opportunities for cultivation of these character traits are available on the sports field, and the playground is a good laboratory for developing these characteristics.
11. **Develops Health and Safety Habits:** While participating in any physical activity or sport sports persons have to wear protective gear as well as follow safety rules. This becomes a habit and inculcates healthy and safe habits amongst the students.
12. **Develops Democratic Values and Citizenship Quality:** Physical Education teaches the art of winning and losing gracefully, the spirit of being fair to others, observing of rules, maintaining a friendly attitude and respect for others, as well as patriotism which are essential to democratic living.



13. **Encourages Constructive Use of Leisure Time:** Students have a lot of energy and when they engage in any sort of physical activity that surplus energy is efficiently utilized. If they are not involved in physical activity, they may utilise that surplus energy in ways that are undesirable. Physical Education provides students an opportunity to use their free time constructively.
14. **Improves Expression and Creativity:** Human body is the main tool in Physical Education for showing expression and creativity. In Physical Education when an individual performs any skill, he/she brings his/her own unique element into it, which is based on his/her expressive ability and creativity.
15. **Develops Economic Values:** Physical Education is fast emerging as a profitable profession. It offers numerous opportunities for business and for self-employment, as well as employment in various agencies at various levels. The concept of sponsorship of players, teams and events by corporate houses, that is fast entering sports arena, has provided a new and meaningful dimension to it.
16. **Helps in Mental Relaxation:** Physical activity promotes secretion of feel-good chemicals called endorphins in the brain that improve the mood, reduce anxiety and enhance self-esteem, thereby making the player more relaxed. Physical activities such as yoga, aerobics, fitness Programmes, recreational activities, sports and games help in relieving and reducing mental stress and anxiety caused by modern lifestyle. These activities divert attention from stressful situations and provide an outlet for frustration. Thus, physical activity becomes an outlet for releasing tension and stress, and facilitates emotional stability and resilience.
17. **Improved Self-confidence and Self-esteem:** Physical Education provides a stronger sense of self-worth in every player and sportsperson. This makes the individual more confident, assertive, independent and self-controlled when performing any physical activity.
18. **Helps in Goal Setting:** Physical Education is a systematic process of education, where individuals are trained to achieve short-term, long-term and specific goals. Therefore, it prepares individuals to set personal, achievable goals in life and strive for achieving them.

I. Tick the correct option.

1. In 1800s Physical Education was known as
 - i. Physical Culture
 - ii. Physical Training
 - iii. Gymnastics
 - iv. Hygiene





2. In Jesse Feiring Williams's definition of Physical Education, "Physical Education is the sum of man's physical activities selected as to kind, and conducted as to outcomes," the phrase 'activities selected as to kind' refers to activities that are
 - i. based on desired outcomes
 - ii. based on physical activities
 - iii. based on expected outcomes
 - iv. based on planned outcomes
3. Physical Education uses the body as a means to exhibit our feelings which develop the quality of
 - i. expression
 - ii. creativity
 - iii. emotional stability
 - iv. intellectuality

II. Answer the following questions briefly.

1. Define Physical Education.
2. Write concept of Physical Education in your own words.
3. What is the evolution path of Physical Education?
4. How Physical Education develop neuro-muscular coordination?
5. How can Physical Education contribute in moral and character building?
6. What is the role of Physical Education to produce an effective citizen for the country?

III. Answer the following questions in 150-200 words.

1. List the importance of Physical Education in school.
2. What is the modern concept of Physical Education?
3. Jesse Feiring Williams defined Physical Education as "the sum of man's physical activities selected as to kind, and conducted as to outcomes". Elucidate this definition, and give examples how it would be interpreted in practice.



Extension Activity Discuss with your group

- What are the short-term effects of exercise?
- What changes take place in your body if you exercise regularly over an extended period of time?
- Are these changes obvious e.g., building of muscles, loss of body fat etc.?
- What about changes that are not so obvious – increased stamina, improved speed?
- What changes occur in heart rate and breathing?

Design a poster to show the effect of exercise on the body.

You could use an outline of the body to show which parts of the body are affected, what those effects are and how to maximize benefits of exercise.

1.2.1 AIM AND OBJECTIVES OF PHYSICAL EDUCATION

Physical Education is “education through movement”. It aims to maximize our physical ability, leading us to be healthy, knowledgeable, skilful, creative, productive and influential in all walks of life. Thus, the aim of Physical Education is the optimal and wholesome development of the individual for complete living, as well as optimum performance in sports competitions. According to National Plan of Physical Education and Recreation, “The aim of Physical Education must be to make every child physically, mentally and emotionally fit and also to develop in him such personal and social qualities as will help him to live happily with others and build him up as a good citizen.”

Do you know?

From April 2019, CBSE has made Health and Physical Education period compulsory for Classes 1st to 8th on an everyday basis.

Aim

Optimum and wholesome development of individual for complete living, *as well as optimum performance in sports competitions.*



Objectives

- Value Physical Education
- Develop Interest in the Discipline
- Achieve Optimum Physical Fitness & Health
- Awareness of Movement
- Organic Development
- Neuro-muscular Co-ordination
- Emotional Development
- Social Development
- Develop Motor Skills
- Enjoyment and Satisfaction
- Development of Evaluative Skills
- Interpretive Development
- Moral & Character Building
- Remedial Values
- Optimum Sports Performance
- Effective Citizenship



**Extension Activity**

Take part in any form of physical activity for one week (the activity can be any sports, simple jogging/walking, recreational activity, adventure sports etc.). After a week fill the table given below.

Name of the Activity.	
What motivated you to choose this activity?	
How do you feel after participating in this activity?	
Would you like to continue participation in this activity?	
If your response to the above question is 'Yes' or 'No' give a plausible reason.	

Objectives of Physical Education:

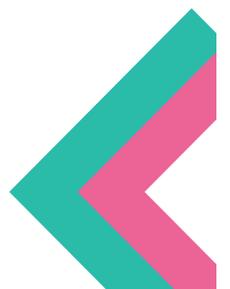
1. **Developed Healthy and Active Life Style:** The chief objective of Physical Education is to make individuals aware of and appreciate the value of Physical Education and its contribution to a healthy and active life style.
2. **Develop interest in the discipline:** The focus of a well-designed Physical Education plan should be to encourage a high level of interest and personal engagement in Physical Education showing initiative, enthusiasm and commitment towards the same.
3. **Achieve Optimum Physical Fitness and Health:** Physical Education Programmes should aim to develop an individual's physical fitness and to make her/him work to her/his optimal level of physical capacity. It also aims to develop healthy habits of sleep, exercise, food etc. for optimum health.
4. **Awareness of Movement:** The Physical Education Programme should make the individual realise that movement is a creative medium for communication, expression and aesthetic appreciation. Proficiency in fundamental movement skills through Physical Education supports the development of more specific skills such as dance.
5. **Development of Organ Systems:** The objective of Physical Education Programme is to develop all organ systems such as respiratory system, circulatory system, digestive system, nervous system, and muscular system. This leads to increased physical efficiency and capacity.
6. **Neuro-muscular Co-ordination:** The Physical Education Programme should be planned in such a manner that it helps in maintaining a better relationship between the nervous system and the muscular system. This helps in developing control and balance among different body parts.



Do you know?

According to **National Planning of Physical Education and Recreation**, the 'aim of Physical Education must be to make every child physically, mentally and emotionally fit and also to develop in him such personal and social qualities as will help him to live happily with others and build him up a good citizen'.

7. **Emotional Development:** Competitions are an indispensable part of sports and games and are marked by success and failure. Physical Education helps develop emotional stability and teaches acceptance of success and failure gracefully. These qualities are helpful throughout one's lifetime. Different situations occur on the sports field whereby individuals learn to control emotions such as anger, pleasure, jealousy, fear, loneliness etc. This makes them emotionally balanced.
8. **Social Development:** Physical Education leads to social development as it provides the individual ample opportunities for social contact and group living which help her/him to adjust in different situations and build relationships. Qualities like cooperation, obedience, fair play, sacrifice, loyalty, sportsmanship, self-confidence are developed. Development of these traits help the individual to become a good human being and also results in a healthy society.
9. **Develop Motor Skills:** The Physical Education Programme helps the individual develop the motor skills necessary for successful participation in different sports and a variety of other physical activities.
10. **Enjoyment and Satisfaction:** A Physical Education Programme provides enjoyment and satisfaction through physical activity.
11. **Development of Evaluative Skills:** A well-designed Physical Education Programme helps participants to show knowledge and understanding of a variety of physical activities and to evaluate their own and others' performances.
12. **Interpretive Development:** Physical Education helps develop interpretive ability amongst the individuals where they can critically reflect upon physical activity in both their local and intercultural context.
13. **Character Building:** A well-structured Physical Education Programme should be based on desirable life outcomes like building character traits such as morality, self-esteem, self-efficacy and resilience, including lowering levels of stress, experiencing positive growth, boosting academic achievement, being willing to set challenging life goals, and pro-social behaviour.
14. **Remedial Values:** Physical Education Programme teaches safety habits where one can learn about corrective exercises which will lead to safety habits amongst individuals.
15. **Optimum Sports Performance:** Physical Education brings an individual to optimum sports performance level.
16. **Effective Citizenship:** At last but not the least, the Physical Education Programme prepares an effective citizen who serves the country in better manner.





I. Tick the correct option.

1. Amongst the following which one is the key process in Physical Education?
 - i. Evaluating performance
 - ii. Checking competency
 - iii. Making efforts
 - iv. Developing skills
2. Amongst the following which one is NOT the aim of social development in Physical Education?
 - i. Obeying of rules and regulations
 - ii. Showing sportsmanship
 - iii. Cooperation with peers
 - iv. Playing for self

II. Answer the following questions briefly.

1. What is the aim of Physical Education?
2. Suggest one activity which helps to develop interest in Physical Education.
3. How does participation in sports lead to better emotional development?

III. Answer the following questions in 150-200 words.

1. What are the objectives of Physical Education?
2. How does Physical Education contribute to an individual's development?

1.3.1 CAREER OPTIONS IN PHYSICAL EDUCATION

Physical Education is a fast-growing discipline in India. To educate individuals in the field of Physical Education numerous courses are offered by different educational institutions.

The National Council of Teacher Education (NCTE) has recognised the courses which prepare teachers of Physical Education for school system in India. NCTE recognises only three courses for Physical Education Teachers.

1. **Diploma in Physical Education (D.P.Ed.):** This course prepares Physical Education Teachers for the elementary stage of school education i.e. for Classes I to VIII.
2. **Bachelor of Physical Education (B.P.Ed):** This course is designed for preparing teachers of Physical Education for teaching theory papers in Classes VI to X and conducting Physical Education and Sports Activities for Classes XI-XII.
3. **Master of Physical Education (M.P.Ed.):** It is meant for preparing Physical Education Teachers for Senior Secondary classes (i.e. XI-XII) as well as Assistant Professors/ Directors/ Sports Officers in Colleges/Universities and Teacher Educators in Colleges of Physical Education and University Departments of Physical Education.



In addition, research-oriented courses such as Master of Philosophy (M.Phil.), Doctorate of Philosophy (Ph.D.) and Post Doctorate Fellowship (P.D.F.) Programmes are also offered in Physical Education.

Apart from this, different educational institutions in India offer various courses in Physical Education (recognised by University Grands Commission, New Delhi or by the Institutions themselves). A few of these courses are listed below:

Post Graduate Diploma Level Courses

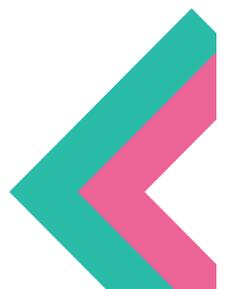
- Post Graduate Diploma in Adventure Sports Administration
- Post Graduate Diploma in Disability Sports
- Post Graduate Diploma in Fitness Management
- Post Graduate Diploma in Sports Coaching
- Post Graduate Diploma in Sports Journalism
- Post Graduate Diploma in Sports Management
- Post Graduate Diploma in Sports Nutrition
- Post Graduate Diploma in Yoga Education

Bachelor Level Course

- Bachelor of Arts (Programme) Sports & Performance
- Bachelor of Physical Education & Sports
- Bachelor of Physical Education (Four Year Course after 12th)
- Bachelor of Science Exercise Physiology
- Bachelor of Science in Physical Education
- Bachelor of Science in Physical Education, Health Education and Sports Sciences

Master Level Courses

- M.B.A. in Sports Management
- M.Tech. in Sports Technology
- Master of Arts in Physical Education
- Master of Arts in Sport and Exercise Psychology
- Master of Arts in Yoga
- Master of Journalism and Mass Communication (Specialization - Sports Journalism)
- Master of Physical Education and Sports





- Master of Science in Exercise Physiology and Nutrition
- Master of Science in Physical Education
- Master of Science in Sports Biomechanics and Kinesiology
- Master of Science in Sports Coaching
- Master of Science in Sports Psychology and Sociology
- Master of Science in Yoga

1.3.2 CAREER OPTIONS IN PHYSICAL EDUCATION

When an individual graduates with a professional degree in Physical Education, the most obvious career option for her/him is to work as a Physical Education Teacher (PET) at an elementary, middle, secondary or senior secondary level school. While it is true that students who study or graduate with any professional degree in Physical Education do choose this career option, it is not only career option they have.

Physical Education is emerging as a fast-growing discipline and this is reflected by the various courses offered by educational institutions situated in India. Courses from sports coaching to sports journalism have emerged as favoured career options due to growing demand in this field.

Thus, Physical Education Programmes prepare their students for careers in both, school and non-school, settings. Graduates of Physical Education have the option to work for schools, colleges, universities, sports clubs, fitness industry, health providers and many more.

Extension Activity

Visit any search engine on internet and fill the information in table.

Course	Name of Institution	Duration of Course	Eligibility Criteria for Admission	Career Options of the Course
D.P.Ed.				
B.P.Ed.				
M.P.Ed.				
MBA in Sports Management				



A few career options are listed below:

Physical Education Teacher: After competing D.P.Ed., B.P.Ed. or M.P.Ed., one can be appointed as PET in a school or college.

Health Education Teacher: There is one paper in the Programme of Physical Education which is completely devoted to health education. After completion of the course one can work as a Health Education teacher.

Sports Coordinator: Skills such as organizing and directing all aspects of assigned recreational sports Programmes, including coaching and teaching responsibilities, and planning team activities are taught in Physical Education courses, so one can effectively work as a sports coordinator.

Do you know?

In 1920, Harry Crowe Buck of Pennsylvania, United States, established YMCA College of Physical Education at Chennai, Tamil Nadu. This is the first Physical Education college in Asia.

Professional Coach: After a Diploma in Sports Coaching, one can be appointed as a professional coach of a team or for individuals/athletes requiring a personal coach/trainer.

Outdoor and Adventure Sports Educators: A person with a degree in any Physical Education course and interest in outdoor and adventure sports can educate others in the field.

Sports Administrator: Supervision and Administrative skills are also taught in Physical Education courses. This enables the individual to work as a sports administrator.

Provider of Recreational Services: One can run a recreational club where recreational services such as Dodge ball, Bean bags, Bob ball, etc. may be provided. One could set up an Amusement Park for provision of adventure sports such as river crossing, rappelling, etc.

Event Manager of a Sports Club: An individual who has graduated with MBA in Sports Management can offer his/her services as an event manager at any sports club.

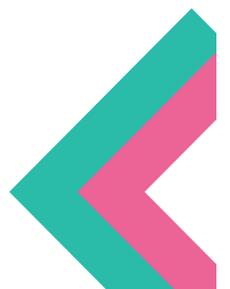
Health and Fitness Club Manager: One can be appointed as health and fitness club manager after having a professional degree in Physical Education as well as an interest in the field.

Sports Clothing & Equipment Designer: If one has zeal and interest in fashion designing then she/he can work as a sports clothing and equipment designer.

Dietician and Nutritionist: After graduating with any Physical Education degree, an individual can choose the profession of a dietician and nutritionist also.

Sports Goods Marketing: Sales and Marketing of sports goods is a fast-growing industry and one can choose this line after graduating in Physical Education.

Yoga Trainer: Yoga has become popular both nationally and internationally, so one





who is trained in yoga can provide her/his services to instruct groups/individuals through various levels and types of yoga.

Fitness Trainer: One can work as a fitness trainer after completing any course in Physical Education.

Physical Therapist: One can also work as a physical therapist after doing any physical education Programme.

Sports Journalist: Some institutes offer a sports journalism course, so those who have graduated in this course can work as sports journalists.

Adapted Physical Education Teacher: This dimension of physical education has gained much importance in today's society, because we have come to realise the right of each and every individual on this planet to live his/her life to the fullest. In this domain, a special curriculum is designed to train individuals for taking care of the physical education needs of persons with disability.

Thus, if you have a degree in Physical Education, you have to just think about your interest and choose a career option that suits your interest.

Art Integration – ROLE PLAY

Working in groups, conduct an interview for any one of the above-mentioned jobs.

You will play the roles of

- Three/Four panellists who interview the candidate to determine how suitable the candidate is for a particular role.
- Two/three candidates.

As the interviewers you must try to assess the candidate's suitability and assess how the candidate (if selected) may react in difficult/problem situations. The situation will often involve some sort of controversy or conflict or dissatisfaction on the opposition's part, and require negotiating and reasoning as well as customer service skills from the interviewee. You will prepare a set of questions related to the candidate's

- educational qualifications
- previous work experience
- suitability to the position in hand.

As the candidate(s), you will prepare a portfolio related to your

- educational qualifications
- previous work experience
- suitability to the position in hand.

You must be prepared with methods of dealing with problem situations.

The other groups will watch and take notes/assess the group performing the Roleplay.



I. Tick the correct options

1. After completing D.P.Ed. you can teach Classes
 - i. I to VIII
 - ii. I to V
 - iii. VI to VIII
 - iv. I to X
2. Which course of Physical Education is not recognised by NCTE?
 - i. D.P.Ed.
 - ii. B.P.Ed.
 - iii. M.P.Ed.
 - iv. B.P.E.S
3. Which one is NOT a research-oriented course in Physical Education?
 - i. M.P.Ed.
 - ii. M.Phil.
 - iii. Ph.D. in Physical Education
 - iv. P.D.F. in Physical Education

II. Answer the following questions briefly.

1. What is the full form of NCTE?
2. Apart from a professional degree in Physical Education, what other key skills are required for opting for a career other than teaching?
3. What are the minimum eligibility criteria for getting admission in B.P.Ed.course?
4. If one is not a sportsperson, is he/she eligible for getting admission in M.P.Ed.? Why/ Why not?

III. Answer the following questions in 150-200 words.

1. How many different kinds of courses and career options in Physical Education are available in India?
2. After completion of any professional course in Physical Education, how many career options will you have?
3. Can a Physical Education graduate justify the job of sports administrator? Explain with suitable examples.





1.4.1 SPORTS COMPETITIONS AT NATIONAL AND INTERNATIONAL LEVEL

The dictionary defines **competition** as *a situation in which someone is trying to win something or be more successful than someone else or an activity done by a number of people or organizations, each of which is trying to do better than all*

1.4.2 SPORTS COMPETITIONS IN INDIA

of the others. It may be in the field of sports or in academics. Further, the competition may be between two or more individuals or between two or more teams from the same place or different places. Thus, a sports competition is an event where two or more individuals or teams compete with each-other and one winner is decided at the end of the competition.

There are several types of sports competitions which are as follows.

1. **Intramural Sports Competitions:** Intramural sports competitions are conducted between the players or teams of the same institution. e.g., Inter-Departmental Sports Competitions.
2. **Extramural Sports Competitions:** Extramural sports competitions are organized between the players or teams of two or more institutions. e.g., Inter-College or Inter-University Competitions.
3. **Inter-District Competitions (State):** Inter-District or State level competitions are those competitions where individuals or teams of more than two districts compete with each other.
4. **Inter-State Competitions (National):** Inter-State or National competitions are those where individuals or teams of two or more states compete with each other.
5. **International Competitions:** International competitions are those competitions where individuals or teams of two or more countries compete with each other. e.g., Olympics, World Cups, Commonwealth Games, Champions Trophy, Asian Games, etc.

NEED AND IMPORTANCE OF SPORTS COMPETITIONS IN SCHOOL

Theodore Hesburgh, in *The Importance of School Sports and Education* writes that it is imperative for school going children to have access to sports and games. Not only does it empower youth and promote higher self-esteem, it also motivates students academically, enabling them to earn better grades. Numerous physical benefits of participation in sports and games include maintaining a healthy weight, preventing chronic diseases and learning the skills necessary to maintaining a healthy lifestyle after graduating.

- Participation in sports competitions offers opportunities to the students at the school level that will be favourable for their overall development.
- Sports competitions provide opportunities to the students to amplify their skills in different sports.
- Participation in sports competitions is enjoyable. At the same time, it develops



coordination with others, leadership skills and obedience of rules, values which ultimately pave the way for the individual becoming a productive citizen of the country.

- To release tension, overcome depression and aggression, participation in sports competitions is essential. It also provides a chance to students where they can have a feeling of achievement which is conducive for their mental and emotional health.
- Organization of sports competitions at school gives opportunities to the students to get an exposure to competitions.

1.4.3 SPORTS COMPETITIONS AT NATIONAL LEVEL

In India numerous national level sports competitions are organised by the national associations of the respective sports. Few of these are listed below-

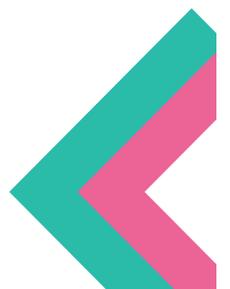
National Games: National Games, initially known as Olympic Games, are multi-sports events where sportspersons representing different States of India/Union Territories participate and compete against each-other.



CBSE Inter-School Sports & Games Competitions: Every year, CBSE organizes sports competitions for all affiliated schools in different age groups at Cluster/ Zonal and National levels.



National School Games: The School Games Federation of India which was formed in December 1954, organises Sports and Games competitions for boys and girls at the national level. At present about 24 states are members of this organisation. Initially, this organization organized competitions in a limited number of games and sports, once a year. In 1959, at the Mumbai meet, a decision was taken to hold the competitions in two phases i.e. Summer Games and Winter Games.





Inter Universities Competition: Inter-University Competitions are organised under the aegis of Association of Indian Universities (AIU) every year in different sports which are approved by AIU. Here sports persons from the various Universities of India participate and compete against each other.

Khelo India Youth Games: Khelo India School Games (KISG) now known as Khelo India Youth Games (KIYG) is a national level multi-sports event held on annual basis under two categories i.e., Under-17 years for school going students and Under-21 years for college students.

Khelo India University Games: Taking forward the legacy of “Khelo India” initiative, national level Khelo India University Games is organised in collaboration with All India Universities (AIU).



1.4.4 LEAGUE SPORTS IN INDIA

To promote sports culture in India, different sports competitions are organized on a league basis in the country. A sports league is a group of sports teams that compete against each other in a specific sport.

Duleep Trophy: It is first-class domestic cricket tournament played in the country named after Kumar Shri Duleepsinhji of Nawanagar. Initially this competition was played by teams representing geographical zones of India, but from 2016-17 it has been played by teams chosen by Board of Control for Cricket in India (BCCI).





Ranji Trophy: Ranji Trophy is also one of the first-class domestic cricket competitions played in the country between the teams representing regional and state cricket associations. The trophy is named after Ranjitsinhji, the first Indian cricketer to play international cricket.



Z. R. Irani Cup: To mark the completion of 25 years of Ranji Trophy, Z. R. Irani Cup (earlier known as Irani Trophy), a domestic first-class cricket tournament was conceived. The tournament is named after Z. R. Irani, who was associated with the BCCI since its inception in 1928, till his death in 1970.

Indian Premier League: It is a professional Twenty 20 cricket league played every year in India. There are eight teams representing eight different cities of India. The league was founded by the BCCI in 2008.



Santosh Trophy: Santosh Trophy is a knock-out football competition played by the regional state associations and government institutions under the All India Football Federation (AIFF). Santosh Trophy is considered one of the oldest football tournaments in India. The tournament was started in 1941 and is named after the president of the Indian Football Association (West Bengal's football association) at the time, Sir Manmatha Nath Roy Chowdhary of Santosh.



I-League: I-League, also known as Hero I-League, is the topmost professional men's football league in India. The league is contested by 11 teams. The competition was founded in 2007 as the successor to the National Football League (NFL). The league was launched as India's first ever professional football league and aims to increase the player pool for India's national team.



Indian Super League: Indian Super League is the top division men's professional football league in India. It is one among the two co-existing top-tier football leagues in India along with I-League. The competition is contested by 10 teams. It is organized by All India Football Federation (AIFF).



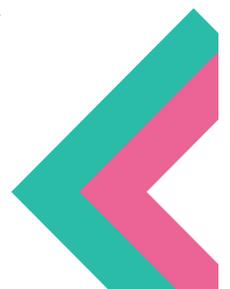
Indian Women's League: The Indian Women's League is a women's football league in India. The first season kicked off in Cuttack in October 2016. The league is run by the All India Football Federation.



Hockey India League: Hockey India League (HIL) is a professional field hockey league in India. The league is organized by Hockey India, the governing body for the sport in India. HIL consists of 6 teams.



Pro Kabaddi League: Pro Kabaddi League is a professional Kabaddi league in India. It was launched in 2014. The league's inception was influenced by the popularity of the Kabaddi tournament at the 2006 Asian Games. The format of the competition was influenced by Indian Premier League. The Pro Kabaddi League uses a franchise-based model and its first season was held in 2014 with eight teams.



Premier Badminton League: Premier Badminton League is a franchise league; Sportz & Live Private Limited (Sportzlive) has the rights to operate and execute the Premier Badminton League. It was named Indian Badminton League (IBL) when founded in 2013, then later renamed Premier Badminton League before the start of the second season in 2016. The inaugural edition of the Indian Badminton League was held from 14 August 2013 to 31 August 2013.



Pro Volleyball League: Pro Volleyball League (PVL) is a professional men's indoor volleyball league in India. The league is an initiative between the Volleyball Federation of India and Baseline Ventures. Sony Pictures Networks India is the official broadcaster of the league.

Pro Wrestling League: The Pro Wrestling League (PWL) is an Indian sport wrestling promotion league which was started in 2015. It was jointly initiated by Pro Sportify and Wrestling Federation of India. The Pro Wrestling League includes six franchises, which represent cities throughout India. The teams are formed via auction. The league adheres to United World Wrestling rules for all weight categories. So far, all the seasons of PWL hosted 6 teams, consisting of 9 players each.

Do you know?

In 1894 Baron Pierre de Coubertin founded the International Olympic Committee (IOC), and the first modern Olympic Games were held in 1896 at Athens under the aegis of IOC.

1.4.5 SPORTS COMPETITION AT INTERNATIONAL LEVEL

Given below is the list of major international sports competitions where teams of different countries compete with each other in both individual and team sports.

Name of the Sports	Name of the Competition	Organisers
Badminton	Badminton World Championships	This championship is organized every year by Badminton World Federation (BWF) where teams affiliated to BWF compete with each other.



Basketball	World Cup	The International Basketball Federation, also known as FIBA, from its French name <i>Fédération Internationale de Basket-ball</i> , is an association of national organizations which govern basketball worldwide. Under FIBA Basketball World Cup, national teams of the affiliated member countries of the International Basketball Federation take part and compete with each other.
Boxing	Boxing World Championships	Boxing World Championship is the amateur boxing competition held biannually, where National teams of the affiliated members of International Boxing Association (AIBA), the governing body of the sport, compete in the championship.
Cricket	ICC World Cup	International Cricket Council (ICC) World Cup is an international one-day cricket tournament where all Test-playing nations and some qualifiers compete with each other.
	T20 World Cup	This is one of the international cricket tournaments of a 20 overs game which is held every 2 years.
	Champions Trophy	ICC Champions Trophy is held every four years. It is a 50 overs international cricket tournament organized by ICC.
Gymnastics	Artistic Gymnastics World Championship (AGWC)	The AGWC is held annually in non-Olympic years. It is a world championship for artistic gymnastics. The championship is governed by Federation of International Gymnastics (FIG).
	World Rhythmic Gymnastics Championships (WRGC)	The WRGC is the world championships for the sport of rhythmic gymnastics. The competition is organized by Federation of International Gymnastics (FIG).
Hockey	World Cup	Hockey World Cup is an international field hockey tournament organized by the International Hockey Federation (FIH) for both Men and Women. It is organized every four years.



	Asia Cup	The Asia Cup is an international field hockey tournament for the members of Asian Hockey Federation (ASHF).
	Champions Trophy	The Hockey Champions Trophy (HCT) is an international field hockey tournament where top 8 teams including the host country's team take part. It is organized by the International Hockey Federation (FIH) on every year.
Football	FIFA World Cup	FIFA World Cup is a competition of the national teams of the Federation of International Football Association (FIFA) members. It is held at every four years.

1.4.5 INTERNATIONAL MULTI-SPORT COMPETITIONS

Games	Description
Summer Olympics	Summer Olympics, also called Olympics, are held every four years, in a leap year. Olympics are a multi-sport competition where almost every country of the world participates.
Winter Olympics	Winter Olympics are also held at every four years, two years after the Summer Olympics. In Winter Olympics, most countries of the world compete with each other in winter sports like Alpine skiing, Cross-country skiing, Freestyle skiing, Ice hockey, Snowboarding, Speed skating etc.
Commonwealth Games	Commonwealth Games are held every four years where athletes from the Commonwealth of Nations take part in various sports competitions. The event was first held in 1930, and has taken place every four years since then. The Commonwealth Games were known as the British Empire Games from 1930 to 1950, the British Empire and
Asian Games	The Asian Games, also known as Asiad, is a multi-sport event. Here only Asian countries take part. The Games were regulated by the Asian Games Federation (AGF) from the first Games in New Delhi, India, until the 1978 Games. Since the 1982 Games, they have been organized by the Olympic Council of Asia (OCA), after the breakup of the Asian Games Federation.



Commonwealth Games from 1954 to 1966, and British Commonwealth Games from 1970 to 1974. It is the world's first multi-sport event which inducted equal number of women's and men's medal events. This was implemented recently in the 2018 Commonwealth Games.

I. Tick the correct option.

1. The football tournament played on knock-out basis is
 - i. Santosh Trophy
 - ii. Hero I-League
 - iii. Indian Super League
 - iv. Indian Women's League
2. Which one of the following is NOT a multi-sports competition?
 - i. Commonwealth Games
 - ii. Asian Games
 - iii. Olympics
 - iv. Champions Trophy
3. A competition played within the walls of an institution is known as
 - i. Intra-mural Competition
 - ii. Extra-mural Competition
 - iii. Inter-district Competition
 - iv. Inter-State Competition
4. The international governing body for Basketball is
 - i. BWF
 - ii. FIBA
 - iii. IBA
 - iv. IBF

II. Answer the following questions briefly.

1. What is a sports competition?
2. Define intra- and extra-mural sports competitions.
3. List some sports competitions at national and international level.

III. Answer the following questions in 150-200 words.

One of the objectives of Physical Education is to 'Value Physical Education'. How can one start valuing Physical Education? Give your suggestion.



**IV. Answer the following questions in 150-200 words.**

- One of the objectives of Physical Education is to 'Value Physical Education'. How can one start valuing Physical Education? Give your suggestion.

Extension Activity

Choose any two sports of your interest and complete the table below:

Name of the Sports	Local Level Competition	National Level Competition	Next Due date of International Level Competition	Top Two Players of the Sports	Your Favourite Player

1.5.1 ABOUT KHELO INDIA PROGRAMME

Sports and fitness are of immense importance in one's life. Participation in games and sports inculcates team spirit, develops strategic and analytical thinking, leadership skills, goal setting and risk taking. A fit and healthy individual makes for an equally healthy society and a strong nation.

Extension Activity

Visit a stadium or sports academy in your vicinity. Ask the coaches/trainers deputed there what they know about the Khelo India Programme.

Prepare a report.

Sports is an extremely important component for the overall development of our nation. India, in the last few years has made steady progress in the field of sports. This tremendous potential needs to be showcased at a global platform. To inspire young talent and to give them top-notch infrastructure and training, we need to inculcate a strong spirit of participation in sports that enables players to demonstrate their true potential. Only then can India realise its dream of becoming a super performer on the sports field.



The Khelo India Programme has been introduced to revive the sports culture in India at the grassroots level by building a strong framework for all sports played in our country and to establish India as a great sporting nation.

Participation in sports is an extremely important component for development of any nation. When we see India's performance in International sports events, it is found that India is making a steady progress and this is happening when only 5% of our total population participates in sports and games. If this percentage of participation is enhanced, then results could be different. Thus, to inspire young talent and to provide them with world-class infrastructure and training facilities, "KheloIndia - National Programme for Development of Sports" was launched by the Ministry of Youth Affairs and Sports, Govt. of India in the financial year 2017-2018.

Do you know?

The Khelo India Programme was approved in the Cabinet meeting of the Department of Sports, Ministry of Youth Affairs and Sports, Govt. of India, held on 20th September, 2017.

The budget allocation for the Khelo India Programme is Rs. 1,756 Crore for the period of 2017-18 to 2019-20.

The intention is to achieve the two main objectives which are mass participation and promotion of excellence in sports in the country.

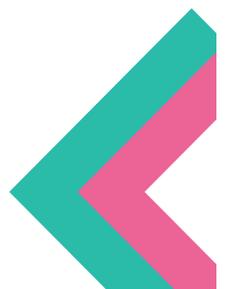
1.5.2 VISION OF KHELO INDIA

The vision of the Government of India behind launching the Khelo India Programme is to further sports culture in India, especially at the grassroots level as well as achieve sporting excellence in the country.

1.5.3 MISSION

The mission of the Khelo India Programme is "to encourage sports for all thus allowing the population across gender and all age groups to harness the power of sports through its cross-cutting influence, namely, holistic development of children and youth, community development, social integration, gender equality, healthy lifestyle, national pride and economic opportunities related to sports development."

In short, the aim of Khelo India Programme is to provide a platform to each and every citizen of India, despite their individual differences of age and gender, to participate in sports and channelize their sporting skills which ultimately leads to an all-round development of every child and youth. This will lead to community development, social integration and gender equality. It will inculcate a healthy lifestyle, bring laurels to country and provide economic opportunities.





1.5.4 AIM AND OBJECTIVES OF THE PROGRAMME

The Khelo India Programme aims at developing a sporting culture in the country, identifying talent from the grassroots, and grooming them for international success.

The intention of Khelo India Programme is to build a strong framework for each and every sport played in the country and to make India into a strong sporting nation arena. To achieve this Khelo India Programme has outlined twelve verticals namely

- Play Field Development
- Community Coaching Development,
- State Level Khelo India Centres
- Annual Sports Competitions
- Talent Search and Development
- Utilization and Creation/Upgradation of Sports Infrastructure
- Support to National/Regional/State Sports Academies
- Physical fitness of school children
- Sports for Women
- Promotion of sports amongst people with disabilities
- Sports for peace and development
- Promotion of rural and indigenous/tribalgames.



1. **Play Field Development:** One-time funding of up to 50 Lakhs will be provided to States/UTs for developing, managing, equipping and maintaining playing field and sports infrastructure development and open spaces for public use by the Ministry of Youth Affairs and Sports, Government of India.

Implementing Agency: Financial assistance will be provided by the Department of Sports.

2. **Community Coaching Development:** In this vertical, community coaches will be provided and coaching infrastructure developed across the country, based on a cascading model. A short-term Programme will be evolved for 'community coaching development'. From among the pool of existing Physical Education Teachers (PETs), about 2000 will be identified and will be trained as master trainers each year. They will in turn train other PETs/Volunteers as community coaches and develop teams at community level. Further, a system will be evolved for induction and utilization of community coaches.





Do you know?

- NPF AI has been registered as a Society under Societies Registration Act, 1860 in February, 2009.
- Development of playgrounds in all gram panchayats can be taken up in convergence with the scheme of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and any other scheme(s) of the State Government/Central Government.

Implementing Agency: Laxmibai National Institute of Physical Education (LNPE) and institutes of Sports Authority of India (SAI), are assigned for developing content and other protocols as well as conduct trainings for Master Trainers.

3. **State Level Khelo India Centres:** To utilize all available resources of sports such as unemployed trained coaches, other support staff, equipment, playing fields etc. a Memorandum of Understanding (MoU) will be signed between Sports Authority of India (SAI) and States/UTs and support will be provided to States/UTs to run centres where, as per SAI, day boarding schemes and training will be provided. Further, online sports coaching and education will be provided through *Khel Pathshalas*.

Implementing Agency: SAI will be the implementing agency.

4. **Annual Sports Competitions:** Khelo India will be the basic platform to showcase sporting skills and accordingly become a platform for talent spotting and providing development pathways for gifted and talented children to achieve excellence. The Central Government will organize National level competitions, i.e., Khelo India National School Games and Khelo India National University Games.

Do you know?

In the First Khelo India Youth Games 2018, Haryana with 102 medals (38 golds, 26 silvers and 38 bronzes) was on top of the medal tally, followed by Maharashtra (111 medals including 36 golds) and Delhi (94 medals including 25 golds).

On February 27, 2019, PM Narendra Modi launched the Khelo India App at the Youth Indian Parliament in Vigyan Bhawan, New Delhi to promote sports and fitness.

Implementing Agency: Technically, conducting of the competitions will be done by the participating National Sports

Federations in collaboration with the SGFI or the AIU/University Sports Board or their sports body, as the case may be. Providing financial assistance and overall monitoring of all aspects relating to the conduct of competitions will be the responsibility of the Department of Sports.



Do you know?

Ministry of Youth Affairs & Sports (MYAS) will simultaneously make efforts to supplement the project 'State Level Khelo India Centres' from Corporate Social Responsibility (CSR) funding through Central Public Sector Enterprises (CPSEs) and Corporate Houses to ensure sustainable funding of recurring costs of these centres.

5. **Talent Identification and Development:** Under this scheme players from 16 priority sports are selected at various levels of participation. For selection of talented players, a High-Powered Committee is constituted by SAI. All selected players under this scheme are given the chance to join SAI, National Sports Academies or other top academies in the country along with annual financial assistance of Rs. 5 Lakhs for 8 years based on their performance.



Implementing Agency: Department of Sports through SAI and State Governments will provide financial assistance as well as overall guidance, supervision and monitoring.

6. **Utilisation and Creation/Upgradation of Sports Infrastructure:** Majority of the schools, colleges and even Universities in the country lack proper playgrounds as well as sporting infrastructure. Efforts will be made to utilize the existing available sports infrastructure all over the country especially those under the control of Central Government/State Governments.

This includes the following two agencies

- i. **University Centre of Excellence Programme:** Under this component, grants-in-aid will be provided for infrastructure, equipment, gym equipment, recovery equipment, coach deployment, training for coaches, team development, training camps for teams, opening of extension centres and University Sports Centres, league development, sports science back-up, etc. to identified Universities. Ministry of Human Resource Development shall ensure that Ministry of Youth Affairs & Sports is included in the University Grants Commission (UGC) Steering Committee for Sports in Universities.
- ii. **Creation of Appropriate Sports Infrastructure:** Under this component, grants-in-aid will be provided to States/UTs, SAI etc. to develop critical sports infrastructure and other infrastructure where there are gaps.



Implementing Agency: The Department of Sports will provide funding while execution of the projects will be through MYAS/SAI.

7. **Support to National/ Regional/State Sports Academies:** Throughout the nation, sports academies both public and private are identified for need-based support. Financial aid is also provided to the identified academies for their operation and maintenance.

Implementing agency: The project will be implemented through SAI/States/UTs/Private entities, including eminent sportspersons.

8. **Physical Fitness:** Under Khelo India the component of physical fitness of school going children is given due emphasis. National Level Physical Fitness parameters will be developed for each region. An assessment kit which is easy to administer will be provided to each school to evaluate physical fitness of all students. After assessing the level of fitness across school-going children, a component of enhancing fitness levels of children will also be undertaken. A grading system for schools will be developed to encourage competition among schools to promote fitness.



Implementing agency: The Programme will be implemented through the Lakshmibai National Institute of Physical Education (LNIPE) and Master Trainers trained under the Scheme in association with States/UTs/Schools. Other Institutions of Physical Education will be empanelled throughout the country for effective implementation of the Programme.

9. **Sports for Women:** All the components of the Khelo India Scheme are gender neutral and afford equal opportunities to women for participating in sporting activities and development of sports. In addition, this vertical is specially devoted to holding annual national competitions for women. Emphasis will be laid on such sports disciplines where there is less participation of women so that a greater number of women participate in such sports disciplines.

Implementing Agency: Competitions will be conducted by the participating National Sports Federations through the SAI/States/UTs.



10. **Sports for Peace and Development:** Under this vertical the Government of India provides a special package to J&K for enhancing sports facilities in the State. To ensure optimal utilization of the infrastructure, soft support in terms of coaches, equipment, consumables, technical support, competition etc. will be provided. Efforts will be made to organise village level competitions in respect of sports disciplines popular in the State of J&K for positive engagement of youth. Similar efforts will also be made in case of other extremism and terrorism affected and disturbed areas.

Implementing agency: The module will be implemented in association with the State Governments through the SAI.



11. **Promotion of Sports Among Persons with Disabilities :** Financial assistance will be provided to States/UTs and SAI for creation of specialist sports infrastructure for persons with special needs. Funds provided under this head will also be used for classification of players, equipment, training and preparation of teams for Paralympic Games and disciplines and competitions.



Implementing agency: This component will be implemented through the SAI/Paralympic Committee of India (PCI)/States/UTs and other agencies involved in development of Sports among persons with special needs, in association with the beneficiary organisations.

12. **Promotion of Rural and Indigenous/Tribal Games:** In order to showcase and encourage children and youth to take up rural and indigenous/tribal games, annual competitions are organized under the Khelo India Scheme. Thus, we can say that 'Khelo India Programme' is not just about winning medals at the world sporting arena. It is a mass movement initiated by the Indian government to provide every possible support and facility to youth of the country for participation in sports. Under this Programme governments strive to focus on each and every aspect that will contribute to making sports more popular among the youth of the country. The end result of this initiative will be to make India one of the top sporting nations in the world.



Do you know?

Ministry of Youth Affairs and Sports recognized archery, athletics, badminton, basketball, boxing, football, gymnastics, hockey, judo, kabaddi, kho-kho, shooting, swimming, volleyball, weightlifting, and wrestling as 16 Priority Sports disciplines.



I. Tick the correct option.

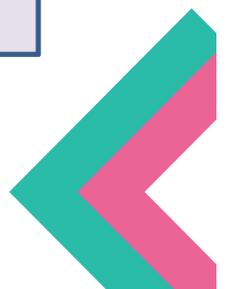
1. How many verticals are there in Khelo India Programme?
 - i. Ten
 - ii. Eleven
 - iii. Twelve
 - iv. Thirteen
2. The Ministry of Youth Affairs and Sports, Govt. of India launched the Khelo India Programme in
 - i. 2013-2014
 - ii. 2014-2015
 - iii. 2016-2017
 - iv. 2017-2018
3. The maximum duration of 'Long Term Athlete Development Programme' is
 - i. 4 Years
 - ii. 6 Years
 - iii. 8 Years
 - iv. 12 Years
4. The scheme of 'Sports for Peace & Development' is exclusively for the state/UT
 - i. Jammu & Kashmir
 - ii. Delhi and NCR
 - iii. Uttar Pradesh
 - iv. Punjab

II. Answer the following questions briefly.

1. What is Khelo India Programme?
2. What is the philosophy of Khelo India Programme?
3. What is the vision and mission of Khelo India Programme?
4. What is the plan of government under the vertical of 'Promotion of Sports Among Persons with Disabilities'?

III. Answer the following questions in 150-200 words.

1. What is the need of sports competition in school? Discuss in detail.
2. Will the increase in professional sports leagues bring any transformation in Indian sporting culture? Justify your answer.
3. Do you think 'Sports for Peace and Development' will work for restoration of peace in Jammu and Kashmir? Support your answer with evidence.



**Weblinks**

Topic	Weblinks	QR Code
Indian Today News“CBSE makes Sports period compulsory everyday for Class 1-8 from April 2019”	https://www.indiatoday.in/education-today/news/story/cbse-sports-period-class-1-8-physical-education-divd-1480665-2019-03-18	
Josh Jagran News “Compulsory Sports Period for CBSE Students from April 2019”	https://www.jagranjosh.com/articles/cbse-students-to-have-a-compulsory-sports-period-from-april-2019-1552894646-1	
NDTV News “Compulsory Sports Period Every Day for CBSE Students”	https://www.ndtv.com/education/cbse-students-to-have-compulsory-sports-period-from-class-1-2008915	
Defining our Field	http://samples.jbpub.com/9781284034080/Chapter1.pdf	
Evaluation of Physical Education	https://www.inspiresport.com/the-evolution-of-p-e-in-schools/	
The Importance of Physical Education	http://www.veanea.org/home/1000.htm	
14 Essential Aim and Objectives of Physical Education	http://www.preservearticles.com/education/aims-and-objectives-of-physical-education/5158	
Aim and Objectives of Physical Education	https://www.importantindia.com/27346/aims-and-objectives-of-physical-education-pe-10-aims-and-10-objectives/	
National Council for Teacher Education (NCTE)	http://ncte-india.org/ncte_new/	
NCTE PE Courses	http://ncte-india.org/ncte_new/?page_id=910	
D.P.Ed.	http://www.ncte-india.org/ncte_new/regulation2014/english/appendix6.pdf	



B.P.Ed.	http://www.ncte-india.org/ncte_new/regulation2014/english/appendix7.pdf	
M.P.Ed.	http://www.ncte-india.org/ncte_new/regulation2014/english/appendix8.pdf	
Career in Physical Education	https://www.examsplanner.in/career-in-physical-education/	
Physical Education Courses in India with Career Option	https://targetstudy.com/courses/physical-education-courses.htm	
Sports Competition in India	https://en.wikipedia.org/wiki/Category:Sports_competitions_in_India	
National Games	https://en.wikipedia.org/wiki/National_Games_of_India	
CBSE Inter-School Sports	http://cbsegames.in/	
National School Games	https://www.sgfibharat.com/index.php?option=com_content&view=article&id=467&Itemid=120	
Inter University Competitions	http://www.aiu.ac.in/Events/events.asp	
Khelo India Youth Games	https://en.wikipedia.org/wiki/Khelo_IndiaYouthGames	

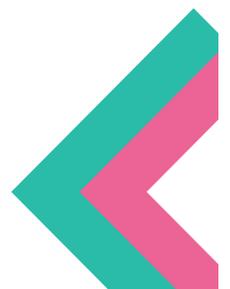




Khelo India University Games	http://www.aiu.ac.in/sports/Khelo%20India%20University%20Games%202018-19.pdf	
Duleep Trophy	https://en.wikipedia.org/wiki/Duleep_Trophy	
Ranji Trophy	https://en.wikipedia.org/wiki/Ranji_Trophy	
Z.R. Irani Cup	https://en.wikipedia.org/wiki/Irani_Cup	
Indian Premier League	https://www.iplt20.com/	
Santosh Trophy	https://en.wikipedia.org/wiki/Santosh_Trophy	
I-League	https://i-league.org/	
Indian Super League	https://www.indiansuperleague.com/	
Indian Women's League	https://en.wikipedia.org/wiki/Indian_Women%27s_League	
Hockey India League	http://league.hockeyindia.org/	
Pro Kabaddi League	https://www.prokabaddi.com/	



Premier Badminton League	http://www.pbl-india.com/	
Pro Volleyball League	https://provolleyball.in/	
Pro Wrestling League	http://www.prowrestlingleague.com/	
Summer Olympics	https://en.wikipedia.org/wiki/Summer Olympic Games	
Winter Olympics	https://en.wikipedia.org/wiki/Winter Olympic Games	
Commonwealth Games	https://en.wikipedia.org/wiki/Commonwealth Games	
Asian Games	https://en.wikipedia.org/wiki/Asian Games	
Khelo India Programme	https://yas.nic.in/sports/khelo-india-national-Programme-development-sports-o	





Unit II: Olympic Value Education

Content

- Olympic, Paralympics and Special Olympics
- Olympic Symbols, Ideals, Objectives & Values of Olympism
- International Olympic Committee
- Indian Olympic Association

Learning Objectives

After completing the study of this Unit, you will be able to:

- differentiate between Modern and Ancient Olympic Games, Paralympics and Special Olympic games
- identify the Olympic Symbols and Ideals
- incorporate values of Olympism in your life.
- describe the role, responsibilities and functioning of IOC and IOA

Discussion

The Olympic Symbols are icons, flags, and symbols used by the International Olympic Committee (IOC) for the Olympic Games.

1. The Olympic flag was created under the guidance of Baron Coubertin in 1913 and was released in 1914. But it was first hoisted in 1920 in Antwerp, Belgium at the 1920 Summer Olympics in the main stadium. How many rings does the Olympics flag have? What do these rings represent? What are the colours of the rings? What do these colours represent? What values do the rings represent?
2. The Olympic motto is *Citius, Altius, Fortius*. What does it mean?
3. What values do the Modern Olympic Games embody? Look at the word cloud given below. List as many values as you think are embodied by the Olympic Games.

Create your own Olympics word cloud.





2.1.1 ANCIENT OLYMPIC GAMES

The ancient Olympic Games were organized in honour of Zeus, the ruler of Greek gods and goddesses, as a part of a religious festival. Olympic Games or Olympics get their name from Mount Olympus, the highest mountain in Greece or Olympia, a town in Elis in ancient Greece. The festival and games began in 776 BCE at Olympia. At first, the only event at Olympia was the foot race. Later, sprints wearing full armour, and longer races, were added. Chariot racing and combat sports such as boxing and wrestling were soon regular features too. The open-air track for horse racing was called a hippodrome. The participants were free male citizens of different city states within Greece. All participants had to receive 10-month training prior to the Olympic Games. Women were not allowed to participate in the games. In fact, they were not even allowed to attend or witness the games. There was, however, a loophole to this rule – chariot owners, not riders, were declared Olympic champions and anyone could own a chariot. Kyniska, daughter of a Spartan king, took advantage of this, claiming victory wreaths in 396 BCE and 392 BCE.



The games were conducted every four years and the period between two games was known as Olympiad. The month when the Olympic Games were held was considered a sacred month and all disputes and wars would be stopped and peace would be declared to facilitate the movement of spectators and athletes.

Do you know?

It is said that when the Persians invaded Greece in the summer of 480 BCE, a lot of the Greek city states agreed that they would put together an allied army but they had a very hard time getting one together because so many people wanted to go to the Olympics. So, they actually had to delay putting the army together to defend the country against the Persians.

Initially, the truce lasted for one month but in later centuries it was extended to three. No wars were permitted, no arms could be carried in the territory of Elis and no hindrance was to be given to any spectator, athlete or *theoriai*- (the official missions representing particular cities) travelling to the games wherever they came from and whichever territory they had to cross.

For the first 12 Olympics the *stadion* foot race was the only event and it remained the most prestigious event throughout the history of the Games. The race was run over one length (a *stadion*) of the stadium track, 600 ancient feet or 192 m and preliminary heats were held with the winners of the heats going into the finals.

Do you know?

The ancient Olympic Games were initially a one-day event until 684 BCE, when they were extended to three days. In the 5th century BCE, the Games were extended again to cover five days. The ancient Games included running, long jump, shot put, javelin, boxing, pankration and equestrian events.





Over time other events were added to the Games to bring the total Programme to 18 events spread over five days. Sports which were included in the ancient Olympic Games included foot race, chariot race, horse race, Pentathlon (running, long jump, discuss throw, javelin throw, and wrestling), boxing, wrestling, Pancratium etc. Athletes were grouped by lot, and in the interest of fairness, this was also the way pairings were matched in the other events. The eventual winner of the *stadion* would even give his name to that particular Games and so be remembered for all time. Koroibos a Greek cook, baker and athlete from Elis, won the *stadion* race in the first recorded Ancient Olympic Games in 776 BCE.

Do you know?

The Olympic Games included

- **diaulos**-the two stadium lengths foot race, added in 724 BCE.
- **dolichos**-longer foot races 7 to 20 stadium lengths, added in 720 BCE.
- **wrestling**-added in 708 BCE. Competitors had to throw the opponent to the ground three times to gain victory.
- **pentathlon**- also added in 708 BCE. All done in a single day, the event order was: jumping (in a soft soil pit using hand-weights or *halteres* and accompanied music), discuss (in stone, iron or bronze), *stadion*, javelin (in wood and thrown using a leather thong), and wrestling. Just how an athlete won the over all event is unclear, three event victories may have guaranteed overall victory.
- **boxing**- added in 688 BCE. Athletes wore straps of leather (*himantes*) around their hands, initially as protection but they evolved in to destructive weapons with metal pieces added. Rules were limited to no low-blows and no holding. Serious injuries were common and deaths not unknown.
- **Tethrippon** - the four - horse chariot race added in 680 BCE was run over ten or twelve circuits of the hippodrome. A version using of also over 8 circuits was added in 384 BCE.
- **keles**-a horse race added in 648 BCE and run over 6 circuits. A version for foals was added in 256 BCE.
- **pankration**- a mix of boxing and wrestling also added in 648 BCE. The pankration was a brutal event and the only moves not allowed were biting and gouging, although competitors did not wear the damaging leather thongs of the boxers.
- **Hoplitodromos**- the race in hoplite armour (helmet, shield and spear) between 2 and 4 stadium lengths was added in 520 BCE and was usually the last event of the Games.
- **apene**- a race with chariots pulled by two mules, added in 500 BCE (dropped from 444 BCE).
- **kalpe**-a trotting horse race for mares, added in 496 BCE (dropped from 444 BCE).
- **synoris**- the two-horse chariot race run over eight circuits of the hippodrome, added in 408 BCE. A version using of also over three circuits was added in 268 BCE.



The opening ceremony of Ancient Olympic Games started with assembly of the competitors, their coaches, their fathers, their brothers and the judges in the council house in front of the statue of Zeus to take the oath. The competitors took an oath that they would not use unfair means and would participate in the games as per rules and regulations. The Judges pledged that they would be fair and honest in the judgments during the games. During the march past, the announcer/ commentator announced the name, father's name and city of the competitor in public and asked whether anyone from the spectators had any kind of objection as regards to their eligibility

In the times of the ancient Olympic Games, there was only one winner. The *Olympionic* (the winner of the Olympic Games) was immediately rewarded after the competition. A herald announced the name of the winner, then he was awarded olive

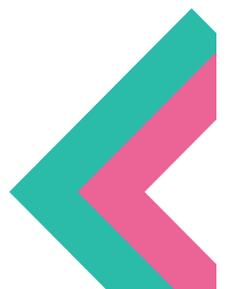


The "Discobolus" is a copy of a Greek statue 5th century BC. It represents an ancient Olympic discus thrower

leaves plucked from the temple of Zeus and that was the highest honour. They tied a ribbon of red wool, a *taenia*, around his head and hands in the sign of victory. The official prize ceremony took place on the last day of the Games in the raised hall in the Temple of Zeus. In a loud voice, the herald announced the name of the Olympic victor, his father and his city. Then a *Hellanodikos* placed a crown made of an olive branch, the *kotinos*, on the winner's head. Returning to his hometown, the athlete was welcomed as a hero and was given numerous advantages for the rest of his life. To show that he had become famous, the athlete had the right to have his own statue erected, among other things.

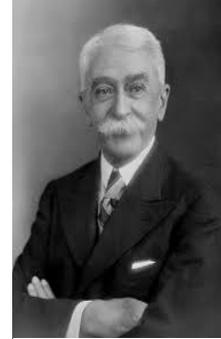
The Olympiad was named after the name of the winner of 200 yards race. The winner's names and figure were engraved on stone by sculptors and poems were written in their name to honour them.

The Roman Emperor Theodosius I legally abolished the games in 393 or 394 A.D. It was found that the games had lost their original values due to corruption, professionalism and foul play.



2.1.2 MODERN OLYMPIC GAMES

1503 years after Emperor Theodosius I ordered the closure of the Ancient Olympic games, once again Olympic games took place in 1896 in Athens, Greece. The idea behind restarting Olympic games came from French nobleman Baron Pierre de Coubertin. Coubertin was greatly interested in education, and he firmly believed that the best way to develop the minds of young people was to develop their bodies as well; he realised learning and athletics should go together. After he visited the ruins of ancient Olympia, it occurred to Coubertin that perhaps the best way to develop an interest in sports and games was to restart the Olympic Games. He hoped the new Games would bring back the ideals of physical, mental, and spiritual excellence displayed in the ancient Games, as well as build courage, endurance, and a sense of fair play in all who participated. In addition, he hoped the Games would turn the tide he saw world wide of the growing commercialism of sports. He also wanted an event that brought all nations together on one platform without barriers of race, creed, language and colour. In 1892, Coubertin first introduced the idea of starting the Olympic Games again. Few people were ready to accept his idea. But in 1894 Coubertin founded the International Olympic Committee (IOC) and began planning the first modern Olympiad.



Baron Pierre de Coubertin

Do you know?

Due to its historical significance, the Greek hosts wanted to win the marathon above all else. Spyridon Louisset off from the city of Marathon and took the lead four kilometers from the finishline and, to the joy of the 100,000 spectators, won the race by more than seven minutes.

As a result of Coubertin's efforts, the first modern Olympic Games were held in 1896 in Athens, Greece. The Games attracted athletes from 14 nations, with the largest delegations coming from Greece, Germany, France and Great Britain. Coubertin remained president of the International Olympic Committee until 1925. In this office he directed the course the Games were to take. He wrote the Olympic Charter, protocol, and athletes' oath, and he also planned the ceremonies.

Extension Activity

The Olympic Games have an interesting, and sometimes controversial history – from cancelled Games during World Wars to boycotts during international conflicts.

Select one of the following Olympic Games and working in groups, research to find out more about it.

- 1920
- 1936
- 1948
- 1972
- 1976
- 1980

Present your ideas to the class in the form of a Power Point Presentation.



The Olympic games are a competition between sportspersons and not between countries. The selection of athletes is done by the National Olympic Committees of the respective nations.

Art Integration – RECREATING THE ANCIENT OLYMPICS

Each group must represent a Team from an ancient Greek city of their choice.

They have to

- choose a different Greek god who will be the mascot of their team, research the god and make a clay statue of the god.
- create their own banner for the opening parade.
- light the Olympic flame.
- sign the Olympic truce.
- take the Olympic oath at the start of the games.
- research and cook a Greek dish

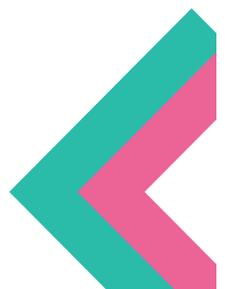
On the day of the “Olympic Games” the Groups will come dressed in traditional Greek dress,

Although the modern Olympic Games are patterned after the ancient Greek Games, there are important differences. Unlike ancient Greece, modern nations have not stopped wars for peaceful athletic competitions. Because of World War I, Games were not held in 1916. Nor were they held in 1940 and 1944, during World War II. While at the ancient Games, athletes competed in individual sporting events, modern games also have lots of team events. Unlike the ancient Olympics, the modern games are not a religious festival. The earlier Games were open only to Greek males who participated in the games without wearing any clothes. The modern Games encourage athletes from all nations who have a National Olympic Committee (NOC) that is recognized by the International Olympic Committee (IOC) to compete. In modern Olympics men and women are equally encouraged and honoured. All participants at the modern Olympics must wear proper sports kit during the competition.

In the first Olympic Games held in Athens in 1896, 241 athletes from 14 countries participated in 43 events in the Panathenaic Stadium. In 1900, in the Paris Olympics, about 997 athletes from 24 countries competed. The 1900 Olympic Games are of great significance as this was the first one when 22 women competing in select sports. As the games became popular, lots of countries joined up. In 2016, 11,238 athletes from 207 Nations participated in 28 sports at the Summer Rio Olympics.

Do you know?

In 1904 the Olympic was hosted in St. Louis, but the number of nations and athletes competing fell to 12 countries and about 651 athletes. This decrease in participant numbers was due to the lengthy transatlantic boatride needed to be made by the European competitors to attend the Games. However, ever since the 1908 London games, which attracted about 2,000 athletes, more than the first three Olympics combined, there has generally been an increase in participation.





Due to two World Wars, three times games were cancelled in 1916, 1940, 1944. The First Winter Olympics was held in 1924 in Chamonix, France, in connection with the Paris Games held three months later to feature snow and ice sports that were impossible to hold during the Summer Games. Although figure skating (in 1908 and 1920) and ice hockey (in 1920) were featured as Olympic events at the Summer Olympics, the IOC desired to expand this list of sports to encompass other winter activities. At the 1921 Olympic Congress in Lausanne, it was decided to hold a winter version of the Olympic Games. The 1924 Olympics in Chamonix were the first Winter Olympic Games. Although at first it was intended that the same country host both the Winter and Summer Games in a given year, this idea was quickly abandoned. The IOC mandated that the Winter Games be celebrated every four years on the same year as their summer counterpart. This tradition was upheld until the 1992 Games in Albertville, France; after that, beginning with the 1994 Games, the Winter Olympics were held every four years, two years after each Summer Olympics.

Do you know?

Host Cities	Winter Olympics
Summer Olympics	Year City
Year City	1924 Chamonix, France
1896 Athens, Greece	1928 Saint
1900 Paris, France 1904 Saint Louis, USA	Switzerland
1908 London, Great Britain 1912 Stockholm, Sweden 1916* not held because of war 1920 Antwerp, Belgium	1932 Lake Placid, USA
1924 Paris, France	1936 Garmisch Partenkirchen, Germany
1928 Amsterdam, Netherlands 1932 Los Angeles, USA	1948 Saint
1936 Berlin, Germany	Switzerland
1940* not held because of war 1944* not held because of war 1948 London, Great Britain 1952 Helsinki, Finland	1952 Oslo, Norway
1956 Melbourne, Australia & Stockholm, Sweden (equestrian events)	1956 Cortina d'Ampezzo, Italy
1960 Rome, Italy	1960 Squaw Valley, USA 1964 Innsbruck, Austria
1964 Tokyo, Japan	1968 Grenoble, France
1968 Mexico City, Mexico 1972 Munich, Germany 1976 Montreal, Canada	1972 Sapporo, Japan
	1976 Innsbruck, Austria 1980 Lake Placid, USA 1984 Sarajevo, Yugoslavia 1988 Calgary, Canada
	1992 Albertville, France
	1994 Lillehammer, Norway



<p>1980 Moscow, USSR 1984 Los Angeles, USA 1988 Seoul, Korea</p> <p>1992 Barcelona, Spain</p> <p>1996 Atlanta, USA</p> <p>2000 Sydney, Australia</p> <p>2004 Athens, Greece</p> <p>2008 Beijing, China</p> <p>2012 London, Great Britain 2016 Rio de Janeiro, Brazil 2020 Tokyo, Japan</p>	<p>1998 Nagano, Japan 2002 Salt Lake City, USA 2006 Turin, Italy</p> <p>2010 Vancouver, Canada</p> <p>2014 Sochi, Russia</p> <p>2018 Pyeong Chang, KoreaSouth</p>
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2.1.3 PARALYMPICS

The Paralympics is a mega sports event involving athletes with a range of disabilities organized by International Paralympic Committee. The range of disabilities includes impaired muscle power (e.g. paraplegia and quadriplegia, muscular dystrophy, post-polio syndrome, spina bifida), impaired passive range of movement, limb deficiency (e.g., amputation or dysmelia), leg length difference, short stature, hypertonia, ataxia, athetosis, vision impairment and intellectual impairment. These disabilities are further divided into classifications which vary from sport to sport. The word **Paralympics** is derived from the Greek word **para** which means *beside* or *along side* and Olympic. Combined, **Paralympics** means an international Games competition that is **parallel to the Olympics**. There are Winter and Summer Paralympic Games, which since the 1988 Summer Games in Seoul, South Korea, are held almost immediately following the respective Olympic Games. All Paralympic Games are governed by the International Paralympic Committee (IPC).



International Paralympic Committee (IPC) was formed on 22 September 1989 and is situated in Bonn, Germany. IPC organizes Summer and Winter Paralympic Games and coordinates and supervises world championships and other competitions. The vision of IPC is ‘To enable Para athletes to achieve sporting excellence and inspire and excite the world.’





Do you know?

List of summer Paralympic sports for Tokyo 2020

1. Archery (since 1960)
2. Athletics (since 1960)
3. Boccia (since 1984)
4. Cycling : Track & Road cycling (since 1984)
5. Equestrian (since 1996)
6. Football5-a-Side (since 2004)-for vision impaired
7. Goalball (since 1980)
7. Judo (since 1988)
8. Para-Badminton (since 2020)
9. Paracanoe (since 2016)
10. Paratriathlon (since 2016)
11. Para-Taekwondo (since 2020)
12. Powerlifting (since 1984)
13. Rowing (since 2008)
14. Shooting (since 1976)
15. Sitting Volleyball (since 1976)
16. Swimming (since 1960)
17. Table tennis (since 1960)
18. Wheelchair Basketball (since 1960)
19. Wheelchair Fencing (since 1960)
20. Wheelchair Rugby (since 2000)
21. Wheelchair Tennis (since 1992)



Sports events for athletes with an impairment have existed for more than 100 years, and the first sport clubs for the deaf were already in existence in 1888 in Berlin.

However, competitive games for people with special needs were widely introduced only after World War II. The purpose was to assist the large number of war veterans and those soldiers who had been injured during wartime. In 1948, on the occasion of the opening ceremony of London Olympic games Gutt mann conducted wheel chair competitions first time in the history, that he named “Stoke Mandeville Games”, in which he involved sixteen injured service persons in the archery event. The first summer Paralympic Games were conducted from 18 to 25 September 1960, in Rome, after the completion of the 1960 Rome Olympics, using the same venues. 400 athletes from 23 countries participated in 57 events of 8 sports in the games After that, Paralympics games were conducted every four years like the Summer Olympic games. In 2016, Paralympics 4342 athletes of 159 countries took part in 528 events across 22 sports.

The first Winter Paralympic Games was organized in 1976 in Omnskoldsvik, Sweden and after that the games have successfully been conducted the same year as Summer Olympics. In 2018, at the PyeongChang Winter Paralympics 569 athletes of 49 countries took part in 80 events in six sports.

2.1.4 SPECIAL OLYMPICS

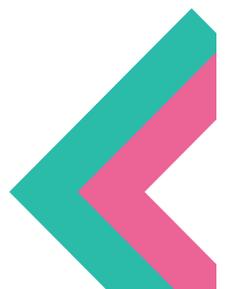
Special Olympics is the world's largest sports organization for children and adults with intellectual and physical disabilities, providing year-round training and competitions to 5 million athletes and Unified Sports partners in 172 countries. The concept was the brainchild of Eunice Kennedy Shriver, who in 1962 initiated a day camp called Camp Shriver for children with intellectual disabilities at her home in Potomac, Maryland. The camp sought to address the concern that children with special needs had very little opportunity to participate in organised athletic events. With Camp Shriver as an example, Kennedy Shriver, head of the Joseph P. Kennedy Jr. Foundation and a member of President John F. Kennedy's Panel on Mental Retardation, promoted the concept of involvement in physical activity and other opportunities for people with intellectual disabilities.

The Logo of Special Olympics is based on the sculpture "Joy and Happiness to All the Children of the World" by Zurab Tsereteli and was adopted in 1979. It reflects joy, happiness, confidence among children and adults with special needs who are learning coordination, mastering skills, participating in competitions and preparing themselves for richer, more productive lives.

The mission of Special Olympics is to provide year-round sports training and athletic



**Special
Olympics**





competition in a variety of Olympic-type sports for children and adults with intellectual disabilities, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in events like Athletics (Track and Field), Badminton, Basketball, Bocce,

Bowling, Cricket, Cycling, Equestrian, Figure Skating, Floorball, Floor Hockey, Football (Soccer), Golf, Gymnastics: Artistic and Rhythmic, Handball, Judo, Kayaking, Netball, Powerlifting, Roller Skating, Sailing, Snowboarding, Snowshoe running, Skiing: Alpine and Cross-Country, Softball, Speed Skating: Short-track, Swimming: Pool and Open-Water, Table Tennis, Tennis, Triathlon and Volleyball.

There are a large number of benefits for people with intellectual disabilities as a result of participating in activities organized by Special Olympics. Apart from physical and health benefits, it provides psychological benefits including higher self-confidence, self-esteem and social competence. The transformative power of sports in instilling confidence, improving health and inspiring a sense of competition lies at the core of Special Olympics.

Extension Activity

Working in groups, investigate the history of the Indian Paralympic and Special Olympics teams. Who have been the most successful athletes?

Select one and find out more about him/her. Present your findings to the class in the form of a Power Point Presentation.

One of the major events of Special Olympics is World Games, which was first held in July 1968 at Chicago with around 1000 participants from U.S. and Canada. Special Olympic Winter Games were initiated in 1977 at Colorado, US. Special Olympics also conducts Unified Sports Programme for inclusion. Sports Participants who have attained 8 years of age along with condition of intellectual disabilities, cognitive delays identified by the agency or a professional can participate in sports competitions.

The Special Olympics was officially recognized by the International Olympic Committee (IOC) in 1988.

I. Tick the correct option.

1. The Ancient Olympic Games started in
 - i. 776 BCE
 - ii. 394 AD
 - iii. 1896
 - iv. 1986
2. The idea for reviving the Olympic Games came from
 - i. Eunice Kennedy Shriver.
 - ii. Baron Pierre de Coubertin



- iii. Dion Nash
- iv. Ludwig Guttman
- 3. The International Paralympic Committee was formed in
 - i. 1960
 - ii. 1976
 - iii. 1989
 - iv. 2016
- 4. The first special Winter Olympic games started in
 - i. 1960
 - ii. 1962
 - iii. 1968
 - iv. 1977

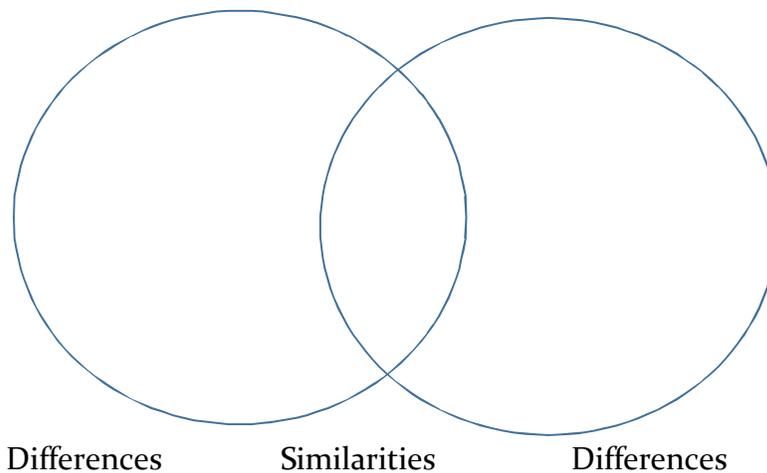
II. Answer the following questions briefly.

- 1. What is the motto of the Olympic Games? What does it mean?
- 2. Write a short note on the Olympic flag.
- 3. List the range of disabilities of athletes for Paralympic Games.
- 4. Differentiate between Paralympic and Special Olympic Games.
- 5. Write down the eligibility conditions of a competitor in ancient Olympics.

III. Complete the Venn Diagram given below listing the similarities and differences between Ancient and Modern Olympic Games.

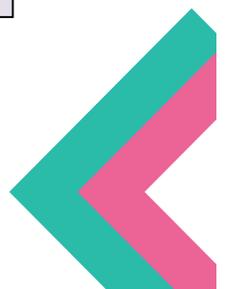
Ancient Olympics

Modern Olympics



IV. Answer the following questions in 150-200 words.

- 1. Write a brief note on the origin and conduct of Ancient Olympics.
- 2. How did the Modern Olympic games originate?
- 3. Write a short note on Special Olympics.



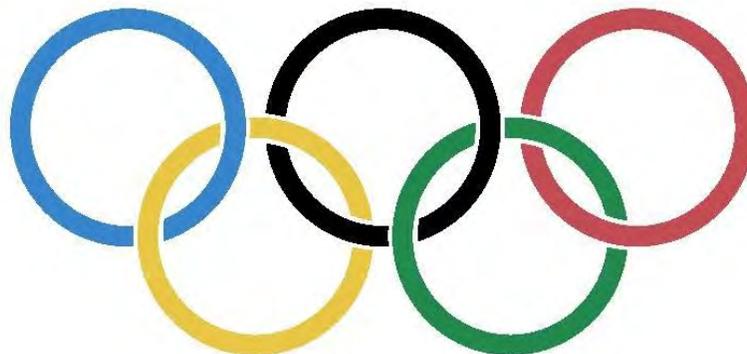


2.2.1 THE OLYMPIC CREED

The creed, or guiding principle, of the modern Olympic Games is a quote by Baron de Coubertin: "The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered but to have fought well."

2.2.2 THE OLYMPIC SYMBOL

The Olympic symbol is five interlocked rings of equal proportions of five different colours. The colour sequence of the rings from left to right is, blue, yellow, black, green and red, where blue, black and red rings are placed at the top, the yellow and green rings are placed at the bottom. The five rings reflect the union of the five continents namely North and South America, Africa, Asia, Australia, and Europe and this is a symbol of the unity of sportspersons from all continents at Olympic Games.



2.2.3 THE OLYMPIC FLAG

The Olympic flag was created by Baron Coubertin in 1913 and was released in 1914. It has a white background without any border. The Olympic symbol of the five interlocked rings is placed in the centre. In the words of Pierre de Coubertin, "The Olympic flag has a white background, with five interlaced rings in the centre: blue, yellow, black, green and red. This design is symbolic; it represents the five continents of the world, united by



Olympism, while the six colours are those that appear on all the national flags of the world at the present time (1931)". The flag was hoisted for the first time in 1920 in Antwerp, Belgium.



2.2.4 THE OLYMPIC MOTTO

The motto of the Olympic Games is “Citius – Altius – Fortius” which is Latin for “Faster- Higher- Stronger”. It expresses the aspirations of the Olympic Movement. It was proposed by Pierre de Coubertin upon the creation of the International Olympic Committee in 1894. Coubertin borrowed it from his friend Henri Didon, a Dominican priest, who was an athletics enthusiast. The Olympic motto was first announced in 1924 held at the Olympic Games in Paris, France.



2.2.5 THE OLYMPIC EMBLEMS

Each Olympic Games has its own Olympic emblem, which is a design integrating the Olympic rings with one or more distinctive elements. They are created and proposed by the Organising Committee of the Olympic Games (OCOG) or the National Olympic Committee (NOC) of the host country. It is the responsibility of the International Olympic Committee (IOC) to approve Olympic emblems for the Olympic Games. Olympic emblems are used in promotional materials, by sponsors of the Olympics, on the uniforms of every Olympic competitor. All emblems are the property of the IOC.



2.2.6 THE OLYMPIC ANTHEM

The Olympic Hymn, also known as the Olympic anthem, is a musical work composed by Spiro Samara, and is played when the Olympic flag is raised in the opening of the Olympic Games.

The Olympic anthem

“Immortal spirit of antiquity,
Father of the true, beautiful and good, Descend, appear, shed over us thy light
Upon this ground and under this sky
Which has first witnessed thy unperishable fame
Give life and animation to those noble games! Throw wreaths of fadeless flowers to
the victors In the race and in the strife!
Create in our breasts, hearts of steel!
In thy light, plains, mountains and seas
Shine in a roseate hue and form a vast temple
To which all nations throng to adore thee, Oh immortal spirit of antiquity!”





2.2.7 THE OLYMPIC FLAME, OLYMPIC TORCHES

The Olympic flame was first lit in 1928 at Amsterdam, Netherlands Olympic Games. It is a continuity symbol of ancient and modern Olympic Games. The Olympic flame is lit in front of the ruins of the Temple of Hera in Olympia by focussing the rays of the sun using a parabolic mirror to ignite a flame. A long relay of runners carries the torches to the site of the Games, where the final torch is used to light a cauldron. The games are declared open officially by kindling the torch and the flame remains lit until it is extinguished in the Closing Ceremony. Remember, the runners do not pass the same torch; only the flame is passed on to the next torch bearer. Each runner is allowed to keep their torch.



The first such relay took place for the 1936 Berlin Games when 3,331 runners carried the flame through Greece, Bulgaria, Yugoslavia, Hungary, Austria, Czechoslovakia, and Germany. Similar relays have taken place for every Summer Games since. The flame travels by plane between cities, and is relayed by foot within cities. Being a torch bearer is considered an honour, and is often given to local residents with a record of community service, in addition to athletes and celebrities. Since 1964, the Winter Games have also had a torch relay starting in Olympia.

2.2.8 RELEASE OF DOVES

In 2014, one leg of the torch relay took place in space as two Russian cosmonauts carried the torch outside the International Space Station, some 200 miles above Earth.

After the cauldron is lit, doves are released into the air, as a symbol of peace. This was first done in the 1896 Olympics, and then in the 1920 Olympics. Since 1920, this has been an official part of the Opening Ceremony of the Summer Games. They are generally not released during the Winter Games, because it's too cold for the birds, but symbolic substitutions, like white balloons, are some times used.

The order—first lighting the cauldron, then releasing the doves—is important. In the 1988 Seoul Games, when it was tried the other way around, many of the doves were in the area of the cauldron just before it burst into flames, leading to their unexpected demise.

2.2.9 THE ATHLETES' OATH

The Olympic Oath is taken by one athlete and one judge from the home nation, during the Opening Ceremony, on behalf of all the competitors and judges. Since 1984, this has been taken while holding a corner of the Olympic flag. Before that, the national flag of the home nation was used.

The oath was first taken by an athlete in 1920. Originally, this was primarily a declaration that all the athletes were amateurs. The wording has been revised over the



years, as being an amateur is no longer a general requirement. In 2000, a specific reference to doping was added. The current oath is “In the name of all the competitors I promise that we shall take part in these Olympic Games, respecting and abiding by the rules which govern them, committing ourselves to a sport without doping and without drugs, in the true spirit of sportsmanship, for the glory of sport and the honour of our teams.”

First time the Olympic oath was taken in 1920 at Antwerp, Belgium by Victor Boin on behalf of all the athletes who participated in the Olympic Games. The Official’s oath was introduced in 1972 and the coach’s oath was added in 2010. It is a promise made by an athlete, judge or official in each of the Olympic Games and is usually said in the language of host country.

2.2.10 OLYMPIC AWARDS

The winners at the Olympic Games are awarded medals. The winner gets a gold medal, the runner up receives a silver medal and the second runner up receives a bronze medal in the awards ceremony on the podium. Participants from first to eighth receive a diploma and all participants receive commemorative medals. The National Anthem of the country of the winner is played during the ceremony.

When Modern Olympic Games began in 1896, the winners were given a silver medal and an olive branch, while runners- up received a laurel branch and a copper or bronze medal. In 1900, most winners received cups or trophies instead of medals. The custom of the sequence of gold, silver, and bronze for the first three places dates from the 1904 Summer

Olympics in St. Louis, Missouri in the United States. The International Olympic Committee (IOC) retroactively assigned gold, silver and bronze medals to the three best placed athletes in each event of the 1896 and 1900 Games.

Extension Activity

Each Olympic Games has its own medal design. From 1928-2004, the front side of every Olympic Games medal carried an image of Nike, the Greek goddess of victory, the Olympic Rings, the Coliseum of ancient Athens, a Greek vase known as an amphora, a horse-drawn chariot, and the year, number of the Olympiad, and host city. However, a new design was created for the 2004 Games, which featured the Greek Panathenaic Stadium and a new image of Nike. Each host city has allowed to add special details to the other side that is to the Games.

Design a medal for the Olympic Games if they were to be held in your town.

Medal designs have varied considerably since the first Olympic Games in 1896, particularly in size and weight. However, the IOC has laid down the physical properties of the medals and has the final decision about the finished design though the medals are developed by the National Olympic Committee (NOC) of the country hosting the Games.

Recipients: The top three competitors receive medals





Shape: Usually circular, featuring an attachment for a chain or ribbon Diameter: A minimum of 60mm

Thickness: A minimum of 3mm

Material: First place (Gold medal): It is composed at least 92.5% of silver, plated with 6 grams of gold.

Second place (Silver medal): 92.5 % silver.

Third place (Bronze medal): It is 97.0% copper with 0.5% tin and 2.5% zinc.

Event details: The sport for which the medal has been awarded should be written on the medal.

2.2.11 THE OLYMPISM

“Olympism is a philosophy of life, exalting and combining in a balanced whole the qualities of body, will and mind. Blending sport with culture and education, Olympism seeks to create a way of life based on the joy found in effort, the educational value of good example and respect for universal fundamental ethical principles.”

The Olympic Movement or Olympism is a philosophy of Olympic Games which is developed and endorsed by the International Olympic Committee. It promotes friendship, respect, fair play and sportsmanship through sports activities and stands against discrimination on the basis of gender, race, religion or nationality. It also expands the area of Olympism from sports activities to promoting peace and brotherhood. “The goal of the Olympic Movement is to contribute to building a peaceful and better world by educating youth through sport without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity and fair play.”

Fundamental Principles of Olympism

In the Olympic Charter following Fundamental Principles of Olympism are described.

1. Olympism is a philosophy of life, exalting and combining in a balanced whole the qualities of body, will and mind. Blending sport with culture and education, Olympism seeks to create a way of life based on the joy of effort, the educational value of good example, social responsibility and respect for universal fundamental ethical principles.
2. The goal of Olympism is to place sport at the service of the harmonious development of human kind, with a view to promoting a peaceful society concerned with the preservation of human dignity.
3. The Olympic Movement is the concerted, organised, universal and permanent action, carried out under the supreme authority of the IOC, of all individuals and entities who are inspired by the values of Olympism. It covers the five continents. It reaches its peak with the bringing together of the world's athletes at the great sports festival, the Olympic Games. Its symbol is five interlaced rings.



4. The practice of sport is a human right. Every individual must have the possibility of practising sport, without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity and fairplay.
5. Recognising that sport occurs within the framework of society, sports organisations within the Olympic Movement shall apply political neutrality. They have the rights and obligations of autonomy, which include freely establishing and controlling the rules of sport, determining the structure and governance of their organisations, enjoying the right of elections free from any outside influence and the responsibility for ensuring that principles of good governance be applied.
6. The enjoyment of the rights and freedoms set forth in this Olympic Charter shall be secured without discrimination of any kind, such as race, colour, sex, sexual orientation, language, religion, political or other opinion, national or social origin, property, birth or other status.
7. Belonging to the Olympic Movement requires compliance with the Olympic Charter and recognition by the IOC.

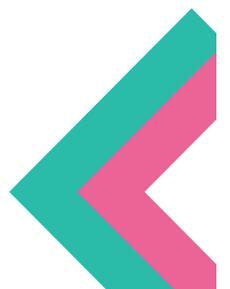
2.2.12 OLYMPIC VALUES

The Olympic Games have established themselves as a global celebration of sport and peace. Through a combination of sport, culture and education, the Olympic Movement uses sport as a tool to promote fundamental ethical principles and support harmonious development for all. The Paralympic movement promotes universal values: courage, determination, inspiration, equality. The three important core values of Olympism central to Olympic Games are Excellence, Respect and Friendship. These core values are considered important in life to make it worth living and helps in decision-making on moral terms. The core values also include five educational values which have been incorporated from three domains of learning: Mental, Emotional, and Physical.

- Joy of effort
- Fairplay
- Respect for others
- Pursuit of excellence, and
- Balance in life between body, will and mind.

Olympic Values Friendship

Friendship is at the core of the Olympic Movement. It encourages us to see sport as an instrument for mutual understanding between individuals, and between peoples all over the world. Friendship brings Olympic and Paralympic athletes and people from around the world together in sport, play and competition. It breaks down barriers – encouraging individuals to look beyond the differences such as gender, ability, culture, race or religion. By welcoming everyone's differences we are able to establish





stronger bonds. Friendships can be the basis of connections within community for working together and supporting each other.

Respect

Respect lies at the heart of Olympism – respect for yourself and your body, for other people, for rules and regulations, for sports and for the environment. In fact, respect is the key to strong friendships, fair play and sportsmanship. Understanding the impact of our actions, positive or negative, is an important part of playing a participative role in our communities. Respecting yourself and others goes beyond sport.

Respect includes

- knowing that we can offend or hurt someone by not letting them join in our game (respect of others).
- listening to and asking for the ideas, opinions and beliefs of everyone—boys, girls, people living with a disability (respect for others).
- helping others to feel safe from violence—teasing, bullying, and verbal, physical and sexual violence (respect for others).
- taking care of ourselves by choosing to eat healthy food, while getting enough rest and exercise (self-respect).
- being confident in ourselves to share and defend our ideas and opinions (self-respect).

Excellence

Excellence means doing the best we can, on the field of play or in our professional life. The important thing is not winning, but taking part, making progress and enjoying the healthy combination of body, will and mind. It is about having an ambition in life, and through determination, effort and perseverance reaching that goal. Excellence is not only on the sporting field; it is also in the classroom, where all children have the right to an education (Article 28), and also by helping children pursue excellence by chasing their dreams.





2.2.13 EDUCATIONAL VALUES OF OLYMPISM

Joy of Effort

According to the UNESCO Charter “every human being has a fundamental right to access to physical education and sport, which are essential for the full development of his/her personality. The freedom to develop physical, intellectual and moral powers through physical education and sport must be guaranteed both within the educational system and in other aspects of social life...”. Thus, the child needs to enjoy and have fun with sports and physical activities he/she is engaged in.

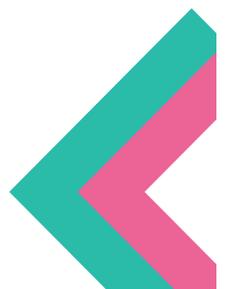
Otherwise, an individual, if forced to over-exert while playing without being given good experiences to remember or cherish, may develop bad memories. Sports or physical activities should be promoted with appropriate opportunity to enjoy the energy and effort with relative outcomes.

Do you know?

An example of joy of effort with running was published in a newsletter of the IOC, where in Kipchoge Keino, a 5-year - old boy from a small village Kenya, who lived four miles from his school with no public transport available, walked or ran to school and back. He enjoyed the running, and, in two to three years he would come home for lunch and go back to school for his remaining classes. At the same time, he developed an incredible aerobic system and soon he competed in national events and went on to become an international player. He got a job with the Kenyan police as a fitness trainee and his story became an example to the cadets.

Fair Play

Although fair play is a concept of sports, it can be applied in many different ways and contexts beyond the sports field. Fair play refers to playing by the rules. Learning fair play behaviour in sport can lead to the development and reinforcement of similar behaviour in one’s everyday life. After participating in sports an individual develops the habit of fair play that is reflected in his/her attitude and behaviour in life and towards the community he/she lives in. In sports, an individual follows the rules. Referees and officials enforce rules through penalties and punishments. There are many ways through which the concept of fair play can be reflected like shaking hands with the opponent at the end of the game, appreciating the opponent’s extraordinary performance etc.



**Do you know?**

Eugenio Monti made Olympic fair play history in the town of Innsbruck, Austria, during the Winter Games of 1964. One of the world's best bobsleighters, Monti had already won a bronze medal in the four-man bobsleigh. He really wanted to win an Olympic gold medal in the two-man bobsleigh. As he waited with his partner at the top of the run for his turn, he realised his main rivals, Robin Dixon and Tony Nash of Great Britain, had lost a bolt that held the runner to their sled. Without that bolt, they could not participate in the race. Without giving it any second thought, Monti lent the pair the bolt from his own sled. Nash and Dixon raced down the track to capture the gold medal. Monti had to settle for third place, but he was awarded a special Fair Play Trophy by CIFP for his act of generosity. Four years later, Monti won gold medals in both the two-man and the four-man bobsleigh events.

Respect for others

As per the Olympic Charter "The goal contribute to building a peaceful and better world by educating youth through sport practised in accordance with Olympism and its values." Living in a multicultural world, we need to accept and respect diversity and promote peace. We should appreciate the worth of all peoples and all cultures, irrespective of race, age, gender and ability. Violence is not the best way to solve conflicts. This acceptance can be achieved through sport, because a sports team may consist of people from different cultures, all focussed on one goal, that is, victory for the team. The task of bringing peace to societies becomes even more challenging for sports leaders and educators in societies where there are ancient hatreds, conflicting values or great economic differences among people. For example, since the end of Apartheid, South Africans have worked together to create a new society, one in which there is acceptance and respect for people of all races. Sport persons and educators have an important role in this process as acceptance and respect for cultural difference has to be taught. Racism and intolerance are often a result of ignorance and fear. Understanding and acceptance of difference develops when people live, work and play together.

Do you know?

At Nazi-hosted 1936 Berlin Olympic Games, it was virtually demanded that white, Aryan supremacy and athletic prowess was to dominate. Jesse Owens, a black man from USA won four gold medals, and he was aided to one of those victories by a blond, muscular German athlete, Luz Long. Long, the European long-jump record holder, advised Owens, his competitor at the Games, when he was having difficulty qualifying for the final of the long jump. Owens had failed twice in his bid to qualify for the long jump final, and was on his final attempt when Long suggested Owens adjust his starting point to avoid overstepping the take-off board. Owens followed Long's advice, and he qualified. In the finals, with Hitler, Goebbels and Himmler looking on, Owens set about his final attempt. In the frenzied atmosphere, Long looked to the crowd, raised his arms and then lowered them to quell the noise, before casting a "furtive" glance at the Fuhrer. The stadium quietened, Owens was able to concentrate, and he leapt to victory, leaving Long with the silver medal.



Pursuit of Excellence

In today's competitive and demanding world, an individual's focus is to become the best. Focusing on excellence can help young people to make positive, healthy choices and strive to become the best that they can be in whatever they do. Sports provide an opportunity to players to become the best or to make healthy choices in safe social and physical surroundings. A healthy, clean and safe community makes the welfare of young people its number one priority. Sport sharpens skills and attends to the needs of all children and youth—girls and boys, children with learning disabilities, and children with hearing, vision and other physical disabilities. It provides an environment free from discrimination, harassment and fear. Sport also provides daily opportunities for children and youth of all ages to participate in physical activity in an environment free from discrimination, harassment and intimidation. It is also a place in which individual differences and cultural traditions are valued and respected.

Balance Between Body, Will and Mind

Do you know?

Deng Yaping of China, a hugely talented table tennis player, started when she was five. By the time she was nine she had won her provincial junior championship. At the age of 13, she had won her first national championship. But being less than 1.5 metre tall, she was initially rejected for the national team, despite her talent. However, it was her talent, her confidence and her perseverance that finally saw her selected in 1988. She won her first international doubles title in 1989 when she was only 16, and her first singles title two years later. "Even from an early age, I dreamed of being world champion," she said. In 1989, she won the Asian Cup and in 1991 she captured the world singles title.

Pierre de Coubertin understood that an international revival of the Olympic Games would stimulate interest in sports and physical activity among young people. This remains as relevant today, as it was over 100 years ago. The focus of the modern Olympic Movement extends beyond sports, embracing cultures, artistic works, environmental awareness and education. All of these can play their part in helping young people to build a balanced approach to life. Pierre de Coubertin maintained, "Modern education... has allowed itself to be carried away by extreme compartmentalisation. Each strength works in isolation, without any link or contact with its neighbour. If the topic is muscles, they only want to see animal function. The brain is furnished as though it were made up of tiny, air-tight compartments." He believed in the concept that learning happened in the whole body, not just in the mind. Physical learning, too, took place in both body and mind but it could not be done without will. Sport is a medium of balancing body, will and mind.



**Do you know?**

At Montreal 1976, a young Japanese gymnast performed his routine on the rings. He twisted, turned and balanced, before performing his landing—a double somersault with a full twist— landing perfectly with both feet. He stood for the required three seconds, but then collapsed in agony because he had been performing with a broken knee, injured during the floor exercises. “I didn’t want to worry my team-mates,” explained Fujimoto. He couldn’t take painkillers because of doping regulations. “I made myself for get what might happen when I landed,” hesaidlater. So, he endured his pain and kept it to himself. Though Fujimoto wanted to carry on inspite of his injuries, his coach and his team- mates, now aware of his pain, would not allow him to continue with such a severe injury. However, inspired by Fujimoto’s pride and courage, they all did their very best and won the gold medal defeating the team from USSR.

Extension Activity

You read about some athletes who embody Olympic values.

Working in groups find out about other such athletes and make a presentation in class.

I. Tick the correctoption.

1. The word “Altius” in the Olympic motto means
 - i. Faster
 - ii. Higher
 - iii. Heavier
 - iv. Stronger
2. The logo of Olympic Games was createdby
 - i. Eunice Kennedy Shriver.
 - ii. Deion Nash
 - iii. Guttmann
 - iv. Baron Coubertin
3. The first Olympic torch was litin
 - i. 1896, Athens, Greece
 - ii. 1920, Antwerp, Belgium



- iii. 1924, Paris, France
- iv. 1928, Amsterdam, Netherlands
- 4. The Olympic flag was used for the first time
 - i. 1896, Athens, Greece
 - ii. 1920, Antwerp, Belgium
 - iii. 1924, Paris, France
 - iv. 1928, Amsterdam, Netherlands

II. Answer the following questions briefly.

- 1. write a short note on Olympic creed.
- 2. What do you understand by Olympism?

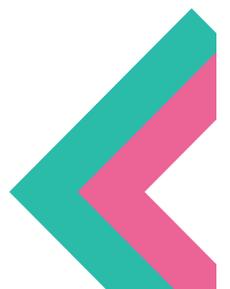
III. Answer the following questions in 150-200 words.

- 1. Explain the educational themes of Olympism.
- 2. Write a note on the principle of Olympism.
- 3. Write a note on the symbols and ideals of the Olympic Games.

2.3.1 INTERNATIONAL OLYMPIC COMMITTEE

The International Olympic Committee (IOC) was constituted by Pierre de Coubertin on 23 June 1894 with Demetrios Vikelas as its first president. It is a non-governmental and non-profitable organization situated in Lausanne, Switzerland. The object of the IOC is to fulfil the mission, role and responsibilities as assigned to it by the Olympic Charter. English and French are the official languages of the IOC. It is an official and supreme authority to spread Olympic movement worldwide through International Sports Federations, National Olympic Committees, Organising Committees for the Olympic Games, United Nations etc. It reserves the right on Olympic Games, the symbols and other elements which are related with the Olympic Movement.

The Committee organizes Summer and Winter Olympic Games that were started in Athens, Greece in 1896 and Chamonix, France in 1924 respectively. Before 1992 Winter and Summer Olympics were conducted the same year, but after 1992, IOC changed the schedule of the Olympics Games. Now, while Summer Olympics take place every leap year, Winter Olympic take place two years later, in even years. For example, while Summer Olympic Games were held in 2000, Sydney, Australia and in 2004, Athens, Greece, Winter Olympic Games were held in 2002, Salt Lake City, USA and 2006 Turin, Italy. IOC also organizes the Youth Olympic Games (YOG), held in summer and winter, every four years. The first Summer YOG were in Singapore in 2010 and the first Winter YOG in Innsbruck in 2012.





United Nations General Assembly declared IOC as a permanent observer in 2009. The decision enables the IOC to be directly involved in the UN Agenda and to attend UN General Assembly meetings where it can take the floor. In 1993, the General Assembly approved a Resolution to further solidify IOC–UN cooperation by reviving the Olympic Truce.

2.3.2 MISSION AND ROLE OF INTERNATIONAL OLYMPIC COMMITTEE

As per Olympic Charter, the mission of the IOC is to promote Olympism throughout the world and to lead the Olympic Movement.

The IOC's role is:

1. To encourage and support the promotion of ethics and good governance in sport as well as education of youth through sport and to dedicate its efforts to ensuring that, in sport, the spirit of fair play prevails and violence is banned.
2. To encourage and support the organisation, development and coordination of sport and sports competitions.
3. To ensure the regular celebration of the Olympic Games.
4. To cooperate with the competent public or private organisations and authorities in the endeavour to place sport at the service of humanity and thereby to promote peace.
5. To take action to strengthen the unity of the Olympic movement, to protect its independence, to maintain and promote its political neutrality and to preserve the autonomy of sport.
6. To act against any form of discrimination affecting the Olympic movement
7. To encourage and support elected representative so fathletes with in the Olympic movement, with the IOC athletes' commission acting as their supreme representative on all Olympic games and related matters.
8. To encourage and support the promotion of women in sport at all levels and in all structures with a view to implementing the principle of equality of men and women;
9. To protect clean athletes and the integrity of sport, by leading the fight against doping, and by taking action against all forms of manipulation of competitions and related corruption.
10. To encourage and support measures relating to the medical care and health of athletes.
11. To oppose any political or commercial abuse of sport and athletes.
12. To encourage and support the efforts of sports organisations and public authorities to provide for the social and professional future of athletes.
13. To encourage and support the development of sport for all.



14. To encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic games are held accordingly.
15. To promote a positive legacy from the Olympic games to the host cities and host countries.
16. To encourage and support initiatives blending sport with culture and education
17. To encourage and support the activities of the International Olympic Academy (IOA) and other institutions which dedicate themselves to Olympic education.

2.3.3 ORGANIZATION AND SETUP OF INTERNATIONAL OLYMPIC COMMITTEE

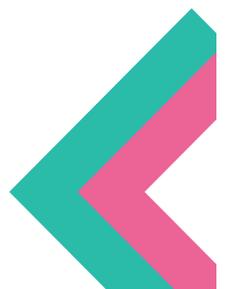
The powers of the International Olympic Committee are exercised through the following three organs:

- The Session
- The IOC Executive Board
- The President

The Session: The Session is the general meeting of the members of the IOC. It is the IOC's supreme organ. Its decisions are final. An ordinary Session is held once a year. Extraordinary Sessions may be convened by the President or upon the written request of at least one third of the members. Every member has right of one vote. The main decisions like choosing city for Olympic games sports Programmes, electing new members etc. are taken in the session and its decisions are final.

Powers of the session are:

1. to adopt or amend the Olympic Charter;
2. to elect the members of the IOC, the Honorary President, honorary members and honour members;
3. to elect the President, the Vice-Presidents and all other members of the IOC Executive Board;
4. to elect the host city of the Olympic Games;
5. to elect the city in which an ordinary Session is held, the President having the authority to determine the city in which an extraordinary Session is held;
6. to approve the annual report and financial statements of the IOC;
7. to appoint the independent auditor of the IOC;
8. to decide on the awarding or withdrawal by the IOC of full recognition to or from NOCs, associations of NOCs, IFs, associations of IFs and other organisations;
9. to expel IOC members and to withdraw the status of Honorary President, honorary members and honour members;
10. to adopt or amend the Athletes' Rights and Responsibilities Declaration upon



recommendation of the Athletes' Commission and to promote respect for this Declaration within the Olympic Movement;

- ii. to resolve and decide upon all other matters assigned to it by law or by the Olympic Charter.

The **Quorum** required for a Session is half the total membership of the IOC plus one. Decisions of the Session are taken by a majority of the votes cast; however, a majority of two-thirds of the votes cast is required for any modification of the Fundamental Principles of Olympism, of the Rules of the Olympic Charter, or if elsewhere provided in the Olympic Charter.

Each member has one vote. Abstentions and blank or spoiled votes are not taken into consideration in the calculation of the required majority. Voting by proxy is not allowed. Voting is held by secret ballot when so required by the Olympic Charter, or if the Chairman so decides or upon the request of at least a quarter of the members present. In the event of a tie, the Chairman shall decide.

The Session may delegate powers to the IOC Executive Board.

The IOC Executive Board: The Executive board was founded in 1921 to manage the affairs of IOC. The Board consists of the President, four Vice-Presidents and ten members who are elected by the IOC members in the session by secret ballot by a majority of votes cast. The Executive Board undertakes overall responsibility for the administration and management affairs of IOC.

As per Olympic charter it performs following duties:

1. it monitors the observance of the Olympic Charter;
2. it approves all internal governance regulations relating to its organisation;
3. it establishes an annual report and the financial statements of the IOC in accordance with International Financial Reporting Standards and Swiss law, which it submits to the Session for approval together with the report of the auditor;
4. it submits a report to the Session on any proposed change of Rule or Byelaw;
5. it submits to the Session the names of the persons whom it recommends for election to the IOC;
6. it establishes and supervises the procedure for accepting and selecting candidatures to organise the Olympic Games;
7. it establishes the agenda for the Sessions;
8. upon the proposal of the President, it appoints – or dismisses – the Director General. The President decides on his compensation and may take sanctions;
9. it provides for the safe keeping of all minutes, financial statements and other records of the IOC in compliance with the law, including minutes of all Sessions, IOC Executive Board and other commission or working group meetings;
10. it takes all decisions, and issues regulations of the IOC, which are legally binding, in the form it deems most appropriate, such as, for instance, codes, rulings,



norms, guidelines, guides, manuals, instructions, requirements and other decisions, including, in particular, but not limited to, all regulations necessary to ensure the proper implementation of the Olympic Charter and the organisation of the Olympic Games;

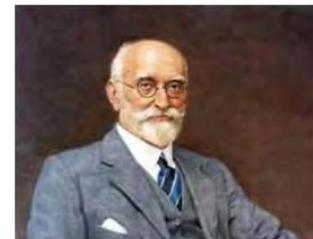
11. it organises periodic meetings with the IFs and with the NOCs at least once every two years. Such meetings are chaired by the IOC President, who determines the procedure and the agenda after consultation with the relevant bodies;
12. it creates and confers the honorary distinctions of the IOC;
13. it exercises all powers and performs all duties not attributed by law or by the Olympic Charter to the Session or to the President.

The President:

The President is elected by the IOC members in the session through secret ballot for a period of four years, which can be renewed for further four years. The President is the representative of IOC and is responsible for organization and preparation of all Executive meetings. He may give his power to the Director General. He can execute any action or decision on behalf of IOC. If the President is unable to fulfil his work, the senior Vice President can replace him.

2.3.4 INDIAN OLYMPIC ASSOCIATION

The Indian Olympic Association is a non-profit organization under the Societies Registration Act of 1860 founded by Sir Dorabji Tata as President and Dr A.G. Noehren as Secretary General in 1927. In the same year the association was recognized by the International Olympic Committee. The prime objective of the Association was to promote and develop Olympic movement in India. In the early years, IOA selected sportspersons to represent India, but after 1947 they gave the responsibility of selection and training to the National Sports Federations. Now they only arrange transport, board and accommodation for officials and sports persons.



Sir Dorabji Tata

The Indian Olympic Association is the governing body for the Olympic Movement and the Commonwealth Games in India. It is also an affiliated member of the International Olympic Committee (IOC), Commonwealth Games Federation (CGF), Olympic Council of Asia (OCA) and Association of National Olympic Committees (ANOC). IOA is recognized by Ministry of Youth Affairs and Sports.

The IOA looks after several aspects of sports and sportspersons which includes sending athletes or teams to represent India in the Olympic Games, Commonwealth Games, Asian Games and other international multi-sport competitions of IOC, CGF, OCA and ANOC.

The members of the IOA include

- National Sports Federations affiliated to International Sports Federations whose sport is included in the Programme of the Summer and Winter Olympic Games.





- National Sports Federations affiliated to International Sports Federations whose sport is not included in the Programme of the Summer and Winter Olympic Games but is included in the Programme of all Asian and/or Commonwealth Games.
- Indian citizens who are member/s of the International Olympic Committee.
- Two (one male and one female) active athletes or retired athletes having taken part in the Olympic Games; subject to the condition that the retired athletes must retire from their post latest by the end of the third Olympiad after the last Olympic Games in which they took part.
- State Olympic Associations
- Union Territories' Olympic Associations
- Services Sports Control Board
- The National Federation of the Indian game KhoKho.

2.3.5 OBJECTIVES OF THE INDIAN OLYMPIC ASSOCIATION

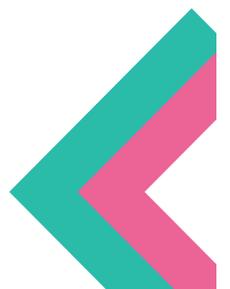
In accordance with the Olympic Charter, the membership for National Sports Federations mostly include NSFs that govern sports featured in the sports Programme of the Summer Olympic Games, Winter Olympic Games, Asian Games and Commonwealth Games.

As per constitution of Indian Olympic Association following objectives have been illustrated in Memorandum of Association of the Indian Olympic Association (Registered under the Societies Registration Act XXI of 1860)

1. The Indian Olympic Association, being part of the Olympic movement, undertake to respect provisions of the Olympic Charter, the Olympic movement, the World Anti-Doping Code and to abide by the decisions of the International Olympic Committee.
 - a. At National Level to participate in events to promote peace and to promote women in sport.
 - b. To develop, promote and protect the Olympic movement in India in accordance with the Olympic Charter.
 - c. To support and encourage the promotion of sports ethics, to fight against doping and to demonstrate a responsible concern to environmental issues.
2. To promote and encourage the physical, moral and cultural education of the youth of the nation for the development of character, good health and good citizenship.
3. To enforce all rules and regulations of the International Olympic Committee and the Indian Olympic Association and not to indulge in or associate with any activity which is in contradiction with the Olympic Charter.
4. To follow, observe and uphold the primacy and domination of the Olympic Charter in case of any contradiction between it and the rules, byelaws and the constitution framed by the Indian Olympic Association.
5. To enforce and defend the exclusive right of the IOC and the Association to the



- use of the Olympic properties pursuant to the Olympic Charter.
6. To be the official organization in complete and sole charge of all Olympic matters in the country.
 7. To educate the public of the country as to the value of sport.
 8. In cooperation with National Sports Federations to guard and enforce the applicable rules.
 9. To maintain the highest ideals of sport and to promote interest therein, particularly in connection with the Olympic Games and other Games under the patronage of the IOC as well as the IOA.
 10. To have full and complete jurisdiction over all matters pertaining to the participation of India in the Olympic Games and other Games under the patronage of the IOC as well as the IOA. To participate in the Games of the Olympiad by sending athletes and to constitute, organize and lead its delegation at the Olympic Games and at the regional, continental or world multi-sports competitions patronized by the IOC. It shall also ensure that the members of the delegation shall conduct themselves in a responsible and dignified manner at all such meets.
 11. To assist in cooperation with National Sports Federations the selection, training and coaching of the teams that will represent India in the Olympic/Asian/Commonwealth/South Asian Games and other international competitions and tournaments, under the patronage of the IOC as well as IOA. After selection of the teams by the National Sports Federation, IOA will supervise and control the participation of the team in the said competitions and tournaments.
 12. To undertake with the assistance of National Sports Federations the financing, management, transportation, maintenance and welfare of teams from India taking part in the Olympic Games and other Games under the patronage of the IOC as well as IOA.
 13. To certify the eligibility of competitors from India for such international competitions as require such certification.
 14. To stimulate the interest of the people of the country in the promotion of sports and games in the Olympic Programme as well as form the State Olympic Association in newly formed State/Union Territory.
 15. To act as the channel of communication between National Sports Federations and the Government of India for financial or other assistance to the Federations.
 16. To admit the membership of State Olympic Associations and National Sports Federations which shall be required to submit their annual reports and audited statement of accounts to the IOA for information, failing which disciplinary action can be taken.
 17. To take disciplinary action against any affiliated unit for misbehaviour or any other undesirable activity bringing discredit to the country and sport.
 18. To do all other things that may be necessary or expedient to promote the development of sports and games in the country and for the conduct of its business.
 19. To resist in the realm of sports all pressures of any kind, whether of a political,





- legal, racial, religious or economic nature.
20. To collaborate with schools and university establishments in India to propagate the fundamental principles of Olympism at National level within the framework of sports activity and also take steps for the diffusion of Olympism in the teaching Programmes of Physical Education.
 21. To take steps for the creation of National Olympic Academies, Olympic Museums and other cultural institutes related to the Olympic movement.
 22. To collaborate and help National Sports Federation, State Olympic Associations and other Sports bodies in the training of the sports administrators for the effective dissemination of sports information in India.
 23. To resist and oppose any form of discrimination on grounds of race, religion, legal, politics, gender or otherwise and to resist violence in sport.
 24. To lay down guidelines to enforce the World Anti-Doping Code and to fight against the use of substance and procedures prohibited by the International Olympic Committee or the International Federations and to adopt and implement World Anti-Doping Agency Code thereby ensuring that the IOA's Anti-Doping policies and rules, membership and/or funding requirements and results, management procedures conform with the World Anti-Doping Code and respect all the rules and responsibilities for the National Olympic Committee that are listed within the World Anti-Doping Code.
 25. To have full and complete jurisdiction over all matters pertaining to the designation of the city which may apply to organize Olympic Games in India.

2.3.6 ORGANIZATIONAL SETUP OF THE INDIAN OLYMPIC ASSOCIATION

IOA election generally held once in four years, following are hierarchy of Office Bearers and members with their roles:

1. **President:** The President is Head of IOA and presides over all meetings of the Assembly and Executive Council.
He has overall powers to supervise the office bearers and members of the Executive Council in the discharge of their duties.
2. **Senior Vice President:** There are Two Senior Vice Presidents in IOA, in the absence of President one of the senior Vice Presidents nominated by the Executive Council takes over the duties and responsibilities of President.

Extension Activity

Interview a member of the IOA or any Sports Federation of your State for your school Magazine.

3. **Vice-Presidents:** There are nine elected Vice Presidents in IOA. In the absence of the Senior Vice President, the Vice President approved by the Executive Council takes on the duties and responsibilities of the President. Generally, both Senior Vice Presidents and the Vice Presidents perform work as per directions of the President.



4. **Secretary General:** The Secretary General looks after the day to day administration, calling meetings, maintaining of IOA properties, preparing and presenting of Annual report, carrying out correspondence on behalf of association, maintaining the minutes of meetings and keeping records which may be necessary for the smooth and efficient functioning of the IOA. He may perform any function as per direction of the President.
5. **Treasurer:** The Treasurer is responsible for the management of the Association's accounts, receiving money, paying bills, preparation of inventory, presentation and submission of annual budget in finance committee etc. He can perform any task under the directions of the President.
6. **Joint Secretaries:** There are six Joint Secretaries, who perform duties which are assigned by the President and/or the Secretary General. The Joint Secretaries may perform any tasks or functions which are directed by the President.
7. **Executive Council Members:** There are ten Executive Council members having voting rights and they are part of all meetings of the Association.
8. **IOC member:** The IOC member(s) in India must be ex-officiomember(s) of the Executive Council having voting rights.
9. One representative elected out of the Athletes Commission One representative elected out of the Athletes Commission

2.3.7 DISAFFILIATION/DE-RECOGNITION/SUSPENSION

The IOA has the right to disaffiliation/de-recognition/suspension of any National Sports Federations/State Olympic Associations on the basis of following grounds:

- If members are not following the directions issued by the Indian Olympic Association.
- Not conducting elections after completion of tenure.
- Not submitting their audited account statements of the year, annual reports within the specified time period.
- Disaffiliation/De-Recognition of National Sports Federation by the International Federation of the Sport

2.3.8 UNSPORTSMAN-LIKE BEHAVIOR AND ACT OF VIOLENCE

Any kind of unsportsman like behaviour, e.g., abusing, making of undesirable gestures, provoking etc. of opponents, spectators, officials, coach(es), sports persons during any International competitions may lead to following punishment:

- Disqualification for the duration of the activity of that event of sports
- Disqualification for the entire duration of the competition
- Prohibition from participation in competitions for a fixed period of time.





I. Tick the correct option.

1. The IOA was established in
 - i. 1926
 - ii. 1927
 - iii. 1928
 - iv. 1930
2. There are _____ Vice Presidents in the IOA.
 - i. 1
 - ii. 3
 - iii. 7
 - iv. 9
3. The IOC Executive Board has _____ members.
 - i. 1
 - ii. 2
 - iii. 8
 - iv. 10
4. The First President of IOA was
 - i. Sir Dorabji Tata
 - ii. Dr A.G. Noehren
 - iii. Baron de Coubertin
 - iv. Maharaja Bhupender Singh

II. Answer the following questions briefly.

1. Write a short note on the Olympic Flag.
2. From where and how is the Olympic torch brought to the host city?
3. List the office bearers of the IOC.
4. Describe the Olympic oath.
5. Describe the formation of the IOA.

III. Answer the following questions in 150-200 words.

1. Describe the organisational step-up of International Olympic Committee.
2. Discuss the role and functioning of Indian Olympic Associations.
3. Write down the role of IOC.
4. List the Objectives of IOA.

Reference :

- <https://olympic.ind.in/>
- <https://www.olympic.org/the-ioc>



Unit III: Physical Fitness, Wellness & Lifestyle

Content

- Meaning & importance of Physical Fitness, Wellness & Lifestyle
- Components of Physical Fitness and Wellness
- Components of Health-related Fitness

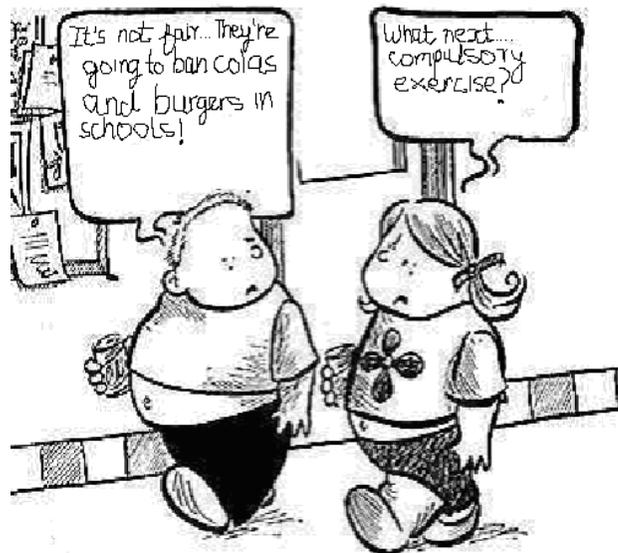
Learning Objectives

After completing the study of this Unit, you will be able to:

- describe concept of a healthy life style
- explain wellness and its importance and define the components of wellness.
- classify Physical Fitness and recognise its importance in life.
- distinguish between skill-related and health-related components of physical fitness.

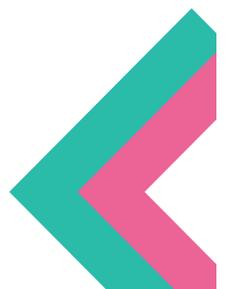
Discussion

Look at the cartoon given below. As a result of a sedentary lifestyle and unhealthy eating habits, obesity among children is on the rise. Using information from the cartoon given below and your ideas, deliver a speech in your class on the importance of healthy eating and regular exercise.



Cases of diabetes in India have seen an increase in the last one decade. In fact, incidence of diabetes is the second highest in India, only next to China. The reasons mentioned by the doctors and the experts are change in lifestyle and eating habits. The magnitude of the problem is so huge and growing so rapidly that the government is revisiting health promotion strategies for increasing awareness. Physical activities, healthy diet and a change in lifestyle have been highly recommended to overcome the new health issue.

Let's understand the importance of a healthy life style so that contemporary issues leading to lifestyle related diseases can be addressed.





3.1.1 DEFINITIONS OF LIFE STYLE

A way of living of individuals, families (households), and societies, which they manifest in coping with their physical, psychological, social, and economic environments on a day-to-day basis.

– Business Dictionary

The particular way that a person or group lives and the values and ideas supported by that person or group.

– CambridgeDictionary

Lifestyle is the interests, opinions, behaviours, and behavioural orientations of an individual, group, or culture.

– Adorno (1991)

Lifestyle is a way used by people, groups and nations and is formed in specific geographical, economic, political, cultural and religious text. Lifestyle is referred to the characteristics of inhabitants of a region in special time and place. It includes day to day behaviours and functions of individuals in job, activities, fun and diet.

– Dariush d. Farhud (2015)

Based on the definitions above, we can conclude that lifestyle is the way of life of an individual or a group (family, peer group, office group, religious group etc.) that includes the way they live, their day to day life, the pattern of their social relationships, food habits, entertainment and dress. Lifestyle is expressed in the individual's activities, attitudes, interests, opinions and values. Life style can, therefore, be described as the actions or reactions of an individual or group.

Do you know?

Lifestyle – A way of life or style of living that reflects the values and attitudes, the living conditions, behaviour, and habits of a person and group that are typical of them or are chosen by them.

Wellness – The state of being healthy and free from disease.

Physical Fitness – The degree to which one is healthy and strong. **Physical activity** – Body movement that is carried out by the skeletal muscles and requires energy.

Exercise – Planned, structured, repetitive movement intended to improve or maintain physical fitness.

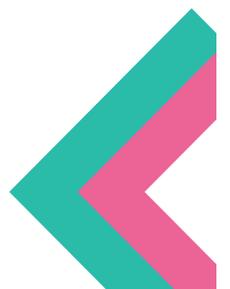
Workout – The component of a total physical activity programme designed to produce health, wellness, fitness, and other benefits using appropriate amounts of different types of physical activity.



While technology has transformed life and benefited society in myriad ways, changing the way we work, live and relax, at the same time these new developments have had certain very serious implications. A worrying consequence of the increase of technology has been its impact on lifestyle and physical health. Since technology has made execution of many of our daily chores possible by the simple pull and push of handles or buttons, most people have no need to exert physically for even the most basic or regular chores because one need not go to the market to purchase the groceries. You just need to send the list online, or on the telephone, and your groceries will be delivered to your home. All kinds of bill payments, banking transactions, sale or purchase of any goods can be done from the comfort of one's home. Use of effort-saving devices like telephones and escalators has minimised human effort and movement. Physical inactivity and poor lifestyle habits have led to serious health related problems.

Physical inactivity leads to hypokinetic diseases. The term **Hypokinetic** is derived from *hypo* meaning **low** or **little** and *kinetic* meaning **movement** or **motion**. Hypokinetic diseases, therefore, are diseases brought on, at least in part, by insufficient movement and exercise. Hypokinesia has been identified as a risk factor for the origin and progression of several widespread chronic diseases, including back pain, obesity, heart-related diseases, high blood pressure etc. There are a few factors, other than physical inactivity, which have negative effect on our health including stress, faulty nutrition and environment. There are several identified health related problems in India which occur due to poor lifestyle. Obesity, problems related to mental health, heart diseases, respiratory diseases, cancer, food allergies, hormonal disorders are diseases which are caused by drinking alcohol, smoking and chewing tobacco, eating junk food or food with high salt and sugar content, excessive stress of any kind related to occupation or personal relations, and air, water and noise pollution etc.

A press release of the Ministry of Health and Family Welfare, Government of India reveals that in 2016, 62% deaths were caused by non-communicable diseases. National Family health survey tells us that about 60% of these persons had a history of hypertension, and that one woman out of ten and one man out of seven of the ages of 15 to 49 years are hypertensive. A 2017 survey conducted by Centre for Science and Environment revealed that one in every twelve Indians is a diabetic, every third child in Delhi has damaged lungs, and that 30% deaths in India are caused by air pollution. The Study also predicted more than 1.73 million new cancer cases are likely to be recorded each year by 2020 in India due to faulty lifestyle habits.



**Extension Activity**

Question at least 15 students from your school or a nearby school. Get them to complete the questionnaire.

1. Do you have any of the following health conditions?

Heart Disease	High Blood Pressure	Type 2 Diabetes	Depression
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2. Do any of your immediate family members have any of the following, and if so, who?

Heart Disease	High Blood Pressure	Type 2 Diabetes	Depression
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3. On average, how many days per week do you get at least 60 minutes of moderate to vigorous physical activity or play?

4. On most days of the week do you

- walk or cycle to school? Yes / No
- participate in physical education class at school? Yes / No
- participate in organized physical activity (sports, dance, martial arts, etc.) or spend 30 minutes or more playing outside? Yes / No

5. Do you think you are underweight about right over weight

7. On average, how many hours per day of recreational screen time (video games, TV, Internet, phone, etc.) do you get?

8. On an average, how many servings of fruits and vegetables do you eat each day?

9. On average, how many 200 ml of carbonated drinks do you have each day?

10. On average, how many times per week do you eat fast food?

11. How many hours of sleep do you typically get (including naps) every day?

12. Do you often feel tired, fatigued, or sleepy during the day time? Yes / No

Share your findings in your group.

Based on the information, design a poster advocating a Healthy Lifestyle.

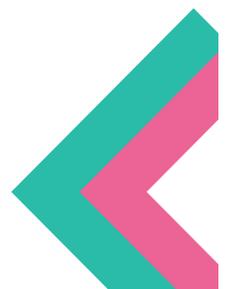
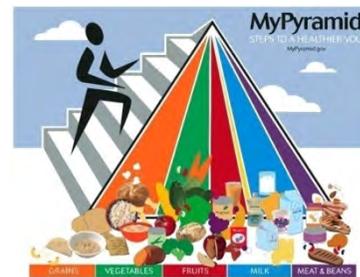


3.1.2 HEALTHY LIFESTYLE HABITS



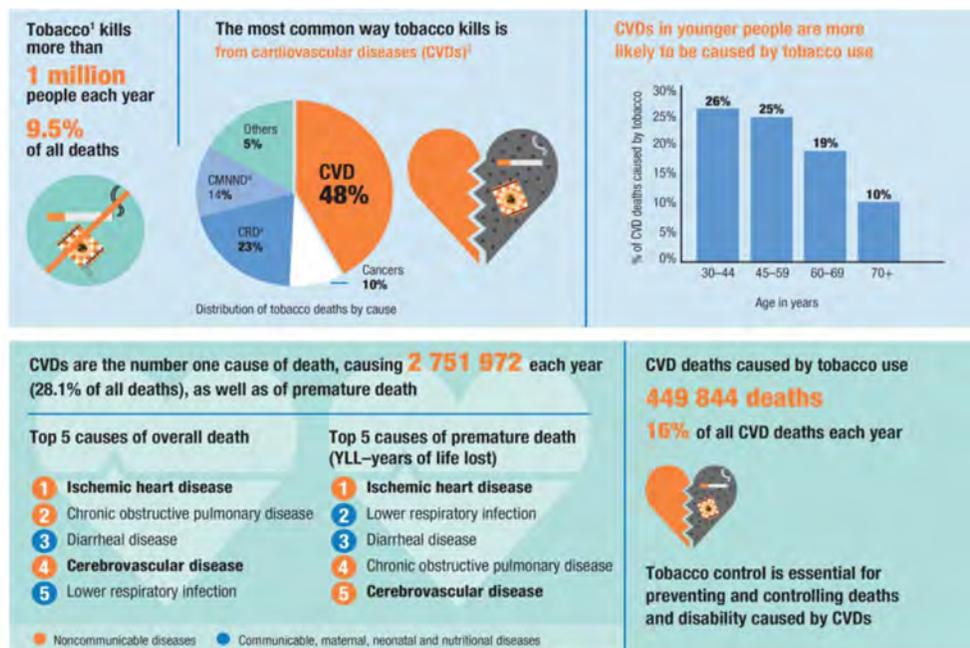
It is essential to adopt healthy lifestyle habits to stay fit and healthy.

1. **Taking a balanced diet** – Taking three main meals and two additional meals every day is important. Meals should include proper nutrients like proteins, fats, carbohydrates, fibres, vitamins, minerals etc. Intake of calories should be balanced with calorie consumption. Junk foods should be avoided because such foods are high in calories and low in proteins and other vitamins, minerals and other nutrients. It is also important to include fruits, vegetables, fibre and water in the diet.





- Participating in regular physical exercise** – Second only to smoking, physical inactivity is the highest cause of preventable deaths in the world. It is important to get regular physical exercise at least three times in a week. Each session of physical activity should be between 30 minutes to 45 minutes in which 20 to 30 minutes should be given to aerobic exercises like cycling, running, jogging, swimming and the remaining time should be given to strength-training along with flexibility exercises.
- Taking adequate rest** – An individual requires 7 to 8 hours of sleep daily. Any kind of continuous work or activity, e.g., three to four hours of sitting on a chair, should be avoided. One should avoid maintaining the same posture for long time. Care should also be taken to avoid any kind of vigorous activity which is beyond the physical limits of an individual. It is essential to take proper rest after strenuous activity.
- Avoiding use of tobacco and alcohol** – Smoking and chewing of tobacco is one of the most important causes of illness and premature deaths not just in India, but also in the world, and it is a cause of death which is preventable. According to WHO, tobacco is responsible for more than a million deaths in India each year. Consumption of alcohol is not only a health related problem, but is also a social problem. Alcohol can affect the way the brain works, changing mood and behaviour, making it harder to think clearly or move with coordination. Excessive drinking over a long time may also damage the heart, or lead to a stroke and liver cirrhosis.



- Fighting obesity** – Obesity is a medical condition in which excess body fat accumulates to an extent that it may have a negative effect on health. It is important to maintain the recommended body weight through exercise and through taking a balanced, nutritive diet. Alternate or cosmetic methods to reduce body weight should be avoided. Obesity leads to health-related problems like cardiovascular diseases, type 2 diabetes, high blood pressure, cancer and arthritis.



6. **Overcoming stress** – Stress is body’s reaction to a challenge or demand. Body reacts to stress by releasing hormones. These hormones make the brain more alert, cause muscles to tense and increase the pulse. It also causes feelings of frustration, anger, or nervousness. In short bursts, stress can be positive, such as when it helps you avoid danger or meet a deadline. But when stress lasts for a long time, it may harm your health. Negative stress leads to health related and social problems, including high blood pressure, heart disease, diabetes, obesity, depression or anxiety. Stress can be reduced through exercise and stress management techniques.

7. **Making healthy friendships** – Making friends not only enhances social interaction but boosts good health. Friends encourage positive behaviour, e.g., friends who are fitness enthusiasts, encourage their friend to lead a lifestyle that is physically active. On the other hand, unhealthy friendships play a destructive role and lower self-esteem. Mortality rates are higher in those who are not well adjusted in society as this leads to social isolation and loneliness.

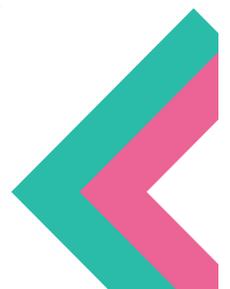


8. **Maintaining a pollution-free environment** – Increased environmental pollution in present times is responsible for more than one-third of the health-related problems. According to a report published in Down to Earth “Outdoor air pollution has become the fifth largest killer in India after high blood pressure, indoor air pollution, tobacco smoking, and poor nutrition.” Breathing polluted air leads to unusually high rates of lower respiratory infections, heart disease, strokes, and lung cancer. In 2015, water pollution, led to 0.5 million deaths, while unsafe sanitation caused 0.32 million deaths. It is important to use proper equipment for protection against pollution e.g., using a face mask, filtering drinking water, washing vegetables and fruit before eating etc.

9. **Spreading education** – Education is one of the lifestyle indicators which helps to promote longevity. Health economists argue that better educated people are more likely to choose healthier lifestyles. People from a higher educational background are, on average, less likely to smoke, abuse alcohol, and will exercise more, eat healthier foods, and have more frequent health checks than those who are not educated. This can be explained by a variety of different reasons. For instance, students with healthier lifestyles may be more efficient in acquiring knowledge so they tend to perform better at school, they also stay in school for longer, work more at younger ages and invest more in positive health-related behaviours.



10. **Adopting adequate safety measures** – All of us are familiar with the adage “Accidents happen.” This suggests that at times unfortunate happenings are





unpredictable and unavoidable. While it may be true to some degree that tragedy strikes in unexpected ways, we can minimise the effects of these accidents because injuries that occur as a result of these accidents are preventable by taking precautionary measures like wearing seat belts during driving, wearing a helmet while riding a two-wheeler, using occupational safety gear etc. An individual must read and implement all safety rules before using any device and must wear protective gear before carrying out any activity which has high degree of risk of injury. e.g., while participating in sports, athlete should wear prescribed uniform or sports kit and protective equipment before they participate in the game like wearing a face mask in boxing, abdomen guard, batting pads in cricket etc.

3.1.3 MODIFICATION OF LIFESTYLE BEHAVIOUR

Modification of behaviour for lifestyle change is a difficult process. Many a times, an individual pledges that he/she will not eat junk food because it is not good for health, or get regular physical exercise to promote good health, or reduce weight to say fit. There are lots of people who want to change their lifestyle, but are not able to do so because of various factors. There are personal factors that affect an individual's health behaviour but are beyond their control, like heredity, age etc. Heredity plays an important role in health behaviour, e.g., some individuals may have a natural tendency to gain weight and it may affect their fitness level. Genes contribute to obesity in many ways like affecting appetite, satiety (the sense of fullness), metabolism, food cravings, body-fat distribution, and the tendency to use eating as a way to cope with stress. Age is another factor which affects behaviour. e.g., a younger person may be more likely to eat junk food, drink alcohol, or smoke but an older person would try to avoid such substances. However, the most important reason for non-communicable diseases is an unhealthy lifestyle. Thus, these diseases are preventable if lifestyle is modified.

The Trans-theoretical model, also called the Stages of Change Model, works on the assumption that people do not change behaviour quickly and decisively. Rather, change in behaviour, especially habitual behaviour, occurs continuously through a cyclical process. There are five different stages in which lifestyle behaviour may be modified. This model has been applied for different lifestyle modifications. e.g., quitting of smoking, alcohol, weight control, regular physical activities etc.

Art Integration – AEROBIC EXERCISE

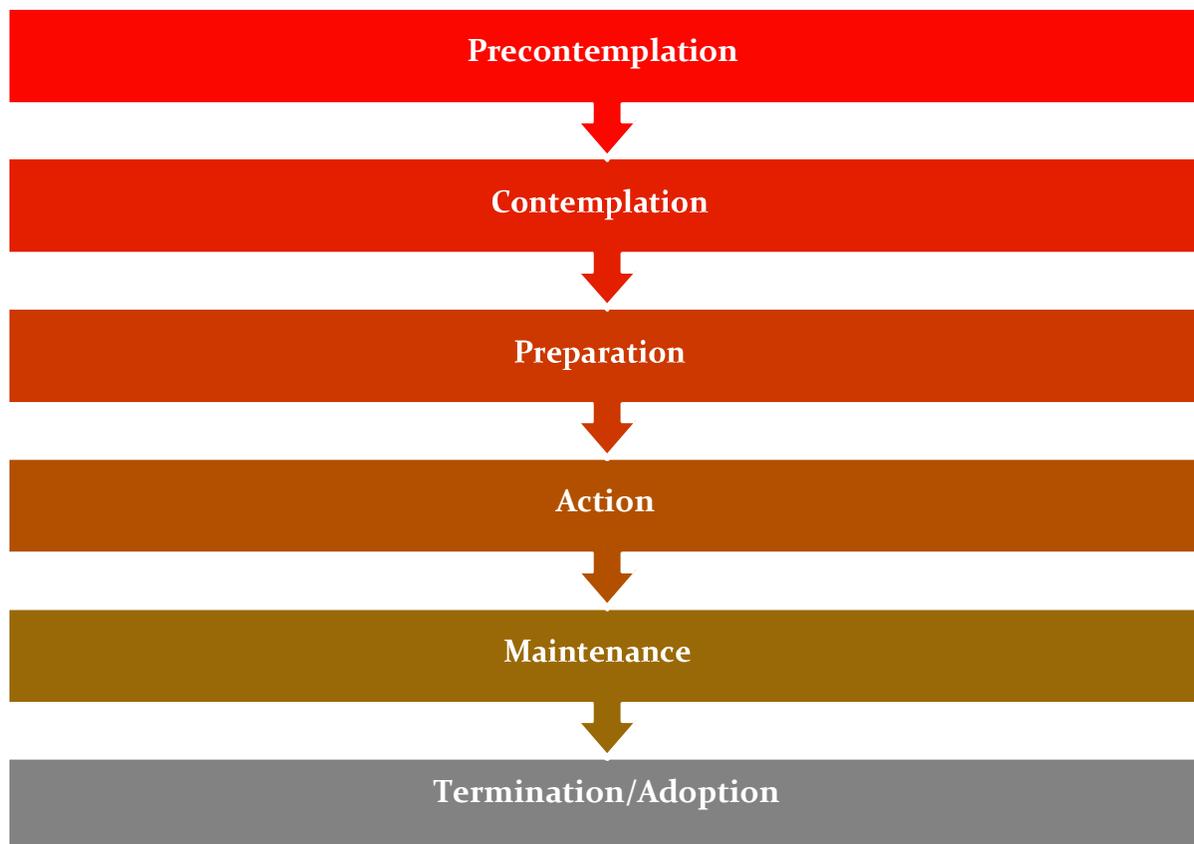
Dancing is an aerobic activity that improves your balance and co-ordination. It's suitable for people of all ages, shapes and sizes.

Whether you like to jump or jive, tap or tango, do the hip hop or salsa, dancing is one of the most enjoyable ways for losing weight, maintaining strong bones, improving posture and muscle strength, increasing balance and co-ordination, and beating stress.

Working in Groups,

- choose the dance style you wish to incorporate into your exercise routine.
- learn/improvise steps.
- choose/create your own music.
- set the dance steps to music.

Perform your Aerobic Dance Activity in the school PE period.



1. **Precontemplation** -- In this stage an individual does not want to change in the near future because she/he is unaware that her/his behaviour is problematic or produces negative consequences. Other people in her/his life –friends or family – clearly identify the problem but the affected person avoids information or indications or warnings. Even somebody offering a free consultation for quitting the unhealthy lifestyle does not affect her/him. At this stage, the individual is the most complex person to deal with, as no one can help someone until the affected person does not want to change herself/himself. Education is the only way to deal with such kind of people. Challenging them in a way that they are held responsible for adverse effects in future or describing the situation that may affect their family members, may help them out from this stage.

Do you know?

Lapse – A lapse is a slip up with a quick return to action or maintenance.

Relapse – a relapse is a full-blown return to the original problem behaviour.

2. **Contemplation** – An individual in this stage recognizes the problem and seriously wants to change her/his behaviour, but they are not ready to change themselves right now. They gather information about the problem and work on it, finding out the positives and negatives in that. They may make an action plan to change their lifestyle behaviour over the next six months, but they may still feel ambivalent towards changing their behaviour. It is also possible that they remain at the same stage for years. The important support groups to help them move out from this stage include friends, family, peer groups.





3. **Preparation** – In this stage the individual seriously wants to change the behaviour within the time limit of one month. An individual tries new behaviour for short periods of time and takes a few steps towards change in his/her behaviour like doing regular exercise for few days, stopping intake of junk food for few times etc. In this phase the individual prepares general objectives and illustrates specific objectives to achieve his/her goals. Environmental and peer group support can help them out from this situation.
4. **Action** – An individual manages time and energy in this stage. Now the individual works on the objectives and modifies her/his behaviour as per need. e.g., she/he does regular exercise five days a week or balances her/his diet as per set objectives. Downfall is common during this stage as, generally, the individual takes a break or leaves the objective within six months of beginning the new behaviour. Individuals should remain focused on the objective and identify the hurdles or barriers which restrict the action. If people maintain the activity for six months continuously then they enter into the next stage.
5. **Maintenance** – People at this stage are those who changed their behaviour more than 6 months ago. It is important for people during this stage to be aware of situations that may tempt them to slip back into doing the unhealthy behaviour—particularly stressful situations. Here, the important point is to follow the specific guidelines which govern behaviour like exercising, taking aerobic training along with anaerobic, or taking proper balanced diet with prescribed servings etc. In this phase the individual focuses on the benefits which she/he is getting.
6. **Termination/Adoption** – In the stage known as Termination or Adoption stage, the individual maintains his/her modified behaviour for more than five years without any break. The term “termination” is used in case of negative behaviour being terminated e.g., quitting of smoking, or taking alcohol. The word “adoption” refers to positive behaviour that has been adopted for five years continuously. Once an individual has entered in this stage, it is believed that lifestyle behaviour is adopted or terminated. Now the individual feels she/he will not relapse into negative behaviour. However, experts believe that in case of positive behaviour like weight reduction, taking regular exercise or a balanced diet, the chance of relapse is always high.

While for some individuals, relapses can be important for learning and helping the person to become stronger in their resolve to change, on the other hand, for others, relapses can be a trigger for giving up the process of change. The key to recovering from a relapse is to review the “quit attempt” up to that point, identify personal strengths and weaknesses, and develop a plan to resolve those weaknesses to solve similar problems the next time they occur. Relapse is a factor in the action or maintenance stages. Many people who change their behaviour decide for a number of reasons to resume their drug use or return to old patterns of behaviour. Research clearly shows that relapse is the rule rather than the exception.



I. Tick the correct options.

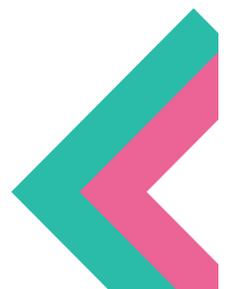
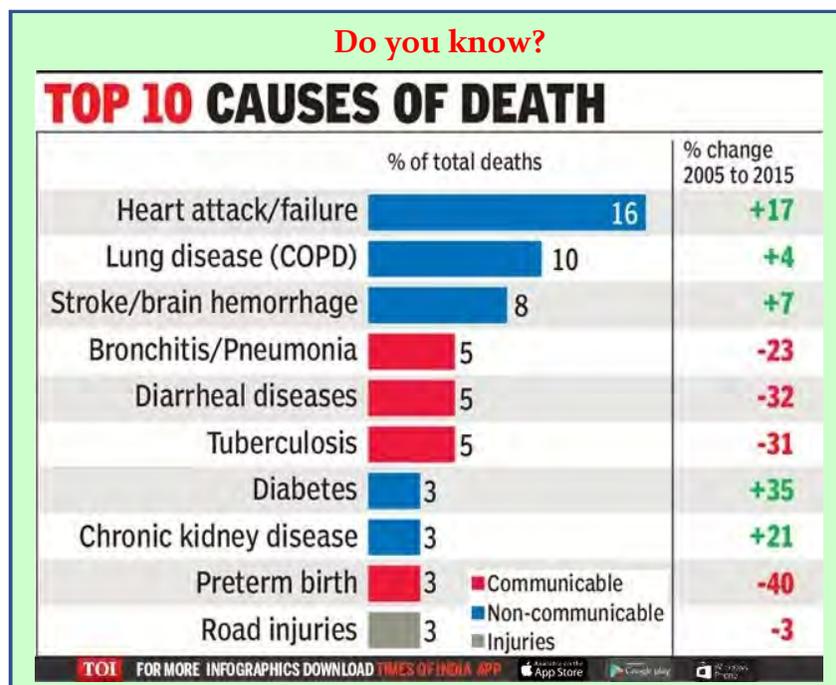
1. "I refuse to quit smoking! There is absolutely nothing wrong with what I am doing." Which of the following stages in the Trans-theoretical Model describes this individual?
 - i. Action
 - ii. Preparation
 - iii. Contemplation
 - iv. Pre-contemplation
2. In the Transtheoretical model, the maintenance stage refers to the period of _____ when the individual attains new behaviour.
 - i. one months to six months
 - ii. one month to five years
 - iii. six months to two months
 - iv. six months to five years

II. Answer the following questions briefly.

1. Define lifestyle with a suitable example.
2. Define the pre-contemplation stage of Trans-theoretical model

III. Answer the following questions in 150-200 words.

1. What is a healthy life style? How does it affect our health?
2. List down some good Lifestyle Habits
3. How can we modify our health-related life style?





3.2.1 CONCEPT OF WELLNESS

The WHO defines health as “a state of physical, mental, and social well-being, not merely the absence of disease.” While the term **Health** focuses on an individual’s illness status and her/his relationship to that status, **wellness** transcends the absence of disease. It is much more than merely physical health, exercise or nutrition. In fact, wellness is the full integration of states of physical, mental, and spiritual well-being. Wellness is about living a life full of personal responsibility and, therefore, taking proactive steps for one’s entire well-being. This means that a person living a life of wellness controls risk factors that can harm her/him. Risk factors are different types of actions or conditions that increase a person’s chances for illness or injury. e.g., smoking is a risk factor as there is a risk for developing lung cancer. Alcohol is a risk factor as there is a risk for developing liver damage. So, an individual takes pro-active steps to remove such health risks from her/his life.



Maintaining an optimal level of wellness is absolutely crucial to living a higher quality life. Wellness matters because everything we do, and every emotion we feel, relates to our well-being. In turn, our well-being directly affects our actions and emotions. It’s an on going circle. Therefore, it is important for everyone to achieve optimal wellness in order to reduce stress and the risk of illness and to ensure positive interactions.

Thus, wellness may be defined as “the optimal state of health of individuals and groups. There are two focal concerns: the realization of the fullest potential of an individual physically, psychologically, socially, spiritually, and economically, and the fulfilment of one’s role expectations in the family, community, place of worship, workplace, and other settings.” – WHO Health Promotion Glossary Update 2006.

The integration of many different components (physical, emotional/mental, intellectual, social, and spiritual) that expand one's potential to live (quality of life) and work effectively and to make a significant contribution to society. Wellness reflects how one feels (a sense of well-being) about life, as well as one's ability to function effectively. Wellness, as opposed to illness (a negative), is sometimes described as the positive component of good health.

– Charles B. Corbin, Gregory J Welk, William R Corbin, Karen A Welk

Wellness is an active process through which people become aware of, and make choices toward, a more successful existence.

– National Wellness Institute

Thus, wellness is a continuous and thoughtful process to stay healthy and achieve total wellbeing. It is a positive and ideal state of an individual which is reflected in day to day work, contribution to society, optimal functioning and having a healthy quality of life.



3.2.2 THE SEVEN COMPONENTS OF WELLNESS

Most people think that physical fitness alone is sufficient to lower the risk of health-related diseases but it is not true. e.g., consider an individual who regularly does vigorous physical training in which she/he does aerobic exercises thrice a week, does weight training, and stretching and maintains a good ratio of fat percentage of the body, but at the same time she/he eats junk food regularly, smokes and drinks alcohol. By doing so, she/he is increasing her/his chances of suffering from cardiovascular disease and other health related issues.

Wellness includes factors like spirituality, healthy diet, regular physical activity, personal safety, avoiding drug abuse, preserving environment, prevention of disease, stress management etc. In fact, there are seven components of wellness namely physical, emotional, mental, social, environmental, occupational, and spiritual which are interlinked with each other.





1. **Physical Wellness** – Physical wellness is an individual's ability to meet the demands of day to day work and being able to take care of her/his health. Overall physical wellness encourages the balance of physical activity, nutrition and mental well-being to keep the body in top condition. Obtaining an optimal level of physical wellness allows the individual to nurture personal responsibility for her/his own health. As the individual becomes conscious of her/his physical health, she/he is able to identify elements she/he is successful in, as well as elements she/he would like to improve. Physical Wellness includes regular vigorous activities, balanced diet, proper rest, avoiding intake of tobacco or alcohol, living in a healthy environment, following safety precautions etc. A physically fit individual must have optimum muscular endurance, muscular strength, cardio vascular endurance, flexibility and a fit body composition.



2. **Emotional Wellness** – Emotional wellness inspires self-care, relaxation, stress reduction and the development of inner strength. It is an individual's ability to understand and balance her/his emotions, accept her/his own weaknesses, and respect another's strength. It is important to be attentive to one's positive and negative feelings and be able to understand how to handle these emotions. It allows the individual to accept her/his feelings. Once the individual accepts her/his feelings, she/he begins to understand why she/he is feeling that way, and can decide how she/he would like to act in response to those feelings. Emotional wellness also includes the ability to learn and grow from experiences. It is important in today's life that an individual should be able to cope with stress, adjust to one's environment, enjoy her/his life. Trust, self-esteem, self-confidence, optimism are key words for emotional wellbeing.



3. **Mental Wellness** – Mental wellness, also known as intellectual wellness, is an individual's ability to learn, evaluate, accept new ideas, develop creative thinking, have a good sense of humour, and promote a lifelong learning process. Intellectual wellness encourages the individual to engage in creative and mentally-stimulating activities that expand her/his knowledge and skills while allowing her/him to share them with others. Intellectual wellness can be developed through academics, cultural involvement, community involvement and personal hobbies. Intellectual wellness encourages learning and enables the individual to explore new ideas and understandings. It also stimulates curiosity, thereby developing a desire to try new things. An individual with intellectual wellbeing is open-minded and clear, enthusiastic to gather knowledge, accepting of ideas put forth by others.
4. **Social Wellness** – It is an individual's ability to positively interact with the people of different cultures, ages, gender, religion etc. without building stereotypes. Social wellness refers to the relationships an individual may have and how she/he interacts with others. Her/His relationships can offer support during difficult times. Social wellness involves building healthy, nurturing and supportive relationships. Conscious actions are important in learning how to balance one's social life with one's academic and professional lives. Surrounding oneself with a positive social network increases one's self-esteem. Social wellness enables an individual to establish communication and trust and to manage conflict. Having good social wellness is critical to building emotional resilience.
5. **Environmental Wellness** – Environmental wellness refers to respecting the environment and natural resources. Environmental wellness inspires the individual to live a lifestyle that is respectful of one's surroundings and leading the individual to take action to protect it. It promotes respect for all nature and all species living in it. It encourages the individual to adopt habits that promote a healthy environment resulting in a more balanced lifestyle. It helps develop habits like producing and eating organic food, minimising the use of petroleum products, and reducing air, water, noise and land pollution or food contamination. We are answerable to future generations in regard to natural resources. We should recycle the products which we use and reduce waste and pollution.
6. **Occupational Wellness** – Occupational Wellness is the ability to achieve a balance between work and leisure time, addressing workplace stress and building relationships with co-workers. It focuses on the individual's search for a calling and involves exploring various career options and finding where one fits. Occupational wellness deals with satisfaction from job and career of an individual. It is not about holding a big post in a company or drawing a high salary etc. e.g., Individual 'A' may have a good salary in a reputed company, but she/he may not be able to execute the plans or policies of the company effectively. Thus she/he may be stressed. Whereas Individual 'B', drawing a lesser salary and occupying a lower post than A may be satisfied with her/his life. An individual picking up a job should consider internal and external rewards.
7. **Spiritual Wellness** – Generally, people think that spiritual wellness is linked with religion, but the core of spiritual wellness is to find the meaning and direction of





life. Spiritual wellness allows an individual to be in tune with her/his spiritual self and to appreciate her/his life experiences for what they are. It lets one find meaning in life events and define one's individual purpose. By finding meaning in her/his life experiences, the individual will be able to develop a harmony between her/his inner self and the outside world. A spiritually well individual should have beliefs, principles and values which guide and strengthen her/his life. By following the path of spirituality an individual gets faith, love, peace, joy, closeness with others, altruism, compassion and forgiveness.

Thus, we can see that all the components of wellness are linked with each other. Wellness is holistic, because rather than focusing on symptoms, it is important to integrate body, mind, and spirit as one whole person. Wellness also considers the self as the only true healer as one's wellness is one's own responsibility. Health professionals can only help facilitate the healing process. It is the individual's body, mind, and spirit that do all the healing. Therefore, it is important to think positive thoughts as negative thinking strips one of power and control. Wellness is outcome-oriented. As soon as one is able to identify a problem, one's energy must be put into the solutions.

3.2.3 IMPORTANCE OF WELLNESS

Wellness requires continuous and thoughtful efforts to remain healthy and to reach the highest level of wellbeing. Overall physical wellness is achieved through the balance of physical activity, nutrition and mental well-being to keep your body in top condition. Health related lifestyle habits lead to longevity, improve quality of life and help achieve total wellbeing.

After reading seven dimensions of wellness an individual can understand the importance of wellness:

- Wellness Programme should be developed with an aim to providing health-related lifestyle education with required support and resources to achieve wellness.
- Wellness makes the individual responsible for taking good decisions and adopting good practices and preventative measures for achieving optimum level of physical, emotional and social functioning.
- Wellness Programmes enable an individual to understand health issues like chronic diseases, cancer, cardiovascular disease, STDs, obesity, nutrition, diabetes, injuries, and other lifestyle related diseases and enhances longevity and the quality of healthy life.
- It promotes the behaviours which help maintain good health like quitting smoking, giving up alcohol abuse etc. and reducing social evils like violence, abuse, child labour, gender inequality, caste system etc. and adoption of positive values that result in an individual becoming a good citizen of the country.
- It also enables an individual to maintain balance between work, personal life and health that results in efficient and consistent output and improves general health,



and fitness through adopting regular physical activities.

- It also helps to develop healthy social environment where people share and solve personal and social problems, thus making the individual socially accessible and culturally sensitive.
- Wellness components like physical, emotional, mental, social, environmental, occupational, and spiritual are highly inter connected and can help to make environment disease and pollution free.

I. Tick the correct option.

1. Which of the following is NOT a component of Wellness
 - a. Physical
 - b. Cosmetic
 - c. Mental
 - d. Occupational
2. Occupational wellness is related with
 - a. fitness
 - b. meditation
 - c. environment
 - d. job

II. Answer the following questions briefly.

1. Define wellness.
2. Define the physical component of wellness
3. Define the spiritual component of wellness

III. Answer the following questions in 150-200 words.

1. What is wellness? What is importance of wellness?
2. Describe the seven components of wellness





Extension Activity

Your school wishes to draw up an action plan for promoting wellness among all its students. Working in groups, help the school authorities draw up a plan wellness plan by suggesting activities.

Wellness Component	Activity suggested
Physical Wellbeing	
Emotional Wellbeing	
Mental Wellbeing	
Intellectual Wellbeing	
Environmental Wellbeing	
Occupational Wellbeing	
Spiritual Wellbeing	

3.3.1 PHYSICAL FITNESS

Before we begin, it is essential to understand the meaning of different terms- Exercise, physical activity and physical fitness. We often use these terms inter changeably, which is not the correct usage. Exercise refers to planned, structured and repetitive bodily movements aimed at improving one or more components of physical fitness. e.g., swimming as an exercise aims at improving cardio vascular endurance. Physical activity, on the other hand, is any bodily movement which is not specifically designed for physical fitness but results in significantly increasing resting energy expenditure. e.g., walking will increase the resting energy expenditure but will not contribute to any fitness component. Physical Fitness is a state of health and well-being and the ability to perform aspects of sports, occupations and daily activities.





Definitions of Physical Fitness

Fitness is the ability of an individual to lead a full and balanced life. It includes physical, mental, emotional, social and spiritual factors and capacity for their wholesome expression.

- Charles A. Bucher (1958)

Physical fitness is the ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies.

- H Harrison Clarke (1976)

Physical fitness is the ability to perform moderate to vigorous levels of physical activity without undue fatigue and the capability of maintaining such ability throughout life.

(American College of Sports Medicine)

Individuals are physically fit when they can meet both the ordinary and the unusual demands of daily life safely and effectively without being overly fatigued and still have energy left for leisure and recreational activities.

- Wener W.K. Hoeger, Sharon A. Hoeger (2014)

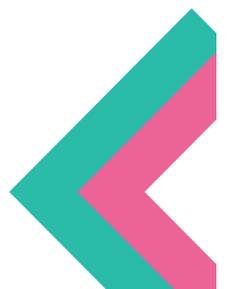
Physical fitness is associated with a person's ability to work effectively, enjoy leisure time, be healthy, resist hypokinetic diseases or conditions, and meet emergency situations.

- Charles B. Corbin, Gregory J Welk, William R Corbin, Karen A Welk, (2015)

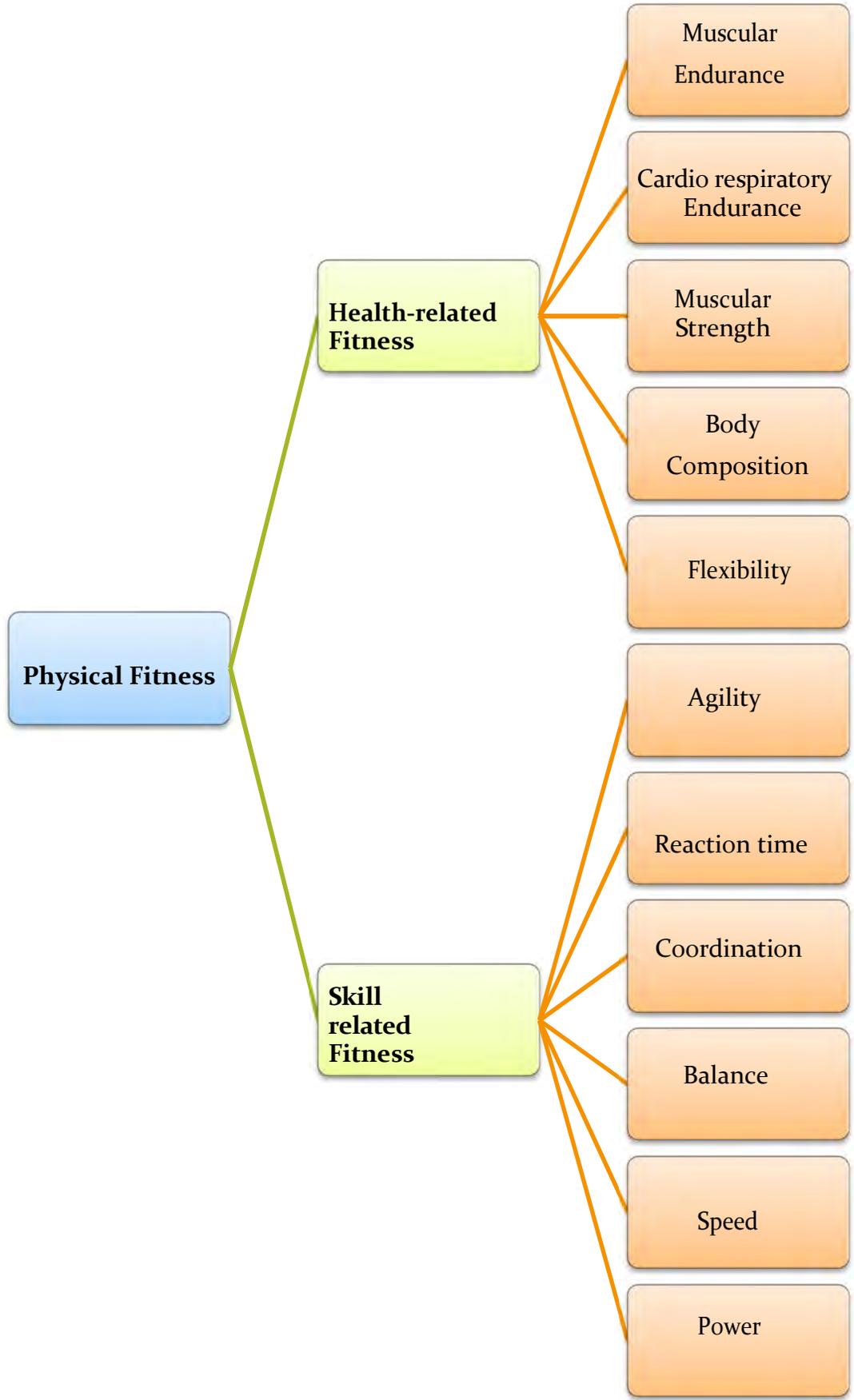
As per above definitions an individual who is physically fit should be able to perform daily tasks efficiently and effectively, without undue fatigue, and, along with that, she/he should also successfully complete the demands of recreational activities and emergent situations.

Each individual's physical fitness differs from the other's depending upon their profession or day to day activities. A doctor's activity is to check patients within the room, while a farmer works hard in the field. Similarly, a sports person performs skilfully on the field or court. But as per the definition of physical fitness each of these individuals must successfully perform their day to day tasks without undue fatigue, and have enough energy for leisure activities like going for a walk, playing table tennis or football etc. whatever she/he wishes to do. In addition, she/he should be able to meet the situation if there is an emergency at work. e.g., the doctor may be called to see a patient in an emergency, and may need to travel some distance to see the patient, or the farmer may have to rush to his farm to save his paddy crop from a natural calamity, when after a day at work, he is participating in some recreational physical activity.

There are a lot of health benefits of physical fitness. Optimum fitness is required to prevent injuries, to maintain a stable posture etc. However, physical fitness cannot be achieved without regular physical activity. Physical fitness is an important dimension of the Wellness Programme.



3.3.2 TYPES OF PHYSICAL FITNESS



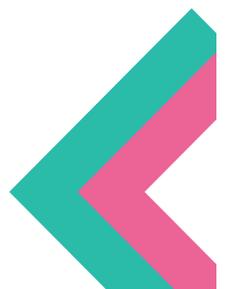


1. **Health-related Fitness** – There are five components of health-related physical fitness – muscular endurance, cardio respiratory endurance, flexibility, muscular strength and body composition. These are directly related with good health, and help to reduce the risk of hypokinetic diseases. For health promotion and disease prevention, each of the components of health-related fitness are important in moderation. A higher level of health-related fitness is directly related to the degree of skill performance. e.g., moderate level of muscular strength is required to maintain posture and to prevent neck, back or knee pain etc. but a high amount of muscular strength helps to increase performance in weight lifting, jumps, throws etc.
2. **Skill-related Fitness** – Skill related fitness has six components namely agility, balance, coordination, reaction time, power and speed. These are associated with performance. An individual who has achieved a good skill-related fitness is able to achieve high level of motor skills, which are a prerequisite in sports and in certain jobs. Though, skill-related fitness is generally known as sports fitness or motor fitness, but it is very specific and multi dimensional. e.g., agility is required in combat sports as well as in the job of a fire fighter.

3.3.3 IMPORTANCE OF PHYSICAL FITNESS

Exercise helps to promote health, to maintain or improve physical appearance and to improve the overall quality of life. Physically active people live life with less health problems and enjoy a better quality of life than people who are physically inactive. Regular physical activity has lots of permanent benefits.

1. **Physical and physiological importance** – Regular exercise improves posture, thus preventing back pain, neck pain etc. and improving physical appearance. It also helps to strengthen the cardiovascular and digestive systems. Muscular strength, endurance and flexibility is also improved by regular exercise. Exercise helps to maintain the balance between lean body mass and fat, and helps maintain body weight. A physically active lifestyle speeds up the recovery process after injury, disease or intensive work out. Due to continuous physical activity, flexibility of joints increases, reducing chance of developing arthritic pain and helping to relax muscles. It helps to maintain healthy bones and to maintain bone mass, which lowers the risk of osteoporosis. It also upgrades athletic performance and keeps energy levels high. Due to regular physical activity, an individual's resting metabolic rate become high and her/his body develops such immunity which help to lower incidence of disease. As a result, the individual feels energetic and that helps in job productivity, enjoyment of leisure time activities and the ability to face emergencies.
2. **Mental and psychological importance** – Regular physical exercise increases the function of brain, enhances memory, and develops creative thinking. Physical fitness enhances self-image, increases morale, self-confidence and self-esteem and also reduces tension, stress and anxiety. Psychological well-being helps an individual cope better with stress and anxiety, thereby improving her/his mental health.





3. **Social importance** – Improved emotional health and self-esteem improves social relations. Increased self-confidence prompts an individual to reach out to others. Participation in physical activities and sports promotes leadership qualities and strengthens bonds of friendship. Also, participating in sports activities provides opportunity to meet new people who share a common interest. Meeting others may be the first step towards establishing new friendships and developing a support network.
4. **Improved health** – Continuous physical activity increases longevity and slows down the process of aging. It also decreases the mortality rate from chronic diseases. It promotes the quality of life, enabling the individual to live longer, happier and healthier. Physical activity improves sleep quality and increases sleep duration. Individuals who exercise regularly are less likely to suffer from troublesome sleep disorders, such as sleep apnea and restless leg syndrome. Regular physical activity reduces risk of heart disease, type 2 diabetes, high blood pressure, adverse blood lipid profile, metabolic syndrome, colon and breast cancers etc. It keeps the blood thin which helps to decrease chances of heart disease and stroke and to maintain level of blood lipid.
5. **Improved financial condition** – Regular physical activity makes an individual healthier and fitter and helps develop good habits. People who adopt an active lifestyle have less chances of falling ill, and less chance of disease means bigger savings in terms of money and time.

I. Tick the correct option.

1. Physical activity can help with
 - i. increased stress levels
 - ii. getting sleep apnea
 - iii. causing restless leg syndrome
 - iv. helping your social life
2. Which is NOT a health related Physical Fitness component?
 - i. Muscular endurance
 - ii. Cardio respiratory endurance
 - iii. speed
 - iv. flexibility
3. Which is a component of Skill related Fitness?
 - i. Muscular Strength
 - ii. Power
 - iii. Body Composition
 - iv. Flexibility

II. Answer the following questions briefly.

1. Write a short note on health related fitness.



2. What do you mean by skill related fitness?
3. How does physical fitness improve your financial health?

III. Answer the following questions in 150-200 words.

1. What do you mean by Physical Fitness?
2. What is the importance of Physical Fitness?

3.4.1 COMPONENTS OF HEALTH-RELATED FITNESS



Body Composition



Muscular Endurance



Cardiorespiratory Endurance

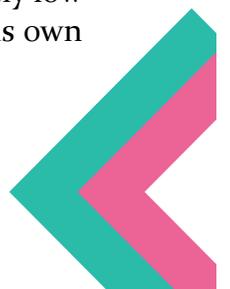


Muscular Strength



Flexibilit

Body Composition – Body composition may be defined as the relative percentage of fat and lean body mass. Lean body mass is fat-free mass of our body which covers muscle, bone, and other tissues that make up the body except fat. A healthy individual should have relatively low percentage of fat in the body. It is important for an individual to regularly check her/his own





body composition because body fat is associated with incidence of heart disease, diabetes, hypertension etc. There are several techniques to measure body composition. You will study some of these methods in greater detail in Unit 7.

- Height and Weight
- Body Mass Index
- Waist-to-Hip Ratio
- Girth Circumference
- Skin folds
- Bio electrical Impedance Analysis
- Hydrostatic Weighing

1. **Height and Weight** – While measuring the height of an individual, keep in mind the following points:

- first, remove shoes
- stand up straight, and take a deep breath
- look straight ahead
- record the height in centimetres or inches

To measure the weight of an individual, the following points should be kept in mind:

- remove shoes and as many clothes as possible
- record the weight in kilograms

The next step is to compare height and weight. This can be done using given parameters. However, as per experts' opinion no single number can represent healthy weight because fat, bone, muscle mass varies from individual to individual.

2. **Body Mass Index (BMI)** – Body mass index (BMI) is a convenient rule used to broadly categorize a person as underweight, normal weight, overweight, or obese based on tissue mass (muscle, fat, and bone) and height. To calculate the index, it is required to measure height in metres and weight in kilograms. Carrying too much weight can lead to a variety of health conditions, such as type 2 diabetes, high blood pressure, and cardiovascular problems. On the other hand, a weight that is too low can increase the risk of malnutrition, osteoporosis, and anaemia.

3. **Waist-to-Hip Ratio (WHR)** – The waist-to-hip ratio (WHR) is a ratio between the circumference of the waist and the circumference of the hip. It indicates health risk of obesity. An individual who has a greater circumference of trunk is an indicator of high risk of hypertension and type 2 diabetes as compared to an individual who has equal hip and waist circumference.

5. **Girth Circumferences** – Circumferences of different segments of our body also give the estimation of body composition. It is a technique that is easy to administer and can be locally used to measure the size of muscles of arms, legs etc. It also shows the changes in the body before and after training and helps to document the body size. There are formulas to estimate the percentage of body fat where circumference is used.



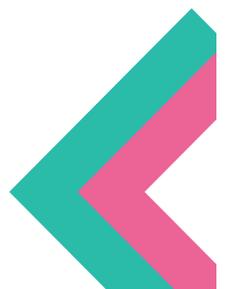
6. **Skinfolds** – Skinfolds determine body fat quite accurately as compared to techniques mentioned above because skinfold measurements are directly measured. But still, it is not an absolute measure of the percentage of fat. The skinfold technique can only be performed by a trained technician with the help of skinfold callipers. Skinfold estimations are based on the principle that the amount of subcutaneous fat is proportional to the total body fat. But technically it varies according to gender, age and race.
7. **Bioelectrical Impedance Analysis** – Bioelectrical impedance analysis (BIA) is a commonly used method for estimating body composition, in particular body fat and muscle mass. In BIA, a weak electric current flows through the body and the voltage is measured in order to calculate impedance (resistance) of the body. Most of our body water is stored in our muscles. Therefore, if a person is more muscular there is a high chance that the person will also have more body water, which leads to lower impedance. Bio electrical impedance analysis (BIA) is a portable machine easy to administer and gives reliable results of body composition.
8. **Hydrostatic Weighing** – Underwater weighing is known as the gold standard method to measure body composition. It is also referred to as “underwater weighing”, “hydrostatic body composition analysis”, and “hydro densitometry”. It is a technique for measuring the mass per unit volume of a living person’s body. It is a direct application of Archimedes’ principle, that an object displaces its own volume of water. This principle can be used to determine a person’s percentage of body fat because the density of fat mass and fat-free mass are constant. Lean tissue, such as bone and muscle, is denser than water, and fat tissue is less dense than water. Basically, muscle sinks and fat floats. Therefore, a person with more body fat will weigh less underwater and be more buoyant. Someone with more muscle will weigh more underwater.

3.4.2 MUSCULAR ENDURANCE

Muscular endurance is the ability of the muscles to exert themselves repeatedly. A fit person can repeat movements for a longer period without undue fatigue. The definition of muscular endurance is the ability of a muscle group to execute repeated contractions over a period of time sufficient to cause muscular fatigue, or to maintain a specific percentage of the maximum voluntary contraction for a prolonged period of time. To measure muscular endurance following equipment are used: Free weights (barbells, dumbbells), Gym mat (curl-ups, push-ups), Stop watch.

Following activities can be used to measure muscular endurance:

- Bench-jump
- Abdominal crunch
- Bent-legcurl-up
- Bench Press
- Biceps Curl
- Triceps Curl
- Half Squat





- Wrist Curl
- Lunge

3.4.3 CARDIO RESPIRATORY ENDURANCE

Cardio respiratory Endurance is the ability of the heart, blood vessels, blood, and respiratory systems to supply nutrients and oxygen to the muscles and the ability of the muscles to utilize fuel to allow continuous exercise. A healthy individual can sustain physical activity for a longer duration without undue stress. Lack of cardio respiratory fitness may cause restriction in daily activities due to inefficiency of the heart to supply blood to different body parts. Cardiorespiratory endurance activities are also called aerobic exercises. e.g., walking, jogging, swimming, cycling, cross-country race, skiing, water aerobics, climbing stairs and skipping a rope. An individual can be tested for cardio respiratory endurance through following tests.

- 12-Minute Swim Test
- Step Test
- 1.0-Mile Walk Test
- 1.5-Mile Run Test

3.4.4 MUSCULAR STRENGTH

Muscular strength is the ability of the muscles to exert an external force or to lift a heavy weight. A fit person can do any work that involves exerting force like lifting or controlling own body weight, pushing almira at home, lifting gas cylinder etc. The definition of muscular strength is the maximal force that can be generated by a specific muscle or muscle group. Muscular endurance is defined as the ability of a muscle or group of muscles to repeatedly exert force against resistance. Muscular strength is defined as the maximum amount of force that a muscle can exert against some form of resistance in a single effort.

Do you know?

Fast Twitch fibres: muscle fibre that contracts quickly especially during brief high-intensity physical activity requiring strength such as sprinting.

Slow Twitch fibres: muscle fibre that contracts slowly especially during sustained physical activity requiring endurance such as long-distance running.

There are two types of muscle fibres that allow for both muscular endurance and muscular strength. These are the fast and slow twitch fibres.

Fast twitch fibres, also called Type 2 fibres, are the main source of muscular strength. Fast twitch fibres are able to produce more force but they fatigue much faster than slow twitch fibres. **Slow twitch**, or Type 1, fibres are mainly used for muscular endurance exercises because they contract more slowly and take a much longer time to fatigue.



Do you know?

Static Contraction: where muscle exerts force but movement does not take place. Example: pushing wall, pulling rope

Dynamic contraction: an individual can see movement when muscle exerts the force. Example: pushups, pull-ups
Concentric Contraction: When muscle contraction takes place, shortening of muscle happens; that is concentric contraction.

Eccentric contraction: in the process of contraction, the opposite muscle's lengthening takes place; that is known as eccentric contraction.

Muscle strength is specific to the muscle group, type of contraction (static or dynamic; concentric or eccentric), the speed of the contraction, and the joint angle being tested. Therefore, no single assessment exists for evaluating total body muscular strength.

The measurement of muscle strength production is used for the following:

- To assess muscular fitness
- To identify weaknesses
- To monitor progress in rehabilitation
- To measure effectiveness of training

An individual can test Muscular Strength through following tests:

- Handgrip Test Procedures
- 1-Repetition Maximum (RM) Bench Press Test
- Upper Body Strength
- Isokinetic Testing

3.4.5 FLEXIBILITY

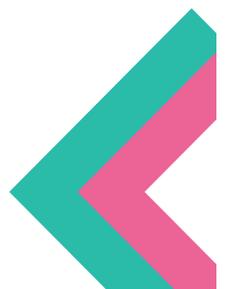
Flexibility is the ability of a joint to move effectively through its full range of motion without incurring pain. Movement happens due to muscle length, joint structure, and other factors. A healthy person can move the body joints through their full range of motion in work and in sports. Due to lack of flexibility, performance of daily life activities decreases, and there is occurrence of problems like lower back pain.

While whole body flexibility cannot be tested in one run, but “sit and reach” test is broadly used test to assess the flexibility of hamstring, hip, and lower back muscles.

To measure flexibility through “sit and reach” test following equipment are used:

- Goniometers, sit and reach box
- Sit and Reach Test (Trunk Flexion)

Before starting the test, an individual should do proper warm-up and stretching.





3.4.6 COMPONENTS OF SKILL-RELATED FITNESS



Reaction Time



Power



Balance



Speed



Agility



Coordination

1. **ReactionTime**–Reaction time is an individual' sability to quickly respond to a stimulus.

It is the interval time between the presentation of a stimulus and the initiation of the muscular response to that stimulus. e.g., in a sprint start, focusing on the starter's voice and the sound of the gun and reacting, reaction to a football, reaction of the goalkeeper during the penalty kick in a football match.

Tests to measure reaction time include

- Reaction Time Ruler Test
- Reaction Stick Timers
- Other game specific test



2. **Power** – Power refers to an individual’s ability to act fast with resistance. It is a combination of strength and speed. Throwing shot put, long jump, kicking in karate are power dominant activities. Power can be tested by the following tests:

- Standing broad jump test
- Burpee jump test
- Medicine ball throw test
- Vertical jump
- Other game specific tests

3. **Balance** – Balance is an individual’s ability to maintain the state of equilibrium while moving or in a stationary position. There are two types of balance one is static and another is dynamic.

Static balance is where individual maintains the state of equilibrium in a stationary position.

Dynamic balance refers to maintaining equilibrium during motion.

Gymnastics, surfing, squash, diving are balance dominant sports. An individual can test the fitness component balance through following tests

- Flamingo Balance Test
- Stork Stand Test
- Standing Balance Test
- One Leg Stand
- Other game specific test

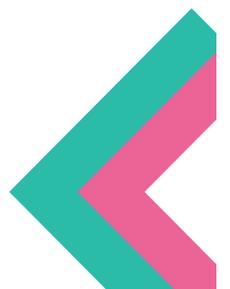
4. **Speed** – Speed refers to an individual’s ability to perform the movement in the shortest possible time. It is the minimum time taken to complete the task. Examples are 100 m and 200 m sprint, ice hockey etc.

Following are the tests to assess the speed of an individual:

- 20 meter dash
- 30 yard dash
- Other game specific tests

5. **Agility** – Agility is an individual’s ability to change the direction of the body rapidly and accurately. It is a combination of speed, balance, power and co-ordination. Rugby, football, hockey are the examples of sports requiring agility. Following are tests to assess the agility of an individual:

- AAHPERD Agility Test
- Illinois Agility Run
- Shuttle Run test
- Zig Zag Test





- Other game specific test
- 6. **Coordination** – Coordination is the ability of an individual to perform a motor task by using body movements and senses accurately and fluently. Juggling in football, hitting a tennis ball and kicking of football are good examples coordination.
- Stick Flip Coordination Test
- Wall-Toss Test
- Block Transfer
- Plate Tapping

I. Tick the correct options.

1. Which of the following is NOT a technique to assess body fat?
 - i. body mass index
 - ii. skin fold thickness
 - iii. hydro static weighing
 - iv. air displacement
2. Which is NOT a balance test?
 - i. Standing Balance Test
 - ii. One Leg Stand
 - iii. Plate Tapping
 - iv. Flamingo Balance
3. Which is a gold standard measure of body composition?
 - i. Height and Weight
 - ii. Bioelectrical Impedance Analysis
 - iii. Hydrostatic Weighing
 - iv. Skin fold

II. Answer the following questions briefly.

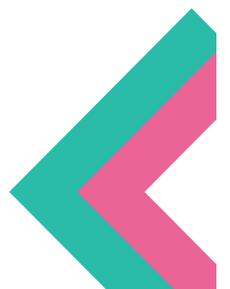
- Q1. Define physical fitness component “Muscular Endurance”
- Q2. What is the difference between Physical fitness component Speed and agility?
- Q3. List the methods used to measure body composition.

III. Answer the following questions in 150-200 words.

1. Describe Health related fitness components?
2. Differentiate between skill-related and health-related components of physical fitness



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https://www.nationalwellness.org/page/Six_Dimensions	
https://www.nationalwellness.org	
https://dictionary.cambridge.org/dictionary/english/lifestyle	
http://www.businessdictionary.com/definition/lifestyle.html	
https://www.hhs.gov/fitness/index.html	





UNIT-IV

PHYSICAL EDUCATION AND SPORTS FOR CHILDREN WITH SPECIAL NEEDS

Content

- Aims and objectives of Adaptive Physical Education
- Organization promoting Adaptive Sports (Special Olympics Bharat; Paralympics; Deaflympics)
- Concept of Inclusion, its need and Implementation
- Role of various professionals for children with special needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist and Special Educator)

Learning Outcomes –

After completing the study of this unit, you will be able to:

- identify the factors that affect access to physical activity for CWSN.
- recognize the need of Physical Education and sports for CWSN.
- outline and describe the aim and objectives of Adapted Physical Education
- distinguish the role of Paralympics, Special Olympics and Deaflympics
- describe concept of inclusion, need of inclusion and its implementation
- explain strategies for increasing access and participation in sports.
- identify different professionals, their role and services for CWSN

Discussion

Every individual is different and therefore, has different capabilities and needs. Discuss in a group

- In what ways are the students in your class different from each other? (e.g., some may be short or tall, or have different abilities)
- In what way do their different needs impact their learning capabilities?
- How important is it to respect individual differences and strengths? Share your views with the class.

4.1.1 WHAT IS ADAPTED PHYSICAL EDUCATION.

With the introduction of the Right to Education, which makes education a fundamental right of every child between the ages of 6 and 14 all children – including those who are physically and mentally challenged, or afflicted with various types of disabilities and disorders – have the right to come to school to develop their abilities through the process of education.



Do you know

According to the WHO: **Disabilities** is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person's body and features of society in which he or she lives.

It is, therefore, the duty of all schools to provide them with such opportunities that they develop their learning.

Do you know?

Autism— a developmental disorder of variables severity that is characterized by difficulty in social interaction and communication and by restricted or repetitive patterns of thought and behaviour.

Cerebral Palsy— a condition marked by impaired muscle coordination (spastic paralysis) and/or other disabilities, typically caused by damage to the brain before or at birth.

Down Syndrome— a congenital disorder arising from a chromosomal defect, causing intellectual impairment and physical abnormalities including short stature and a broad facial profile.

Dyslexia— disorders that involve difficulty in learning to read or interpret words, letters, and other symbols, but that do not affect general intelligence.

Muscular Dystrophy— a hereditary condition marked by progressive weakening and wasting of the muscles.

Spina Bifida— a congenital defect of the spine in which part of the spinal cord and its meninges are exposed through a gap in the backbone. It often causes paralysis of the lower limbs, and sometimes learning difficulties.

Children with Special Needs (CWSN) face different challenges in undertaking certain activities. So, in addition to the regular programmes of Physical Education (PE), the schools must provide Adapted Physical Education (APE) Programmes for children who may not receive benefits from regular Physical Education Programmes. Physical Education and sports are an integral part of a school routine. Regular PE sessions in school help develop a healthy lifestyle and attitude in school-going students. It caters to their physical as well as social and emotional health. As you know, PE is important for

- development of gross motor and fine motor skills
- conditioning different systems in the body
- developing emotional health and wellbeing
- inculcating social values and obligations





To make PE accessible for all students has been a need as well as a challenge. Every child is different as per their ability and they might need different plans, resources, teaching strategies and environment to enhance their learning.

Discuss in your group

- Do you think everyone benefits from PE and Sports?
- In what way do students with special needs benefit through taking part in PE and Sports?

Children with special needs have less exposure to sports and physical activities. The very nature of their disability restricts the kind of physical activity that they can participate in. This exclusion from physical activity adds to the life style related challenges caused by their disabilities and they suffer from additional problems such as hyper activity, obesity, hyper tension, diabetes, and postural and movement deformities. This makes it imperative to adapt PE to their special needs.

When you picked up the ball in the Extension Activity using different methods, it reflected your body's modification to the challenge. By using a tool, or a modified tool, you adapted equipment to suit your task. Similarly, by asking a friend for help, you experienced inclusion in the activity.

Extension Activity

Take a paper and make a ball with it. Throw the ball on the floor. Try to pick up the ball in as many different ways as you can. You may use your right hand, your left hand, foot, or your mouth.

You could also use some equipment that may be available or take help from a friend.

You could also try to pick up the ball with your eyes closed. How did you feel while picking up the ball?

4.1.2. ORIGIN OF ADAPTED PHYSICAL EDUCATION

The first Physical Education Programme for students with disability started in 1838, at the Perkins School for students with visual disabilities in Boston because the Director of the school wanted the students to receive the health benefits that could accrue to them through physical activity. Students of the school participated in gymnastic exercises and swimming. However, until 1952, many schools excused students with disabilities from participating in the Physical Education Programme. It was in 1952 that the American Association for Health, Physical Education and Recreation (AAHPER) formed a committee to define Adapted



Physical Education and give direction for teachers. This committee defined Adapted Physical Education as “a diversified Programme of developmental activities, games, sports, and rhythms suited to the interests, capacities, and limitations of students with special needs who may not safely or successfully engage in unrestricted participation in the rigorous activities of the regular Physical Education Programme.”

4.1.3. MEANING OF ADAPTED PHYSICAL EDUCATION

Adapted Physical Education is the art and science of developing, implementing, and monitoring a carefully designed Physical Education instructional programme for a learner with a disability, based on a comprehensive assessment, to give the learner the skills necessary for a lifetime of rich leisure, recreation, and sport experiences to enhance physical



fitness and wellness. Adapted Physical Education (APE) generally refers to school-based Programmes for students aged 3–21 years. It is a structured way to make Physical Education and sports accessible to all with modified instruction, resources, space and environment for CWSN as per their ability.

According to Adapted Physical Education National Standards (APENS) Adapted Physical Education is Physical Education which has been adapted or modified, so that it is as appropriate for the person with a disability as it is for a person without a disability. In other words, Adaptive Physical Education (APE) is Physical Education which has been adapted or modified to make it as appropriate for a person who is differently-abled as it is for a person without disability. It is basically a Physical Education Programme specially designed for differently-abled students so that physical education activities are safe, achievable, enjoyable and, therefore, a successful experience. APE is safe and beneficial even for infants and toddlers who need early intervention services because of developmental delays in physical, cognitive, communication, social and emotional aspects. Moreover, APE is not only for differently-abled infants and students but also for the people of all ages.

4.1.4. IMPORTANCE OF ADAPTED PHYSICAL EDUCATION

Adapted Physical Education can be provided to students with special needs and leads to the development of

1. **Physical and motor skills** which include development of gross motor skills like sitting, standing, crawling, rolling and stretching and fine motor skills like holding, picking, pulling, pushing and pinching.
2. **Fundamental motor skills and patterns** including activities like throwing, catching, walking, running, and swinging.
3. **Skills** in aquatics, dance, and individual and group games and sports including intramural and life time sports.





Do you know?



Padma Shri & Arjuna Award winner Deepa Malik became India's first female para-athlete to win a medal at the Paralympics. She won silver medal in the shot put at the 2016 Paralympic Games in Rio. Deepa Malik has successfully proved that physical limitations can not deter a strong mind. She was diagnosed with a spinal tumour in 1999. Although she underwent three surgeries, she was left paralyzed from the waist down. Deepa did not let her physical impairment deter her and started her sports career at the age of 36. This all-rounder is the first paraplegic Indian woman biker, swimmer, rallyist, entrepreneur and social activist.

The Individuals with Disabilities Education Act (1990) uses the term disability as a diagnostic category that qualifies students for special services.

These categories include

1. **Physical disabilities** – A physical disability is a limitation on a person's physical functioning and mobility.

Physical disabilities include impairments which limit other facets of daily living.

- Amputation
- Arthritis
- Cerebral Palsy
- Clubfoot/hand
- Dwarfism
- Muscular Dystrophy
- Spina Bifida
- Spinal Cord Injuries





Do you know?



13-year-old autistic swimmer Yash Singh is the first Indian to win a medal at Special Olympics World Summer Games 2015 in Los Angeles. He won the bronze in the 25-metre backstroke swimming event.

2. **Intellectual disabilities** –Intellectual disabilities involve impairment of general mental abilities that impact adaptive functioning in three domains, or areas including conceptual, social and practical. These domains determine how well an individual copes with everyday tasks. Intellectual disabilities have multiple causes including biological, psychosocial, or a combination.

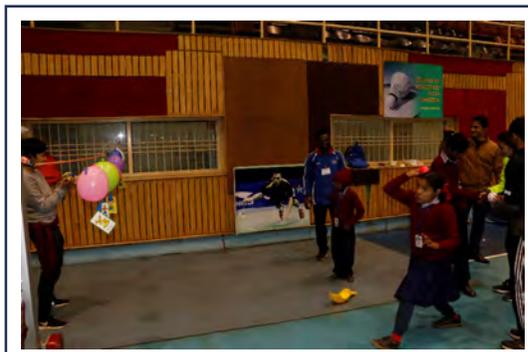
Extension Activity

Find out about Indian athletes who have won medals at the Paralympics and the Special Olympics.

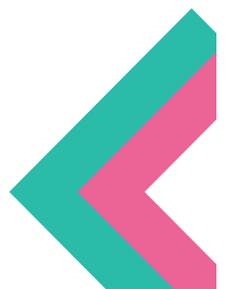
What disability did they suffer from? In which game did they win the medal?

Developmental or inherited conditions include

- Down Syndrome



3. **Cognitive disabilities** – Neurological disorders which create hindrance in storing, processing and producing information are called Cognitive Disabilities. Cognitive disability affects ability to read, compute, speak and write.





- Dyscalculia
- Dysgraphia
- Dyslexia

4. **Affective disorders** – Affective Disorders, also known as mood disorders or psychiatric disorders, include depression, bipolar disorder, and anxiety disorder.



Symptoms of these disorders may vary from individual to individual and can range from mild to severe. Individuals with these disorders may require help from a psychiatrist or other trained mental health professionals. Treatment would include both medication and psychotherapy. To involve students with affective disorder in individual sports like trekking, swimming, badminton, squash, cycling, tennis and rafting ,starting from non-competitive format, will be beneficial. A trained APE teacher or a trained coach may use different ways to occupy these students gainfully to enhance their confidence and self-esteem.

The services provided by an APE teacher include (Adapted from Sherrill, 1998):

- Planning services
- Assessment of individuals
- Prescription/placement: the IEP
- Teaching/counselling/coaching
- Evaluation of services
- Coordination of resources and consulting
- Advocacy

Extension Activity

Specially Designed Equipment

CWSN require equipment which is specially designed or modified to suit the irability. Look at some equipment and complete the table as shown.

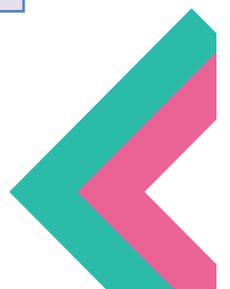
Tennis	Forehand		A modified tennis racquet with a big head and has been fixed on rope. Ball is also	Ball will travel in linear motion to improve forehand movement.
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			fixed in rope	
Baffel Ball for tennis, cricket, hockey	Throwing, Hitting		A modified ball with____ _____ _____ _____	_____ _____ _____
_____ _____ _____	_____ _____ _____		_____ _____ _____	_____ _____ _____

I. Tick the correct options

1. The Right to Education
 - i. makes education a fundamental right of every child between the ages of 6 and 14
 - ii. provides special facilities to children with various types of disabilities
 - iii. gives no special opportunities for children who are differently-abled
 - iv. enforces Adapted Physical Education programme for children with special needs
2. The aim of Adapted Physical Education is
 - i. to enhance the potential of differently-abled students in physical education and sports
 - ii. to restrict the dangers and challenges faced by children with special needs on the field
 - iii. to provide equal opportunity to differently-abled students in physical education and sports
 - iv. to design special equipment for the use of differently-abled students and infants





3. Down syndrome is a condition that results in
 - i. Physical disability
 - ii. Cognitive disability
 - iii. Intellectual disability
 - iv. Affective disorders
4. A child who has difficulty in following directions related to basic spatial movements has
 - i. Physical disability
 - ii. Cognitive disability
 - iii. Intellectual disability
 - iv. Affective disorders
5. According to WHO, a disability is a
 - i. health problem
 - ii. activity limitation
 - iii. interaction between individual and society.
 - iv. participation restriction
6. To develop abilities of children with special needs, it is essential to have an educational set up that is
 - i. inclusive
 - ii. integrated
 - iii. regular mainstream
 - iv. special school

II. Answer the following questions.

1. Define Adapted Physical Education?
2. Write any two basic steps to modify sports or physical education for children with special needs?
3. Which diagnostic categories qualify a student for Adapted Physical Education?

III. Complete the following table listing disabilities that qualify students for special services.

Category	Physical disabilities	Intellectual disabilities	Cognitive disabilities
Definition			
Examples			



IV. Answer the following questions in 150-200 words.

1. Describe some of the impairments of CWSN with suitable examples.

4.2.1. AIM AND OBJECTIVES OF ADAPTED PHYSICAL EDUCATION

Aim

The chief aim of Adapted Physical Education (APE) is to provide every individual an opportunity to participate in Physical Education and sports and to make Physical Education accessible to all as per their need.

Objectives

The main objectives of adapted physical education include

1. **To build a Programme to meet the needs of CWSN**– Since APE is developed as per the needs of the individual, it is, therefore, more beneficial for the student. For this purpose, the student is assessed on the physical education parameters and an individual education plan is designed. e.g., for a student with autism a structured programme with clearly defined timings, day, trainer/coach, start and finish of activity and description of skill with visual cards is helpful for successful partnership.
2. **To build in CWSN the capacity to be functionally active for lifetime** – APE is a planned and structured Programme designed to fit the need of an individual. For Children with Special Needs, daily life skills become difficult due to restriction in movement, co-ordination challenges, life style issues, behavioural problems and cognitive challenges. APE conditions the brain, muscles and specific movements for different functional tasks, activities or sports/games skills. In this manner, APE stimulates activeness for life time with a regular Programme. e.g., a student with Cerebral Palsy crossing an elementary ladder hurdle where she/he needs physical help to accomplish the task though she/he tries to control her/his reflexes for lifting her/his knee up, judging the space to cross the hurdle and landing her/his foot appropriately to maintain and regain her/his balance to finish the task.
3. **To provide a safe and accessible PE and sports Programme as per the needs of the individual** – During PE Programme, safety must be a primary concern as PE is very dynamic and reactive in movements. For children with special needs, who suffer from different physical and psychological challenges, the safety issues may become magnified. Therefore, during an APE session, environment, instruction and equipment are modified to make PE safe and accessible. Specially designed Physical Education Programme is for those students who are not benefiting from general PE Programme or modified PE Programme. Here, special equipment and support is given to a student to access and enjoy sports and PE sessions. e.g., a guided or supported rope for a person with visual impairment for running or walking, using light equipment for students with lower action time, using a structured programme or behaviour management for hyper





or emotionally challenged students.

4. **To ensure active participation or transition towards the integrated or regular PE Programme (Inclusion)** – APE ensures transition of a student from specially designed PE to integrated PE. APE ensures active and passive participation of a student through a planned programme according to individual needs. This programme can be implemented for maintenance of basic functional fitness, motor movements, skill oriented activities, competitive sports, integration and inclusion. e.g., a person with severe intellectual disability will be involved in physical education activities passively or with physical help to give her/him basic fitness to accomplish daily functional tasks, or a person with mild disability can be given a skill oriented programme where her/his goal is to perform a single sports skill such as dribbling, shooting or floating in water.
5. **Helping to develop self-esteem in CWSN**– APE helps to enhance self-esteem and self-image of CWSN when they are able to access the activity or sports and participate successfully. Ability to perform these tasks and activities easily, and the recognition they derive from this, encourages them to move on to higher goals. Once the goals set are realistic and achievable by working on their motor skills, and students receive recognition, their self-esteem is enhanced and leads to a better self-image. e.g., when a student with cognitive disability achieves success in a physical activity or sport, the resulting recognition leads to enhanced self-image and behavioural change.
6. **To promote regularity and discipline** – Participation in physical activity and sports provides a feeling of wellbeing which in promotes regularity and discipline. It encourages the student to continue the activity/sport and adopt a healthy lifestyle which helps overcome the challenges and achieve greater success. e.g., a child with Attention Deficit Hyperactive Disorder (ADHD) may benefit even in cognitive fields with regular participation in sports as not only is her/his energy channelized gainfully but the increase in physical activity is also therapeutic.
7. **To promote sportsmanship** – The Collins dictionary defines sportsmanship as behaviour and attitudes that show respect for the rules of a game and for the other players. Sports include an element of fun and also discipline, where you try to achieve a target whether individually or as a team. When she/he learns and participate successfully in a particular sport, follows the simple rules such as regularity, waiting for her/his turn, listening to and implementing instructions, appreciating the efforts of others, accepting defeat, celebrating victory, feeling of oneness with the team, respecting authority and maintaining decorum on the field modifies her/his behaviour on as well as off the field.



I. Tick the correct options

1. The most important area catered to by Adapted Physical Education is
 - i. Physical health
 - ii. Mental health
 - iii. Social health
 - iv. Emotional health
2. Exclusion from physical activity adds to lifestyle related challenges. The most important is
 - i. Hyper activity
 - ii. obesity
 - iii. diabetes
 - iv. postural problems

II. Answer the following questions.

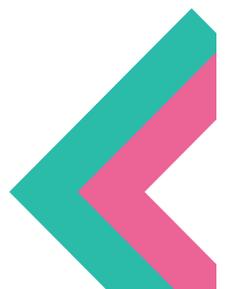
1. What is Adaptive Physical Education?
2. How does Adaptive Physical Education provide CWSN the capacity to be functionally active?
3. Why are safety issues important for CWSN during Physical Education?
4. How can safety standards be met for CWSN?
5. How does Adaptive Physical Education build self-esteem in CWSN?

III. Answer the following questions in 150-200 words.

1. Write a detailed note on the concept of Adaptive Physical Education.
2. What are the chief objectives of Adaptive Physical Education?

4.3.1. ORGANISATIONS PROMOTING ADAPTED PHYSICAL EDUCATION AND SPORTS

Disability refers to limitations in individual functioning, including physical impairment, intellectual impairment, cognitive impairment, sensory impairment, mental illness and various types of chronic diseases. A person with disability is not able to participate in sports and physical education due to her/his impairment, and attitudinal and environmental barriers.





Extension Activity

Find out the history of the following events:

1. Special Olympics Bharat
2. Special Olympics
3. Paralympics
4. Deaflympics

Encouraging participation in Physical Education and Sports

1. **Role of Family** – The role of family in encouraging a healthy, sports oriented lifestyle for a child with a disability is crucial. At times the family may find it difficult to accept reality, and may give up on the child. It is essential to promote awareness and to treat CWSN as equal in the family. CWSN may require a structured life routine where participation in recreational games and sports plays a very important role in developing a healthy mind and body of the child. Parents should observe certain different abilities of the child and take professional help to enable her/him to excel in the area.
2. **Role of School** – School gives a structured programme to a child or a group where co- scholastic activities and sports are a part of the regular routine. All schools must have trained APE teachers to give a specially-abled child access in games where movements are involved in a fun way for her/his holistic development. Here, a teacher or a coach helps a child to transit towards competitive sports under different organizations such as Special Olympics, Paralympics etc.. The school should take care to provide infrastructure that is compatible with the needs of CWSN e.g., a ramp along with stairs. Schools must run sensitization programmes so that CWSN are recognised for their efforts and organise intramural and extramural sports competitions or carnivals.
3. **Role of Organisations** – There are few organizations working at the grass root level to promote adapted sports. These organizations are responsible for training teachers and coaches for teaching, coaching and organizing sports events at Zonal, District, State, National and International levels.

Art Integration – CREATING ZERO COST MATERIAL FOR CWSN

CWSN are at times excluded from PE activities. As a result, they are likely to have poorer health, less education, and have to deal with greater inequalities than their peers.

One of your classmates is a child with special needs. You would like to include her/him in your Sports/Games.

Using the available material, design equipment for her/him that is safe and usable so that she/he is able to participate in Physical Exercise.



4.3.2. PARALYMPICS

The word “Paralympic” derives from the Greek preposition *para* meaning **beside** or **alongside** and the word *Olympic*. Thus, the word **Paralympics** refers to an International Games Competition that is parallel to the Olympics and illustrates how the two movements exist side-by-side.

Although sports clubs for the deaf were already in existence in Berlin since 1888, and some sports competitions for athletes with an impairment were being organised for more than 100 years, it was not until after World War II however, that they became widely accepted. The purpose at that time was to assist the large number of war veterans and civilians who had been injured during wartime.



Dr Ludwig Guttman opened a spinal injuries centre at the Stoke Mandeville Hospital in Great Britain in 1944, and in time, rehabilitation sport developed to recreational sport and then to competitive sport.

On 29 July 1948, during the Opening Ceremony of the London 1948 Olympic Games,

Dr Guttman organised the first competition for wheelchair athletes which he named the Stoke Mandeville Games where 16 injured servicemen and women who took part in archery. This was a milestone in Paralympics history. In 1952, Dutch ex-servicemen also joined the Movement and the International Stoke Mandeville Games were founded.

These Games later became the Paralympic Games which first took place in Rome, Italy in 1960 featuring 400 athletes from 23 countries. Paralympics is a major international multi sports event involving athletes with a range of disabilities. The first Paralympic games were held in Rome in the year 1960. The Games were initially open only to athletes in wheelchairs; at the 1976 Summer Games, athletes with different disabilities were included for the first time at the Summer Paralympics.

Till 1988, Winter and Summer Paralympic games were held as per a separate schedule. However, since the Summer Games of Seoul, Korea in 1988 and the Winter Games in Albertville, France in 1992 the Games have also taken part in the same cities and venues as the Olympics due to an agreement between the International Paralympic Committee (IPC) and the International Olympic Committee (IOC). All Paralympic games are governed by the IPC. There are twenty-two sports on the Summer Paralympic programme and five sports on the Winter Paralympics programme. Several events are organised within some of the sports to include various disabilities.

The vision of the IPC is, “To enable Paralympic athletes to achieve sporting excellence and to inspire and excite the world.” The Paralympic anthem is “Hymne de l’Avenir” or “Anthem of the Future”. It was composed by Thierry Darnis and adopted as the official anthem in March 1996.

Given the wide variety of disabilities that Paralympics athletes have, there are several categories in which the athletes compete. The allowable disabilities are broken down into ten eligible impairment types which vary from sports to sports.





Categories

A major challenge facing the organisers of para-sports is that the competition may become one sided and predictable, in which the least impaired athlete will always win. To prevent this, para-athletes are placed in categories for competition based on their impairment, these are called sport classes. Paralympic athletes have an impairment in body structure and functions that leads to a competitive disadvantage in sports. Consequently, criteria are put in place to ensure that winning is determined by skill, fitness, power, endurance, tactical ability and mental focus. When an athlete starts competing, she/he is allocated a class that may be reviewed throughout the athlete's career.

The purpose of the criteria

- Defining the impairment group in which an athlete can compete in the various sports.
- Grouping athletes in classes defined by the degree of activity-limitation related to the impairment and/or specific to the task in the sport.

The IPC has established ten disability categories, including physical, visual, and intellectual impairment. Athletes with one of these disabilities can compete in the Paralympics though not every sport can allow for every disability category. These categories apply to both Summer and Winter Paralympics.

1. **Physical Impairment** – There are eight different types of physical impairment:

- **Impaired muscle power** – With impairments in this category, the force generated by muscles, such as the muscles of one limb, one side of the body or the lower half of the body is reduced.e.g., spinal cord injury, spina bifida, post-polio syndrome.
- **Impaired passive range of movement**
– Range of movement in one or more joints is reduced in a systematic way. Acute conditions such as arthritis are not included in this category.
- **Loss of limb or limb deficiency** – A total or partial absence of bones or joints from partial or total loss due to illness, trauma, or congenital limb deficiency.e.g., amputation, dysmelia.
- **Leg-length difference** – Significant bone shortening occurs in one leg due to congenital deficiency or trauma.
- **Short stature** – Standing height is reduced due to shortened legs, arms and trunk, which are due to a musculo skeletal deficit of bone or cartilage structures. e.g., achondroplasia, growth hormone deficiency, osteogenesis imperfecta.





- **Hypertonia** – Hypertonia is marked by an abnormal increase in muscle tension and reduced ability of a muscle to stretch. Hypertonia may result from injury, disease, or conditions which involve damage to the central nervous system.e.g., cerebralpalsy.
 - **Ataxia** – Ataxia is an impairment that consists of a lack of coordination of muscle movements.e.g., cerebral palsy, Friedreich’s ataxia, multiplesclerosis.
 - **Athetosis** – Athetosis is generally characterized by unbalanced, involuntary movements and a difficulty maintaining a symmetrical posture (e.g. cerebral palsy,choreoathetosis).
2. **Visual Impairment** – Athletes with visual impairment ranging from partial vision, sufficient to be judged legally blind, to total blindness. This includes impairment of one or more component of the visual system – eye structure, receptors, optic nerve pathway, and visual cortex. The sighted guides for athletes with a visual impairment are such a close and essential part of the competition that the athlete with visual impairment and the guide are considered a team. Beginning in 2012, these guides, along with sighted goalkeepers in 5-a-side football, became eligible to receive medals of their own.
 3. **Intellectual Disability** – Athletes with a significant impairment in intellectual functioning and associated limitations in adaptive behaviour fall under the category of intellectual disability. The IPC primarily serves athletes with physical disabilities, but the Intellectual Disability group has been added to some Paralympic Games. This includes only athletes with exceptional athletic ability who have intellectual disabilities diagnosed before the age of 18. However, the IOC recognized Special Olympics World Games are open to all people with intellectual disabilities.

4.3.3. SPECIAL OLYMPICS

Special Olympics is the world's largest sports organization for children and adults with intellectual disabilities and physical disabilities. It provides year-round training and competitions to 5 million athletes and Unified Sports partners in 172 countries. Special Olympics competitions are held every day, all around the world—including local, national and regional competitions, adding up to more than 100,000 events a year. Like the IPC, the Special Olympics organization is recognized by the IOC; however, unlike the Paralympic Games, Special Olympics World Games are not held in the same year or in conjunction with the Olympic Games.

History of Special Olympics

In June 1962, Eunice Kennedy Shriver started a day camp called Camp Shriver for children with intellectual and physical disabilities at her home in Potomac, Maryland. The camp sought to address the concern that children with special needs had very little opportunity to participate in organised athletic events. With Camp Shriver as an example, Kennedy Shriver, head of the Joseph P. Kennedy, Jr. Foundation and a member of President John F. Kennedy's Panel on Mental Retardation, promoted the





concept of involvement in physical activity and other opportunities for people with intellectual disabilities. Camp Shriver became an annual event, and the Kennedy Foundation gave grants to universities, recreation departments, and community centres to hold similar camps. The first games were held on July 20, 1968 in Chicago, Illinois, with about 1000 athletes from the U.S. and Canada. International participation expanded in subsequent games. In 2003, the first Special Olympics Summer Games held outside the United States were in Dublin, Ireland with 7000 athletes from 150 countries. The first World Winter Games were held in 1977 in Steamboat Springs, Colorado. Austria hosted the first Winter Games outside the United States in 1993. The World Games alternate between Summer and Winter Games, in two-year cycles, recurring every fourth year.

Recognition Like the International Paralympic Committee, the Special Olympics organization is recognized by the International Olympic Committee; however, unlike the Paralympic Games, the Special Olympics World Games is a major event put on by the Special Olympics.

Logo and Oath

The Special Olympics logo is based on the sculpture “Joy and Happiness to All the Children of the World” by ZurabTsereteli. The logo is a symbol of growth, confidence and joy among children and adults with disabilities who are learning coordination, mastering skills, participating in competitions and preparing themselves for richer, more productive lives. The Special Olympics athlete's oath, which was first introduced by Eunice Kennedy Shriver at the inaugural Special Olympics international games in Chicago in 1968, is “Let me win. But if I cannot win, let me be brave in the attempt.”

Programmes run by Special Olympics around the world Young Athlete Programme

For young people with and without intellectual disabilities between the ages of 2–7, Special Olympics has a Young Athletes Programme — an inclusive sport and play Programme with a focus on activities that are important to mental and physical growth. Children engage in games and activities that develop motor skills and hand-eye co-ordination.

Unified Sports Programme

In recent years, Special Olympics has pioneered the concept of Unified Sports, bringing together athletes with and without intellectual disabilities as teammates. The basic concept is that training together and playing together can create a path to friendship and understanding. The programme has expanded beyond the U.S. and North America: more than 1.4 million people worldwide now take part in Special Olympics Unified Sports. The goal is to break down stereotypes about people with intellectual disabilities and promote unity.

Healthy Athletes Programme– This Programme offers health screenings to athletes in need. In 1997, Special Olympics began an initiative called Healthy Athletes that currently offers health screenings in seven areas: Fit Feet (podiatry), FUN fitness (physical therapy), Health Promotion (better health and well-being), Healthy Hearing (audiology), MedFest (sports physical exam), Opening Eyes (vision) and Special Smiles



(dentistry). Screenings educate athletes on health issues and also identify problems that may need additional follow-up. For example, the FUN fitness Programme assesses flexibility, strength, balance, and aerobic fitness of the athlete. Following the screen, the physical therapist would provide instructions on how to optimize their physical fitness in the areas screened.

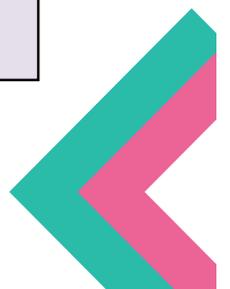
Special Olympic Sports Rules/Guidelines

- Athletes shall be divided into competition division based upon their ability, age and sex. Competition divisions are structured so that an athlete competes against another athlete of similar ability
- Special Olympics has more than 30 Olympic-type individual and team sports that provide meaningful training and competition opportunities for people with intellectual disabilities.
- At competitions, medals are awarded to the first, second and third-place winners in each event, and ribbons are awarded to athletes who finish in fourth through eighth place.

To participate in Special Olympics, a person must be at least 8 years old and identified by an agency or professional as having one of the following conditions: intellectual disabilities, cognitive delays as measured by formal assessment, or significant learning or vocational problems due to cognitive delay that requires or has required specially designed instruction.

I. Tick the correct options

1. The first Integrated Physical education Programme started in i. 1738
ii. 1838
iii. 1900
iv. 1938
2. The reason Paralympic Games got their name was because
i. they were meant for athletes suffering from paraplegia.
ii. they run alongside or parallel to the Olympic Games.
iii. the athletes are paragons of their sports.
iv. they are attended by a large number of paramedics.
3. Paralympic Games was a 1948 sporting competition held at Stoke Mandeville hospital in
i. England
ii. United States of America
iii. Germany
iv. Greece
4. The founder of Special Olympics was
i. Eunice Kennedy Shriver





- ii. John F. Kennedy
 - iii. Lyndon B. Johnson
 - iv. Donald Trump
5. The first Special Olympics Games were held in
- i. Chicago
 - ii. Paris
 - iii. New York
 - iv. Washington D.C.

II. Answer the following questions.

1. Define disability.
2. What is the role of school in encouraging participation of CWSN in PE?
3. When and where did Paralympics start? What was the purpose of these games?
4. What is the vision of the International Paralympic Committee?
5. What is the anthem of the Paralympics? What, according to you, is its relevance?
6. What do you understand by the term hypertonia?
7. Differentiate between Special Olympics and Paralympics.
8. What do you know about Deaflympics?

III. Answer the following questions in 150-200 words.

1. What was the major challenge facing the organisers of para-sports? How did they deal with this challenge?
2. Write a short note on Special Olympics.
3. List the Programmes run by Special Olympics around the world.

4.4.1. INCLUSION ITS NEEDS AND IMPLICATION

Each individual is different in terms of his physical, social, emotional and cognitive characteristics. This diversity is a reality, and everyone should respect the differences of each other. Inclusion is vast concept that implies including everyone in education without being judgmental about the abilities, appearance economic condition etc. Inclusion in education refers to a model wherein CWSN spend most or all of their time with students with non-special needs. It is based on the notion that Inclusive Education is more effective for students with special needs since they get mixed experience. This social interaction leads to success in later life.

Inclusion plays a big role to inculcate a safe, comfortable and emotionally secure environment in any educational institution. Inclusion is not a law to be forced on anyone. It is a process which enables a child smooth transition to understand, accept and implement the culture of inclusion in different situations. Physical education and sports play a very important role to promote inclusion in any educational institute.



Need for Inclusive Education

Inclusive education provides a student training for real life situations as all students, with or without disabilities, learn to interact and work collectively.

1. **Builds Self Esteem** – Inclusive classrooms are filled with diverse learners. This lets kids observe and talk about diverse learning patterns and the manner in which everyone learns in their own way. CWSN may find that they have more in common with other students and this goes a long way in building self-esteem. It also helps reduce stigma faced by those who have learning and attention issues. Differently-abled individuals show marked improvement in self- confidence if they have studied in a regular school. It can also help students build and maintain friendships.
2. **Improves Social and Communication Skills:** Inclusive education provides ample opportunities for all students – students with disabilities and those without disabilities – to have better social relations amongst themselves. Since social skills are learnt properly through observation and imitation, students with special needs get a better understanding of the world around them by being part of a regular classroom. This is especially true of students with intellectual impairment like autistic students.
3. **Enhances Sensitivity** – It has been noted that students without disabilities become more sensitive if they study in a classroom where they have students with special needs. They understand and appreciate their emotions and feelings and become more sensitive and caring towards them. They learn how to be more patient and to empathise with others. When children are involved in helping their peers, they not only derive immense satisfaction out of it, but often strike life long friendships with them.
4. **Creates Better Understanding and Appreciation of others** –In an inclusive classroom, students with or without special needs understand and appreciate the strengths and weaknesses of their classmates. They learn to appreciate these differences.
5. **Creates a Sense of Belonging**– All children are able to be part of a community and develop a sense of belonging. This makes them better prepared for life as they learn to value each other despite their differences. CWSN enjoy the acceptance and develop a feeling of belonging to the group of students with or without special needs.
6. **Enhances Academic Performance** – Inclusive education leads to better academic performance than in exclusive education. It provides better opportunities for learning as children with varying abilities are often better motivated when they learn in classes surrounded by other children.
7. **Improves Performance** – Since the expectations of all the children are higher in a mixed abilities classroom, inclusion attempts to develop an individual's strengths and gifts by stretching each individual to optimal performance.

Implementation of Inclusive Education in India

In India, the number of children/persons with disabilities or special needs is really large. As a result, they have a number of problems in getting education, especially





inclusive education. It is important to implement inclusive education in India not only to provide benefits of inclusion to all individuals but also to ensure optimal utilisation of resources.

India should emphasize on the following measures for effective implementation of inclusive education.

1. Ensuring effective implementation of the Right to Education in all states so that no child is left out of the ambit of education so that we are able to take care of the needs of CWSN.
2. Equipping teachers, especially in rural areas, through appropriate training and in-service workshops to teach CWSN in an inclusive classroom.
3. Developing a support team through regular analysis of schools, curriculum and amenities in order to give access to the regular curriculum methods to children with difficulties in learning.
4. Encouraging a flexible approach towards curriculum transaction whereby teachers and students are able to diagnose and resolve the problems that they face during the teaching learning process.
5. Involving parents as partners and as a resource in the decision-making process for enhancing their child's learning so that a collaborative effort results in effective inclusive education.
6. Looking at all children at what they can do rather than what they cannot do. It is important for the student's self-esteem that a child with special needs is not looked at with sympathy, but is recognised for her/his talents, capabilities and abilities.
7. Designing schools and classes in ways that help children learn and achieve to their fullest potential. Enrolling of CWSN in regular schools requires a lot of adjustments in terms of classrooms, transport facilities and educational materials and assistive devices such as audio textbooks or Braille text books, etc.
8. Developing education goals according to each child's abilities. Curriculum experts should carefully design programmes so that curriculum is made parallel for all the children with or without special needs in inclusive education. This also means that children do not need to have the same education goals in order to learn together in regular classes and will require the designing of a suitable examination system and putting in place periodic evaluation of CWSN to meet the challenges and changing trends.
9. Making sincere efforts to develop good relations and understanding between families of students with disabilities and without disabilities. In this way, all students will also develop good relations among themselves and thereby create an appropriate environment for implementing inclusive education.
10. Providing students related materials like uniforms, books, stationery, transport allowance, stipend for girls, boarding and lodging facilities, therapeutic services, teaching and learning materials, assistive devices, etc., to CWSN from the school.
11. While Inclusive Education implies means that all children are educated in regular classrooms, it does not, however, mean that individual children cannot leave the classroom for specific reasons. For example, a child may require one-on-one assistance in a particular subject. This may or may not happen during



regular classtime. Once schools are inclusive, serious thought is given to how often a child may be out of regular classroom and the reasons that this may be happening. It does not mean that children with certain characteristics (for example, those who have disabilities) are grouped together in separate classrooms for all or part of the school day.

I. Tick the correct options

1. Inclusion is vast concept that implies
 - i. including learners with differing abilities, appearance and economic conditions in education
 - ii. including learners with an emotional or intellectual impairment in mainstream education
 - iii. integrating all children with intellectual disabilities into main stream schooling
 - iv. integrating all children with physical disabilities into mainstream schooling

II. Answer the following questions.

1. What do you understand by inclusion in education?
2. How does inclusion in PE help improve communication skills of learners?
3. What do you understand by inclusion in education?
4. What do you understand by inclusion in physical education?
5. How does inclusion in PE help improve communication skills of learners?
6. List two benefits of inclusive education.

III. Answer the following questions in 150-200 words.

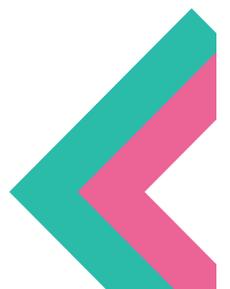
1. How does inclusion in Physical Education benefit CWSN?
2. How does inclusive education help integration of CWSN in society?
3. How can inclusive education be implemented in India?

4.5.1.ROLE OF VARIOUS PROFESSIONALS FOR CWSN

Keeping in view the fact that Children with Special Needs form one of the largest groups that are still outside the fold of the general education system, Inclusive Education provides them with an opportunity to enter formal education. This makes it necessary for the school to employ various professionals such as school counsellor, occupational therapist, physiotherapist, etc., for CWSN. These professionals help and support children in achieving their full potential physically as well as academically, improve their motor skills, enhance their communication skills and in promote their mental as well as physical health.

These professionals include

1. **School Counsellor** –The school counsellor is the specialist who works with students with special needs in schools and provides a comprehensive Programme that helps CWSN with their academic goals, their social, personal and career development. School Counsellors involve parents, teachers, other school





personnel, and members of the community in assisting students' development into effective members of the community. They work with the various members of the school community to create a positive school climate in which children can learn. It is their duty to assure a coordinated team effort to address the needs of all students and ensure student access to school and community resources.

More specifically, School Counsellors use individual and small-group counselling to help students develop aptitudes such as:

- skills in communicating, cooperating, and resolving conflict
 - the ability to engage in behaviours that foster good physical and mental health and to avoid behaviours that detract from good physical and mental health
 - skills in planning and making decisions, resulting in higher self-efficacy and a sense of personal responsibility
 - an awareness of resources about educational and vocational opportunities and ways to access those resources
 - positive attitudes towards one's self, as both a student and a potential worker
 - an awareness of and appreciation for both genders and the contributions of cultural diversity in society
 - a comprehensive plan for school and work experiences through high school and beyond
2. **Physiotherapist** – A physiotherapist is probably the best known of the therapists who works with CWSN. They use exercises to help their patients gain and keep the best possible use of their bodies. They also try to improve breathing, to prevent the development of deformities and to slow down the deterioration caused by some progressive diseases. The aim of a physiotherapist is to help the children with special needs to their full potential through providing physical intervention, advice and support. A physiotherapist evaluates bodily movement of CWSN with particular attention to physical mobility, balance, posture, fatigue and pain.

The role of a physiotherapist includes

- assessment of the mechanics of the body
- improvement the mobility in terms of joint movement, gross motor movement and fine motor movement
- management of children and young persons with movement disorders and disability.
- maintenance and conditioning of bones, joints and muscles to prevent degeneration
- rehabilitation through different therapies including massage manipulation, exercise and movement, electrotherapy, cryotherapy and hydro therapy



3. **Occupational Therapist** – An occupational therapist trains CWSN in performing assisted daily-life skills and self-care skills and activities related to fine motor skills and hand-eye coordination. An occupational therapist so helps children in participating and interacting with others in play.

The role of an Occupational Therapist includes

- training for activities of daily living skills like toilet training, eating, dressing, bathing and grooming
- training for fine motor skills like buttoning shirts, tying shoelaces, handwriting, movement of fingers.
- helping children in writing and other classroom activities like grasping and releasing toys and other objects
- sensory intervention and sensory integration to help the child in coping with challenges caused by her/his sensory disorder e.g., using different techniques to minimise self-harm actions, sensory diet to fulfil her/his visual and vestibular needs
- improve skills such as hitting a ball or copying from black board.
- **Physical Education Teacher** – The Physical Education teachers need to determine the abilities of students with special needs. They also need to determine measures to support their participation in sports, games and fitness activities through general, modified and specially designed PE Programme.

The role of a physical education teacher is

- improving general movement, movement skills and movement patterns
- improving hand-eye coordination, flexibility, muscular strength, endurance
- developing different sports-specific skills such as in basketball, soccer, swimming etc.
- improving social skills such as listening, understanding, implementing, playing in small to large groups, taking responsibilities, leadership etc.
- providing psychological support by channelizing energy to reduce anxiety, hyperactivity, tension and depression, developing self-esteem, reducing feelings of isolation

4. **Speech Therapist** – A speech therapist in school provides treatment, support and care for students with special needs who have difficulties in communication. Speech therapists help students with special needs to gain ability to communicate through speech and language. They help and provide training for students who face difficulty in producing sounds or syllables or saying words incorrectly. They also help such students who have fluency disorders like stoppages, repetitions and prolonging sounds in words. They modify the ways of making two-way communication with different tools and strategies.
5. **Special Educator** – A special educator plays a critical role in weaving all together all the stakeholders in school and at home. The Special Educator is responsible for assessing the level of the child, observing her/his performance or behaviour





to bring improvement in different subject areas of special needs education.

The role of a special educator includes

- assessment of the child's abilities
- curriculum development as per abilities and suitability
- setting individual education plan (IEP)
- setting weekly, monthly, annual goals
- parent conferences or meetings
- pre- and post-performance observation
- reporting
- integration
- inclusion
- transition

I. Tick the correct option

1. The professional who works along with CWSN, parents, teachers, other school personnel, and members of the community in helping them become effective members of the community is
 - i. the Counsellor
 - ii. the Physiotherapist
 - iii. Occupational Therapist
 - iv. Physical Education Teacher

II. Answer the following questions.

1. What is the role of the School Counsellor in inclusive education?
2. Discuss the role of physiotherapist in integrated education.
3. What is the role of Educational Counsellor in inclusive education?
4. Discuss the role of Speech Therapist in inclusive education.

III. Answer the following questions in 150-200 words.

1. Describe the role of Special Educator in inclusive education.
2. In what ways does the Physical Education Teacher help CWSN get integrated in mainstream schooling?

Weblinks

1. https://en.wikipedia.org/wiki/Adapted_physical_education
2. <https://blog.firstcrayon.com/the-essential-guide-to-special-needs-education-in-india-47769fc4d234>
3. <http://www.ymcacollege.ac.in/special-school.html>



UNIT-V YOGA

Content

- Meaning & Importance of Yoga
- Elements of Yoga
- Introduction- *Asanas, Pranayamas, Meditation & Yogic Kriyas*
- Yoga for concentration & related *asanas (Sukhasana, Tadasana, Padmasana, and Shashankasana, Naukasana, Vrikshasan, Garudasana)*
- Relaxation Techniques for improving concentration-*Yog-nidra.*

Learning Outcomes

At the end of this unit students will be able to:

- recognize the concept of yoga and aware with the importance of it
- identify the elements of yoga
- identify the *Asanas, Pranayamas, meditation and yogic kriyas*
- classify various yogic activities for enhancement of concentration
- know about relaxation techniques for improving concentration

Discussion

Read the newspaper clipping given below.

International Yoga Day

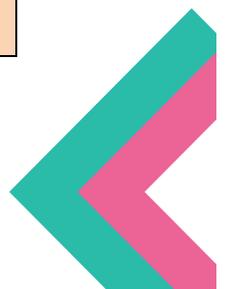
New Delhi: International Day of Yoga (IDY), Yoga day or Antarashtriya Yog Divas is an annual event celebrated all over the world on June 21 since its inception in 2015. The idea of IDY was first proposed by Prime Minister Narendra Modi during his speech at the United Nations General Assembly (UNGA), on September 27, 2014. Later, IDY was declared unanimously by the UNGA on December 11, 2014.

Yoga is a physical, mental and spiritual practice that has its routes mostly in India. The date of June 21 was suggested by PM Modi in his UN address as it is the longest day of the year in the Northern Hemisphere and is highly important in many parts of the world. Last year, 72 students and teachers from City Montessori School of Lucknow performed yogic exercises at the United Nations Headquarters in New York on the occasion of International Day of Yoga.

In 2018, PM Modi participated in the event organised in FRI Dehradun. As many as 60,000 people are expected to turn up for the event.

Discuss in your group

- What prompted our PM to introduce yoga to the world?
- How does yoga contribute to an individual's growth, development, health and fitness?
- Why was June 21 chosen as IDY?
- What are the objectives of IDY? Present your ideas to the class.





The intention behind introduction of yoga to the world is holistic development of the child which will lead to a well-balanced individual in all walks of life.

In this unit you will learn what yoga is and how it can contribute to maintaining health and fitness levels in all walks of life. Apart from this you will also learn about different aspects of yoga.

5.1.1 MEANING OF YOGA

Yoga is a word derived from **Yuj** which in Sanskrit means *union*. Yoga is the union of soul with spirit. This union of soul and spirit is a long process which may take even many births according to Hindu scriptures. Yoga is also considered as union of the nerves *Ida* and *Pingla*, union of sunnerve and moonnerve, union of negative and positive, union of Shiva (spirit) with Shakti (mother nature) and union of *Mooladhar Chakra* (Coccyx plexus) with *Sahasrar Chakra* (thousand lotus petal plexus). Yoga is a union of *Prana Vayu* with *Apan Vayu* (life current with excretion current.)

While in the West, Yoga is being acknowledged for its many physical and psychological benefits, such as improved muscle tone, lower blood pressure, stress relief, increased vitality, and mental clarity, yet the original purpose of yoga was — and its highest purpose has always been — spiritual. Yoga is a science of experience which is meant for the upliftment of humanity. Yoga is the art and science of attaining true, lasting happiness. It is a science because it offers specific, practical methods for obtaining these benefits. It is an art, because its highest benefits come only through sensitive and intuitive practice; otherwise it yields only superficial results. Therefore, Yoga should not be misunderstood merely as a science for treatment of some diseases. In a broader sense it is a science which brings health and happiness on causal, astral and physical planes. All the religions of the world speak of the divine union of soul and spirit in one way or the other. Yoga (union of soul and spirit) can be achieved through any means, but yoga as propounded by Maharishi Patanjali is the fastest way.

Do you know?

In the modern era, Swami Vivekananda, introduced the importance of Yoga to the Western world, when he addressed the World Parliament of Religions at Chicago in 1893.

Swami Vivekananda is also credited for being the greatest proponent of Yoga in the West.

5.1.2 DEFINITIONS OF YOGA

Stilling the whirlpools (modifications) of the mind stuff (Yogahchittavritt-inirodhah).

– Yogamaharishi Patanjali.

Skill in action (Yogahkarmasukoushalam).

– Yogeshwar Krishna in Bhagavad Gita.



A skillful and subtle process to calm down the mind.

– Yoga Vashistha

“Yoga is said to be the oneness of breath, mind, and senses, and the abandonment of all states of existence.”

– Maitri Upanishad

“Yoga is said to be the unification of the web of dualities (Dvandva Jaala).”

– Yoga Bija

“Yoga is said to be control.”

– Brahmaanda Purana

5.1.3 IMPORTANCE OF YOGA

Yoga is not a religion; it is a way of living which aims at achieving “a healthy mind in a healthy body”. Man is a physical, mental and spiritual being; yoga helps to promote a balanced development of all the three. Other forms of physical exercise, like aerobics, assure only physical wellbeing. They have little to do with the development of the spiritual or astral body.

Yogic exercises recharge the body with cosmic energy.

Extension Activity Discuss with your group

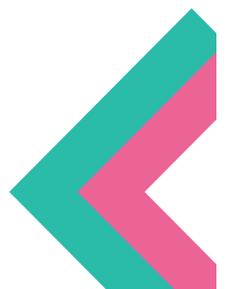
- What are the short-term effects of yoga?
- What changes take place in your body if you do yoga regularly over an extended period of time?
- Are these changes obvious – relating to visible changes in your body e.g., building up of muscles, loss of body fat etc.?
- What changes occur in heart rate and breathing?
- What about changes that are not so obvious and are long-term – increased stamina, improved flexibility?

Design a poster to show the effect of yoga on the body.

You could use an outline of the body to show which parts of the body are affected, what those effects are and how to maximize benefits of exercise.

The benefits of Yoga include

- facilitating attainment of perfect equilibrium and harmony.
- promoting self-healing.
- removing negative blocks from the mind and toxins from the body.
- enhancing personal power.
- increasing self-awareness.
- helping develop attention and concentration, especially important for children.





- reducing stress and tension in the physical body by activating the para sympathetic nervous system.

Yoga rejuvenates and energizes, thus bestowing upon every individual who practises Yoga the powers to control body and mind.

I. Tick the correct option.

1. The purpose of Yoga is to attain
 - i. Perfect health
 - ii. peace of mind
 - iii. stress relief
 - iv. enlightenment or self-realization.

II. Answer the following questions briefly.

1. Define yoga.
2. Who is known as Father of Yoga?
3. How can yoga contribute in enhancing personal power?
4. What is the role of yoga in reducing stress?

III. Answer the following questions in 150-200 words.

1. List the importance of yoga.
2. What is the modern concept of yoga?
3. How does yoga help in self-actualization?
4. How does yoga help in attitude formation?

5.2.1 ELEMENTS OF YOGA (ASHTANG YOGA)

Yoga is more than just a physical discipline. It is a way of life—a rich philosophical path. And the *yamas* (social restraints) and *niyamas* (self-discipline) are ten good common-sense guidelines for leading a healthier, happier life and for bringing spiritual awareness in to a social context. They are for the individual to think about and ponder over with a rational mind, because yoga is not about mindlessly accepting externally imposed rules – it is about finding the truth for oneself and “connecting” with it.

1. **Yamas:** *Yama* is the first “limb” of *Ashtang Yoga*. The 5 *yamas* are universal practices that help us move forward in our personal and spiritual development. The five *yamas* ask practitioners to avoid violence, lying, stealing, wasting energy, and possessiveness.

The five *yamas*, or codes of conduct or moral disciplines towards the outside world are:

- a) *Ahimsa* — Sanskrit for “non-harming”
- b) *Satya* — Sanskrit for “refraining from dishonesty”
- c) *Asteya* — Sanskrit for “non-stealing”
- d) *Brahmacharya* — Sanskrit for “wise use of vitality”
- e) *Aparigraha* — Sanskrit for “non-possessiveness”



Practicing Yoga's "golden rules" helps us attain a healthy mind and body, and it is important to follow the *yamas* without the desire for an end goal.

- a) **Ahimsa (non-violence):** *Ahimsa* means practicing kindness towards others, towards animals and towards ourselves in every thought and action. When we are compassionate and accepting of all ways of life we can handle any situation with grace.
 - b) **Satya (refraining from dishonesty)** *Satya* is the principle of living with integrity. *Satya* refers to refraining from dishonesty and betrayal in thought, word, and deed. It is important to note, though, that *ahimsa* is still the most important principle. Thus, in case truth can cause harm or violence, the option to be exercised is one that will not cause harm.
 - c) **Asteya (non-stealing):** *Asteya* teaches that everything we need in life is already within us. By choosing *Asteya*, we rise above our "base cravings" and become self-sufficient because we no longer desire something outside of ourselves. Feeling gratitude for what we have, and only taking what's freely given, makes it easy to wipe out feelings of envy or entitlement, and for authentic generosity.
 - d) **Brahmacharya (wise use of energy)** *Brahmacharya* refers to the wise use and preservation of vitality. It does not mean celibacy, but rather acting responsibly with your vitality, as a way to respecting others and yourself.
 - e) **Aparigraha (non-possessiveness)** *Aparigraha* refers to the ability to let go. It encourages non-grasping, non-clinging, and non-attachment to possessions or even thoughts. *Aparigraha* teaches you not to take it easy and be happy with what you have.
2. **Niyamas:** The *niyamas*, the second constituent of *Asthang Yoga*, deal with the manner in which we interact with ourselves and our internal world. Following the *Niyamas* helps the individual regulate her/his behaviour and maintain a positive environment in which to grow. Energy generated through the cultivation of the *yamas* is harnessed through the practice of the *Niyamas*. While Sage Yajnavalkya lists ten *niyamas* and the Bhagavad Gita lists 11, Patanjali names the following five:
- a) *Saucha* or purity
 - b) *Santosha* or contentment
 - c) *Tapa* or austerity
 - d) *Swadhyaya* or self-education, and
 - e) *Ishwar Pranidhana* or meditation on the Divine.
- a) **Saucha** implies both external as well as internal purity. According to Manu, just as water purifies the body, truthfulness purifies the mind and true knowledge the intellect, the soul is purified by knowledge and austerity. It advocates the practices of intellectual purity, purity of speech and of the body.
 - b) **Santosha** or contentment is the second *niyama*, which is described as not desiring more than what one has earned through honest labour. *Santosha* implies that the state of mind does not depend on any





external causes, and that one must maintain equanimity through all that life offers. *Santosh* involves the practice of gratitude and joyfulness – maintaining calm at all costs.

- c) **Tapa** or Austerity, the third *niyama*, is described in the philosophy of yoga as the power to stand thirst and hunger, cold and heat, discomforts of place and postures, silent meditation and fasts. It also maintains that the perfect man is he who practices both mental as well as physical austerity.

Do you know?

Maharishi Patanjali is a saint who is believed to have lived some time during the 2nd century BCE. He is known for his treatise on Yoga, entitled “Patanjali Yoga Sutra”.

- d) **Swadhyaya** or self-education, according to the commentator Vyas, consists of scriptural studies – the study of the Vedas and Upanishads together with the recitation of the Gayatri Mantra and the Om Mantra.
- e) **Ishwar Pranidhan**, the last of the *niyamas*, is described as the dedication of all our actions, performed either by intellect, speech or body, to the Divine. The results of all such actions are, therefore, dependent upon Divine decision. The mortal mind can simply aspire to realize the Divine through dedication, purification, tranquillity and concentration of the mind. This Divine contemplation spills over into all aspects of the yogi’s life.

Benefits of Practicing Yamas & Niyamas

They *amas* and *niyamas* help in managing our energy in an integrated manner, complementing our outer life to our inner development. They help us view ourselves with compassion and awareness. They help in respecting the values of life, in balancing our inner growth with outer restraint. In short, *Yamas* and *Niyamas* are not about right and wrong, but are about being honest with oneself. Living according to these principles is about living our lives in a better way, and moving towards connecting with the Divine.

1. **Asanas:** *Asana* is a posture in harmony with one’s inner consciousness. It aims at the attainment of a sustained and comfortable sitting posture to facilitate meditation.

Asanas also help in balancing and harmonizing the basic structure of the human body, which is why they have a range of therapeutic uses too.

2. **Pranayama:** *Pranayama* is a compound term (*Prana* and *Yama*) meaning the maintenance of *prana* in a healthy manner throughout one’s life. More than being merely a breath-control exercise, *Pranayama* is the art of the life force or *prana*. Ancient yogis, who understood the essence of *prana*, studied it and devised methods and practices to master it. These practices are better known as *Pranayama* since breath or *prana* is basic to life, the practice of *Pranayama* helps in harnessing the *prana* in and around us, and by deepening and extending it, *Pranayama* leads to a state of inner peace. According to *Hatha Yoga*, *Pranayamas* can be classified under:



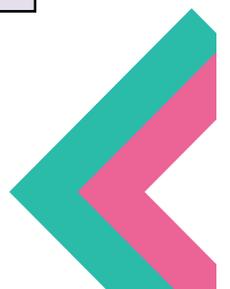
- a) *Surya Bhedi*
 - b) *Ujjai*
 - c) *Sitkari*
 - d) *Sitli*
 - e) *Bhastrika*
 - f) *Bhramari*
 - g) *Murchha*, and
 - h) *Kewali*.
3. **Pratyahara:** *Pratyahara* is the “withdrawal of the senses” and it is the fifth element among the eight stages of Patanjali’s *Ashtang Yoga*, as mentioned in his classical work. It is also the first stage of the six-branch yoga of the Buddhist *Kalachakra tantra*, where it refers to the withdrawal of the five senses from external objects to be replaced by them internally created senses of an enlightened deity.
4. **Dharana:** The last three limbs of *Ashtang Yoga* are the three essential stages of meditation. *Dharana* involves developing and extending our powers of concentration. This consists of various ways of directing and controlling our attention and mind – fixing skills, such as concentrating on the chakras or turning inwards.
5. **Dhyana:** *Dhyana* is the state of meditation, when the mind attains a state of concentration without getting distracted. Strictly speaking, unlike the other six limbs of yoga, this is not a technique but rather a state of mind, a delicate state of awareness, where the mind has been quieted, and in the stillness it produces few or no thoughts at all. This state rightfully precedes the final state of *Samadhi*.
6. **Samadhi:** *Samadhi* or total absorption is the ability to become one with the true self and merge into the object of concentration. In this state of mind, the perceiver and the object of perception unite through the very act of perception—a true unity of all thought and action. This is the acme of all yogic endeavours—the ultimate “yoga” or connection between the individual and the universal soul.

Do you know?

According to Hindu mythology, Shiva is considered the Supreme Lord of Yoga.

I. Tick the correct option.

1. There are eight stages of training for a yogi to go through in order to reach “moksha” (release). What is the final stage called?
 - i. *Samadhi*
 - ii. *Yama*
 - iii. *Pranayama*
 - iv. *Kaivalya*





2. *Yama* and *Niyama* are part of
 - i. physical growth
 - ii. charity
 - iii. meditation
 - iv. morality and ethics
3. Out of the following which one is NOT *Ashtang Yoga*?
 - i. *Yama*
 - ii. *Niyama*
 - iii. *Dhauti*
 - iv. *Pratyahar*

II. Answer the following questions briefly.

1. List the components of *Ashtang Yoga*.
2. What is *Yama*?
3. What is *Niyama*?

III. Answer the following questions in 150-200 words.

1. What are the purposes of *Ashtang Yoga*?
2. How does yoga contribute to an individual's personality development?

5.3.1 INTRODUCTION TO ASANAS

Asanas are special postures of the body that stabilize the mind through static stretching. The great seer Patanjali has said "*Sthiram Sukhamasanam*" means *asana* (posture) should be stable, comfortable and effortless.

Asanas are psycho-physical in nature. They are not mere physical exercises. *Asanas* play a significant role in toning up the neuromuscular and glandular systems of the body to restore and to maintain the vitality of different organs of the body.

Do you know?

Tao Porchon-Lynch, born on August 13, 1918, is an American yoga master and award-winning author of French and Indian descent. She discovered yoga in 1926 when she was eight years old in India and studied with, among others, Sri Aurobindo,

B.K.S. Iyengar, K. Pattabhi Jois, Swami Prabhavananda, and Maharishi Mahesh Yogi. At age 100, she teaches six to eight classes a week in New York, and leads programmes across the globe. She is the author of two books, including her autobiography, *Dancing Light: The Spiritual Side of Being Through the Eyes of a Modern Yoga Master*, which won a 2016 IPPY Award and three 2016 International Book Awards.



5.3.2 VARIOUS CATEGORIES OF ASANAS

Consummate mastery over the entire gamut of *asanas* is no doubt time consuming, but what is of vital importance is the will to remain in the present moment and to let both the mind and body relax completely. The various categories of *asanas* include:

1. Supine line *Asanas*
 2. Prone line *Asanas*
 3. Sitting *Asanas*
 4. Standing *Asanas*.
1. **Supine Line *Asanas*:** These *asanas* prepare you to proceed further in yoga and bring consistency in the development of physical and mental pliability. Examples of such *Asanas* are *Viparitakarani*, *Matsyasana*, *Halasana* and *Naukasana*.
 2. **Prone Line *Asanas*:** These *asanas* bring physical and mental sharpness and alertness. The postures are the opposite of forward bends, as are their effects. In prone line *asana* the posterior spine is extended, bringing consistency and mental peace. Such *Asanas* include *Bhujangasana*, *Ardha Salbhasana* and *Dhanurasana*.
 3. **Sitting *Asanas*:** Sitting up right and supine extending positions help prepare the individual physically and mentally for *Pranayama*. Some of them are *Ardh-matsyendrasana*, *Paschimottanasana*, *Vajrasana*, *SuptaVajrasana*, *Padmasana*, and *Yogmudrasana*.
 4. **Standing *Asanas*:** Beginners should start with these *asanas* as they bring elasticity in joints and muscles and build up stamina and physical ability. They constitute the most basic training in the early stage of yoga. Some basic standing poses are *Vrikshasana*, *Aradhakati Chakrasana*, *Trikonaasana* and *Tadasana*.

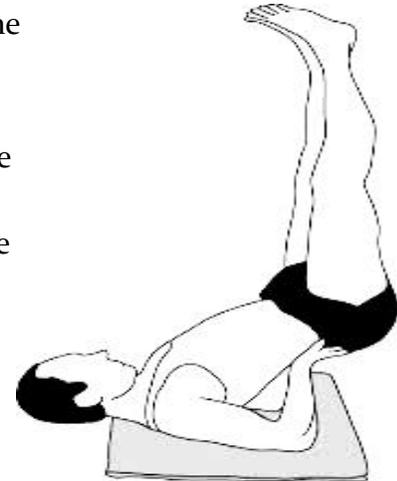
5.3.3 SUPINE LINE ASANAS

Viparitakarani

In Sanskrit the words “*viparita*” means inverted or reversed, and “*karani*” means doing or making and “*asana*” means posture. So, in the final position of this *asana* one has to invert the position of the body, placing the head at the bottom and the legs on top.

Techniques:

1. Take supine position, hands straight by the side of the thighs, palm resting on the ground.
2. Slowly raise your legs together without bending at the knee by pressing your hands and stop at 30° angle.
3. Gradually raise your legs little more and stop at 60° angles.
4. Now slowly bring it at 90° angle.





5. Press the hands and bring your legs little towards head so that your hips are raised from the floor.
6. After that, support your hips with the palms of both the hands, place the elbows on the ground making a broad base.
7. Raise the legs towards sky, and continue to support your hips with your hands. Raise the legs, abdomen and chest in a straight line. Place the palms on your back for support. Chin should be placed against the chest (jugular notch). Maintain the position.
8. After that slowly turn to the original position. While returning to the original position first lower your hips, then slowly place your hands on the ground. Divide the weight of your body on hands and slowly place your hips on the ground and bring your legs at a 90° angle.
9. Slowly place your legs on the ground without bending the knees and return to the original position.

Things to remember while performing this Asana:

1. Do not use your hands for jerking to raise your body.
2. Judge the limitation of your body. If you feel any pain or legs cannot be easily raised, then do not force your body in anyway.

Contraindications:

This asana is not recommended for persons with high blood pressure, heart disease, stroke, serious neck or shoulder pain, or during menstruation.

Do you know?

India's oldest Yoga teacher

99 year old V. Nanammal is India's oldest Yoga teacher who comes from Coimbatore, Tamil Nadu, India. Nanammal, who has trained one million students over 45 years, teaches 100 students daily. 600 of her students have become Yoga instructors around the world.

Her work has been honoured with India's National Nari Shakti Puraskar in 2016 and the country's fourth highest civilian award, the Padma Shri, in 2018.



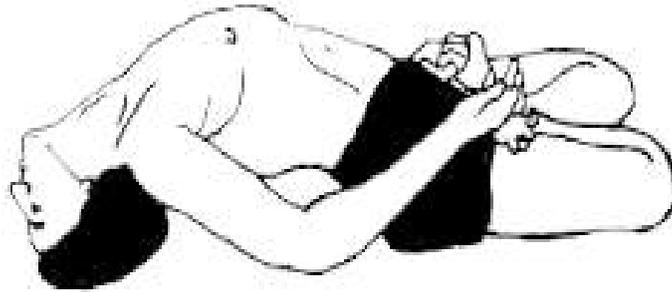
Benefits:

1. This removes the symptoms of premature oldage.
2. Diseases like dyspepsia, constipation, hernia can be treated by this asana.
3. It also helps in improving or eliminating varicose veins.
4. Stretches the backs of the legs.



Matsyasana

The name comes from the Sanskrit words *matsya* meaning “fish” and *asana* meaning “posture”. Since the final position of this posture is like fish therefore it is known as *Matsyasana*.



Techniques:

1. Sit in *Padmasana* posture.
2. Slowly, with the help of your elbows, lie down on your back completely.
3. Now with the help of elbows or palms bend your head backward and place the middle of the head on the ground.
4. Hold your toes with your index fingers and thumbs, and place the elbows on the ground.
5. While returning to the original position, first release your toes, and straighten your head, taking the help of your hands.
6. Now, lift yourself with your elbows, till you are sitting in *padmasana*.

Things to remember while performing this Asana:

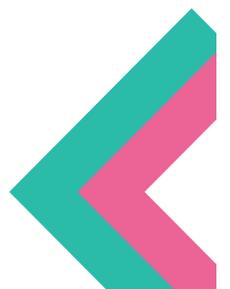
1. Do not bend your neck backward with a jerk.
2. While bending neck backward, the spine will be arched maximum.
3. While returning you can release your legs in sitting position or even in lying position.

Contraindications:

1. Avoid this posture if you have high or low blood pressure.
2. Patients suffering from migraine and insomnia should also refrain from doing the Fish Pose.
3. *Padamasana* is not recommended for those who have had serious lower-back or neck injuries.

Benefits:

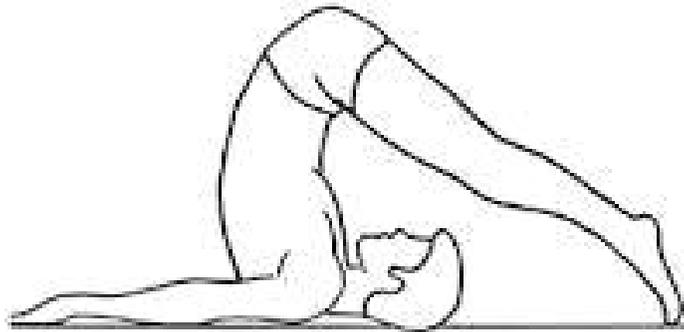
1. Stretches the chest and neck
2. Helps relieve tension in the neck and shoulders
3. Provides relief from respiratory disorders by encouraging deep breathing
4. Tones the parathyroid, pituitary and pineal glands





Halasana

The name comes from the Sanskrit words *hala* meaning “plough” and *asana* meaning “posture”. It is known as *Halasana* because in its final position the body resembles the shape of the plough.



Techniques:

1. Take supine position, hands straight by the side of thighs, palm resting on the ground.
2. Slowly raise your legs together without bending at knees by pressing your hands and stop at 30° angles.
3. After few seconds raise your legs further up to 60° angle and maintain.
4. Now slowly bring the legs at 90° angles.
5. Pressing both the hands bring the legs little towards the head.
6. Continue the bending of legs till toes touch the ground and then stretch your legs backwards as far as possible.
7. Now place both the palms on the head making a finger-lock. Bring the elbows on the ground.
8. While returning back to the original position first release the finger-lock. Stretch the hands straight and place them on the ground by the side of the body.
9. Lower the waist and raise the legs from the ground. Slowly let the waist rest on the ground and stop with the legs at 90° angles.
10. Slowly come back to the original position.

Things to remember while performing this Asana:

1. Do not bend the legs at knees while raising the mup.
2. Do not raise the legs in ajerk.
3. After reaching 90° angle, go ahead carefully balancing your weight. Sometimes due to gravitational force the legs may fall backward on the ground with jerk, therefore, control your self.
4. While stretching the legs backward balance your weight on the hands and also while returning use hands for balancing the weight.
5. Do not forcibly stretch your legs if they are not in a position to touch the ground. Stretch them as far as they are stretched easily. Maintain the posture. Gradual practice will make body capable of moving forward, and flexibility will be developed



Contraindications:

1. Avoid practicing Plough Posture (*Halasana*) if you have injured your neck, or are suffering from diarrhoea and high blood pressure.
2. Ladies should avoid practicing Plough Posture (*Halasana*) during pregnancy and during the first two days of the menstrual cycle.
3. Consult a doctor before practicing Plough Posture (*Halasana*) if you have suffered from chronic diseases or spinal disorders in the recent past.

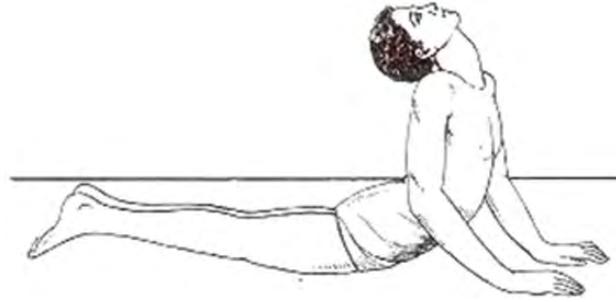
Benefits:

1. Stretches the shoulders and spine.
2. Controls hypertension and reduces stress and fatigue.
3. Helps relieve the symptoms of menopause and stimulates the abdominal organs, and thyroid gland.
4. Therapeutic for backache, headache, infertility, insomnia, sinusitis.

5.3.4 PRONE LINE ASANAS

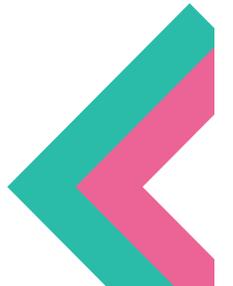
Bhujangasana

In Sanskrit the word *Bhujanga* means cobra. Since the final position of this *asana* resembles the “Hooded Snake” therefore it is called *Bhujangasana*.



Techniques:

1. Lie down in prone position, legs together, toes together, pointing outwards, hands by the side of the body, fingers together, palm facing upward and forehead resting on the ground.
2. Fold arms at the elbows, place palms on the ground near each side of the shoulder, thumb should be under the armpit.
3. Bring chin forward and place it on the ground. Gaze in front.
4. Raise chin and turn head backward as much as possible. Raise the thorax, turning spine backward up to the navel region. Do not raise hips.
5. Maintain the posture for some time. Then slowly bring your body on the ground, starting from upper part of the navel region, thorax, shoulders, and chin and lastly place the forehead on the ground.
6. Now, relax your arms and place them by the either side of the thighs.





Things to remember while performing this Asana:

1. Fingers of the hands must remain together.
2. Do not raise your body with a jerk.
3. Navel, or body below navel region, must not be raised.
4. Put minimum weight on hands. Divide weight on spine and arms.
5. While in final position, thumbs should touch the chest near armpit.
6. In the beginning weight can remain on hands.
7. While coming back do not bend your head first. The part of the body which leaves the ground first will return to the ground last.

Contraindications:

1. Pregnant women or those suffering from spondylolisthesis should avoid the pose
2. People suffering from spinal injuries and/or weak back muscles needs to take care while doing this *asana*.

Benefits:

1. Strengthens and increases the flexibility of the spine and vertebral column
2. Opens the chest, shoulders, heart and ribcage
3. Tones and strengthens the entire spinal extensor group of back muscles
4. Stimulates the endocrine system and digestive organs

(Note: Good for kyphosis—modern day repetitive activities can continuously round the back and shoulders and cause the chin to move forward, which overtime can affect the natural curves of the spine. The chest can collapse, the breathing process get affected, and cervical spine pulled out of alignment. Consistently practising of *Bhujangasana* can help diminish this tendency)

Ardha Shalabhasana

The word *Shalabha* means “locust” and *Ardha* means “half” so it is called the half-locust pose. This pose is an easier version of

Shalabhasana performed with one leg at a time. The final posture resembles a feeding locust, head lowered and tail up.



Techniques:

1. Lie down in prone position, with legs together, toes pointing outward, soles upward, hands by the side of the body, with fists closed, forehead on the ground.
2. Bring chin forward and place it on the ground.



3. Raise the right leg slowly without bending at the knee. Do not tilt the pelvis. Maintain the position for awhile.
4. Slowly return to the original position.
5. Repeat the same with the other leg. This is one round of the *Ardha Shalabhasana*.

Things to remember while performing this Asana:

1. Do not tilt your pelvis while raising your legs.
2. Do not bend the leg at the knee while rising.

Contraindications:

1. The clenching of fist should neither be too tight nor too loose.
2. Hernia and cardiac patients should not perform *Ardha Shalabhasana*.
3. Expectant mothers should not perform this *asana*.

Benefits:

1. It helps to improve blood circulation.
2. It firms thighs and hips by dissolving excessfat.
3. Regularly practising *Ardha Shalabhasana* can help control diabetes.
4. *Ardha Shalabhasana* provides relief from constipation.
5. Women with disorders of the ovaries and uterus can benefit from this pose.

Dhanurasana

The name comes from the Sanskrit words *Dhanura* meaning “bow”, and *Asana* meaning “posture”. The final position of this *asana* is like a bow that is why this *asana* is called *dhanurasana*.



Techniques:

1. Lie down in prone position, legs together, and hands straight by the side of the thighs, chin resting on theground.
2. Fold the legs at the knee and raise them towards the thighs. Knees must remain together.
3. Bring your hands backward and hold the toes of each foot with the thumb and fore finger.
4. Raise your legs up and simultaneously raise your head and chest.





5. Holding the toes, pull the legs forwards, and bring the toes near the ear. Gaze in front.
6. While returning to the original position loosen your hands, take legs backward, let the thighs touch the ground, leave the toes and bring the legs and hands to the beginning position.

Things to remember while performing this Asana:

1. Do not try to bring the toes near ears forcefully if it is difficult.
2. Gradually increase flexibility through practice.
3. It is desirable to practice simple *dhanurasana* before one resorts to the above mentioned *dhanurasana*.

Contraindications:

1. Persons suffering from high blood pressure, back pain, hernia, headache, migraine or those who have undergone abdominal surgery should not perform *dhanurasana*.
2. *Dhanurasana* should not be practised during pregnancy and during menstrual cycle.

Benefits:

1. Increases flexibility of spine and back muscles and strengthens nerves.
2. Cures constipation and removes excess fat.
3. Cures dyspepsia, rheumatism and gastro-intestinal disorders.
4. Improves digestion and appetite.

5.3.5 SITTING ASANAS

Ardha Matsyendrasana

This asana is named after Yogi Matsyendranath. The name comes from the Sanskrit words *ardha* meaning “half”, *matsya* meaning “fish”, *eendra* meaning “king”, and *asana* meaning “posture”. The final position of this *asana* is just like Half Lord of the Fish that is why it is called *Ardha Matsyendrasana*. This pose is also known as “Half Spinal Twist Pose”.





Techniques:

1. Sit extending both the legs together in front, hands by the side, palm resting on the ground. Fingers should remain together pointing forward.
2. Fold the right leg at knee. Slowly set the right heel at the perineum.
3. Now fold the left leg and, bringing it from above the right knee, place it beside the right knee on the ground. The left knee should point upwards.
4. Now bring the right hand on the left side of the left knee. The left knee should remain at the left side of the right armpit.
5. Straighten the right hand and hold the toe or ankle of the left leg.
6. Twisting the body to the left side, look backwards, and place the left hand on the right thigh bringing it from the back.
7. Keep your gaze towards the back.
8. While returning to the original position first release the hand from the thigh and turn head forward.
9. Now bring the back to normal position after loosening the righthand.
10. Bring the left leg in original position.
11. Now bring the right leg also in original position.
12. Repeat it, folding the left leg first.

Things to remember while performing this Asana:

1. Some person may experience difficulty in practicing the *asana*. If they cannot hold the toes of the left leg with the right hand, they should hold the ankle. If that also is not possible then hold the knee.
2. While twisting backward twist the back bone.
3. Before practising this *asana*, you could practise *Vakrasana*.

Contraindications:

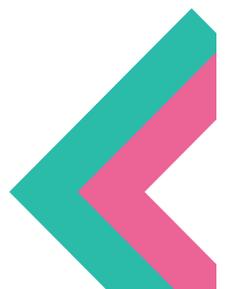
1. Should be avoided during pregnancy and menstruation due to the strong twist in the abdomen.
2. People who have undergone cardiac, abdominal or brain surgeries should not practise this *asana*.
3. Care should be taken by those suffering from peptic ulcers or hernia.
4. Those with severe spinal problems should avoid the *asana* while those with mild slipped disc can benefit from it.

Extension Activity

A number of schools around the world are teaching Yoga. Find out about a school in any other country where Yoga is being taught. Check out the asanas being taught. Write to the school and share your experience of Yoga asanas, and find out how they feel after learning Yoga.

Benefits:

1. It is very useful in constipation and dyspepsia.
2. This *Asana* improves liver efficiency and removes debility of kidneys.
3. It is very useful in diabetes.

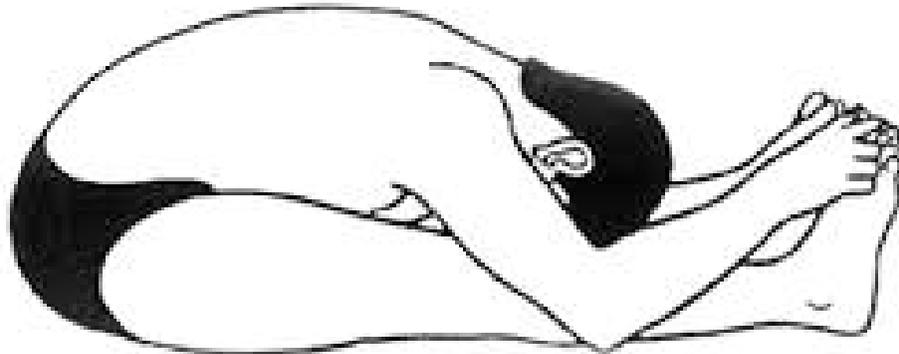




4. It is very beneficial for the muscles of shoulder and back.

Paschimottasana

The word *paschimottasana* comes from the Sanskrit words *paschima* meaning “west” or “back” or “back of body” and *uttana* meaning “intense stretch” or “straight” or “extended” and *asana* meaning “posture”. In this pose one has to sit and stretch/extend the back forward.



Techniques:

1. Sit, stretching both the legs together in front, hands by the side, palms resting on the ground. Fingers should remain together pointing forward.
2. Loosen your back muscles and bend the body forward as far as is possible.
3. Maintaining this posture, loosen your hands and place them where they are comfortable. It would be better if they are put on the thighs.
4. Practise it daily and keep bending forward a little more. Finally, hold the big toes of the legs with your hands, and place forehead on the knees.
5. After a few seconds, raise the head, release your toes and come to the original position.

Things to remember while performing this Asana:

1. Your aim is to hold the toes by bending forward slowly and to place the forehead on the knees therefore do not perform this *asana* in haste.
2. Do not force your body to reach final position on the very first day, if you find it difficult, recognise your limitations, and accordingly increase bending forward daily.
3. Never fold the legs at the knees whether you can bend forward or not.

Contraindications:

Do not do this *asana* in case you have a painful and enlarged liver or spleen, or you have a herniated disc or acute appendicitis.

Benefits:

1. It stretches the muscles of the back from head to the ankles. It contracts the muscles of the anterior part of the body.
2. Improves the flexibility of the lumbar region, the hips and thighs.



3. Massages and tones the abdominal and pelvis region including all organs such as the liver, pancreas, kidneys, spleen and intestines.
4. Improves the blood circulation in the back region and tones the spinal nerves.

Vajrasana

In Sanskrit *Vajra* means “thunderbolt” and the final position of this *asana* looks like thunder bolt that is why this *asana* is called *vajrasana*. This *asana* is also called Adamantine Pose, Diamond Pose, Kneeling Pose, Pelvic Pose.

Note: - This can be considered a meditation posture. While practicing it for meditation, one should close one’s eyes at the final stage.

Techniques:

1. Sit with legs extended together, hands by the side of the body, palm resting on the ground, fingers of the hands together pointing forward.
2. Fold the right leg at the knee and place the foot under the right hip. Sole will remain inside.
3. Similarly folding the left foot, place it under the left hip.
4. Rest your hands on the respective hips.
5. Sit erect, gaze in front or close the eyes.
6. While returning to the original position, bend a little towards right side, take out your left leg and extend it.
7. Similarly extend your right leg and return to the original position.



Things to remember while performing this Asana:

1. While sitting on the bent feet, heels should remain out and toes inside, soles upwards.
2. Do not sit on the heels.

Contraindications:

1. A person suffering from piles should not practise this *asana*.
2. A person suffering from knee joint pain should not practise this *asana*.

Benefits:

1. Strengthens thigh muscles and calf muscles.
2. Gives longevity and strengthens the spine.
3. Calms the mind and brings stability.
4. Cures constipation, acidity, increases digestion process.
5. Cures urinary problems.





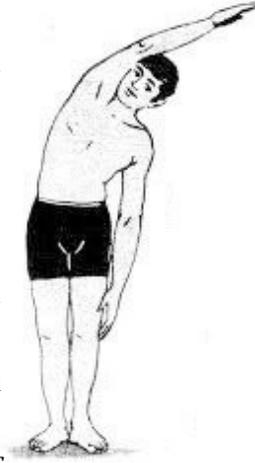
5.3.6 STANDING ASANAS

Ardha Kati Chakrasana

In Sanskrit *Ardha* means “half”, *Kati* means “waist”, *Charka* means “wheel” and *Asana* means “posture”. So, in this *asana* one has to bend the waist laterally to form a half wheel posture.

Techniques:

1. Stand erect with legs together, toes together, hands by the side of the thigh, gaze in front.
2. Slowly raise your right hand and bring it parallel to your shoulder, palm-facing downwards.
3. Start raising your hands upwards and let the arm touch the ear, fingers pointing towards sky.
4. Now start bending laterally towards left side, loosen the left part of your body. The left hand will go down from that high together with the body.
5. After maintaining the position for some time, slowly return to beginning position and stand erect.
6. Repeat with the other side. This forms one complete round of *Ardha Kati Chakrasana*.



Things to remember while performing this Asana:

1. While bending, do not bend forward or backward. Only the upper part of the waist will bend laterally either towards left or right.
2. Do not start bending before your arm is completely straight upward.
3. While practicing this *Asana* gaze in front.

Contraindications:

Those suffering from spondylitis should practise it carefully.

Benefits:

1. Increases flexibility of lateral region.
2. Stretches lateral thoracic muscles and increases blood supply.
3. Increases flexibility of hip joints
4. Reduces excess fat around the waist.
5. Relieves back pain, constipation
6. Good for those who have a flat foot



Trikosana

The name comes from the Sanskrit words *trikona* meaning “triangle” and *asana* meaning “posture”.



Techniques:

1. Stand erect with legs together, hands by the side of the thighs.
2. Keep two or two and half feet distance between the two legs and raise both the hands towards each side so as to make a parallel line with shoulder.
3. Slowly bending towards right side, touch the toe of the left leg with the forefinger and middle finger of the right hand and raise the left hand towards the sky.
4. Gaze up towards the left hand.
5. After maintaining the position for some time, slowly return to the beginning position.
6. Now start bending slowly towards left side and touch the toe of right leg with left hand and keep right hand pointing towards sky.
7. Gaze should rise towards raised hand.
8. While returning back to the original position, bring down your raised hand, leave the toes and stand erect with legs together.

Things to remember while performing this Asana:

1. Do not bend legs at the knees.
2. Judge your limitations.

Contraindications:

Avoid this pose if you are suffering from migraine, diarrhoea, low or high blood pressure, or neck and back injuries (those with high blood pressure could avoid raising their hand overhead, as this may further raise the blood pressure).

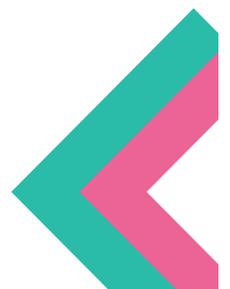
Benefits:

1. Strengthens the legs, knees, ankles, arms, and chest
2. Stretches and opens the hips, groins, ham strings, and calves; shoulders, chest, and spine
3. Increases mental and physical equilibrium
4. Helps improve digestion
5. Reduces anxiety, stress, back pain and sciatica.

Extension Activity

Perform any two *Asanas* for 8 consecutive days and write 3 changes which take place in you after 8th day.

Name of the <i>Asana</i>	Change 1	Change 2	Change 3





5.3.7 INTRODUCTION TO PRANAYAMA

Pranayama forms an important component of Yoga. *Pranayama* is a science which helps to regulate vital energies through the regulation of breathing. The main purpose of *Pranayama* is to gain control over the Autonomous Nervous System and improve mental functions. *Pranayama* involves slow deep inspiration (*Puraka*), holding breath (*Kumbhaka*) and near complete expiration (*Rechaka*). The flow of *Prana* or vital energy to all the vital parts of the body is regulated by these breath-regulating practices. Carrying out *pranayama* regularly can modulate the sensitivity of chemo receptors and also calms and quiets the mind.

Different types of *Pranayama* mentioned in the Hatha Yoga Texts are listed below.

- i) *Suryabhedana*,
- ii) *Ujjayi*,
- iii) *Sheetkari*,
- iv) *Sheetali*,
- v) *Bhramari*,
- vi) *Bhastrika*,
- vii) *Moorcha*,
- viii) *Palvani*

Nadishodhan, *Suryabhedan*, *Ujjayi*, *Sheetli*, *Bhramari*, *Bhastrika* *Pranayama* are important *Pranayama* to be practised.

Before doing the above *Pranayama*, one must follow the essentials for practicing *Pranayama* as stated below.

1. **External environment:** Any place that is well-ventilated and free from noise, insects and flies should be preferred to practise *Pranayama*.
2. **Right season to begin the practice of *Pranayama*:** One should start to practise *Pranayama* in Spring season i. e. March-April and Autumn season i. e. Sept-Oct. One who is already engaged in the practice of *Pranayama* should continue its practice in all seasons.
3. **Right time:** Morning is the best suited times to practise *Pranayama*.
4. **Seat or *Asana*:** The seat should be soft, thick and comfortable.
5. ***Asana*:** *Asanas* such as *Padmasana*, *Siddhasana*, *Vajrasana* and *Sukhasana* are considered the most suitable postures for *Pranayama*.

Before doing the above *Pranayama*, one must practise *Nadi-shodhana* *Pranayama* in the beginning.

Nadi-Shodhana* *Pranayama

Nadi means “channel” and refers to the energy pathways through which *prana* flows. *Shodhana* means “cleansing”. So *Nadi-Shodhana* means





cleansing of the channel. *Pranayama* is practised only after purifying the *Nadis*. *Nadis* can be purified by practising *Anulom-Vilom Pranayama*. A common learner must begin *Pranayama* with *Anulom-Vilom*.

Techniques:

1. Sit in any comfortable meditative *asana*.
2. Keep the head and spine straight and close your eyes.
3. Place right hand in *jnana* mudra and close the right nostril with the right thumb.
4. Inhale through the left nostril for 5 counts.
5. After 5 counts of breath release the pressure of thumb from the right nostril and close the left nostril with the ring finger and exhale through the right nostril for 10 counts, keeping the respiration rate slow, deep and silent.
6. Then, inhale through the right nostril for 5 counts. Exhale. Practise 5 rounds or for 3 to 5 minutes, making sure that no sound is produced as the air passes through the nostrils.

Benefits:

1. Calms and steadies the mind, improves focus and concentration. Balances left and right hemispheres of the brain.
2. Strengthens the immune system and manages hypertension.
3. Provides sufficient oxygen for the functioning of every cell in the body.
4. Removes waste products such as carbon dioxide and other toxic gases from the body, so that they do not remain in the blood stream.

Surya Bhedhana Pranayama

Surya means the “sun” and, according to Yoga the *Surya Nadi* is the right nostril. In this type of *Pranayama* you use your right nostril for inhalation and the left one for exhalation. The same procedure is repeated in each round.

Techniques:

1. Sit in any meditative posture e.g. *Padasana*, *Sukhasana* etc. and close your eyes.
2. Keep the left nostril closed with your middle and ring finger of the right hand.
3. Slowly inhale without making any sound through the right nostril as long as you can do it comfortably.
4. Then bring your hand down and place it on the knees and retain the breath by firmly pressing the chin against the chest (*Jalandhara Bandha*).
5. Simultaneously contract your rectum muscles (*Mool bandh*). This point cannot be reached at the very outset. You will have to increase the period of *Kumbhaka* (retaining breath) gradually.
6. This constitutes *Surya Bhedhana Pranayama*.
7. Exhale very slowly without making any sound through the left nostril by closing





the right nostril followed by releasing the *Moolbandh*, *Uddiyanbandh* and *Jalandhar bandh*.

8. Relax and come back to original position. Do this 3 to 5 times.

Benefits:

1. This *Pranayama* should be performed repeatedly, as it purifies the brain and destroys the intestinal worms and diseases arising from excess of wind (*Vayu*).
2. It helps to manage rhinitis and various sorts of neuralgia.
3. The worms that are found in the frontal sinuses are removed.
4. It is good for persons suffering from low blood pressure.

Ujjayi Pranayama

Ujjayi Pranayama is also called “ocean breath” or “warrior’s breath.” This *Pranayama* stretches and warms the breath before it enters into the lungs. This helps in generating a heat that is effective in getting rid of the toxins in the body. Both the inhalations and exhalations are performed through the nose. The breath is directed to the back of the throat while the muscles are constricted, causing a hissing sound like the sound of an ocean. As the passage of the throat is made narrower the air speed is increased.



Techniques:

1. Sit in any meditative posture and close the mouth.
2. Inhale slowly through both the nostrils in a smooth, uniform manner.
3. Retain the breath as long as you can do so comfortably and then exhale slowly through the left nostril by closing the right nostril with your right thumb.
4. Expand the chest when you inhale. During inhalation a peculiar hissing sound is produced owing to the partial closing of glottis. The sound produced during inhalation should be of a mild and uniform pitch. It should be continuously practised.

Benefits:

1. Removes the heat from the head.
2. The practitioner’s voice becomes clear and melodious.
3. Removes phlegm in the throat and all sorts of pulmonary diseases are managed effectively.
4. It is good for asthma patients and also for people suffering from respiratory disorders.



Sheetali Pranayama

Sheetali is a Sanskrit word meaning “cooling”. It is a breathing technique which cools the body and mind.



In this *Pranayama*, air is slowly inhaled through the mouth and exhaled through both nostrils. This cools the whole body and at the same time relaxes the central nervous system.

Techniques:

1. Sit in *Padmasana* or any other comfortable position.
2. Place your hands on the knees in *Gyan Mudra* and close your eyes gently.
3. Open your mouth, bring the tongue outside the mouth and form a cylindrical shape by bending both the extreme sides of the tongue longitudinally and inhale. While inhaling, the air should pass through the tongue.
4. Close your mouth and retain the air as long as you can with pressing the chin against the chest (chin lock), simultaneously pull your rectum muscles (anal lock).
5. Then release chin-lock and anal lock and exhale slowly through the nostrils.

Benefits:

1. Beneficial in diseases pertaining to throat and spleen etc.
2. Cures indigestion
3. Helps in controlling thirst and hunger.
4. Lowers blood pressure
5. Beneficial in diseases caused by imbalance of *pitta dosha* (heat)
6. Purifies blood.

Sheetkari Pranayama

Sheetkari Pranayama is a breathing technique which involves hissing leading to a cooling effect upon the whole body.

Techniques:

1. Sit upright in a comfortable posture, keeping the head, neck, and spine erect.
2. Place the hands in *Gyana Mudra*.
3. Open the lips and keep the teeth together.
4. Lightly press the tip of the tongue against the lower front teeth.
5. Inhale through the mouth over the tongue with a kind of hissing sound.
6. After filling the lungs completely, close the mouth and exhale through both nostrils without retention.
7. Repeat five to ten times.



Benefits:

1. It quenches thirst and appeases hunger. It cools the body system.
2. It destroys *gulma* (chronic dyspepsia), fever, indigestion, bilious disorders,





phlegm.

3. It is good for health of teeth and the gums.
4. When you are caught up in a jungle or any place where you cannot get water, if you feel thirsty practise this *pranayama*. You will be at once relieved of thirst.

Precautions: Those who are suffering from cold, cough or tonsils should avoid this *pranayama*.

Bhramari Pranayama

The word *Bhramari* means a black bee. While practicing this *Pranayama*, the sound produced resembles the buzzing of a black bee.

Techniques:

1. Sit in the *Padmasana* position or any other comfortable sitting position.
2. Close your eyes, lips and ears and inhale deeply and exhale making sound as black bee does.
3. In order to get benefits from this *Pranayama* you should close both ears with your thumbs and exhale making sound of the bee.



Benefits:

1. *Bhramari* delights the mind.
2. It is beneficial for pregnant women as preparation for labour.
3. Improves blood circulation to the brain, and clears the ears, eyes, nose and throat.

Bhastrika Pranayama

The meaning of the Sanskrit word *Bhastrikais* “bellows”, thus the *Bhastrika Pranayama* is called the “bellows breath”. This form of breathing increases the flow of air into the body to produce inner heat at the physical and subtle level.

Techniques:

1. Sit in any comfortable posture either *Padmasana* or *Vajrasana* and keep the body, neck and head erect, with mouth closed.
2. Close the right nostril and respire rapidly 20 times through the left nostril.
3. Repeat 20 rapid respirations through the right nostrils
4. Then perform the 20 rapid respirations through both nostrils.
5. Make sure that the inhalation and exhalation are rhythmic and of equal duration.
6. The nostrils should not expand and contract during the practice, but should be kept still.





Benefits:

1. This *asana* stimulates the metabolism and encourages better immunity. The increase in appetite and improved digestion encourages and strengthens the immunity standards.
2. It destroys phlegm, and cures diseases of the nose and chest.
3. Relieves inflammation of the throat
4. Detoxifies the lungs and cures asthma etc.

Extension Activity

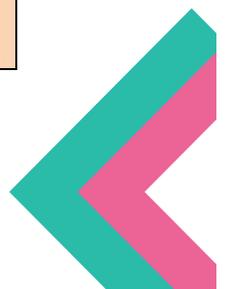
Perform any ONE *Pranayama* technique for 8 consecutive days and write 3 changes which take place in you after 8th day.

Name of the <i>Pranayama</i>	Change 1	Change 2	Change 3

Art Integration – MAKING YOUR OWN YouTube/TV SHOW

Would you like to make your own instructional Yoga Show? Well why not do it? It's not very difficult and is a lot of fun.

1. The first step is, of course, the format of the show. You have to set yourself apart from the others. So, decide on your target audience. You could focus on teaching seniors only, or you could combine your classes with hip-hop music.
2. Choose a name for your Show. It should be something memorable, and relevant. Don't copy any other show's name. Make the name of your Show unique.
3. Get all the things you need. A camera for recording the Yoga Asanas, a recorder for voice over giving instructions, suitable music, a mat.
4. Come up with material for the show. Decide upon the Asanas you wish to demonstrate. They should be interesting, and at the same time not so complex that people are unable to follow them.
5. Choose a crew. You will need
 - Someone to operate the camera(s).
 - A Host and (or) a co-Host who give the instructions/voice-over for the Asanas.
6. Two or three persons demonstrating the Asanas. They must be adept at what they do to avoid any fiascos.
7. Create a script and proofread it.
8. Select an awesome set. Don't have your show with bare white walls in the background. Create an awesome set that is unique.
9. Plan out segments. Start planning out unique segments for your web show. How many Asanas would you like to include? Would you like to take a break? Or more than one break between the Asanas?
10. Rehearse the asanas, voice-over, music and recording well. Start rehearsing.





Rehearse at least two times before you shoot your show. You might want to use cue cards.

11. Shoot your TV/YouTube show. Have a great time shooting your first episode. Relax and have fun. If you or any of the stars make a mistake, start over. You can't do a live show on YouTube or TV, so shoot your show at least one week before you're uploading it on YouTube.
12. Make any necessary edits to the show, consider using Windows Movie Maker for this job.

5.3.8 MEDITATION (*DHYANA*)

Meditation (*Dhyana*) is a state of pure consciousness, which transcends the inner and outer senses. Meditation can be an effective form of stress reduction and has the potential to improve the quality of life and decrease health care costs. Meditation involves achieving a state of "thoughtless awareness" in which the excessive stress producing activity of the mind is neutralized without reducing alertness and effectiveness. Authentic meditation enables one to focus on the present moment, rather than dwell on the unchangeable past or undetermined future.

Meditation is the art of focusing 100% of your attention in one area. The practice comes with a myriad of well-publicized health benefits including increased concentration, decreased anxiety, and a general feeling of happiness. Although a great number of people try meditation at some point in their lives, only a small percentage actually carry on with it for the long-term. This is unfortunate, and a possible reason is that many beginners do not begin with a mindset needed to make the practice sustainable. Meditation is an absolutely wonderful practice, but can be very difficult in the beginning.

5.3.9 TYPES OF MEDITATION

1. **Mindfulness Meditation:** Mindfulness meditation, is about being aware of the sounds and activities happening around you. Brooding over past events, or thinking about future possibilities may lead to anxiety. In such situations, mindfulness meditation, the most widely practised type of meditation, can be helpful in calming the mind. It brings you and your thoughts into the present, focusing on emotions, thoughts, and sensations that you're experiencing "in the now." While it can be initially difficult to quiet your thoughts, with time and practice you can experience the benefits of mindfulness meditation, including reducing stress and anxiety. It is almost a flow-like type of meditation, because you just let your mind be fluid and flow from one thought to the next, not really focusing on one particular thing. For instance, if you live in a noisy city, you don't have to block out the outside sirens and screaming children, you let your mind be aware of the sounds without becoming too focused.
2. **Spiritual Meditation:** This type of meditation is for those who regularly participate in prayer, as it is based on communicating with God. Just like the other styles, you must become calm and quiet and then begin to focus on a



question or problem you might have. This style of meditation can be not only relaxing, but rewarding aswell.

3. **Focused Meditation:** If the idea of clearing your mind of all thoughts stresses you out, focused meditation is great because you can focus on a sound, object, mantra, or thought. The key here is to just focus on one of these things and stay committed to that one thought or object. This is when relaxation music comes in handy. Even though you are essentially using your mind, you will be amazed at how rejuvenated you feel afterwards because in our day to day lives, our mind can wander off to ten different places at the same time!
4. **Movement Meditation:** Movement meditation may seem intimidating, but if you are by yourself and you really get into it, it can be extremely uplifting and relaxing at the same time. Sitting with your eyes closed, simply focus on your breath and try out different gentle, repetitive flowing movements. Rather than focussing on a sound, object, or thought, just turn your attention to your movement. You may find a slow left and rights waying motion to be therapeutic, or you could try moving your entire upper body in a slow circularmotion.
5. **Mantra Meditation:** Mantras are words that are chanted loudly during meditation. It may seem odd to be making loud noises during a meditation session, but it is actually the sounds that become the object being focused on. In Yoga, the mantra “Om” is regularly used since it delivers a deep vibration that makes it easy for the mind to concentrate on that particular sound.

5.3.10 BENEFITS OF MEDITATION (DHYANA)

- Produces a feeling of tranquillity and freedom in daily life.
- Reduces psychological disorders like anxiety, tiredness and depression etc.
- Provides relief from aches and pains, such as headache, joint pains etc.,
- Leads to beneficial effects in problems such as in insomnia.
- Encourages peace through infinite patience, and increase in affection and sympathy for others.
- Leads to growth in devotion and belief in the SupremeBeing.
- Brings about a stronger urge and aptitude for service and cooperation in social life.

Extension Activity			
Perform any type Meditation for 8 consecutive days and write 3 changes which take place in you after 8th day.			
Name of the <i>Pranayama</i>	Change 1	Change 2	Change 3





5.3.11 TYPES OF YOGIC KRIYAS (SHAT KRIYAS)

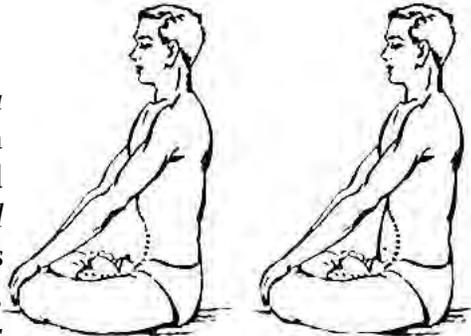
According to *tridosha* theory (one of the fundamental theories of Indian medicine), the human body is made up of three basic constituents called **tridoshas**, which are *Vata* (mechanical functional constituent of the body), *Pitta* (chemical functional constituent of the body) and *Kapha* (material functional constituent of the body). Any imbalance in the constituents in the body leads to diseases. Yoga recommends six purification processes to get and keep the equilibrium of these *tridoshas*. They are called as **Shat kriyas** (six purification processes). They are

1. *Kaphalabhati* – Purification of frontal lobes and lungs.
2. *Trataka* – gazing without blinking.
3. *Neti*– Nasal cleansing.
4. *Dhauti*– Cleaning of digestive tract, stomach.
5. *Nauli*– Abdominal massage.
6. *Basti* – Colon cleaning.

These six cleansing processes are excellent practices designed to purify the whole body, and to get good health.

Kapalabhati

Kapalabhati is an important part of *Shat karma* (sometimes known as **Shatkriya**), the yogic system of body cleansing techniques. The word *kapalabhati* is made up of two words: *kapal* meaning “skull” (here skull includes all the organs under the skull too) and *bhati* meaning “shining, illuminating.” Due to the process, the organs under the skull mainly the brain and the small brain are influenced in a positive manner. Hence the word is used in that way. It is intended mainly to the cleaning of the cranial sinuses but has many other effects, according to the **Gherand Samhita** and other sources



Techniques:

1. Sit comfortably in an upright posture and rest your hands on your lower belly.
2. Draw your navel to your spine in a quick motion, forcefully expelling all the air from your lungs. The primary movement is from your diaphragm.
3. Allow your lungs to fill naturally, with no effort.
4. Perform this cycle ten times, then allow your breathing to return to normal and observe the sensations in your body. Repeat these cycles of ten movements three to four times.

Contraindication: *Kapalabhati* should not be practised by pregnant women.

Benefits:

1. Effective in reducing weight by increasing the metabolic rate.
2. Clears the *nadis* (subtle energy channels).



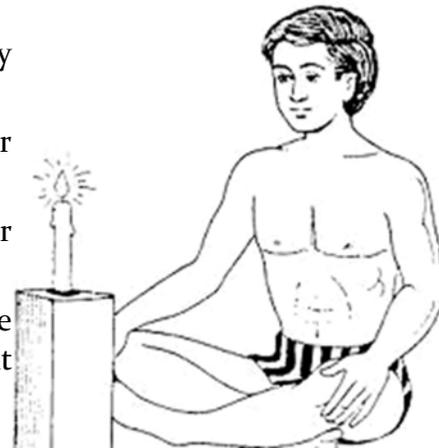
3. Stimulates abdominal organs and thus is extremely useful for those suffering from diabetes.
4. Improves blood circulation and adds radiance to the face.
5. Improves digestive tract functioning, absorption and assimilation of nutrients.
6. Calms and uplifts the mind.

Trataka

Tratakais a Sanskrit word meaning “to look, or to gaze”. *Tratakais* the practice of staring at some external object. This fixed gazing is a method of meditation which involves concentrating on a single point such as a small object, black dot or candle flame. It is used in Yoga as a way of developing concentration, strengthening the eyes, and stimulating the *ajnachakra*.

Techniques:

1. Sit on a floor-mat in *sukhasana*, or in any comfortable position, or even on a chair.
2. Sit calm lyand breath enormally with your waist, back and neck erect.
3. Keep a lighted candle or oil lamp on a stool or table at a distance of 2 feet from you.
4. Remember, it should be at eye level. Please ensure there is no breeze or wind that might the make the flame flutter.
5. Now, fix your gaze upon the flame.
6. Continue to gaze non-stop, without blinking until you feel the strain in your eyes and they start to water.
7. Once this happens, close your eyes.
8. Now rub the palms of both hands vigorously, until warm, and place the mon your eyes.
9. Visualize the flame at the centre of your eye brows.



Benefits:

1. Improves eyesight and vision.
2. Improves concentration, intelligence and memory.
3. Enhances self-confidence, patience and will power.
4. Calms the mind and provides inner peace and silence.
5. Brings greater clarity in mind and improves decision-making ability.

Neti

It is one of the *shatkarma* or cleansing techniques which involves cleaning of the nasal passages or sinus irrigation. There are two types of *netione* is *jalaneti* and the other is *sutraneti*.





- a) **Jalaneti:** *Jalaneti* is an ancient Indian yoga technique, meaning literally “water cleansing”, where the practitioner rinses out the nasal cavity with salted water using a *netipot*. The technique is starting to be recognized by science under the term “nasal irrigation”.

Techniques:

1. Mix one cup of warm water with half a teaspoon of salt, to make a solution. It is preferable to use pure *neti* salt, for better results
2. Pour the salt and water solution into the *Neti* Pot
3. Place the spout into one of the nostrils. The cone needs to be placed into the nostril and sealed inside thoroughly, with the help of a few gentle wists
4. Let the water to flow right into the nostril and then tilt your head on to one side, so that the water can flow out through the other nostril
5. During this procedure, you need to ensure that you breathe through your mouth. Moreover, you need to make sure that you neither sniff, not swallow while the water is flowing between the nostrils, or else you could experience a severe bout of coughing

Contraindications:

1. If you are suffering from persistent nose bleeding you should not do *Jala Neti*.
2. *Jala Neti* should be practised under the guidance of expert.

Benefits:

1. Reduces allergy problems.
 2. Improves breathing.
 3. Eliminates post-nasal drip.
 4. Cures sinusitis or chronic sinus infections.
 5. Improves resistance to common colds. (Common colds are either avoided or the duration greatly shortened.)
 6. Improves sense of smell.
- b) **SutraNeti:** *Sutraneti* is a yogic technique to clean the nasal passages in a special thread. In *Sutra Neti*, a waxed cotton string is inserted into the nose and then pulled out from the mouth. Then both ends are held with the hands and nasal cleaning is done by moving the ends of the string to and fro. Now a days, a rubber catheter is used instead of the string as it is easily available in any medical store.

Techniques:

1. Place a rubber string in front of your left nostril, holding it horizontally
2. Push this rubber string along the side of your nose, till you can feel it touch the back of your throat
3. Insert your middle finger and index finger through the mouth to catch the tip of the string at the back





of the throat

4. Using one hand pull the string partially out of your mouth gently while still holding the other tip too
5. Move the string in a gentle massaging motion so that it cleans the nasal passage
6. While removing the string, pull it out of the nose
7. Repeat the exercise with the other nostril

Contraindications:

1. *Sutra neti* should be practised under the guidance of experienced yoga teacher.
2. Try *sutra neti* only after you have mastered the *jalaneti*.
3. Do not use force to pass the catheter through the nose.

Benefits:

1. It helps to maintain nasal hygiene by removing the dirt and bacteria trapped in the mucus in the nostrils.
2. It de-sensitizes the sensitive tissues inside the nose, which can alleviate rhinitis, allergies and some types of asthma.
3. Several health problems like sinusitis, migraine, headaches, can be reduced by doing *Neti*.

Dhauti

Dhauti is an important part of the *Shatkarma*, the yogic system of body cleansing techniques. It is a series of yogic practices that cleanses the stomach and digestive system. It is intended mainly for the cleaning of the digestive tract over its full length, but it also helps clean the respiratory tract, external ears and eyes. These exercises should not be performed by persons suffering from

- ulcers
- hernias
- heart disease
- hypertension

Benefits of Dhauti:

1. *Dhauti* cleanses the complete body including the respiratory system and the entire digestive system.
2. It eliminates excess bile, stomach acids, mucus and toxins inside the body and restores it to its naturally balanced state.
3. It can benefit those suffering from constipation, indigestion, acidity, heartburn, dyspepsia, biliary disorders and disorders of the stomach. Broadly speaking there are three types of *dhautis* that are prominently practised.
 - a) **Vamana Dhauti:** In Sanskrit, *Vamana* means





“middle” and *Dhauti* means “purification”. In the yogi literature, this technique is known also as *KUNJALA*, or the gesture of the elephant. Using this yogic cleansing technique, you can clean your upper digestive and respiratory system

Techniques:

1. Add 1 tablespoon of salt to 1 litre of lukewarm water and stir it till all the salt has dissolved.
2. Drink the saltwater as quickly as possible; gulping it down till you feel you cannot have anymore.
3. Lean forward keeping your torso horizontal.
4. Insert your middle and index fingers as far back into your throat as possible and vomit out all the contents of your stomach.
5. Continue to insert your fingers into the back of your throat till there is no more water left to vomit.
6. Once done, lie down in the *Shavasana* (Corpse Pose) and rest. You are done.

Precautions:

1. Gulp, rather than sip, the water, else the technique will not work.
 2. You have to drink enough water for the technique to work.
 3. Keep your body relaxed at all times. This becomes easier with practice.
- b) **DandaDhauti:** One of the cleansing techniques (*shatkarmas*), used to clean the oesophagus with a “stick” or *danda*. This kriya helps to clean the windpipe, oesophagus and stomach by inserting a rubber tube into the throat all the way down to the stomach. The tube should be cleaned and disinfected before use.

Techniques:

1. Add 1 tablespoon of salt to 1 litre of lukewarm water and stir it till all the salt has dissolved.
2. Drink the salt water as quickly as possible; gulping it down till you feel you cannot have anymore.
3. Insert the rubber tube gently into your throat and swallow it.
4. Continue swallowing till the end of the tube reaches the stomach.
5. Bend forward and allow the salt water to be siphoned off.
6. Remove the tube slowly after all the salt water has come out.

Precautions:

1. If you are unable to swallow the tube then you should stick to performing the *Vamandhauti*.
 2. Make sure you have a professional to help you through the procedure in order to avoid any unwanted situations.
- c) **Vastradhauti:** *Vastra* is the Sanskrit word for “cloth”. It is a yogic detoxification technique in which a specially





prepared cloth is swallowed and removed after ten minutes, in order to remove mucus from the stomach

Techniques:

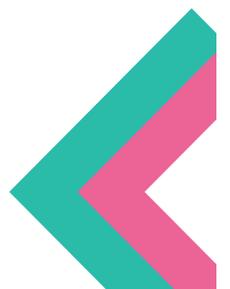
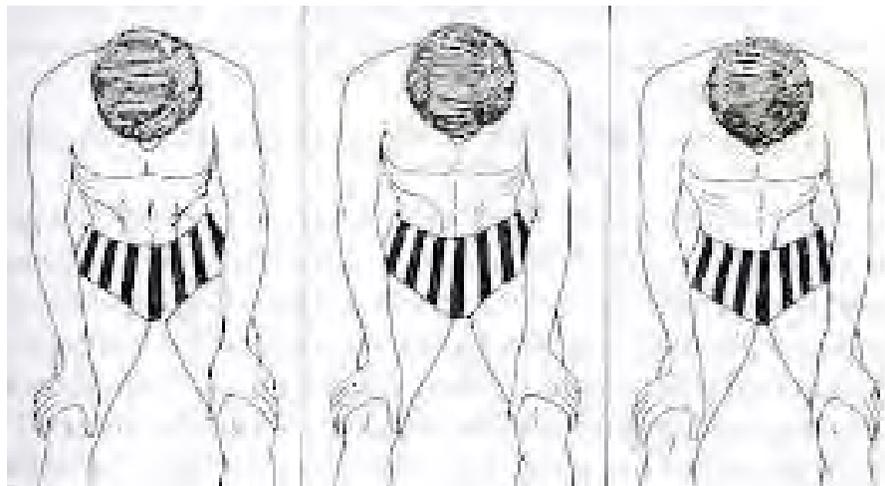
1. Keep ready a strip of muslin cloth. It should be about 20 feet long and 3 inches wide and should be washed and disinfected prior touse.
2. Start by slowly inserting the muslin cloth into your throat and swallowing it.
3. Initially you can try swallowing about 1 foot of the cloth and gradually increase it till you can swallow almost all of the cloth.
4. Keeps the cloth in your throat for a few seconds increasing the period every day.
5. When the cloth sticks in your throat, sip some warm water.
6. Stop swallowing when about six inches of the cloth are left out side.
7. Slowly withdraw the cloth.

Precautions:

1. Avoid using synthetic cloth for the *neti*.
2. Ensure that the cloth is kept neatly trimmed and that there are no frayededges.
3. Do not swallow the cloth completely.
4. Ensure that the cloth is narrowerth any our tongue to prevent it from folding while being swallowed.
5. Wash and disinfect the cloth immediately afte ruse.
6. Make sure that if you are a beginner, you have a trained person as a guide to help you in the process.

Nauli

*Nauli*is one of the *Kriyas* or *Shatkarma*from Yoga. The exercise is claimed to serve the cleaning of the abdominal region - digestive organs, small intestine and is based on a massage of the internal belly organs by a circular movement of the abdominal muscles. *Nauli* is an exercise of the classical *Hatha Yoga* but is not taught of tenin yoga schools. *Nauli* is considered to be a difficult exercise, and one which can be learned only with perseverance and patience.





There are four different variations, which are gradually learned one after another:

1. *Madhyananauli*: the isolated contraction of the central muscles of the abdomen.
2. *Vamanauli*: the isolated contraction of the left part of the central muscles of the abdomen.
3. *Daksinanauli*: the isolated contraction of the right part of the central muscles of the abdomen.
4. *Naulikriya*: the circular movement of the central muscles of the abdomen.

Techniques:

1. Stand upright with legs slightly apart.
2. Inhale deeply through the nose.
3. Exhale through the mouth and bend forward, keeping the back straight.
4. Bend the knees slightly and place both hands on the thighs.
5. Draw in the muscles along the sides of the abdomen and at the same time contract the muscles that run parallel to each other in the centre of the abdomen (Rectusabdominus). In this way a strong suction effect is produced within the whole abdominal cavity.
6. When the impulse to inhale occurs, stand upright again and inhale. This process can be repeated 5-6 times, or for as long as there is still power in the abdominal muscles.
7. After the *kriya* is practised for some time, it is possible to move the Rectusabdominus from right to left, then left to right and also later, to move these muscles in a circular motion. **Precautions:** *Nauli Kriya* must only be practised on an empty stomach. It must not be performed during pregnancy, menstruation or after any abdominal operation. Consult a doctor before practising this technique if you suffer any disease of the intestine or pancreas.

Benefits:

1. *Nauli* strengthens the abdominal muscles and massages the intestines and organs of the lower abdomen.
2. It regulates blood pressure and has a preventative effect against diabetes.
3. It is helpful for heartburn and skin diseases (acne).
4. It improves the digestive system.

Basti

Basti is an important part of *Shatkarma* (sometimes known as *Shatkriya*), the yogic system of body cleansing techniques. It is intended mainly to clean the lower abdomen, especially the colon. The *Hatha Yoga* and other sources usually attribute to it many beneficial effects. There are basically two techniques to perform *Basti*:

- *Sthalabasti* (also known as *Sushkabasti* or *Vatabasti*), cleans the colon by sucking air into the body without the help of any catheter or tube.
- *Jalabasti* (also known as *Vatibasti*) cleans the colon by sucking water into the anus. It is allowed the use of a catheter tube.



I. Tick the correct option.

1. To stabilize and focus the mind on one object, image, sound or idea is called
 - i. *Dharana*
 - ii. *Dhyana*
 - iii. *Samadhi*
 - iv. *Pratyahara*
2. Which of the following *Asana* can be practised immediately after food?
 - i. *Siddhasana*
 - ii. *Simhasana*
 - iii. *Swastikasana*
 - iv. *Vajrasana*
3. Withdrawal of senses from the sensory objects is
 - i. *Dharana*
 - ii. *Dhyana*
 - iii. *Pratyahara*
 - iv. *Samadhi*
4. Which of the following *Asana* is good for thyroid gland?
 - i. *Dhanurasana*
 - ii. *Paschimottanasana*
 - iii. *Chakrasana*
 - iv. *Sarvangasana*
5. is a very good *Kriya* to get rid of nasal allergy?
 - i. *Vastradhauti*
 - ii. *Dandadhauti*
 - iii. *Neti*
 - iv. *Kapalbhati*
6. *Suryanamaskar* is a well-devised combination of and breathing.
 - i. *Pranayama*
 - ii. *Dhyana*
 - iii. *Bandha*
 - iv. *Asana*
7. Which of these is a *Kriya*?
 - i. *Kapalbhati*
 - ii. *Bhastrika*
 - iii. *Ujjayi*
 - iv. *Nadishodhana*



**II. Answer the following questions briefly.**

1. What is meditation?
2. Define yogic *kriyas*.
3. List five *Pranayam* techniques.
4. How do yogic *asanas* help in developing neuro-muscular coordination?

III. Answer the following questions in 150-200 words.

1. List the importance of Yogic *Asanas* in school.
2. What is significance of *Pranayam*?
3. What is the effect of *Kriyas* on our body?
4. How does meditation help in relaxing the mind?
5. What is the role of yoga to produce an effective citizen for the country?

5.4.1 YOGA FOR CONCENTRATION AND RELATED ASANAS

We all know about the effective health benefits of Yoga, but the most important benefits to accrue from Yoga is that it works on changing the working of our mind. Yoga helps in improving our concentration and focus by calming the mind and getting rid of deflecting thoughts.

Here are seven easy yet effective yoga *asanas* one needs to try to boost concentration and jump start your brain.

Sukhasana

Sukhasana is one of the most basic yoga *asanas* and is suitable for yogis of all levels. The name is derived from the Sanskrit, *sukha*, meaning “pleasure” or “comfort,” and *asana*, meaning “pose.”

**Techniques**

1. Sit on the floor with legs stretched out.
2. Fold the left leg and tug it inside the right thigh.
3. Then fold the right leg and tug in inside the left thigh.
4. Keep the hands on the knees.
5. Sit erect with spine straight.
6. Relax your whole body and breathe normally.
7. Maintain this position for as long as comfortable.

Things to remember while performing the *Asana*:

1. Despite its name, *sukhasana* doesn't always feel easy for a lot of people.
2. To achieve full length of the spine, one must first master the balance at the base.



Contraindications

1. Individuals who are experiencing back ache shouldn't stay in this position for more than 5 mins.
2. Sukhasana should be avoided by individuals who have undergone knee replacement surgery.
3. Individuals suffering from problems related to the spine or spinal disc should avoid this *asana*.

Benefits and limitations

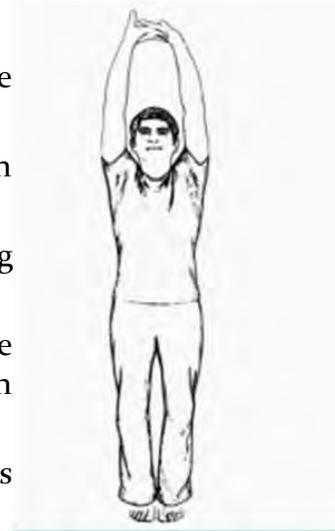
1. Strengthens muscle of the back and improves body posture.
2. Reduces stress and anxiety.
3. Helps in improving concentration for effective meditation.

Tadasana

In Sanskrit the word *tada* means "mountain" and *asana* means "posture". Since one has to maintain the final position of this *asana* like that of mountain therefore it is called *tadasana*. This *asana* is also called *Samasthiti*.

Techniques:

1. Stand straight, legs together, hands by the side of the thighs, gaze in front.
2. Raise your arms straight in front, your palms facing each other.
3. Bring the hands up straight towards sky, fingers pointing upwards.
4. Now slowly raise your heels and stand on toes. Raise your heels as much as you can. Stretch body up as much as possible.
5. While returning to the original position, bring your heels to the ground first.
6. Slowly bring your arms down.



Things to remember while performing this Asana:

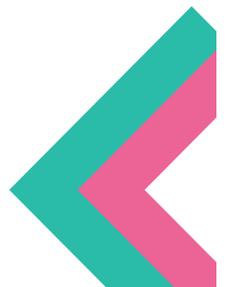
1. This is a balancing pose.
2. Do not make haste, otherwise you will lose your balance or suffer a jerk.
3. In the beginning, legs can be kept apart.

Contraindications:

Person suffering from blood circulation problems such as faulty valves and low blood pressure should not perform this *asana*.

Benefits and limitations:

1. This *asana* improves height.
2. Spine becomes flexible.





3. Stabilizes the body and mind and promotes emotional balance and grounding

Padmasana

Padmasana is a term derived from the Sanskrit word *padma* meaning lotus, and *asana* meaning posture. So, it is popularly known as *lotus pad* or *lotus throne* and it is used for meditation.

Techniques:

1. Sit on the ground with the legs extended in front.
2. Place your left foot on the right thigh and right foot on the left thigh.
3. Place the heels in such a way that they are close to the navel.
4. Place your hands on your knees. Join the index finger with the thumb of both hands.
5. Close your eyes.



Benefits:

1. Stretches the ankles and knees and keeps joints and ligaments flexible.
2. Calms the brain and restores energy levels.
3. Increases awareness and attentiveness.
4. Keeps the spine straight and helps to develop good posture.
5. Eases menstrual discomfort and sciatica.

Shashankasana

Shashankasana is a simple dynamic forward-bending posture that provides a gentle stretch while relaxing and energizing the body and mind. The name comes from the Sanskrit *shash*, meaning “hare” or “rabbit” and *ank* meaning “lap”; and *asana*, which means “posture.”



Techniques

1. Sit in *Vajrasana*.
2. Straighten the back.
3. Inhale, and slowly raise the arms, keeping them straight.
4. Now, exhale and bend forwards.



5. The arms, trunk and head should remain in one line.
6. The forehead and arms should rest on the floor in front of the knees.
7. Relax the whole body.
8. Inhale and exhale slowly.
9. Inhale and raise your arms up and slowly bring them down.

Things to remember while performing this asana

1. As you take your head down see that you don't raise your hips off the floor.
2. Avoid this *asana* if you feel dizzy or have a backache or pain in the legs

Contraindications

Shashankasana is not to be performed by people with very high blood pressure, or those who suffer from a slipped disc or vertigo.

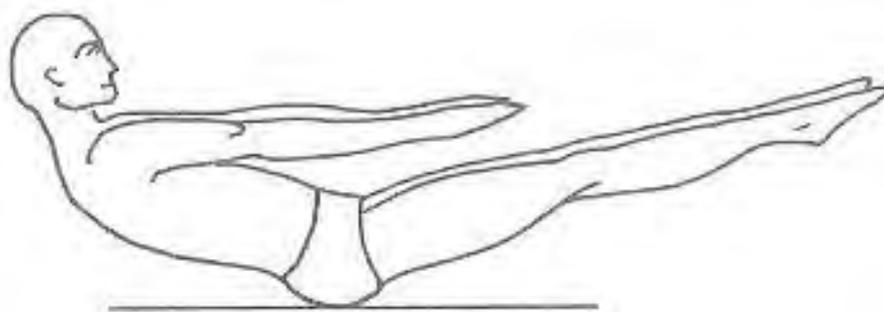
It should also be avoided in case of severe knee and ankle problems where excessive stretching of these joints may be painful.

Benefits and limitations

1. Helps in getting rid of constipation.
2. Releases stress from spinal vertebrae.
3. Improves the functioning of adrenal glands.
4. Stretches the back muscles making them stronger.
5. Enhances the health of both male and female reproductive organs.
6. Tones and massages the muscles of the pelvic region and sciatic nerve.

Naukasana

In Sanskrit *nauka* means "boat" and *asana* means "pose". So, this *asana* is called as *Naukasana*. While practicing this *asana* you will see the entire body takes a shape of a boat that is why it is called *naukasana*.



Techniques:

1. Take a supine position with legs together.
2. Put your arms together by the side of the body, palms resting on the ground.
3. Slowly raise your legs together; simultaneously raise the head and trunk also, and stop at 45° angles.
4. While returning to the original position, first place your trunk and head on the





ground.

5. Now slowly bring down your legs and hands and lie on the ground as in the first position.

Things to remember while performing this Asana:

1. Do not bend legs at the knee.
2. Release the *Asana* before you get pain in abdominal muscles.

Contraindications:

1. *Nauk asana* should not be performed by one suffering from low blood pressure, severe headache, migraine, or someone who has suffered from some chronic diseases or spinal disorders in the recent past.
2. Those suffering from hypertension, heart disease and lumbar spondy litis should avoid this *asana*.
3. Women should avoid doing *Naukasana* during pregnancy and during the first two days of the menstrual cycle.

Benefits:

1. Helps to reduce belly fat and strengthens abdominal muscles.
2. Regulates the function of pancreas, liver and lungs and improves digestion.
3. Good for diabetes patients as it helps to maintain the sugar levels.
4. Improves blood circulation.
5. Strengthens muscles of thighs, hips, neck and shoulders.



Vrikshasana

In Sanskrit the word *vriksh* means “tree”, and *asana* means “posture”. So, the final posture of this asana resembles a tree.

Techniques:

1. Stand straight with legs together, hands by the side of the thighs, and gaze in front.
2. Fold your right leg at the knee and place the sole near the left high joint.
3. Bring both the hands in *Namaskara Mudra*.
4. After maintaining it for some time, release your hands and stand on both feet.
5. Now repeat the *asana* with the other leg. This completes one round of *Vrikshasana*.

Things to remember while performing this Asana:

1. Stand straight.
2. The folded knee should point toward their respective side.
3. This is a pose requiring balance. If you feel you are about to lose your balance, then go back to standing erect on both legs and start again.



Contraindications:

1. People who are suffering from high blood pressure should not raise their arms overhead, therefore they should minimize *Vrikshasana*.
2. Avoid *Vrikshasana* if you are suffering from headache and insomnia.

Benefits:

1. It improves balance, and concentration.
2. It develops neuro muscular coordination.
3. It strengthens thigh and calf muscles.

Garudasana

Garudasana is a standing pose in which the yogi twists one arm with the other and one leg with the other. The term comes from the Sanskrit words, *garuda* or “eagle” and *asana* or “posture”.

Technique

1. Stand straight and keep your legs slightly apart from each other.
2. Raise your hands above your head and look straight while focusing on one point in front of you.
3. Interlock the fingers of both the hands and turn them upwards in such a way that the palms are towards the sky.
4. Take a deep breath, and while inhaling, stretch your arms, chest, and shoulders upwards.
5. Raise your heels in such a way that all the weight of your body is on the toes.
6. Remain in this position for 20-30 seconds.
7. Retain your breath while stretching.
8. While exhaling, come down to your original position.



Things to remember while performing this Asana:

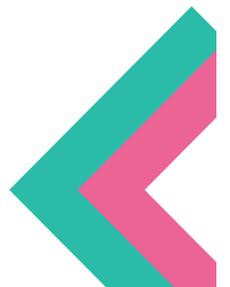
1. While practicing *Garudasana* always make sure that you keep your hands, arms, and thighs in one straight line to derive maximum benefits from the pose.

Contraindications

1. Avoid practicing *Garudasana* in case of recent knee, ankle or shoulder injury.
2. This *asana* should not be attempted if a person suffers from obesity, frequent headaches, high or low blood pressure or asthma.

Benefits and limitations

1. This *asana* helps to stretch the thighs, hips, upper back, and shoulders.
2. It helps improve focus and the ability to balance.
3. The calf muscles get strengthened with this *asana*.





4. It also helps to relieve pain associated with rheumatism and sciatica.
5. It helps to make the back, legs, and hips more flexible.
6. This *asana* also works as a stress buster.

I. Tick the correct option.

1. Which of the following *Asanas* may be practised immediately after food?
 - i. *Siddhasana*
 - ii. *Simhasana*
 - iii. *Swastikasana*
 - iv. *Vajrasana*
2. Which of the following *Asanas* is good for thyroid gland?
 - i. *Dhanurasana*
 - ii. *Paschimottanasana*
 - iii. *Chakrasana*
 - iv. *Sarvangasana*
3. Which of *Asanas* is helpful to maintain normal blood pressure?
 - i. *Shavasana*
 - ii. *Sheershasana*
 - iii. *Salabhasana*
 - iv. *Sarvangasana*

II. Answer the following questions briefly.

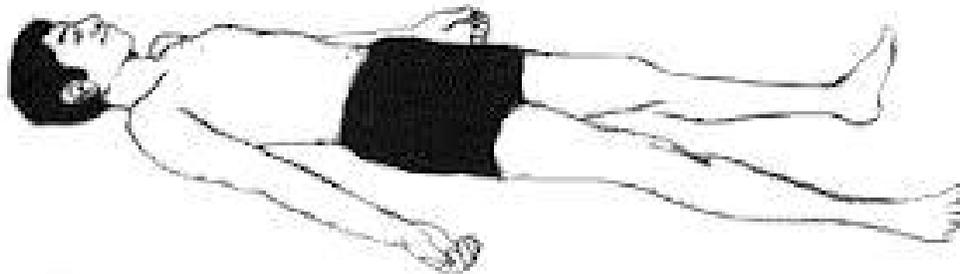
1. Which yoga poses can one do at one's desk?
2. What are the best poses for the morning?

III. Answer the following questions in 150-200 words.

1. Explain the procedure, benefits and precaution during *Padmasana*.
2. Explain the details of steps, benefits and precaution during *Sukhasana*.

5.5.1 RELAXATION TECHNIQUE FOR IMPROVING CONCENTRATION - YOG NIDRA

The Sanskrit word *yoga* means “union or perfect awareness”, and *nidra* means “sleep”. *Yoga nidra* is a state where the body appears to be asleep, but the consciousness is functioning at a deeper level of awareness.





Techniques:

1. Lie down straight on your back in *Shavasana* (Corpse Pose). Close your eyes and relax. Take a few deep breaths in and out. Remember to take slow and relaxed breaths.
2. Start by gently taking your attention to your right foot. Keep your attention there for a few seconds, while relaxing your foot. Then gently move your attention up to the right knee, right thigh and hip. Become aware of your whole right leg.
3. Gently, repeat this process for the left leg.
4. Take your attention to all parts of the body: stomach, navel region, chest.
5. Take your attention to the right shoulder, right arm, palms, and fingers. Repeat this on the left shoulder, left arm, throat, face, and finally the top of the head.
6. Take a deep breath in and observe the sensations in your body. Relax in this state for a few minutes.
7. Slowly becoming aware of your body and surroundings, turn to your right side and keep lying down for a few more minutes. Rolling over to the right side makes the breath flow through the left nostril which helps cool the body.
8. Taking your own time, you may then slowly sit up, and whenever you feel comfortable, slowly, and gradually, open your eyes.

Things to remember while performing *yoga nidra*:

- 1) *Yoga Nidra*, is best done on an empty stomach
- 2) This *asana* should be practised in a comfortable clutter-free space.
- 3) Some people may feel a little cold after *Yoga Nidra*, so, it is a good idea to keep a blanket handy.

Contraindications:

1. *Yoga Nidra* should be done at your discretion, especially if you face severe clinical depression or other challenging mental health conditions. The extra introversion is unlikely to help. However, it may help relieve mild conditions.
2. Do not do *yoga nidra* while driving or operating machinery, as you may fall asleep.

Benefits and limitations:

1. Produces deep relaxation.
2. Reduces stress and anxiety.
3. Reduces depression.
4. Reduces pain and dependency on drugs.
5. Reduces addictions.
6. Provides relief from insomnia and improves quality of sleep.
7. Improves clarity of thought and memory.





8. Improves learning capacity and acquisition of new skills.
9. Improves overall health and healing.

I. Tick the correct option.

1. *Yoga-nidra* is performed in-
 - i. *Shavaasana*
 - ii. *Simhasana*
 - iii. *Swastikasana*
 - iv. *Vajrasana*
2. *Yoga-nidra* is a/an-
 - i. *Asana*
 - ii. *Pranayama*
 - iii. *Dhayan*
 - iv. *Samadhi*

II. Answer the following questions briefly.

1. What is *yoga-nidra*?

III. Answer the following questions in 150-200 words.

1. Explain the benefits of *yoga-nidra* in detail.
2. What is the procedure to do perfectly *yoga-nidra*?



Weblinks

Topic	Weblinks	QR Code
Meaning of Yoga	https://www.ananda.org/yogapedia/yoga/	
Importance of Yoga	https://www.oceanicyoga.com/importance-of-yoga-in-our-daily-life/	
Elements of Yoga	https://sportsjone.com/elements-of-yoga/	
Introduction- Asanas	http://www.shreyasretreat.com/yoga-blog/what-is-asana-in-yoga-an-introduction-to-hatha-yoga-posture/	
Introduction- Pranayamas	https://www.verywellfit.com/Pranayama-yoga-breathing-exercises-3566760	
Introduction- Meditation	https://en.wikipedia.org/wiki/Meditation	
Introduction- Yogic Kriyas	https://en.wikipedia.org/wiki/Kriya_Yoga	
Yoga for concentration & related asana	https://food.ndtv.com/health/yoga-for-concentration-5-asanas-that-simply-do-wonders-1645786	
Relaxation Techniques for improving concentration- Yoga-nidra.	https://www.yogameditation.com/reading-room/relaxation-in-yoga-yoga-nidra/	





UNIT-VI

PHYSICAL EDUCATION AND LEADERSHIP TRAINING

Content

- Leadership Qualities and Role of a leader.
- Creating leaders through Physical Education.
- Meaning, Objectives and types of Adventure Sports (Rock climbing, trekking, River Rafting, Mountaineering, Surfing and Para Gliding)
- Safety measures to prevent sports injuries

Learning Outcomes

At the end of this unit you will be able to:

- recall definitions of leadership
- list the qualities of a leader
- understand adventure sports
- recognize and classify sports injuries
- demonstrate injury management
- apply safety measures

KWL Chart for Vocabulary

In this chapter we are going to know about.

Discussion

1. Match theQuote

Each one of the students to look for and get a written leadership quote from home. Place the leadership quotes around the room. Now, walk around and read the quotes. When you find the one that matches the way you think leadership should be, stand next to it. More than one student can stand in front of the same quote. When each one of you has found your favourite quote, interpret the meaning of the quote.

2. Complete the following blurbs. Discuss your answers in your group. Share your views with the class.

If you got a chance to be the Head Boy / Head Girl of the School, what would you do?

If I were the Principal of my school, I would

Were you ever selected a class monitor? What did you do to control your naughty friends?



6.1.1 MEANING AND DEFINITION OF LEADERSHIP

You have to Programme your mind into victory.

This game is all about how bad you want it, it's about grit. It's about HEART. The difference between winning and losing is how far you're willing to go!

Your HUNGER will be tested on the field. Your DESIRE to win, will determine the outcome of the game.

We keep on fighting even if the odds are stacked against us.

They don't know that we have the heart, the courage and the will to make things happen!

We will destroy everything that comes in our way, BECAUSE WE WERE BORN TO WIN, WE WERE BORN TO DOMINATE!

We might be the underdogs; we might be the "weaker" team.

But one thing is for sure: When we step on the field we FIGHT. We fight for ourselves and WE FIGHT for each other YOU WILL NEVER PLAY THIS EXACT GAME AGAIN IN YOUR LIFE.

Read the paragraph above.

Have you gained an insight into the making of a leader? Would you like to make any changes to your quote about the qualities of a leader above?

Do you know?

Leader—The person who leads or commands a group, organization, or country.

Delegate – assign/allocate a responsibility

Commitment – quality of being dedicated to a task

Accountable—responsible, expected to justify actions.

Let's read further about Leadership.

LEADERSHIP

Leadership is the art of motivating a group of people to act towards achieving a common goal.

He/she is the person in the group who possesses the combination of personality and leadership skills that makes others want to follow his/her direction.

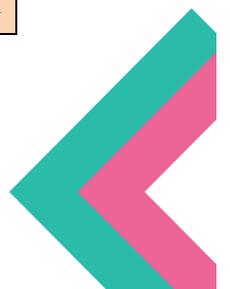
Leadership can be defined as a certain set of characteristics, behaviour or style that one exhibits on a day to day basis, through one's thoughts, words, and actions.

"It is better to lead from behind and put others in front, especially when you celebrate victory when nice things occur. You take the front line when there is danger. Then people will appreciate your leadership".

– Nelson Mandela

"The greatest leader is not necessarily the one who does the greatest things. He is the one that gets the people to do the greatest things."

– Ronald Reagan





“A leader is one who has power in authority.”

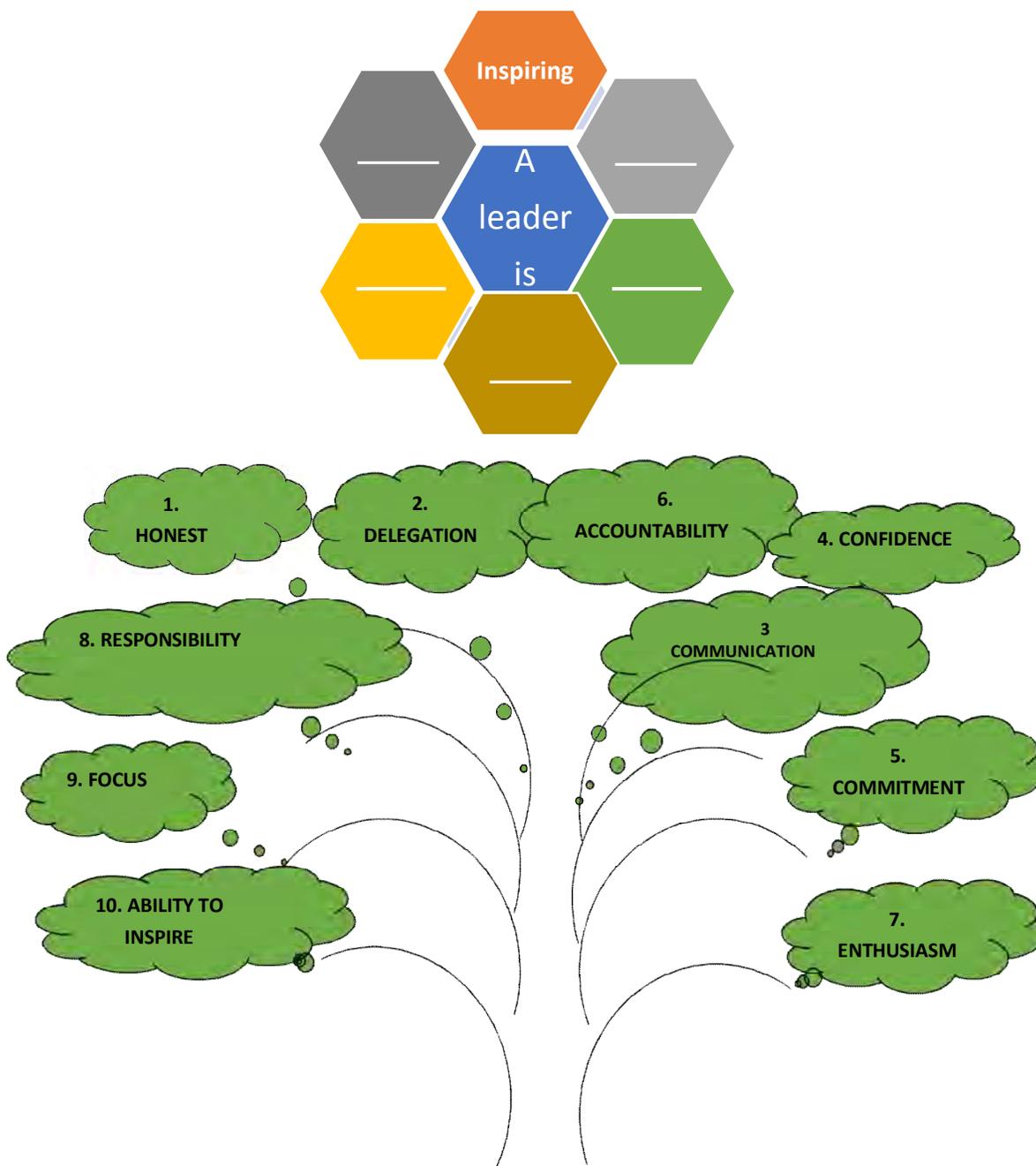
– H.T Mazumdar

“Leadership is the behaviour that affects the behaviour of the people more than their behaviour affects that of a leader.”

– LaPierre

6.1.2 QUALITIES OF A GOOD LEADER

What, according to you are the qualities of a leader? Based on the quotations you read, and your own views, complete the web chart given below listing essential qualities of a leader.





1. Honesty

One of the qualities that defines a good leader is her/his honesty. When a leader is responsible for a team of people, it is important for her/him to be straightforward. If she/he makes honest and ethical behaviour a key value, the team will follow. President Dwight D Eisenhower of United States once said, “The supreme quality of leadership is, unquestionably, integrity. Without it, no real success is possible, no matter whether it is on a section gang, a football field, in an army, or in an office.” Honesty and integrity are two important ingredients which make a good leader. A leader will not be able to get his teammates to be honest if she/he lacks honesty. Leaders succeed when they stick to their values and core beliefs and without ethics, this will not be possible.

“A leader is one who knows the way, goes the way, and shows the way.”

– John C. Maxwell

Extension Activity

Work in groups of six. Interview the Captains of your school's/a nearby school's Cricket Team, Football Team, Hockey team etc.

1. What are the most important values you demonstrate as a leader?
2. How have you gained commitment from your team?
3. What is your greatest strength?
4. How do you get your teammates to accept your ideas?
5. How would you go about uniting your team who may have internal disagreements?
6. How do you motivate your team?
7. What is the most difficult part of being a leader?
8. What is a leader's best asset?
9. How would you proceed to reorganize your team?
10. How do you go about resolving conflict?
11. Name a time when an employee disagreed with your directive and how you handled it?
12. Who are the most important members of your team?
13. How do you delegate responsibilities to your team?
14. How did you handle a time when you had to make an unpopular decision?

Discuss what you have learnt and share your views with the class about the qualities of a successful Captain.

2. Delegation of duty

It is important for a leader to focus on key responsibilities and delegate work, duties and, even, authority to other team members. A good leader delegates tasks to her/his teammates and oversees how they perform. By empowering the other members of the





team, the leader shows that she/he has confidence in their abilities, and this can result in a positive morale in the team. If the leader continues to micromanage the team members, there will be a lack of trust between them. More importantly, she/he will not be able to focus on important matters. By providing them with all the resources and support they need to achieve the objective, and giving them a chance to shoulder responsibility, the leader empowers the team. Given a specific role or responsibility, the team members feel honoured and, as a result of the trust and faith of the leader, the teammates are able to handle the task given to them satisfactorily.

3. Communication Skills

Communication is the key to success. Without clear communication skills, no one would understand their mission, goals, and vision. Communication should also be consistent when assigning a task or passing instructions. If the leader has effective communication skills, the team members will have a good understanding as to what is expected of them. Until the leader clearly communicates her/his vision to the team, and tells them the strategy to achieve the goal, it will be very difficult to achieve the desired results. In other words, if the leader is unable to communicate her/his message effectively to the team, she/he can never be an effectual leader. It is the leader's words that have the power to motivate the team and make them achieve the desired goal.

4. Confidence

Another quality that defines a good leader is her/his confidence. To be an effective leader, she/he should be confident enough to ensure that others follow her/his instructions and the team places their trust in her/him. A leader must be confident and assertive to gain the respect of the teammates. If the leader is uncertain about her/his decisions and programmes, then the other team members will never follow her/him. Of course, confidence does not mean overconfidence or arrogance, but the leader must be responsible for holding the team together and winning the team's confidence and keep them moving forward by staying calm and self-possessed.

5. Commitment

There is no greater motivation for the team than seeing their leader working alongside everyone else. By proving her/his commitment to the team, she/he not only earns the respect of the team, but also instils that same drive among the team members. The leader's commitment sets an example for others to follow, and leads to greater loyalty and respect for her/him as a leader.

Since the team looks up to her/him, the leader's passion is the best way to motivate and inspire the team members to give their best shot. It also helps the leader gain the respect of her/his teammates and infuse new energy in the team, which helps them perform better. A feeling that the leader is not fully committed or lacks passion, on the other hand, demotivates the team. It is important to remember that if a leader expects the team to work hard and produce quality work, she/he would need to lead by example.



6. Accountability

A good leader takes responsibility for everyone's performance as well as her/his own. When a leader takes personal accountability, she/he is willing to take responsibility for the outcomes of her/his choices and behaviours. Leaders do not blame others when things go wrong. Rather, they make things right – they are fixers. Accountability goes beyond the leader's actions and decisions. Accountable leaders assume ownership for the performance of their teams. When things are going well, she/he praises the team members. However, when problems arise, they identify them quickly, seek solutions, and get the team back on track. The leader must also ensure that every one of the teammates is accountable for what they are doing. If they do well, they must be praised, but if they struggle, they must also be made to realize their mistakes, and then work together towards improving performance.

Holding the team members accountable for their actions will create a sense of responsibility among the teammates and they will go about their business more seriously.

Extension Activity

Look at the picture.



MS Dhoni tells his players: "Don't think about winning or losing. Just go out, play your best cricket and enjoy the match. Sometimes you win, sometimes you lose. It does not matter as long as you are giving your 100%."

What do you think the Captain is saying to the team? What would you tell your team if you were the Captain? Share in your group.

Share the best advice with the class.

"With great power comes great responsibility"

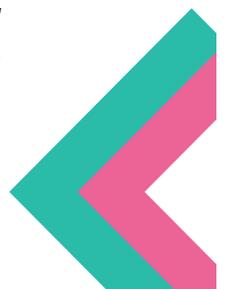
– Anonymous

"A good leader takes little more than his share of the blame and little less than his share of the credit."

– Arnold H Glasow

7. Enthusiasm

The term **enthusiasm** is derived from the Greek origin meaning *possessed by a god*, is used for a leader who is motivating, energetic, passionate, and dynamic. A good leader is enthusiastic about her/his own work and performance and also about her/his role as





leader. Teammates respond more openly to a person who is passionate and dedicated towards good performance. Leaders should be a source of inspiration, and be motivators towards the required action or cause. The leader should be a part of the team when working towards the goal. An enthusiastic leader brings excitement, enjoyment, and anticipation to the task, engaging teammates to participate. Thus, the leader's enthusiasm can lead to positive attitudes, better performance, and improved team behaviour.

8. Focus

A good leader is generally focused and is able to think rationally. A leader should also be self-driven to work harder in wanting to achieve better results. Since she/he is the driving force in the team and also someone the team could look up to, the leader must be mentally strong. Inevitably, the leader will be criticised at some point, both within and outside the team. Equally, she/he needs to remain focused and aware while under intense pressure during a task or a programme, so that she/he can make the correct decisions at the right time. To cope with such situations requires considerable mental strength. So, the leader must stay focussed and encourage the rest of the members to be together for achieving the desired goal.

9. Ability to inspire

Probably the most difficult job for a leader is to persuade others to follow. This is possible only if the leader is able to inspire her/his followers by setting a good example. In difficult situations, the team members look up to the leader and watch out for her/his reactions to the situation. If the leader handles it well, they will follow her/him. A leader should think positive and this positive approach should be visible through her/his actions. Staying calm under pressure and keeping the motivation level up, is an essential job of the leader. As John Quincy Adams puts it, "If your actions inspire others to dream more, learn more, do more and become more, you are a leader." If you are successful in inspiring your teammates, you can easily overcome any current and future challenges easily. A leader should be able to inspire others to follow the path of loyalty, hard work, regularity and the value of time.

10. Responsibility

Last, but not least, the quality that defines a good leader is responsibility. A good leader understands that leadership is about responsibility, and not power. A leader takes responsibility for her/his actions which includes both failures and successes. Being responsible requires accountability and adaptability. When leaders are accountable for things within their power and control, they are being responsible. Great leaders, at the same time, know that when it comes to their team members, they need to take personal responsibility for failure. A good leader does not make excuses; they take the blame regardless and then work out how to fix the problem as soon as possible.

I. Tick the correct options.

1. A leader who is honest in speech and upright in character exhibits
 - i. patience



- ii. servitude
 - iii. integrity
 - iv. enthusiasm
2. A good leader is one who
- i. is unable to trust or show any confidence in her/his team mates
 - ii. is only enthusiastic about her/his own performance
 - iii. is focused and is able to think rationally
 - iv. is assertive and doesn't care about the respect of the team mates

II. Answer the following questions briefly.

1. Who is a leader?
2. Why must a good leader be accountable?
3. A good leader delegates duties and responsibility. Do you agree?

III. Answer the following questions in 150-200 words.

1. Who is your role model as a leader? What are her/his characteristics? What have you learned from her/him?
2. Discuss the role of a leader.

6.2.1 ROLE OF A LEADER

The word **leader** come from the Indo-European *laitho*, meaning **to cause others to follow a particular path**. Leaders must know what they are doing.

Extension Activity

“Be the change you wish to see in the world.” - Gandhi Look at the cartoon given below. Leadership is the process by which one individual influences the behaviours, attitudes and thoughts of others. A leader's actions are held to an unspoken standard of what is appropriate and what is not. In present day cricket, where sledging is very common, Rahul Dravid's boys showed exemplary behaviour.

Discuss the role of a leader in the light of the above statement.





Successful teams have strong leaders and the importance of this role is evident in all categories of sports. Leadership is an integral part of any sport. Whether you've been a coach for the last 20 years or you recently stepped up to lead your team as the captain for the first time, leadership should always be at the forefront of your thinking. It does come with a lot of pressure that's why it's important to incorporate certain values into your leadership to allow your team to reach its full potential and ease the overall pressure.

1. **Instilling Positivity** – Whether it has been a difficult training session, or a few dropped catches or a face-off with a very tough opponent in a crucial match – each of these situations requires a strong support system in place to tell the players not what they are doing wrong, but what they're doing right. This positive reinforcement is delivered on the field by the Captain, and off the field, by the Coach. The team's morale does not remain high if there hasn't been a pre-match motivational team-talk or some encouragement from the side-lines. This affects the team's performance. Thus, positivity is a very important part of leadership. The leader should be able to judge when to use a firm approach to motivate a member of the team and when it is the right time to encourage them. Success is more likely if the team is motivated. Indeed, motivation is an intrinsic part of team building and a challenge for the team leader. According to Sir Alex Ferguson of Manchester United "For a football player and for any human being, there is nothing better than hearing 'well done'. Those are the two best words ever invented in sports."
2. **Regulating Group Behaviour** – Groups are formed of individuals, and individuals influence work and work behaviour. Therefore, they cannot be ignored. A leader always tries to minimise individual behaviour that may be against the best interests of the whole team. The leader enforces rules effectively using rewards and punishments. She/He may warn the member or player of a team who demonstrates indiscipline, and reward a player who performs well. Thus, the leader deals with all matters pertaining to group or team discipline like rewards, warnings or, arbitration.
3. **Communicating with the Team** – The leader must set clear goals for the team and communicate these to the team. Communicating specific and clearly laid down goals leads to greater output and better team performance. Defining, developing, articulating, and communicating the vision inspires the team as they get a simple, clear, and relevant vision of the way ahead. This can be done either on a one-on-one basis, or collectively with the entire team. A successful leader, whether it is a Coach or a Captain, is one who can communicate her/his views to the team and her/his expectations from the team clearly and strongly. The main aim for a Captain or Coach is to find a way of communicating her/his views, ideas, suggestions in a manner that inspires the teammates to listen. She/He should be able to influence the players and bring about a change in their behaviour and performance.
4. **Providing Feedback** – Coaches and Captains lead their teams in different ways. Some coaches use a philosophy of pointing out mistakes and speaking negatively to players in order to keep them determined and on their toes, some take a



softer, more informal approach. Whatever method the coach or captain uses as a leader, he/she should always look for opportunities to deliver useful feedback to players about their performance. However, the method of delivering feedback is very risky. The leader must work hard on her/his method of delivery because she/he runs the risk of not being listened to, which can prove pointless for certain players, or worse still, being resented for the way feedback is delivered, which can be disastrous for the team. A leader should also draw up an individual plan for each of the players in his/her team for their personal development and to help them progress. She/He should organize continuous review sessions with them throughout the season. It is a good idea to set targets for players so that they improve their levels.

5. **Instilling a Desire to Win** – A good leader always has the desire to win no matter what the circumstances are and instils the team with the same attitude too. A leader who has a negative attitude and a negative approach is not good for the team morale as she/he will lower the team's passion to win. A good leader leads by example and motivates the team whether it is in training, or on the field, or in the dressing room before or after a game, the leader's words must inspire the team and keep them all together, not just in a win but even after a defeat. The leader should not lose focus as she/he shoulders the responsibility to hold the fort and keep the players in the winning mindset.
6. **Structuring the Situation** – The leader has a duty to structure the situation for the group members by interpreting the actual situation, by clarifying ambiguities and by emphasizing certain aspects of a tournament or competition. She/He focuses on the goal and, in doing this, constantly strives for objectivity, without in any way denying important facts and distorting the data, however unpleasant or unpalatable it might be. Co-operative behaviour of group becomes possible only if group members accept her/his interpretation. The leader observes every situation minutely, and after the tournament or competition, she/he interprets the complete situation to members of a team. She/He clarifies doubts and sets goal for her/his team.
7. **Commitment to Win** – The leader puts in the extra hours to review a match, talk to the players – together, or one-on-one – or, even plan an extra training session because players are going to benefit from this hard work. Such commitment in the leader will produce a positive response from the players. By putting in these hours, the leader will gain a lot of respect and hard work from the team.
8. **Gaining the Team's Respect** – A good leader must have the team's respect. The respect of the players for the leader is vital to gaining their commitment on the field. Respect makes people listen to the leader, and take her/his advice. e.g., if the leader suggests a new strategy, the team will put it into practice only if they respect the leader. The leader must remember, however, that respect is earned, not demanded. To gain a good level of respect, the leader needs to be able to relate to players, be approachable and open to feedback herself/himself. Otherwise she/he will struggle to strike up relationships with players.





I. Tick the correct options.

1. The leader instils positivity among the team by
 - i. holding difficult training sessions
 - ii. pulling up players making mistakes
 - iii. telling players their strengths
 - iv. sitting and observing the team from the sidelines.
2. The leader regulates group behaviour by
 - i. ignoring individual differences within the group
 - ii. enforcing rules firmly through rewards and punishment
 - iii. dealing with matters of group discipline in an arbitrary manner
 - iv. overlooking a member spreading indiscipline within the team

II. Answer the following questions briefly.

1. How does a good leader regulate team behaviour?
2. A leader's responsibility is to see that the plans of the group are put into execution. Elaborate.
3. The leader's foremost function is to structure the situation for the group members. How does she/he do this?

III. Answer the following questions in 150-200 words.

1. What role does a leader play in leading her/his team to success?
2. Explain the role of the leader in holding her/his team together.

6.3.1 CREATING LEADERS THROUGH PHYSICAL EDUCATION

Leadership is a complex process that involves the effort of an individual to help groups identify and achieve personal and group goals. Physical activity and sport Programmes offer great opportunities for youth to develop important life skills, including leadership.

The battle of Waterloo was won on the playing fields of Eton.

– The Duke of Wellington

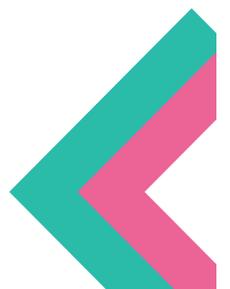
Leaders have both innate and acquired qualities. Through physical education acquired qualities can be created and developed successfully. Sports and physical activities are highly interactive, provide numerous leadership opportunities or “moments” for young people to gain leadership experience e.g., enforcing rules for teammates provides an opportunity for a young captain to learn leadership in an enjoyable, motivating way.

For creating or making the effective and efficient leaders in the field of physical education, stress must be laid down on the following points:



1. **Analysing leadership skills required for further development:** It is essential to analyse leadership skills that are already well developed among the students and those which need further development.
2. **Identifying the students or groups of students whose leadership skills required to be improved:** Once players are involved in leadership activities, they must be given the chance to further improve their leadership skills by being given opportunities in leading teams and organising various sports competitions, and then observing signs of improvement in their leadership skills.
3. **Offering opportunities for leadership roles:** For improving leadership skills it is important
 - students are offered leadership roles such as supervising and managing sports activities. They may be appointed captains of different sports teams, given various responsibilities such as membership of various committees, official duties and ground preparation duties, supporting other students in their play, organising festivals and assisting teachers and coaches in running clubs and teams.
 - leadership courses are organised for students. Care should be taken, however, to ensure that these courses lead to an application of the knowledge, skill and understanding.
 - students are given opportunities to develop their skills by giving them tasks that show progression in challenge and complexity.
 - leaders are recognised by giving them a symbol of recognition like a cap or other uniform. This will serve to motivate other students.
4. **Having faith and confidence in the students:** It is essential to believe in the leadership skills of the students and to give them a chance for improving them.
5. **Rewarding them for their success:** Rewarding students for showing improvement by giving them more responsibilities helps in developing their potential.

Parental involvement also has a key role to play in training successful leaders. They should be included in physical activity instruction and in co-curricular and community physical activity programmes, and encouraged to support their children's participation in enjoyable physical activities. Parental involvement in children's physical activity is key to the development of a psycho-social environment that promotes physical activity among young people. Involvement in these programmes provides parents opportunities to be partners in developing their children's knowledge related to physical activity, attitudes, motor skills, confidence, and behaviour. Thus, teachers, coaches, parents and other school and community personnel should encourage students to become great sports leaders. We can certainly do much more to "intentionally" help young people develop their leadership capabilities and skills. We cannot only make them physically fit but we can teach them life skills, like leadership, that enable them to be more productive members of society.



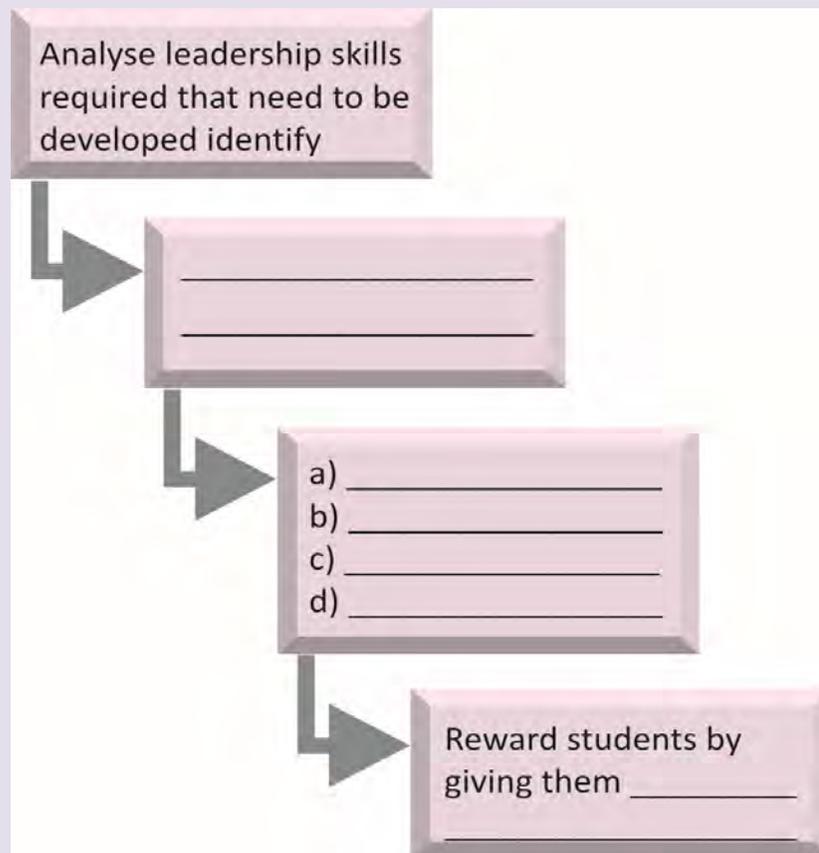


I. Tick the correct options.

1. The three long-term goals in a Physical Education include
 - i. developing competency in sport, leadership and team work
 - ii. creating leaders, communicators and coaches
 - iii. organising leadership training and literacy in sports
 - iv. highlighting sports culture, knowing the sport and being a good fan

2. Sports and physical activities provide numerous leadership opportunities as they
 - i. identify students for improvement
 - ii. analyse leadership
 - iii. develop individual skills
 - iv. are highly interactive

II. Complete the following flowchart outlining how leaders are created through Sports.





Discussion

Which of the following sports would you describe as Adventure Sports? Why?



6.4.1 MEANING OF ADVENTURE SPORTS

Adventure is about going out of one's comfort zone to open up to the experiences and beauty that life gives all.

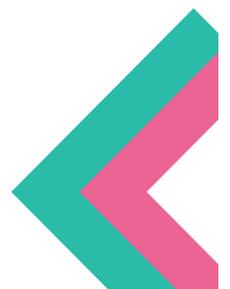
Adventure sports are also called **extreme sports**. They are activities involving high degree of risk. Such activities often involve speed, height, a high level of physical exertion and at times specialized gear. They also involve a high level of danger. These are usually outdoor sports involving intense, sometimes even life-threatening, actions.

Do you know?

Adventure: Engaging in an unusual and exciting, typically hazardous, experience or activity.

Objectives of Adventure sports

1. **Developing self-confidence:** By overcoming the fear and experiencing the thrill of successfully completing an adventure activity one can develop self-confidence.
2. **Building concentration:** While participating in these adventure sports a person has to be very alert and attentive all the time. Therefore, it helps develops concentration.
3. **Developing mental and physical fitness:** These sports help in developing mental and physical fitness. Physical fitness is developed because the individual works for long hours in difficult circumstances, in tough terrains. And because one has to pass through such difficult situations a number of times, one becomes mentally strong.





4. **Improving social relations:** During participation in adventure sports, qualities like sympathy co-operation, helpfulness, adjustment, group cohesion, unity, sincerity, patience, fraternity are developed because one normally works in groups together with unknown people.
5. **Bonding with nature:** Most of the adventure sports are outdoor activities which give enough opportunities to experience nature, and develop a bond with nature.
6. **Facing challenges:** These sports enhance one's capacity to deal with life-threatening situations with courage and determination.
7. **Using abundant energy properly:** Adventure sports provide the participant with a method for positive and healthy channelization of their boundless energy.
8. **Providing amusement and excitement:** It is the vital objective of adventure sport to provide amusement and excitement.
9. **Encouraging creativity:** These sports allow and encourage creativity of an individual. The participants get opportunities to think of various modes and methods of doing things and improving upon their creativity.
10. **Inculcating sportsmanship:** Adventure sports develop honesty, sincerity and similar virtues in the participants and these qualities together improve sports manship.



Types of Adventure sports: (Rock climbing, trekking, River Rafting, Mountaineering, Surfing and Para Gliding)

1. **Rock Climbing:** Rock climbing is a sport or activity where an individual climbs a rock, especially with the aid of ropes and other special equipment. It is done for locomotion, recreation and competition. It is generally done outdoors but can also be done indoors on man-made structures.



Rock climbing styles include free, trad (or, Traditional), aid, solo, ice and mountain. Before one sets out to climb, one needs appropriate equipment, including carabineers that connect rope and harness. The harness is needed to hold up while one is climbing.

Equipment required:

- Carabineers
- Harness
- Strongrope
- Helmet
- Gloves
- Climblingshoes

2. **Trekking:** Trekking is walking long paths on uneven routes, in extreme weather conditions. It is a soft- adventure sport and therefore almost anyone in reasonable physical condition can go trekking. To get initiated into trekking, begin with day hikes, returning to the starting point in the evening.



One can venture into the mountains with an experienced trekker, join an adventure club, or go with an adventure travel company. It is not a good idea to venture out into the mountains alone. A basic knowledge of camp craft, map-reading and first-aid is essential before one goes trekking. A basic course in mountaineering and a first-aid course are recommended if one decides to take it up more seriously and trek to remote/high-altitude areas.

Equipment required:

- Small rucksack /knapsack
- Sleepingbag
- Water bottle (at least 2 litres)
- First-aidkit





- Headlamp/torch
 - Armyknife
 - Whistle
 - Jacket/vest for cool evenings.
 - Wind/rain jacket: waterproof and breathable.
 - Trekking pants, light, comfortable, waterproof/breathable.
 - Long sleeve shirt; light weight, fast-dry (for sun/in sect protection).
 - T-shirts for day time
 - Long sleeve jacket or warm pullover.
 - Short pants,under wear,
 - Sun hat to protect skin from directs unlight
 - Woollen cap for high altitude or during evenings incamp.
 - Sweatpants for cold evenings.
 - A pair of hand gloves or woollengloves
 - Scarf to protect from dust or sunlight.
3. **River Rafting:** Rafting is a recreational outdoor activity which uses an inflatable raft to navigate a river or other body of water. This is often done on white- water or different degrees of rough water. Dealing with risk and the need for teamwork is very important. It is a challenging, but tremendously fun, activity. The presence of rocks and a sudden surge of water makes it a thrilling experience. Difficulty/adventure are felt due to sudden plunges in the river's height, and also because of small or big rocks that are sometimes found lurking in the waters.



Equipment required:

- Inflatable raftingboat.
- Lifejacket.
- Helmets.
- Carbon paddles



- Wetsuit.
 - Drysuit.
 - Rescue throwbags.
4. **Mountaineering:** Mountaineering, also called mountain climbing, is the sport of attaining, or attempting to attain, high points in mountainous regions. Climbing mountains embodies the thrills that are born out of testing one's endurance, courage and stamina to the utmost in inherently risky situations.

Mountaineering is normally a group activity, where every member appreciates and supports each other. For most climbers, the pleasures of mountaineering lie not only in the "conquest" of a peak but also in the physical and spiritual satisfaction brought about through intense personal effort, ever-increasing proficiency, and contact with natural surroundings.

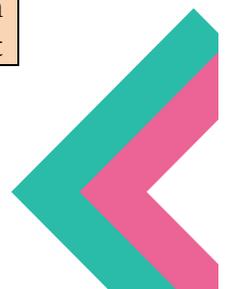


There are three phases of the sport – hiking, rock-climbing, and climbing the snow and ice – and each is quite different. Hiking is the essential element of all climbing, because in the end mountains are climbed by placing one foot in front of another over and over again. The most arduous hours in mountaineering are those spent hiking or climbing slowly, steadily, hour after hour, on the trails of a mountain's approach or lower slopes.

Do you know?

Bachendri Pal is an Indian mountaineer, who in 1984 became the first Indian woman to reach the summit of Mount Everest. She was awarded the third highest civilian award, Padma Bhushan, by Government of India in 2019.

In 1984, India had scheduled its fourth expedition, Everest '84, to Mount Everest. Bachendri Pal was selected as one of the members of the elite group of six Indian women and eleven men to attempt to climb Mount Everest (Sagarmatha in Nepalese). The team was flown to Kathmandu in March 1984, and from there they moved onwards. Recalling her first glimpse of the Mount Everest, Bachendri once reminisced: "We, the hill people, have always worshiped the mountains...my overpowering emotion at this awe-inspiring spectacle was, therefore, devotional." The team commenced its ascent in May 1984. Her team almost met disaster when an avalanche buried its camp, and more than half the group abandoned the ascent





because of injury or fatigue. Bachendri Pal and the remainder of the team pressed on to reach the summit.



On 22 May 1984, Ang Dorjee (the Sherpa Sirdar) and some other climbers joined the team to ascend to the summit of Mount Everest; Bachendri was the only woman in this group. They reached the South Col and spent the night there at Camp IV at the altitude of 26,000 ft (7,924.8 m). On 23 May 1984, early morning at 6:20 a.m., they continued the ascent, climbing "vertical sheets of frozen ice"; cold winds were blowing at the speed of about 100 km per hour and temperatures touching minus 30 to 40 degrees Celsius. On 23 May 1984, the team reached the summit of Mount Everest at 1:07 p.m. IST and Bachendri Pal created history. She achieved this feat on the day before her 30th birthday.

Equipment required:

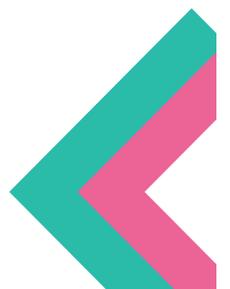
- Rope (dry preferred)
 - Helmet.
 - Harness (with adjustable legloops)
 - Boots (crampon-compatible)
 - Crampons.
 - Ice axe (with leash)
 - Belay/rappel device.
 - Pulley.
5. **Surfing:** Surfing is a surface water sport in which the waverider or a surfer rides on the forward or deep face of a moving wave, which usually carries the surfer towards the shore. Waves suitable for surfing are primarily found in the ocean, but can also be found in lakes or rivers in the form of a standing wave or tidal bore. However, surfers can also utilize artificial waves such as those from boat wakes and the waves created in artificial wave pools.



Equipment required:

- Surfboard
- Fins
- Leash
- Surf Wax
- Traction Pad
- Wetsuit

6. **Paragliding:** Paragliding is a recreational adventure sport. A lightweight glider aircraft is used for the purpose. The pilot sits in a harness suspended below a fabric wing. Wing shape is maintained by the suspension lines, the pressure of air entering vents in the front of the wing, and the aerodynamic forces of the air flowing over the outside. Despite not using an engine, paraglider flights can last many hours and cover many hundreds of kilometres. The speed range of paragliders is typically 20–75 kilometres per hour (12–47 mph).





Equipment required:

- Wing or canopy
- Harness.
- Variometer.
- Radio.
- GPS.

I. Tick the correct options

1. Ropes are extremely important to you. You are a
 - i. scuba diver
 - ii. rafter
 - iii. mountaineer
 - iv. paraglider
2. Which of the following adventure sports could also be an indoor activity?
 - i. Trekking
 - ii. Rock climbing
 - iii. Paragliding
 - iv. Surfing
3. The adventure sport that has become an Olympic event is
 - i. Hanggliding
 - ii. White water rafting
 - iii. Rock climbing
 - iv. Mountaineering

II. Answer the following questions briefly.

1. Write in brief about Paragliding.
2. What is Trekking? Is it fair to trek during extreme weather conditions? What are the protective gears required?

III. Answer the following questions

1. What are Adventure sports? Explain any four.
2. If you were a surfer, which part of the world would you prefer to go and why?
3. Do you love trekking with friends? Explain the positive and negative impacts of trekking with them.



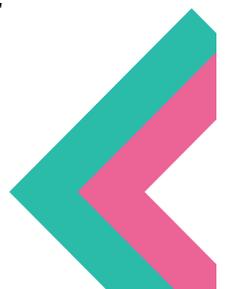
Extension Activity

Working in groups, discuss and deliver a speech on Adventure Sports. You could use the following points to prepare a speech:

- Going on adventures raises your tolerance.
- Feeds your dreams and builds your confidence.
- Overcoming your fears instils confidence.
- Life unfolds with new excitement, experiences.

6.5.1 SAFETY MEASURES TO PREVENT SPORTS INJURIES

1. **Mental preparation** - The most important thing before undertaking adventure sports is to be mentally prepared and excited about the sport one is attempting. Ask oneself one actually wants to do it or is it just peer pressure. *One should go ahead only if one is confident.*
2. **Health issues**- If one suffers from vertigo, acrophobia, asthma or any heart disease one should refrain from taking part in certain adventure sports. People who are physically fit should try such activities and in case of minor ailments, should take a doctor's advice before taking up adventure sports.
3. **Follow instructions**- Follow everything that trainers say to avoid any unforeseen situation. Ensure that you do not make too much noise and the trainer is audible enough to everyone.
4. **Protective gear** -In case of sudden thrust or fall, one may temporarily injure one's knees, elbows and other body parts. Therefore, one must always wear proper safety gear. Don't forget the helmet. Wear appropriate protective padding, if possible. This could include knee pads, elbow pads and wrist pads.
5. **Warm up**- A proper warm-up is needed to keep muscles and joints flexible. Be sure to warm-up the muscles you will be working with before embarking on the chosen activity.
6. **Uncomfortable clothing** -Don't wear clothes that have chances of tearing or that may be uncomfortable while participating in the sport.
7. **Photography** -Don't take pictures while you are participating in the sport activity. It can be extremely dangerous. Focus on what one is there for and make the best of it.
8. **Company** - It is better when one tries out an adventure sport along with a friend or a family member. It not only gives more confidence while attempting it, but in case of an unforeseen situation, having someone one can count on, can be very helpful.
9. **Check the organisation** - Find out details about the company that is organising the sport before you risk your life. Ask as many questions as possible about their





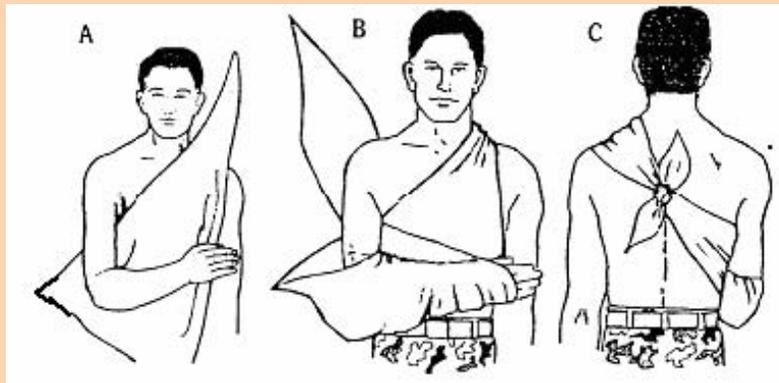
safety and risk management procedures. Choose a company that has been in the business for a while and is popular among the masses.

10. **Valid proof** - Before one opts for any adventure sport, one should make sure to carry a valid photo ID to prove one's age.

Extension Activity

Adventure Sports could be risky. Therefore, knowledge of First Aid is essential. Practise the following activities.

1. Work with your partner. Tie “ankle,” “head,” or “sling,” bandage on each other. Judge who has tied it best.



2. Work in groups of three. Imagine one of you is injured. The other two carry the “injured companion” using Two-Person Carry around the turn around post and back to the starting line.



I. Answer the following in 150-200 words

1. What are the safety measures to prevent sports injuries? Explain any five.

Art Integration – CREATING AN ADVENTURE SPORT OUTFIT DESIGN LINE

As you have seen, Adventure Sports require special outfits and accessories.

Launch your own Design Line for Sports equipment and Fashion line.

Also design a Logo for your Brand.

Prepare an advertisement for your brand. It could be for Print, Radio or TV.



UNIT-VII

TEST AND MEASUREMENT IN SPORTS

Content

- Define Test, Measurement & Evaluation
- Importance of Test, Measurement & Evaluation in Sports
- Calculation of BMI & Waist – Hip Ratio
- Somato Types (Endomorphy, Mesomorphy & Ectomorphy)
- Measurement of health related fitness

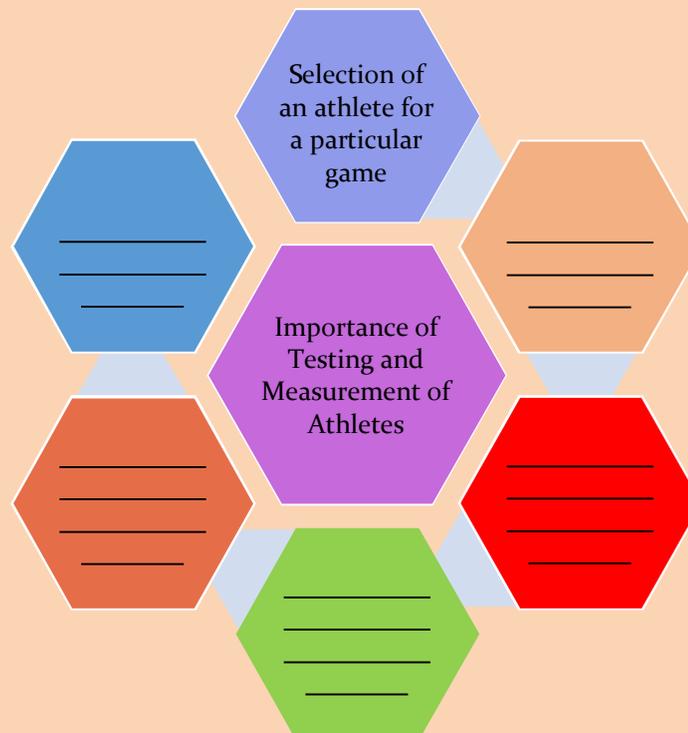
Learning Objectives

After completing this chapter, you will be able to:

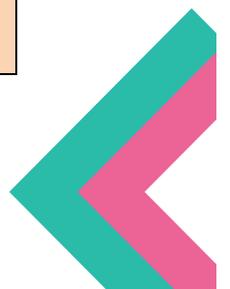
- define the terms test, measurement, and evaluation,
- differentiate norm- and criterion-referenced standards,
- differentiate formative and summative evaluation,
- discuss the importance of measurement and evaluation processes,
- understand BMI: A popular clinical standard and its computation
- differentiate between Endomorphy, Mesomorphy & Ectomorphy
- describe the procedure of measurement of health related fitness

Discussion

1. Working in groups, complete chart given below listing the importance of testing and measurement insports.



2. What are the tests that could be administered to the athletes?



7.1.1 WHAT IS A TEST

Remember when you tried sit-ups for the first time. As a child, you probably did number of sit-ups. You were performing sit-ups to improve your strength endurance. Do you remember your Physical Education teacher counted your sit-ups in your Physical Education class and said, “You were very good!” Numbers are a part of everyone’s life and they can be used in measurement. Measurement is a way of giving meaning to numbers. Further, decision making is a daily task. Many people make hundreds of decisions daily; and to make wise decisions, one needs information. The role of measurement is to provide decisionmakers with accurate and relevant information to make informed choices.

Do you know?

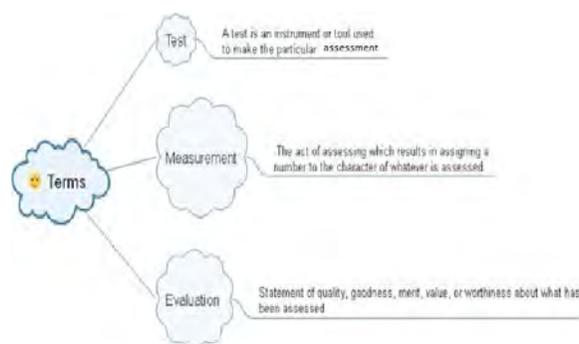
A **test** is an instrument or tool used to make a particular measurement. This tool may be written, oral, a mechanical device (such as a treadmill), physiological, psychological, or another variation.

Measurement is the act of assessing. Usually this results in assigning a number to the character of whatever is assessed.

Evaluation is a statement of quality, goodness, merit, value, or worthiness about what has been assessed. Evaluation implies decision making.

Example 1: A physical education teacher records the 30 sit-ups that a student completes in 1 min and reports the score as Good. In this example, Test is Sit-ups, Measurement is 30 sit-ups and Evaluation is Good.

In our day to day life we all collect data and information before making decisions. e.g., you might gather information about your friend’s marks, health, fitness, type of vehicle, number of vehicle, number of students in a class etc. Physical Educationists collect data related to fitness characteristics because of the relationship between fitness, physical activity and quality of life. The variables measured might include the amount of physical activity, blood pressure, weight height, strength what not. Physical educationists might be interested in measuring different items for taking better decisions. Thus, to make decisions, it is extremely important to measure and evaluate in an accurate manner. Making effective decisions depends on first obtaining relevant information. This is where testing and measurement enter the picture. The most basic principle of this text is that measurement and evaluation are essential to sound educational decision making.





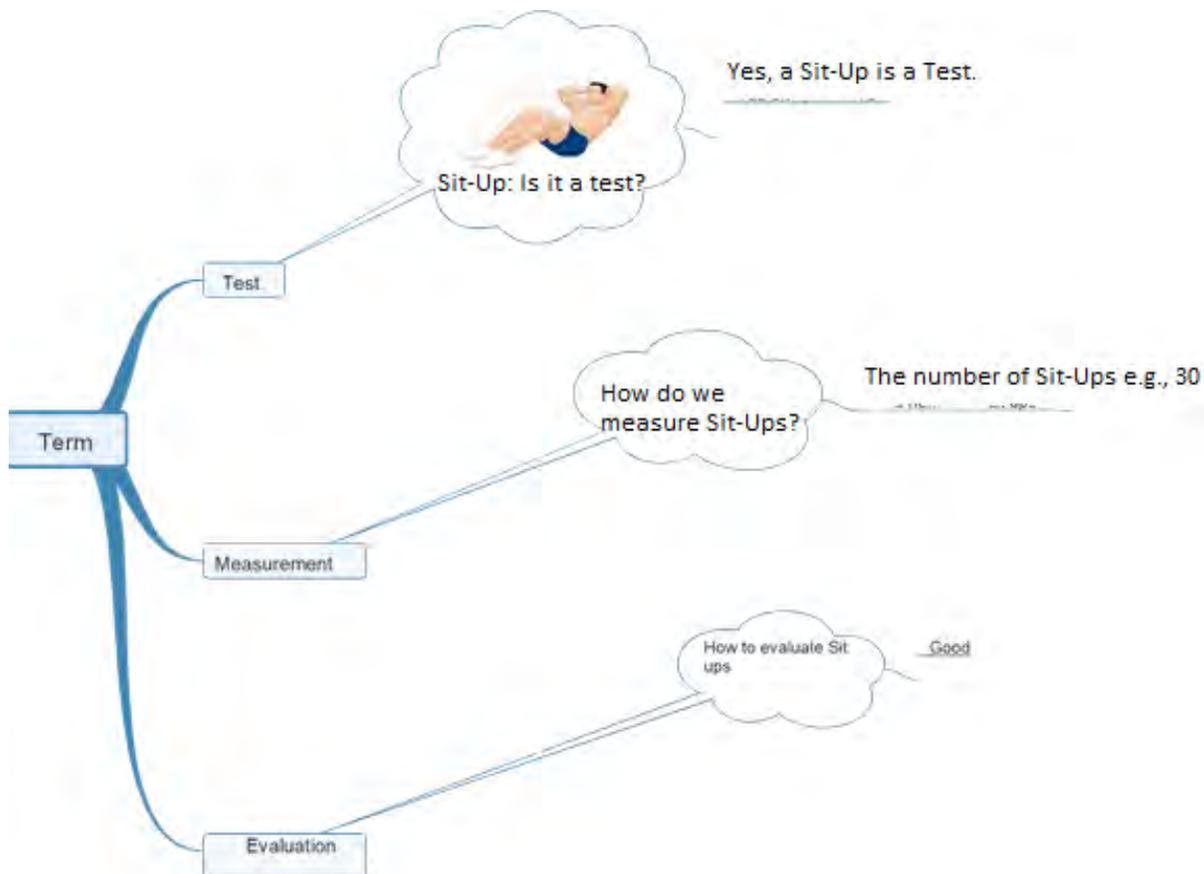
7.1.2 TEST, MEASUREMENT, EVALUATION AND ASSESSMENT

The terms test, measurement, evaluation, and assessment are occasionally used interchangeably, but most users make distinctions among them.

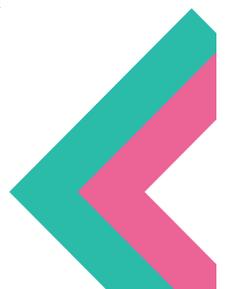
Test is usually considered the narrowest of the three terms; it implies to the tools, instrument or set of questions to measure a dimension, quality or condition, of a any person, object, event.

Measurement Measurement refers to the quantitative form of assessment and also refers to the scores obtained through test. Measurement is requisite for evaluation in a quantitative form of numbers or scores.

Evaluation is “the process of delineating, obtaining, and providing useful information for judging decision alternatives.” Other definitions simply categorize evaluation as professional judgment or as a process that allows one to make a judgment about the desirability or value of something. Thus, measurement is not the same as evaluation. Two athletes may obtain the same measure (test score), but we might evaluate those measures differently because of the different criteria for evaluation available in-terms of norms and criterion measures.



The term **assessment** is also used in a variety of ways. Much of the time the word is used broadly, like evaluation; or, it is often used to indicate the use of both formal and informal data-gathering procedures and the combining of the data in a global fashion to reach an over all judgment. At times, assessment is used more particularly to refer to





the clinical diagnosis of an individual's problems. It is important to point out that we never measure or evaluate people. We measure or evaluate characteristics or properties of people: their scholastic potential, knowledge of algebra, honesty, perseverance, ability to teach, and so forth.

Definitions

A test is a tool to evaluate the skill, knowledge, capacities or aptitudes of an individual or a group.

– Webster's Dictionary

Test refers to any specific instrument, procedure or technique used by an administrator to elicit a response from the test-taker.

– H M Barrow and Megee

Test is the form of questioning or measuring used to assess retention of knowledge, capacity or ability of some endeavour.

– Barry L Johnson and Jack Nelson

A test is an instrument or a tool used to make a particular measurement. The tool may be written, oral, mechanical, or an other variation. Measurement refers to the process of administering a test to obtain quantitative data.

– H M Barrow

Measurement aids evaluation process in which various tools and techniques are used in collection of data.

– Barry L Johnson and Jack Nelson

An evaluation is an assessment, as systematic and impartial as possible, of an activity, project, Programme, strategy, policy, topic, theme, sector, operational area, institutional performance..

– United Nations Evaluation Group

Evaluation is the process of education that involves collection of data from the products which can be used for comparison with preconceived criteria to make judgement.

– H M Barrow and Megee

7.1.3 SCALES OF MEASUREMENT

Measurement numbers are composed of scales. There are four scales of measurement:

- **Nominal measurement scales** – Nominal measurement scales are used to name or label things or to depict categories. Nominal scales put things or people into categories. e.g., Gender is categorized in Male and Female.
- **Ordinal scales** – Ordinal scales order or rank things. In measurement, an assigned rank given to a person or thing is an ordinal number. e.g., First, Second and Third rank in sports.
- **Interval scale** – The most commonly used scale in measurement in physical education is the interval scale. Interval measurement scales are based on a



continuum where the interval (or distance) between any two numbers is always the same. The intervals are equal to each other. e.g., 2, 4, 6, 8 are at equal interval of 2. This scale does not have an absolute meaning of zero.

- **Ratio scale** – The most advanced, the most sophisticated, and the most precise measurement scale is the ratio scale. The ratio measurement scale is distinguished from the interval measurement scale by the fact that it has an absolute, true zero that has meaning. e.g., if somebody's pulse is zero mean there is no life in the individual. If something weighs zero, it means it is weightless.

I. Tick the correct option.

1. Zero degree temperature is an example of scale of measurement.
 - a. Nominal
 - b. Interval
 - c. Ordinal
 - d. Ratio
2. Mohan's height is 3ft 11in. 3ft 11 in is an example of
 - a. test
 - b. measurement
 - c. evaluation
 - d. assessment

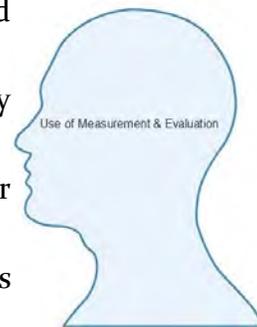
II. Answer the following questions briefly.

1. What is a test?
2. What is measurement?
3. What is Evaluation?

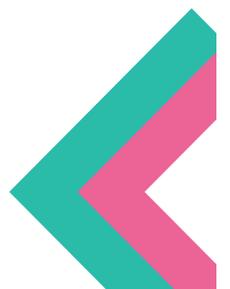
7.2.1 IMPORTANCE OF TEST, MEASUREMENT & EVALUATION IN SPORTS

There are several ways, then, in which evaluation procedures aid the teacher:

- (1) they help in providing knowledge concerning students' entry behaviours.
- (2) they help in setting, refining, and clarifying realistic goals for each student.
- (3) they help in evaluating the degree to which the objectives have been achieved.
- (4) they help in determining, evaluating, and refining the instructional techniques.



The importance of readiness for learning is a well-accepted principle. To teach effectively we must establish where a student is, and start from there. We should have estimates of the student's capacity for learning, as well as estimates of what he currently knows. We cannot, for example, teach lofted kick to a student who cannot hit the ball. To be effective teachers, we must be aware of what our students already know.



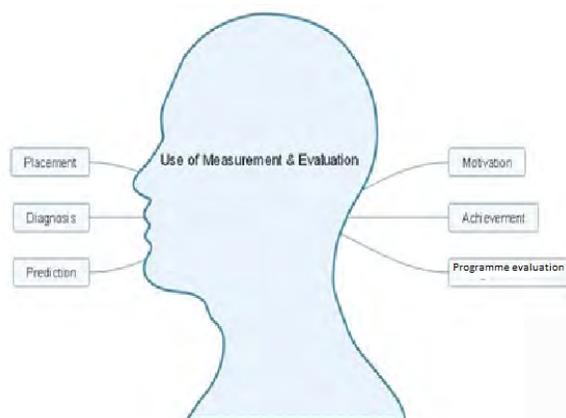


7.2.2 IMPORTANCE OF MEASUREMENT AND EVALUATION

A physical educationist might be interested in knowing whether the students are physical fit or whether they are equipped with sufficient fundamental skills for them to participate in different activities. So, in order to give them the best form of physical education Programme, a physical educationist needs to have the knowledge of Test, Measurement and Evaluation because the ultimate goal is to make an informed decision. Measurement and evaluation aid the student by

- (1) communicating the teacher's goals,
- (2) increasing motivation,
- (3) encouraging good study habits, and
- (4) providing feedback that identifies strengths and weaknesses.

Overall there are six general points that highlight the importance of measurement and evaluation in physical education and sports: placement, diagnosis, prediction, motivation, achievement, and programme evaluation.



Placement: Every student cannot be given the same training programme. Placement refers to the grouping of the students into categories like high fitness and low fitness, swimmers and non-swimmers, skilled and unskilled because students must be put into categories for being imparted the most suitable training. In other words, test and measurement is important to provide a means of classifying students for instruction and participation.

Diagnosis: Diagnosis is important to determine the strengths, weaknesses and limitations of individuals in physical education activity so that appropriate training can be provided. Diagnosis helps to determine the need(s) of the student. Thus, it is important to measure the abilities and capacities of each student in physical education activities.

Prediction: Test scores can be viewed as predictors of one's future success in school. Physical Education teachers may use the physical activity patterns, cardiovascular endurance, blood pressure, body fat, or other factors to predict the student's fitness level.



Motivation: Testing, measurement and evaluation gives the status of physical fitness, sports skills and other parameters which motivate the student to do better and better.

Achievement: In a Programme of instruction or training, a set of objectives must be established by which participants' achievement levels can be evaluated. For instance, in this course,

your final achievement level will be evaluated and a grade will be assigned on the basis of how well you met some objectives set forth by the instructor.

Programme evaluation: The goal of Programme evaluation is to demonstrate (with sound evidence) the successful achievement of Programme objectives to your superiors. A physical education teacher, may be asked to demonstrate how the students are receiving appropriate physical fitness training. So, one might compare students' fitness test results with the test results of students in another school district or with national test norms.

I. Tick the correct options.

1. The term 'placement' refers to
 - i. giving all students the same training Programme
 - ii. placing students into categories based on their skills
 - iii. determining the strengths and weaknesses of individuals
 - iv. predicting a student's future success in a particular sport
2. Test and measurement scores are helpful in
 - i. determining the strengths, weaknesses and limitations of a student
 - ii. discouraging the student from participating in a particular activity
 - iii. helping a student pick up the sports activity of his/her choice
 - iv. predicting the student's future level of achievement

II. Answer the following questions briefly.

1. What is the role test and measurement in Diagnosis?
2. What is role of Test and measurement in Placement?

III. Answer the following questions in 150-200 words.

1. Distinguish between Test, Measurement and Evaluation. Highlight their importance in Sports.

7.3.1 BODYMASS INDEX (BMI)

Confusion surrounds the precise meaning of the terms **overweight**, **overfat**, and **obese** as applied to body weight and body composition. Each term often takes on a different meaning depending on the situation and context of use. The medical literature infers the term overweight to an overfat condition despite the absence of accompanying body fat measures while obesity refers to individuals at the extreme of the overweight (overfat) continuum. The Body Mass Index (BMI) is the measure most often used for this distinction. The overweight condition refers to a body weight that





exceeds some average for stature, and perhaps age, usually by some standard deviation unit or percentage. The overweight condition frequently accompanies an increase in body fat, but not always (e.g., male power athletes), and may or may not coincide with the comorbidities like glucose intolerance, insulin resistance, dyslipidaemia, and hypertension (e.g., physically fit overfat men and women).

When bodyfat measures are available (hydrostatic weighing, skinfolds, girths, bioelectrical Impedance Analysis [BIA], Dual energy X-ray Absorptiometry [DXA] that you have already studied in Chapter 3) it becomes possible to more accurately place body fat level on a continuum from low to high, independent of body weight. Overfatness, then, would refer to a condition where body fat exceeds an age- and/or gender-appropriate average by a predetermined amount. In most situations, “overfatness” represents the correct term when assessing individual and group body fat levels. The term obesity refers to the overfat condition that accompanies a constellation of comorbidities that include one or all of the following components of the “obese syndrome”: glucose intolerance, type 2 diabetes, hypertension, increased risk of coronary heart disease and cancer.

Extension Activity

Record the height and weight of all students in your class.

- Find the BMI by applying formula.
- Find the Waist Hip Ratio using the given formula.

Clinicians and researchers frequently use the body mass index (BMI), derived from body mass and stature, to assess “normalcy” for body weight. This measure exhibits a somewhat higher, yet still moderate, association with body fat and disease risk than estimates based simply on stature and body mass.

BMI Computation

BMI computes as follows:

$$\text{BMI} = \text{Body mass (kg)} / \text{stature (m}^2\text{)}$$

Example

$$\begin{aligned} \text{Male stature: } & 175.3 \text{ cm, } 1.753 \text{ m ; body mass: } 97.1 \text{ kg . BMI} = 97.1 / (1.753)^2 \\ & = 31.6 \text{ kg .m}^{-2}\text{, or simply } 31.6 \end{aligned}$$

BMI	Classification
< 18.5	Under weight
18.5–24.9	normal weight
25.0–29.9	Overweight
30.0–34.9	class I obesity
35.0–39.9	class II obesity
≥ 40.0	class III obesity



7.3.2 WAIST TO HIP RATIO (WHR)

The waist to hip ratio determines the possibility of health risks and is an indication of whether you have an apple- or pear-shaped figure. The waist to hip ratio measurement is calculated by dividing the measurement of your waist by your hip measurement.

- **Aim:** the purpose of this test to determine the ratio of waist circumference to the hip circumference, as this has been shown to be related to the risk of coronary heartdisease.
- **Equipment required:** tape measure
- **Procedure:** A simple calculation of the measurements of the waist girth divided by the hip girth.

Waist to Hip Ratio (WHR) = G_w / G_h , where G_w = waist girth, G_h = hip girth. It does not matter which units of measurement you use, as long as it is the same for each measure.

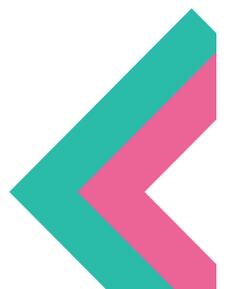
- **Scoring:** The table below gives general guidelines for acceptable levels for hip to waist ratio. Acceptable values are excellent and good. You can use any units for the measurements (e.g. cm or inches), as it is only the ratio that is important.
- **Target Population:** This measure is often used to determine the coronary artery disease risk factor associated with obesity.
- **Advantages:** the WHR is a simple measure that can be taken at home by anyone to monitor their own body composition levels.
- **Other Comments:** The basis of this measure as a coronary disease risk factor is the assumption that fat stored around the waist poses a greater risk to health than fat stored elsewhere in the body.

According to the World Health Organization (WHO), a healthy WHR is:

- 0.9 or less in men
- 0.85 or less for women giving from **Table no-1**

e.g., A man who is 183 cm tall, and weighs 95 kgs.

Assessment: As per Table No 1, ideal weight should be in between 72.6 - 88.9 kg, hence he is overweight.



**Table No. 1: Height and Weight Table**

Adults Weight to Height Ratio Chart		
Height - Ft. In. (cms)	Female	Male
4' 6" - (137 cm)	63 - 77 lb - (28.5 - 34.9 kg)	63 - 77 lb - (28.5 - 34.9 kg)
4' 7" - (140 cm)	68 - 83 lb - (30.8 - 37.6 kg)	68 - 84 lb - (30.8 - 38.1 kg)
4' 8" - (142 cm)	72 - 88 lb - (32.6 - 39.9 kg)	74 - 90 lb - (33.5 - 40.8 kg)
4' 9" - (145 cm)	77 - 94 lb - (34.9 - 42.6 kg)	79 - 97 lb - (35.8 - 43.9 kg)
4' 10" - (147 cm)	81 - 99 lb - (36.4 - 44.9 kg)	85 - 103 lb - (38.5 - 46.7 kg)
4' 11" - (150 cm)	86 - 105 lb - (39 - 47.6 kg)	90 - 110 lb - (40.8 - 49.9 kg)
5' 0" - (152 cm)	90 - 110 lb - (40.8 - 49.9 kg)	95 - 117 lb - (43.1 - 53 kg)
5' 1" - (155 cm)	95 - 116 lb - (43.1 - 52.6 kg)	101 - 123 lb - (45.8 - 55.8 kg)
5' 2" - (157 cm)	99 - 121 lb - (44.9 - 54.9 kg)	106 - 130 lb - (48.1 - 58.9 kg)
5' 3" - (160 cm)	104 - 127 lb - (47.2 - 57.6 kg)	112 - 136 lb - (50.8 - 61.6 kg)
5' 4" - (163 cm)	108 - 132 lb - (49 - 59.9 kg)	117 - 143 lb - (53 - 64.8 kg)
5' 5" - (165 cm)	113 - 138 lb - (51.2 - 62.6 kg)	122 - 150 lb - (55.3 - 68 kg)
5' 6" - (168 cm)	117 - 143 lb - (53 - 64.8 kg)	128 - 156 lb - (58 - 70.7 kg)
5' 7" - (170 cm)	122 - 149 lb - (55.3 - 67.6 kg)	133 - 163 lb - (60.3 - 73.9 kg)
5' 8" - (173 cm)	126 - 154 lb - (57.1 - 69.8 kg)	139 - 169 lb - (63 - 76.6 kg)
5' 9" - (175 cm)	131 - 160 lb - (59.4 - 72.6 kg)	144 - 176 lb - (65.3 - 79.8 kg)
5' 10" - (178 cm)	135 - 165 lb - (61.2 - 74.8 kg)	149 - 183 lb - (67.6 - 83 kg)
5' 11" - (180 cm)	140 - 171 lb - (63.5 - 77.5 kg)	155 - 189 lb - (70.3 - 85.7 kg)
6' 0" - (183 cm)	144 - 176 lb - (65.3 - 79.8 kg)	160 - 196 lb - (72.6 - 88.9 kg)
6' 1" - (185 cm)	149 - 182 lb - (67.6 - 82.5 kg)	166 - 202 lb - (75.3 - 91.6 kg)
6' 2" - (188 cm)	153 - 187 lb - (69.4 - 84.8 kg)	171 - 209 lb - (77.5 - 94.8 kg)
6' 3" - (191 cm)	158 - 193 lb - (71.6 - 87.5 kg)	176 - 216 lb - (79.8 - 98 kg)
6' 4" - (193 cm)	162 - 198 lb - (73.5 - 89.8 kg)	182 - 222 lb - (82.5 - 100.6 kg)
6' 5" - (195 cm)	167 - 204 lb - (75.7 - 92.5 kg)	187 - 229 lb - (84.8 - 103.8 kg)
6' 6" - (198 cm)	171 - 209 lb - (77.5 - 94.8 kg)	193 - 235 lb - (87.5 - 106.5 kg)
6' 7" - (201 cm)	176 - 215 lb - (79.8 - 97.5 kg)	198 - 242 lb - (89.8 - 109.7 kg)
6' 8" - (203 cm)	180 - 220 lb - (81.6 - 99.8 kg)	203 - 249 lb - (92 - 112.9 kg)
6' 9" - (205 cm)	185 - 226 lb - (83.9 - 102.5 kg)	209 - 255 lb - (94.8 - 115.6 kg)
6' 10" - (208 cm)	189 - 231 lb - (85.7 - 104.8 kg)	214 - 262 lb - (97 - 118.8 kg)
6' 11" - (210 cm)	194 - 237 lb - (88 - 107.5 kg)	220 - 268 lb - (99.8 - 121.5 kg)
7' 0" - (213 cm)	198 - 242 lb - (89.8 - 109.7 kg)	225 - 275 lb - (102 - 124.7 kg)

In both men and women, a WHR of 1.0 or higher increases the risk for heart disease and other conditions that are linked to being overweight.

I. Tick the correct options.

1. Skinfold technique is used to measure
 - i. weight
 - ii. fat percentage
 - iii. girth measurement
 - iv. over fatness
2. WHR is calculate by
 - i. multiplying waist by hip measurement
 - ii. adding hip by waist measurement



- iii. dividing hip by waist measurement
- iv. subtracting waist from hip measurement

II. Answer the following questions briefly.

- 1. What is BMI?
- 2. What is WHR?
- 3. What is Overweight and obesity?

III. Answer the following questions in 150-200 words.

- 1. Vilas, a male person whose weight is 90 kg and his height is 1.7 m. Calculate his BMI. Also state the category in which he falls.

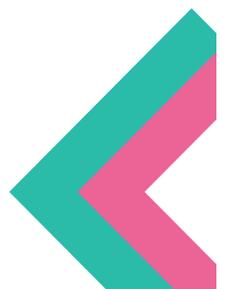
7.4 SOMATOTYPES (ENDOMORPHY, MESOMORPHY & ECTOMORPHY)

Why should you use somatotyping? Of what value is it in exercise and sports science? These are important questions that are often asked. The somatotype gives an overall summary of the physique as a unified whole. Its utility is in the combination of three aspects of physique into a somato type rating. It combines the appraisal of adiposity, musculo-skeletal robustness and linearity into the three-numbered rating and conjures up a visual image of the three aspects of the physique. Adiposity is related to the relative fatness or endomorphy; the relative muscle and bony robustness is related to the fat-free body or mesomorphy; and the linearity or ectomorphy gives an indication of the bulkiness or mass relative to stature in the physique. From a few simple measurements, the somato type gives a useful summary of a variety of possible measures or observations that can be made on the body. The somato type tells you what kind of physique you have and how it looks. It has been used to describe and compare the physiques of athletes at all levels of competition and in a variety of sports. Somato types of athletes in selected sports are quite different from each other, whereas somato types are similar in other sports. Somato typing has also been used to describe changes in physique during growth, ageing and training, as well as in relation to physical performance.

Somatotype is a method for describing the human physique in terms of a number of traits that relate to body shape and composition. The definition of the traits, and the form of the scales that are used to describe the relative importance of the traits, vary from one body-type method to the other. Attempts to establish such methods date from Hippocrates, and continue to the present time. A classic approach that led to today's commonly used method, was introduced by Sheldon.

The somatotype system presented by Sheldon was based on subjective method based on photography of the participants. The Sheldon somatotype was further modified by H.Carter in 1967 for developing an objective method of classifying body type based on anthropometric methods.

The present chapter delimits itself to the basic understanding of the characteristics associated with the three different body types known as Endomorph, Mesomorph, Ectomorph.

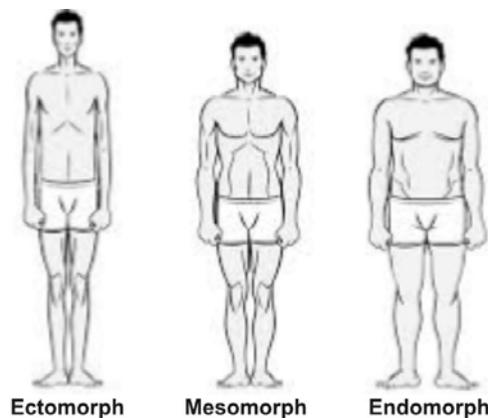




The first component, called Endomorph, describes the relative degree of adiposity of the body, regardless of where or how it is distributed. It also describes corresponding physical aspects, such as roundness of the body, softness of the contours, relative volume of the abdominal trunk, and distal tapering of the limbs. Endomorph are rounded shaped or pear shaped body with high percentage of body fat. They reflect wide hip and narrow shoulders along with under developed muscles. Due to this, they may not be found to be athletic or highly active in sports and less active toward exercise.

The second component, called Mesomorph, describes the relative musculo-skeletal development of the body. It also describes corresponding physical aspects, such as the apparent robustness of the body interms of muscle or bone, the relative volume of the thoracic trunk and the possibly hidden muscle bulk. The definitions of endomorphy and mesomorphy reflect the anatomical model of body composition. Mesomorph are square shaped and muscular in structure. They have well developed muscles, wedge-shaped body, narrow hips and broad shoulders. Mesomorphs are also found have less fat percentage, therefore found to be more physically active in sports, fitness and high intensity activities.

The third component, called Ectomorph, describes the relative slenderness of the body. It also describes corresponding physical aspects, such as the relative 'stretched-outness,' the apparent line a rity of the body or fragility of the limbs, in absence of any bulk, be it muscle, fat or other tissues. Ectomorph are thin and fine-boned in shape and mostly have narrow chest and abdomen. Being underweight is a common reflection of ectomorphs. They also demonstrate narrow shoulders and hips with less percentage of fat. They may not be found to be athletic in characteristics, especially due to being more prone to injuries and lack of muscularity required for competitive sports.



Somatotype modified by H. Carter is a quantified expression or description of the present morphological conformation of a person. It consists of a three-numeral rating, for example, 3.5-5-1. The three numerals are always recorded in the same order, each describing the value of a particular component of physique.

Category is the qualitative description of the individual somatotype, in terms of the dominant component or components. For example, a subject with a high rating on mesomorphy and an equally low rating on endomorphy and ectomorphy, will be called a mesomorph or a balanced mesomorph.



The principal rating of the component values is based on a visual inspection of the subject, or his or her photograph – preferably a front, a side and a back view – taken in minimal clothing. This rating is called the photoscopic (or anthroposcopic) somato type rating. If the investigator cannot perform a photoscopic rating, the component values can be estimated from a combination of anthropometric measurements. The calculated three-numeral rating is then called the anthropometric somatotype. The recommended somato typing procedure is a combination of an anthropometric followed by a photoscopic evaluation.

I. Tick the correct option.

1. Somatotype is a method for describing
 - i. human body length
 - ii. human physique
 - iii. human skull
 - iv. human behaviour
2. The term ectomorphy describes
 - i. the relative volume of the abdominal trunk
 - ii. the relative slenderness of the body ageing
 - iii. the roundness of the body
 - iv. the musculo-skeletal development of the body

II. Answer the following questions briefly.

1. What is somatotype?
2. What is endomorph?
3. What is ectomorph?

III. Answer the following questions in 150-200 words.

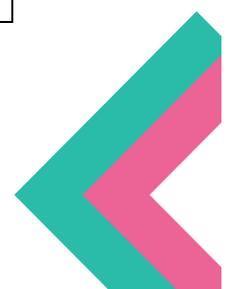
1. Explain the procedure of measuring somatotypes.

7.5. Measurement of health related physical fitness

Components of health related physical fitness has already been defined and discussed in unit-iii and the present unit will discuss about the test battery items, test protocols and evaluation norms for assessment of physical fitness.

Health related physical fitness as defined in earlier chapters, need to have multiple test items which are combined together to form a battery or group of tests. There are many health related physical fitness test batteries used across the world for different age groups and demographics. One of the prominent health related fitness test is 'AAHPERD Health related test' developed for college students in 1980 at USA. The test item of AAHPER health related physical fitness test are:

FITNESS COMPONENTS	TEST ITEMS
--------------------	------------



Body Composition	Triceps and subscapular skinfolds
Low Back Hamstring Flexibility	Sit and Reach
Abdominal Muscle Strength/Endurance	Bent knee sit-ups in one minute
Cardiorespiratory Endurance	Mile run or Nine-minute run

In this chapter, we will discuss about a health related physical fitness test battery for Indian school children between the age group of 9-18 years, developed by Fit India Mission in 2019.

HEALTH RELATED FITNESS COMPONENTS	TEST ITEMS
a. Body composition	BMI
b. Cardiorespiratory endurance	600 mt Run/Walk
c. Muscular strength and Muscular endurance	Partial Curl-up and Push-Up
d. Flexibility.	Sit and Reach

Let's discuss briefly discuss about the test procedures for the test items:

7.5.1 BMI (Body Composition): Body Composition refers primarily to the distribution of muscle and fat in the body. Body mass index is calculated from the measures of body Weight (W) and height(H). It is also referred as BMI, for which the formula is Weight (w) divided by Height (h) in squares ($BMI = W / (H \times H)$), where weight (W) is in kilograms and height (H) is in meters. The higher the score usually indicates higher levels of body fat.

Procedure

i.) Height measuring procedure (protocol):

- Barefoot, stand erect with heels together
- Both heels touching the base of the stadiometer,
- Arms hanging naturally by the sides.
- The heels, buttocks, upper part of the back and usually, but not necessarily, the back of the head are in contact with the vertical wall.
- The subject is instructed to "look straight ahead" and "take a deep breath".
- Mark the highest point on skull (Vertex).
- Measure before exhalation
- Measurement is read to the nearest 0.1 cm.





ii.) Weight measuring procedure:

- a. Place the scale on firm flooring (such as tile or wood) rather than carpet.
- b. Have the participant remove shoes and heavy clothing, such as sweaters.
- c. Have the participant stand with both feet in the center of the scale.
- e. Record the weight to the nearest decimal fraction (for example, 25.1 kilograms).

7.5.2 Partial Curl Up -30sec (Abdominal/ Core Strength): The curl up test measures abdominal muscular strength and endurance of the abdominals and hip-Flexors, important in back support and core stability.



Procedure:

- a) Lie down on flat surface with knees flexed, usually at 90 degrees, with hands straight on the sides (palms facing downwards) closer to the ground, body and near to the first parallel strip on the floor.
- b) Curl the trunk up and raise it towards the knees in a smooth motion by keeping the arms stretching above/along the ground towards the six inch apart parallel strip).
- c) Return to the earlier position to complete one set of curl by lowering the trunk back to the floor so that the shoulder blades or upper back touch the floor.
- d) Complete maximum sets possible in 30 seconds and stop after the time finish signal is received.

Equipment:

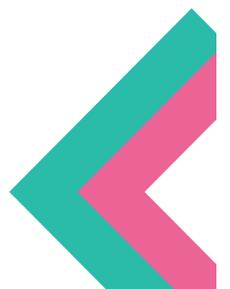
A comfortable mat with a marking of two parallel strips (6 inch apart).

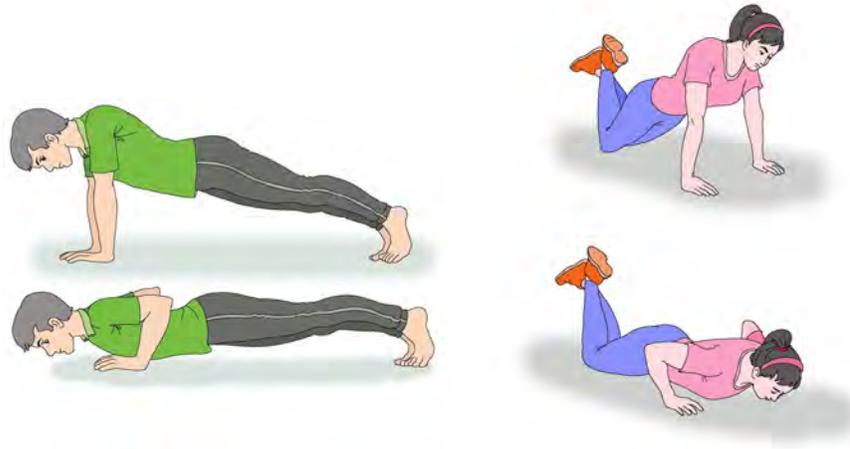
Stopwatch.

Scoring:

Record the maximum number of Curl ups in a certain time period 30 seconds.

7.5.3 Push Up for Boys/Modified Push Up for Girls (Muscular Endurance): Upper body strength and endurance is tested through the Push-Up test for boys and modified Push-Up for girls.





Procedure:

Standard push-up for Boys -

- Initial position for push up begins with the hands and toes touching the floor, the body and legs in a straight line, feet slightly apart, the arms at shoulder width apart, extended and at a right angle to the body.
- Push-up is executed by keeping the back and knees straight, the participant lowers the body to a predetermined point or until there is a 90-degree angle at the elbows, then returns back to the starting position with the arms extended.
- Repeat the sets to the maximal numbers till exhausted, as there is not time limit.

Modified Push-up for Girls: Position will be with knees bent, ankles crossed and resting on the floor.

Scoring: Total number of correct push-up will be recorded as scores.

7.5.4 Sit and Reach Test (Flexibility): is the test for assessment of flexibility of the lower back and hamstring muscles. It is a simple test of stretching the trunk forward by placing the hand on a measuring scale fixed to the flexometer (sit and reach box) and positioning the feet on to the sit & reach box without bending knees.



Procedure:

- Sit bare foot on the floor with soles of the feet placed flat against the Sit and Reach box. Both knees should be locked and pressed flat to the floor.
- Measure the initial positing score by placing the hands on to the measuring scale.



- c) For final position, reach forward along the measuring scale with the palms facing downwards, and the hands on top of each other.
- d) Hold the final position for one-two seconds while the distance is recorded, avoid jerky movements.

Equipment :

Sit and Reach box (Flexometer) - Sit and Reach box with 12" x 12" (sides); 12" x 10" (front and back) ; 12" x 21" (top), fixed with a measuring scale on the top panel.

Scoring:

Difference between initial position and final position is recorded in cm and mm as the final score.

7.5.5 600m Run/ Walk (Cardiovascular endurance): the test is recommended to assess cardiovascular endurance for school children by asking them to run or walk for 600m and record the time for covering the distance.

Procedure:

- a) The track can be a standard track or a modified arena of 600m distance.
- b) The participant can run or walk for the given distance.
- c) Participant should be motivated to cover the distance in shortest possible time.

Discussion

SLAUGHTER-LOHMAN FORMULA TO CALCULATE BODY FAT FOR CHILDREN

Body composition assessment for school children can also be effectively done with various other ways including using of skinfold measurements. Let's read a procedure for skinfold test using two sites for body fat measurement with the help of skinfold calliper as explained by M.H.Slaughter and T.G.Lohman in 1988.

Objective: The Slaughter-Lohman formula calculates the percentage of body fat from the taking of two skinfolds. This is based on an age range from 8 to 18 years old.

Slaughter-Lohman Equation Skinfold Sites

- Triceps
- Calf

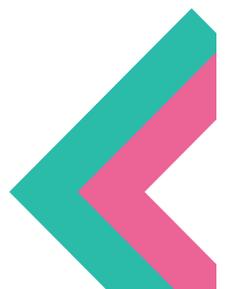
Equipment: Skinfold calliper

Procedure: To calculate the percentage of body fat, measure take the skinfolds (in mm) with a skinfold calliper and perform the followings equations:

Formula:

- *Boys:* % Body Fat = $0.735 (\text{Triceps skinfold} + \text{Calf skinfold}) + 1.0$
- *Girls:* % Body Fat = $0.610 (\text{Triceps skinfold} + \text{Calf skinfold}) + 5.1$

Score: Time taken for completion (Run or Walk) in min, sec, mm





Test Battery Norms for Evaluation

Norms for the Health related Fitness Indicators as per Khelo India battery of fitness assessment test can be referred by scanning this code



I. Tick the correct options.

1. Sit and Reach test is for the assessment of.....
 - i. Strength
 - ii. Flexibility

7.5.6 Endurance

7.5.7 Speed

2. Test for 600 mt run/walk is for the assessment of.....
 - i. Strength
 - ii. Flexibility
 - iii. Endurance
 - iv. Speed

II. Answer the following questions briefly.

1. What is the process of Body Mass Index testing?
2. What is the difference between Push-Up and modified Push-Up test?
3. What is the procedure to measure height?

III. Answer the following questions in 150-200 words.

1. Explain in brief the procedure of testing abdominal strength?

Suggested Reading:

Clarke, H. D. (1987). Application of Measurement to Physical Education. Englewood Cliffs, Prentice Hall.

- Kansal, D. (2008). Text Book of Applied Measurement & Evaluation & Sports. New Delhi: Sports & Spiritual Science Publications.
- Morrow, J. R. (2000). Measurement and Evaluation in Human performance. Human Kinetics.



UNIT-VIII

FUNDAMENTALS OF ANATOMY, PHYSIOLOGY AND KINESIOLOGY IN SPORTS

Content:

1. Definition and importance of Anatomy, Physiology and Kinesiology.
2. Functions of Skeletal System, Classification of Bones and Types Joints.
3. Properties and Functions of Muscles.
4. Structure and Functions of Respiratory System and Circulatory System.
5. Equilibrium: Dynamic and Static and Centre of Gravity and its application in Sports.

Learning Outcomes:

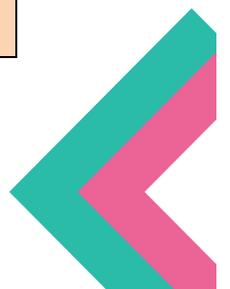
At the end of this unit, you will be able to:

- identify the importance of anatomy, physiology and kinesiology.
- recognize the main functions of the skeleton.
- understand the functions of bones and identify various types of joints.
- figure out the properties and functions of muscles and understand how they work.
- understand the anatomy of the respiratory system and describe its working.
- identify and analyse the layout and functions of Circulatory System.
- articulate and demonstrate the concept and application of equilibrium and centre of gravity insports.

Quiz

Tick the correct answers.

1. Muscles are connected to bones by
 - a. ligaments
 - b. cartilage
 - c. tendons
2. A flexor
 - a. decreases the angle at a joint
 - b. extends a limb
 - c. moves a limb towards the midline
3. Shoulder and Hip Joints are an example of
 - a. ball and socketjoint
 - b. hingejoint
 - c. saddlejoint
4. Histology refers to the study of the





- a. cells of the body
 - b. history of anatomy
 - c. tissues of the body
5. The membrane on the surface of a lung is called the
- a. pleura
 - b. pericardium
 - c. mucosa

8.1.1 DEFINITION OF ANATOMY, PHYSIOLOGY AND KINESIOLOGY

Anatomy is a science that deals with the structure of the body and the relationship between the body parts.

The word anatomy is derived from the Greek words *Ana* which means *apart* and *tomy* meaning *to cut*. Hence, the word *anatomy* refers to *dissection* and it can be defined as the science of the structure of a body learned by dissection. In other words, anatomy is the study of the shape and structure of human body and body parts along with their relationship to one another.

Anatomy is divided into the following categories:

Gross/Macro anatomy is the study of the larger structures of the body, those visible without the aid of magnification. It deals with the large body structures such as heart, lungs and bones. Microscopic anatomy is the study of those structures of body which can't be seen with the naked eye.

Gross anatomy may further be subdivided into the following categories:

1. **Systemic anatomy:** Systemic anatomy is the study of the working and structures of a discrete body system. It is the study of a group of structures that work together to perform a unique body function. e.g., a systemic study of the muscular system would include all of the skeletal muscles of the body.
2. **Regional anatomy:** is the study of the interrelationships of all of the structures in a specific body region. Regional anatomy helps us appreciate the interrelationships of body structures, such as how muscles, nerves, blood vessels, and other structures work together to serve a particular body region. e.g., the study of an area of the body such as the abdomen would include a study of all organs, blood vessels etc in that part of the body.
3. **Surface anatomy:** this is a study of external features of the body like the bony projections of the body which act as a landmark and help us to locate the other deeper structures. e.g., skin, nails, hair etc.

Microscopic anatomy includes

1. **Cytology** or the study of the internal structure of cells
2. **Histology** or the study of tissues (groups of cells)



8.1.2 PHYSIOLOGY

Physiology is the science of the functions of living organisms and their parts. The word physiology is derived from the Greek words *physor nature* and *logio* which means **the study of**. Hence, the word physiology refers to the study of the human body and its functions and of the different parts and organs of the body .e.g., the detailed working and function of the skeletal system, respiratory system and the circulatory. Here we understand and study how human body responds to a givens timulus.

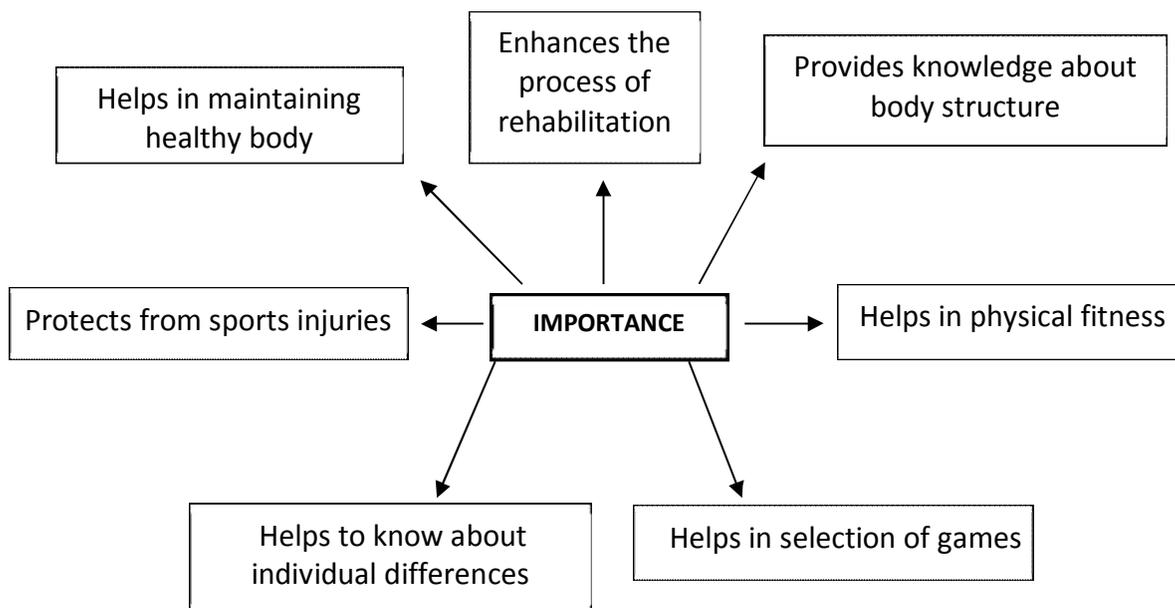
We can also say physiology is the detailed study of life, including the functioning of the smallest of cells, tissues and other organisms.

Physiology is further divided into sub parts which are as follows:

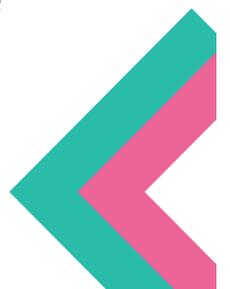
Human physiology: This branch of physiology refers to the study of a specific organism, i.e. the human being.

Cellular and systemic physiology: Cellular physiology is the study of the function of cells while systemic physiology is the study of the function of the body's systems.

8.1.3 IMPORTANCE OF ANATOMY AND PHYSIOLOGY



1. **Helps in physical fitness:** Study of anatomy and physiology helps a sports person to understand the structure and functioning of different parts of the human body and to acquire a fit and healthy body. e.g., building muscle strength, muscle endurance through appropriate exercises.
2. **Provides knowledge about body structure:** Knowing the strengths and weaknesses of one's body can help the sports person develop her/his strength in the field of games or sports which are suitable for as per her/his body structure. e.g., designing exercises based on movement of joints like shoulder rotation, due





to presence of ball and socket joint in the shoulder, and extension and flexion of elbow due to hinge joint in the elbow.

3. **Provides knowledge about the functions of various organs of body:** Knowledge of the capacity or functions of the various body systems like the cardiovascular system or the nervous system, muscular system, excretory system is essential for imparting proper and beneficial training to the athletes by the physical education teacher or coach. e. g., a sprinter usually has fast twitch muscle fibres whereas long distance runners have slow twitch muscle fibres.
4. **Helps in selection of games:** On the basis of the knowledge of body structure, a coach or player can choose an appropriate sport for the student. e.g., weight lifting is more appropriate for short statured students in comparison to volleyball and basketball which are better suited for students who are tall.
5. **Protects from sports injuries:** Injuries related to sports such as sprain, contusion, fracture, dislocation of joints, etc., are fairly common on the sports field. Sports equipment is designed to ensure safety on the basis of knowledge of anatomy. Designing protective equipment in games and sports to provide protection to the soft and delicate organs requires appropriate knowledge about the functions of bones, muscles, tendons and ligaments.
6. **Helps in the process of rehabilitation:** Injuries are common and natural on the sports field. Knowledge of ligaments, tendons and muscles helps in rehabilitation from the injuries sustained during the game or sport and the injured player can recuperate enough to give a good performance again. e.g., a physiotherapist who helps an injured sportsperson in recuperation and rehabilitation so that she/he can get back to the game.
7. **Helps in maintaining healthy body:** Study of anatomy and physiology provides detailed knowledge about all body parts, their nature and function, adopt good, safe and healthy use of body. e. g., knowledge of anatomy provides information about good and bad posture while sitting, standing, lying down, running.
8. **Helps to learn about individual differences between male and female athletes:** Understanding the basic physiological differences between the body of male and female sports persons is essential because games and sports equipment is designed differently on the basis of these differences. e.g., the difference in the structure of shoulder among males and females is the reason for difference in the weights of sports equipment such as shotput, discus, hammer and javelin for males and females.

8.1.4 KINESIOLOGY

Have you ever wondered what makes a physical activity as simple and routine as walking possible? The fact is, even such simple movements require an intricate coordination of muscles, ligaments, and joints. The study of these bodily movements is called Kinesiology. The term Kinesiology is derived from the Greek word *kinesis* which means **movement** or **motion** and *logio*, or **the study of**. Thus, Kinesiology is the scientific study of human or non-human body movement. The dictionary defines Kinesiology as “the science dealing with the interrelationship of the physiological



processes and anatomy of the human body with respect to movement.” It is an analysis of human motion based upon scientific principles, bio- mechanics, muscular system anatomy and neuro muscular physiology. Therefore, to understand kinesiology, it is imperative we have an adequate knowledge of anatomy and physiology.

Importance of Kinesiology

1. The main focus of Kinesiology is the study of the mechanical concepts related to human movement which is beneficial for every individual even in their daily activities.
2. Kinesiology applies sciences like biomechanics, anatomy, physiology and psychology to better understand how the human body responds to physical activity and various stimuli.
3. Kinesiology and physical education study the role of exercise, physical movement and sports in the development of human health and happiness.
4. It helps to understand the interconnection between human structure and functions.
5. It provides adequate knowledge of movement to athletic trainers who can, then, try to prevent athletes from suffering injuries.
6. It provides knowledge regarding efficient movements as a part of daily living in order to achieve optimum quality of body efficiency.
7. The study of Kinesiology and Physical Education may be used as the basis for a variety of careers which include Gym instructors, Coaches in different sports etc.

I. Tick the correct options

1. The science that deals with the structural aspect of the human body is known as
 - i. Physiology
 - ii. Anatomy
 - iii. Botany
 - iv. Kinesiology
2. The scientific study about the human or non-human body movements it is known as
 - i. Physiology
 - ii. Anatomy
 - iii. Biology
 - iv. Kinesiology
3. The study of the larger structures of the body such as heart, lungs and bones is known as
 - i. Systemic Anatomy
 - ii. Regional Anatomy
 - iii. Surface Anatomy





iv. Microscopic Anatomy

4. The athlete who has a greater dominance of slow twitch muscle fibres
 - i. a sprinter
 - ii. a middle distance runner
 - iii. a long distance runner
 - iv. a long jumper

II. Answer the following questions briefly.

1. Differentiate between Anatomy and Physiology.
2. What is the difference between Gross Anatomy and Microscopic Anatomy?
3. Define Kinesiology.
4. List the importance of Kinesiology in sports.

III. Answer the following questions in 150-200 words.

1. Define Anatomy and Physiology. Elucidate the importance of Anatomy and Physiology in the field of sports.
2. Define Kinesiology. Explain the importance of Kinesiology in the field of sports.

8.2.1 SKELETAL SYSTEM

The human skeleton is composed of cartilage and bones. The human skeleton is the internal framework of the body. It is composed of around 270 bones at birth – this total decreases to around 206 bones by adulthood after some bones get fused together.

The human skeleton is divided into two functional parts:

Axial skeleton – consists of the vertebral column, the rib cage, the skull and other associated bones.

Appendicular skeleton – is attached to the axial skeleton. It is formed by the shoulder girdle, the pelvic girdle and the bones of the upper and lower limbs.

Functions of the Skeleton

The functions of the skeleton include:

1. This skeletal system provides shape and support to the body.
2. It allows the body to create movement by forming the frame work of the body, to which the muscles are attached. Movement occurs when muscles contract and pull on bones making them create movement in the joint.
3. Internal organs of the body like heart, lungs, liver, brain etc. are soft and delicate. The skeleton protects these organs.
4. The hard substance of the bones also serves as a store house of minerals.
5. Blood cells are also formed within the cavitation of the skeleton which is known as Haematopoiesis.



Do you know?

joint: a point where two or more bones are connected in the body in a manner that permits movement.

cartilage: a form of connective tissue that is semi-rigid yet flexible. It is found in the joints and other places such as the nose, throat, and ears.

tendon: a strong piece of tissue in the body connecting a muscle to a bone

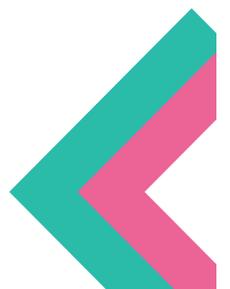
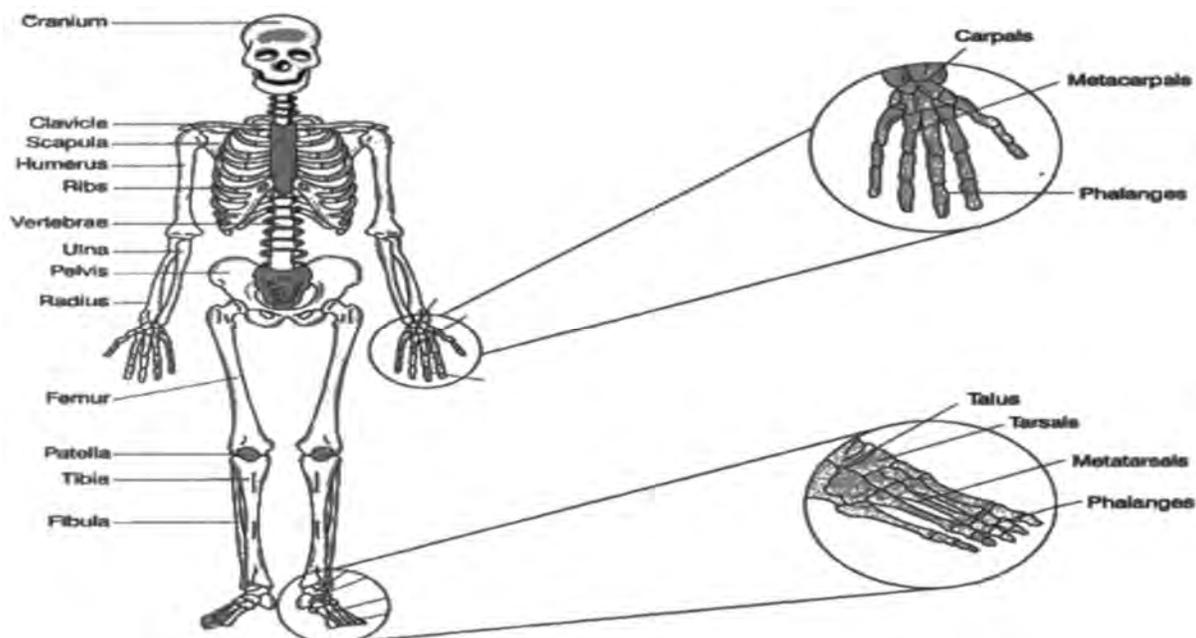
ligament: fibrous cords that bind the bones together at joints

8.2.2 SKELETAL SYSTEM

What makes up the Skeleton

Along with bones, joints and cartilage, the skeleton also includes tendons and ligaments.

1. **Bone** is a rigid part of the skeleton. In the body, bones have a variety of shapes and sizes and serve multiple functions.
2. **Cartilage** is more flexible than the bones. It is found in plenty in the embryo and the foetus. In adults, the surfaces of bones within the movable joints are covered with cartilage. It provides both a firm and a flexible support inside certain structures of the nose, external ears, ribs and trachea.
3. **Tendons and Ligaments** are strong bands of fibrous connective tissues. Tendons connect muscles to bone, whereas ligaments connect one bone to another bone.





Extension Activity

Working in groups of five draw and label the bones of the following parts:

1. Skull
2. Clavicle
3. The kneecap
4. Bones of the fingers of the palm
5. Bones of the fingers of the feet.

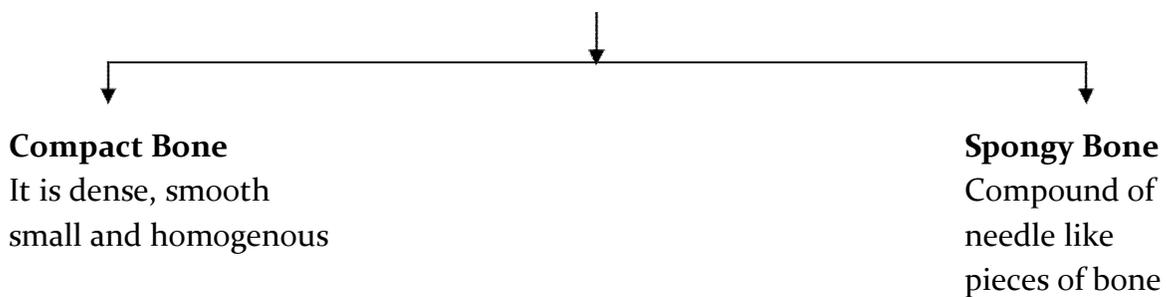
8.2.3 CLASSIFICATION OF BONES

Bones can be classified on the basis of different categories:

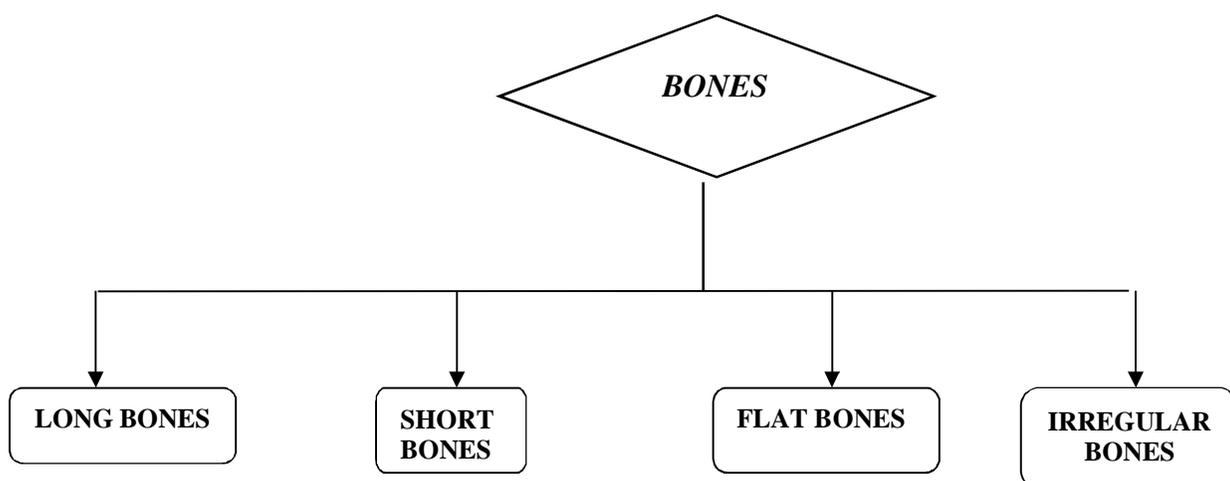
- Classification is on the basis of bone tissue.
- Classification is on the basis of shape and size.

Classification on the basis of bone tissue.

There are 2 Basic types of bone tissue

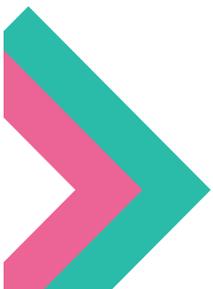


Classification of bones on the basis of shape and size.



1. Long Bones

- Long bones are hard, dense bones that provide strength, structure, and mobility to the body.





- Each long bone is composed of a central shaft and two knobends.
- The long bone is covered with a fibre sheet except where it joins with other bone.
- Where the long bone joins with other bone it is covered with a thin sheet of cartilage.
- Long bones are found in upper and lower arm (Humerus, Radius and Ulna) and thigh and leg (Femur, Tibia and Fibula). Some bones in the fingers and toes are also classified as long bones, even though they are short in length. This is due to the shape of the bones, not their size
- Long bones contain both yellow bone marrow and red bone marrow, which produce blood cells.



Ulna Radius



Femur

2. Short Bones

- Short bones are about as long as they are wide. In fact, they are in cube shape.
- A short bone is composed of central spongy bone and covered with a thin layer of compact bone.
- The motion of short bones is limited, and they glide on one another.
- The carpals in the wrist and the tarsals in the ankles are examples of short bones..



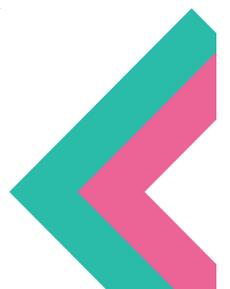
Capital (carpal) Bone



Talus

3. Flat Bones

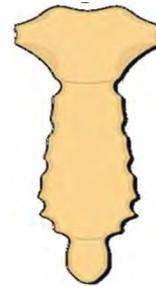
- Flat bones are thin and flat.
- They are composed of a central layer of spongy bone between two outer layers of compact bone.



- They form a bony cage and help in the protection of soft internal organs.
- Flat bones are found in cranial bones, ribs, sternum, scapula and hipbone.



Scapula



Sternum

4. Irregular Bones

- Irregular bones vary in shape and structure and therefore do not fit into any other category (flat, short or long).
- They often have a fairly complex shape, which helps protect internal organs. e.g., the vertebrae. Irregular bones of the vertebral column, protect the spinal cord. Some bones of the skull are also irregular bones.



Vertebra

Extension Activity

Working in groups of five draw and complete the following table:

Bone	Type	Where it is found in the body
Radius		
Patella		
Metatarsal		
Femur		

Do You Know?

The shortest Bone in the human body is the **STAPES** found in the middle ear.



8.2.4 JOINTS

A joint or articulation (articular surface) is the point where the two or more bones meet and muscles act on them to cause movement.

A joint is usually considered movable, but it's not necessary in all the cases. There are many joints which show limited movement and some that are completely immovable.

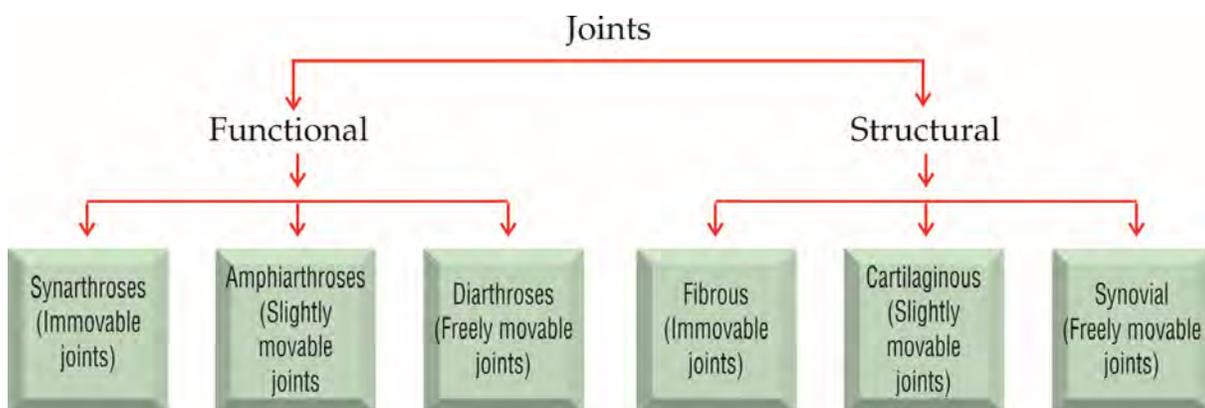
Joints are further classified on the basis of their functions and structure.

Extension Activity

Working in pairs, locate the joints in your

- Shoulder
- Arms
- Wrist
- Fingers
- Hip
- Legs
- Toes

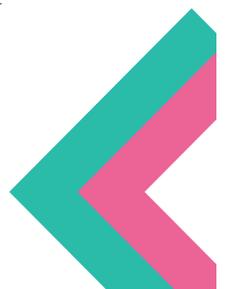
Can you identify the movement in these joints?



The functional classification of joints focuses on the amount of movement permitted by the joint. On the basis of this:

- **Synarthroses** or they may be called **immovable joints**
- **Amphiarthroses** which are also known as **slightly movable joints**
- **Diarthroses** or the **freely movable joints**.

The freely movable joints are majorly found in the limbs, where movement and mobility is of utmost importance. The immovable or slightly movable joints are mostly

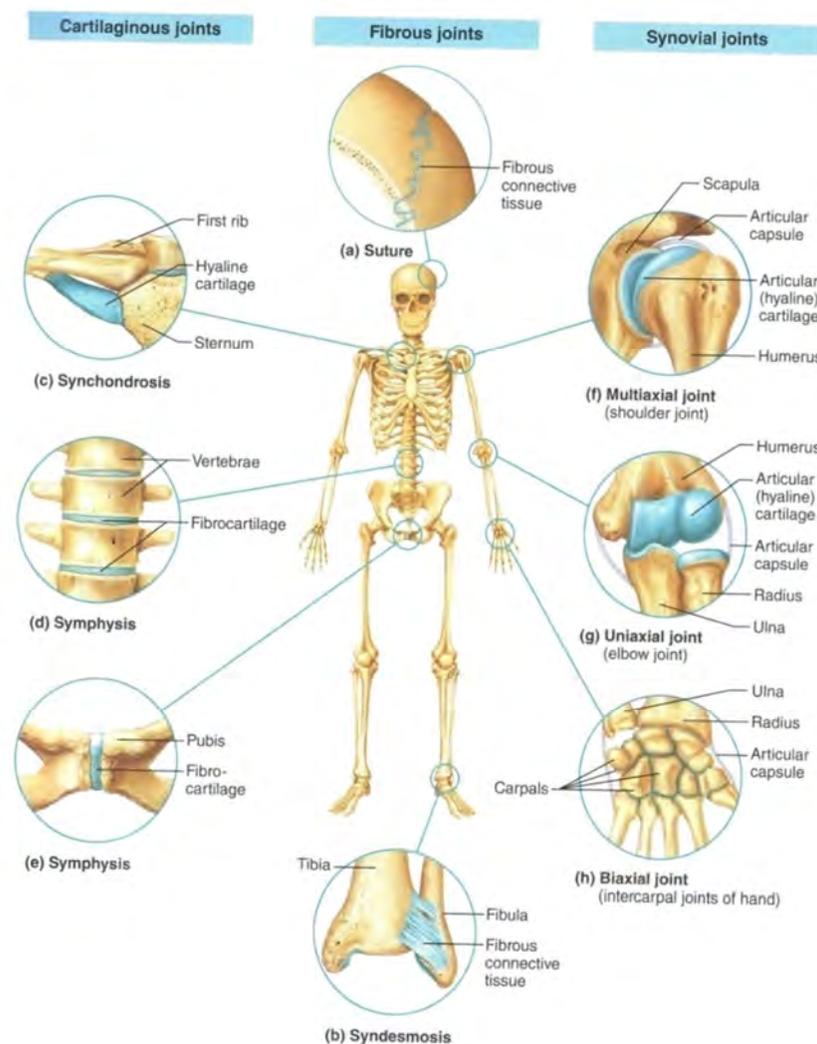




to be found in axial skeleton where the priority is protection of internal organs and firm attachments.

In the structural classification mainly there are fibrous, cartilaginous and synovial joints. This type of classification is based on whether fibrous tissue, cartilage, or a joint cavity separates the bony regions at the joint.

Fibrous joints are generally immovable and, synovial joints are freely movable joints. Cartilaginous joints have a combination of both immovable and slightly movable joints.



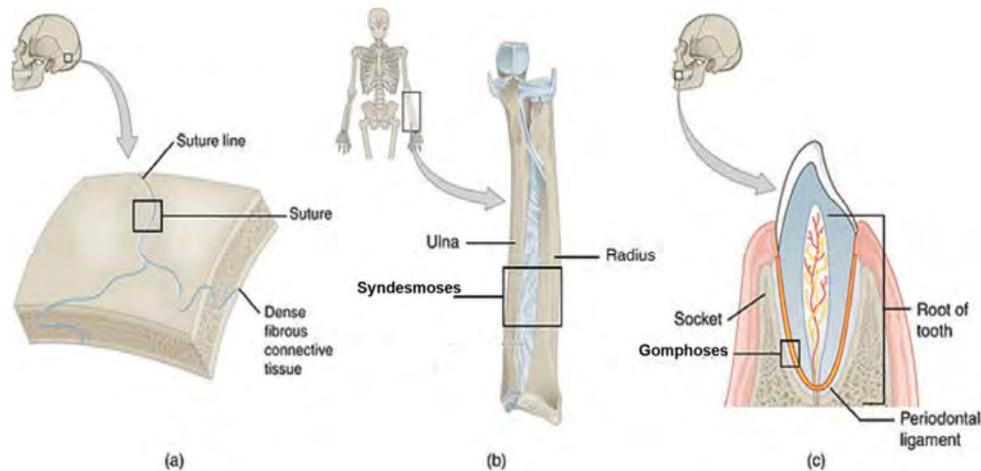
1. **Fibrous Joints** – In this type of joint, the bones are united together by fibrous tissue and show little or no movement. They are again further classified on the basis of structure of the **sutures, syndesmoses** or **gomphoses**.

- i. **Sutures** – A suture is a type of fibrous joint forming a tight union between the bones that prevents any movement between them. Sutures are only found between the bones of the skull or the cranium. The skull bones of a foetus are unfused but after birth, the bones slowly begin to fuse to become fixed, making the skull bones immovable in order to protect the brain from impact.

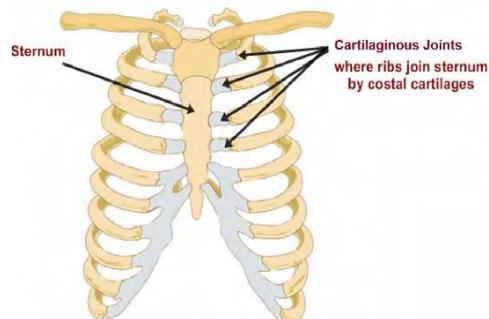
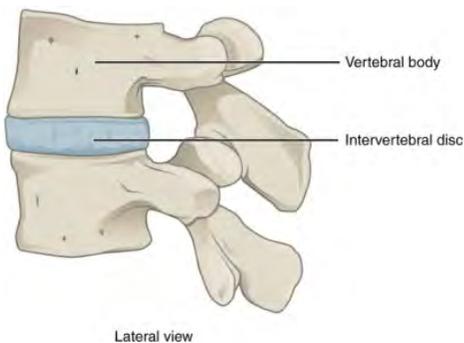




- ii. **Syndesmoses** – Syndesmosis is a fibrous joint in which the bones are separated by some distance and united together with the help of ligaments. e.g., fibrous membrane connecting maximum distal parts of the radius and ulna. Due to the lack of flexibility in these joint structures, ligament injuries in syndesmoses joints are common, particularly at the wrist and ankle.
- iii. **Gomphoses**–Agomphosis mostly consists of a peg attached into a socket and held by ligaments. The best example of this is the joint between a tooth and its socket.



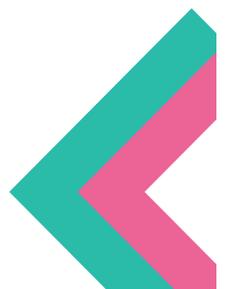
2. **Cartilaginous Joints** – This type of joint unites two bones by the help of a cartilage. Very slight movement can occur at these joints. Another characteristics of this type of joint is that the articulating bone surfaces are connected by pads (discs) of fibrocartilage. e.g., cartilage of the growing long bones and the cartilages between the ribs and the sternum.

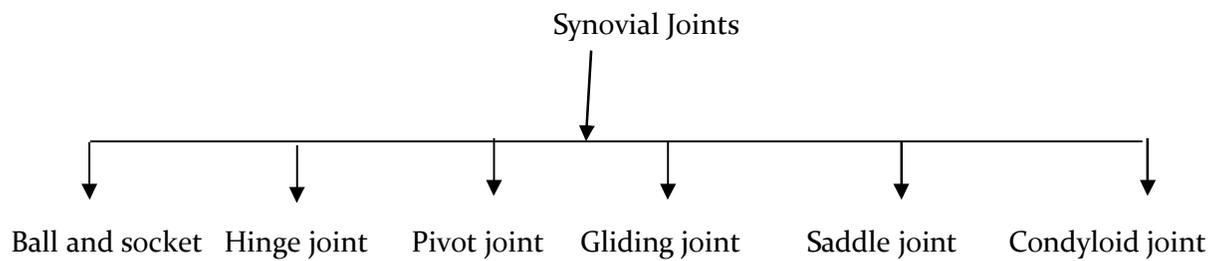


3. **Synovial Joints** - These are freely movable joints. These joints contain synovial fluid. They are mostly found in the limbs.

All synovial joints consist of four distinguishing features.

- Articular cartilage
- Articular capsule
- Joint cavity
- Reinforcing ligament

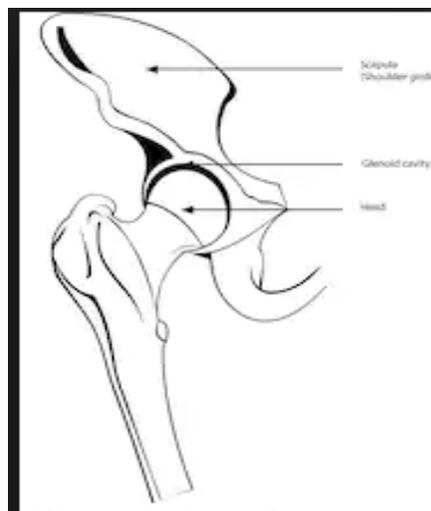




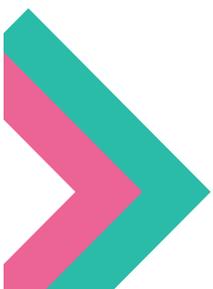
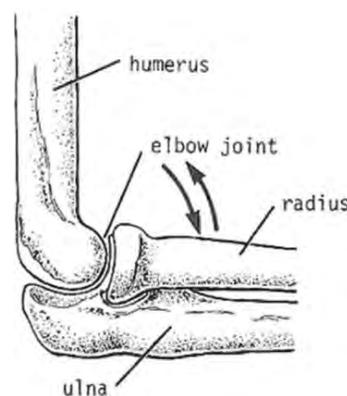
Types of synovial joints:

Synovial joints are classified according to the shape of the articulating surface. As you know, they can further be subdivided into the following categories.

- i. **Ball and socket joint:** The ball and socket joint is a type of synovial joint. It is formed when the ball-shaped head of one bone fits into the cup-like socket or depression of another bone. The ball and socket joint allows the greatest range of movement. These multiaxial joints permit movement in all axes including rotation. e.g., hip joint and shoulder joint. This joint allows movement like an overhead clear in badminton or bowling in cricket.



- ii. **Hinge joint:** The cylindrical end of one bone fits into a rough shaped surface of another bone. Angular movement is possible in just one plane there by restricting the movement of the bone to only bending and straightening. e.g. elbow, knee. The extension and flexion movement is essential for building biceps, triceps and quadriceps muscles.

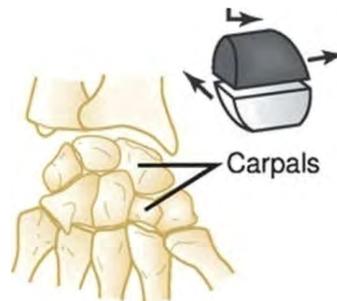




- iii. **Pivot joint:-** Pivot joint also called rotary joint, is a freely moveable joint that allows only rotary movement around a single axis. The moving bone rotates within a ring that is formed from a second bone and adjoining ligament. e.g., the joint between the first and the second cervical vertebrae which allows the turning of the head from side to side.

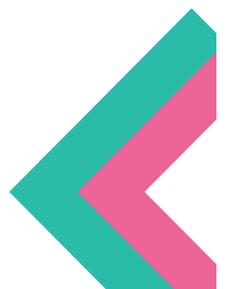
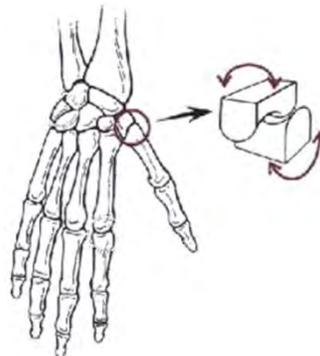


- iv. **Plane or Gliding joint:** A gliding joint, also known as a plane joint, is a type of synovial joint that is formed between bones that meet at flat or nearly flat articular surfaces. Gliding joints allow the bones to glide past on another in any direction along the plane of the joint — up and down, left and right, and diagonally. The movement in this joint is nonaxial which indicates that gliding does not allow rotation around any axis. e.g., inter carpals or joints of the wrist.



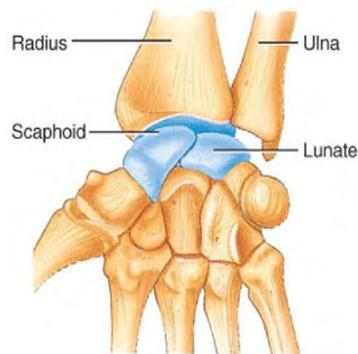
Plane joint

- v. **Saddle joint:** In the saddle joint, the articulating surface is shaped like a saddle, having both convex and concave areas. The bones in a saddle joint can rock back and forth and from side to side, but they have limited rotation. These biaxial joints allow very limited movement like the condyloid joints. e.g., thumb joint. Example of a saddle joint used in sport is in a thumb war. The thumb moves side to side and back and forth in a thumb war.



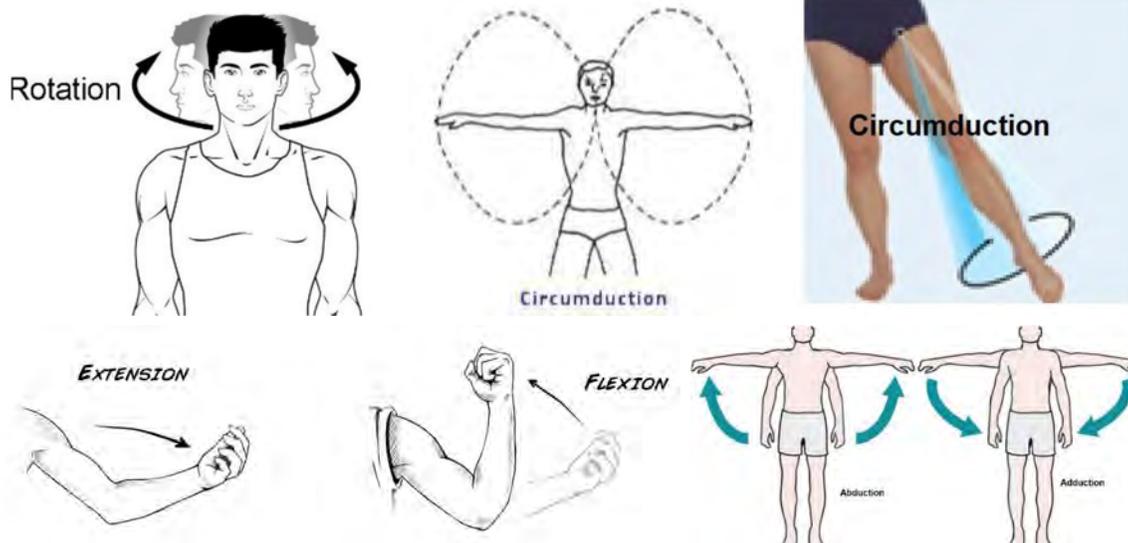


- vi. **Condyloid joint:** Condyloid joints are a type of synovial joint where the egg-shaped articular surface of one bone fits into an oval cavity in another. This joint allows the moving bone to travel from side to side, back and forth but it does not allow it to rotate. Movement occurs only around two axes so they may be also called biaxial. e.g., wrist joint, metacarpal, phalangeal joint. This joint is useful the players use their wrist when dribbling with the ball in basketball.



Extension Activity

Practise the following movements. Can you identify the joint used?



I. Tick the correct option.

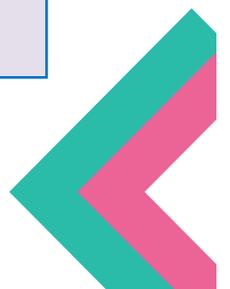
- The short bones are generally
 - flat
 - cube-shaped
 - curved
 - thin
- One of the functions of the skeletal system includes haematopoiesis which refers to
 - provision of support to the body
 - formation of blood cells



- iii. production of minerals
- iv. protection of delicate organs
- 3. A child has ___ bones.
 - i. 206
 - ii. 213
 - iii. 225
 - iv. 270
- 4. Bones serves as a store house for
 - i. potassium
 - ii. phosphorus
 - iii. calcium
 - iv. nitrogen
- 5. According to the functional classification of joint which focuses on the amount of the movement of the joint, synarthroses are also known as:
 - i. immovable joints
 - ii. slightly movable joints
 - iii. freely movable joints
 - iv. combination of immovable and slightly movable joints
- 6. The sutures of the skull are the best examples of:
 - i. cartilaginous joints
 - ii. synovial joints
 - iii. fibrous joints
 - iv. freely movable joints
- 7. The synovial joints in which angular movement is allowed in just one plane is called
 - i. hinge joint
 - ii. saddle joint
 - iii. plane joint
 - iv. pivot joint

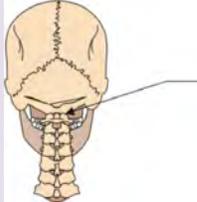
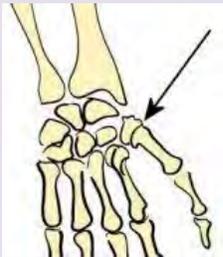
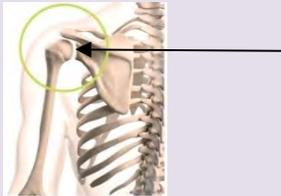
II. Answer the following questions briefly.

- 1. Name the longest and the shortest bones in the body.
- 2. List at least two functions of the skeletal system.
- 3. Name the four main classification of bones.
- 4. What are the two basic classifications of a joint?
- 5. What is the major difference between a fibrous joint and a cartilaginous joint?
- 6. Name two ball and socket joints of the body.





III. Identify the bones given below and mention the type of Joint that is formed by them. Also mention its function.

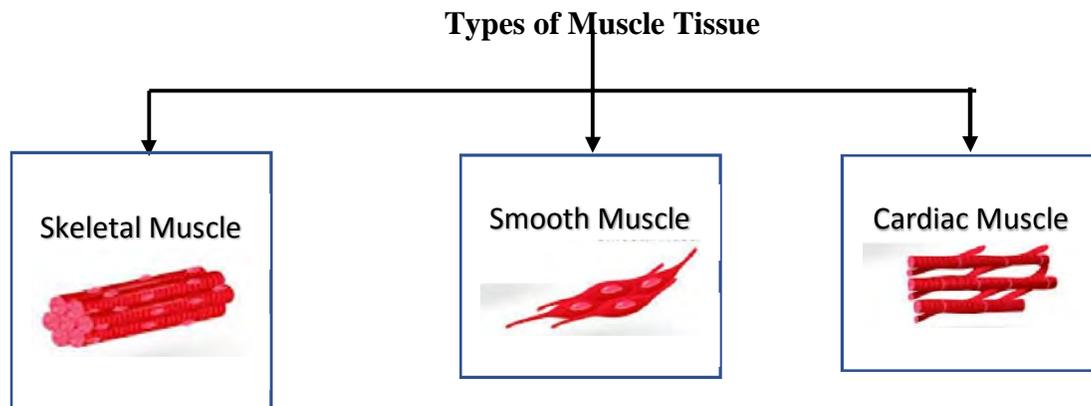
Bones	Type of Joint	Functions
		
		
		
		

IV. Answer the following questions in 150-200 words.

1. Elaborate the functions of the skeletal system.
2. Describe the types of bones found in the human body and discuss their functions.
3. Write about the types of synovial joints in details with suitable examples

8.3.1 PROPERTIES AND FUNCTIONS OF MUSCLES

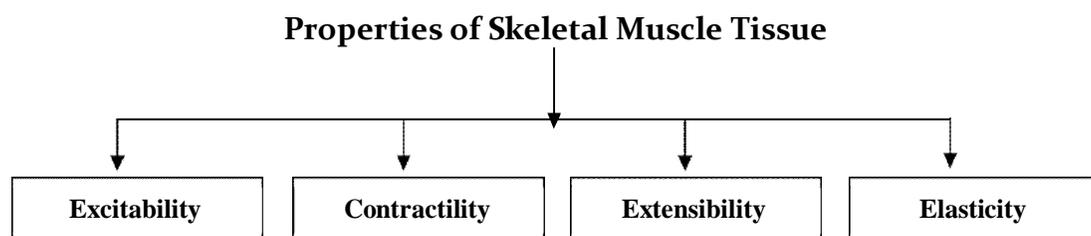
Every movement from heartbeat to completing a marathon takes place due to contraction of the muscles. There are basically three types of muscle tissue.



1. **Skeletal Muscles**–Skeletal muscles comprise 40% of the body weight. They are named so because they are attached to the skeletal system. They are also called striated muscles as their striations can be seen when observed under the microscope. These muscles are responsible for locomotion, facial expressions, posture, and other body movements. They are also known as voluntary muscles as they are under conscious control of the brain. They can contract very rapidly and forcefully but they also tire very easily and require rest after short periods of activity.
2. **Smooth Muscles** – Smooth muscles are small and spindle shape. They are called smooth muscles as their cells are not striated. They are also called involuntary muscles as their expansion or contraction is not under our control. These muscles contract much more slowly as compared to skeletal muscles. They are found mostly in hollow organs such as stomach, urinary bladder and respiratory passages. Smooth muscles are also present in the eyes, where their function is to change the size of the iris and alter the shape of the lens; and in the skin where they cause hair to stand erect in response to cold temperature or fear.
3. **Cardiac Muscles**–Cardiac muscles are found in the heart where they form the walls of the heart. They are long and striated but not as clearly striated as skeletal muscles. The rate of contraction of cardiac muscles is intermediated between smooth and skeletal muscles. Cardiac muscles are involuntary as their expansion and contraction is not under our control.

8.3.2 PROPERTIES OF SKELETAL MUSCLES

Skeletal muscles have four major functional properties:





Excitability is the ability to respond to a stimulus, which may be delivered from a motor neuron or a hormone.

Contractility is the ability of muscle cells to forcefully shorten or the ability for self-contraction.

Extensibility is the ability of a muscle to stretch or the capacity to lengthen.

Elasticity is the ability to recoil or bounce back to the muscle's original length after being stretched.

8.3.3 FUNCTIONS OF MUSCLES

1. **Movement:** Muscles give rigidity to our body. Skeletal muscles can yank and pull on the bones in the skeleton, resulting in body movements such as walking, chewing, running, lifting and manipulating objects with our hands.
2. **Maintenance of posture:** Muscles generate a constant contractile force that allows us to maintain an erect position or posture, without much conscious control.
3. **Heat generation:** Contraction of muscle tissue generates heat, which is essential for maintenance of temperature or homeostasis.
4. **Respiration:** Our muscular system automatically drives movement of air into and out of our body.
5. **Constriction of organs and blood vessels:** Nutrients move through our digestive tract, urine is passed out of the body, and secretions are propelled out of glands by contraction of smooth muscles.
6. **Pumping blood:** Blood moves through the blood vessels because our heart tirelessly receives blood and delivers it to all body tissue and organs.

Do You Know?

*The **gluteus maximus** is the largest muscle in the human body as it has the job of keeping the trunk of the body in an erect posture.*

I. Tick the correct answer.

1. How many types of muscle tissue are there?
 - i. 1
 - ii. 2
 - iii. 3
 - iv. 4
2. Locomotion and facial expression are one of the important responsibilities of
 - i. Cardiac muscles
 - ii. Skeletal muscle



- iii. Smooth muscle
- iv. cardiac and skeletal muscles

3. The ability of a muscle to shorten forcefully is known as

- i. extensibility
- ii. contractility
- iii. elasticity
- iv. excitability

II. Answer the following questions briefly.

1. What is a muscle? List the major types of muscles.
2. Enlist the four major functional characteristics of the skeletal muscles.
3. Write down the properties of cardiac muscle
4. How are smooth muscles different from cardiac muscles?
5. Where are smooth muscles found?
6. How do cardiac muscles differ from skeletal muscles?

III. Answer the following questions in 150-200 words.

1. What do you understand by the muscular system? Explain the structural classification of muscles.
2. Write down the functions of muscles in detail.

8.4.1 STRUCTURE AND FUNCTIONS OF THE RESPIRATORY SYSTEM

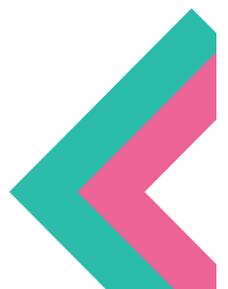
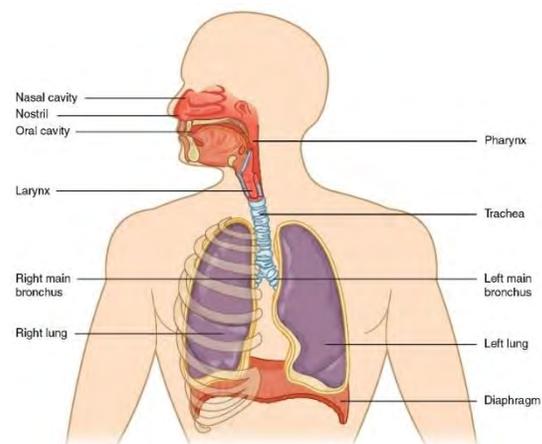
Respiration is made up of two phases called inspiration and expiration: You inhale (breathe in) oxygen during inspiration. You exhale (breathe out) carbon dioxide during expiration. Respiration includes the following processes

- Ventilation, the movement of air into and out of the lungs
- Gas exchange between the air in the lungs and blood, sometimes called external respiration
- Transport of oxygen and carbon dioxide in the blood.
- Gas exchange between the blood and the tissues, sometimes called internal respiration.

Structure of Respiratory System:

The respiratory system consists of

- The nose
- The nasal cavity
- The pharynx
- The larynx
- The trachea
- Bronchi





- The lungs
- Bronchioles
- Alveoli
- Diaphragm

The Nose: The term nose usually refers to the visible structure that forms a prominent feature of the face and also refers to the internal nasal cavity.

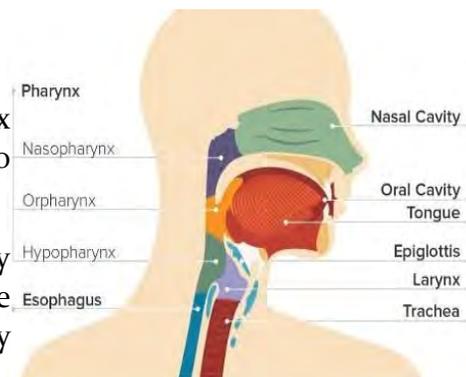
The Nasal Cavity: It extends from the external opening in the nose to the pharynx, and it is divided by the nasal septum into right and left side.

Pharynx: The pharynx is the common passageway of both the digestive and respiratory systems.

The pharynx can be divided into three regions

The nasopharynx: It is the superior part of pharynx and extends from the internal nares of nasal cavity to the level of uvula.

The oropharynx: The oropharynx is a passage way for both air and food. It extends from the uvula to the epiglottis. The oropharynx is bordered superiorly by the nasopharynx and anteriorly by the oral cavity.



The laryngopharynx: The laryngopharynx extends from the epiglottis to the lower margin of the larynx. It continues the route for ingested material and air until its inferior end, where the digestive and respiratory systems diverge.

Larynx: The larynx consists of an outer casing of nine cartilages that are connected to each other by muscles and ligaments. It is also known as Voice box.

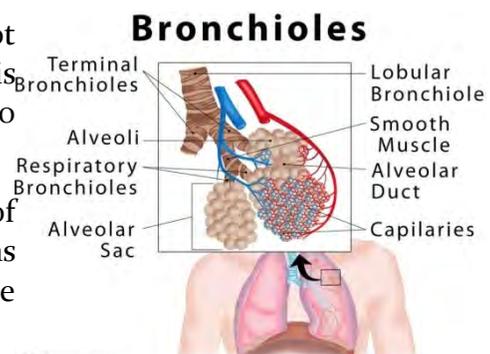
Trachea: The trachea, also known as the windpipe, is a membranous tube that consists of connective tissues and smooth muscles.

Bronchi: The trachea divides into the left and right primary bronchi. The main function of the bronchi, like other conducting zone structures, is to provide a passageway for air to move into and out of each lung. In addition, the mucous membrane traps debris and pathogens.

Bronchioles: Bronchioles, which are about millimeter, further branch until they become the tiny terminal bronchioles, which lead to the structures of gas exchange. There are more than 1000 terminal bronchioles in each lung.

The muscular walls of the bronchioles do not contain cartilage like those of the bronchi. This muscular wall can change the size of the tubing to increase or decrease airflow through the tube.

Alveoli: An **alveolar duct** is a tube composed of smooth muscle and connective tissue, which opens into a cluster of alveoli. An **alveolus** is one of the

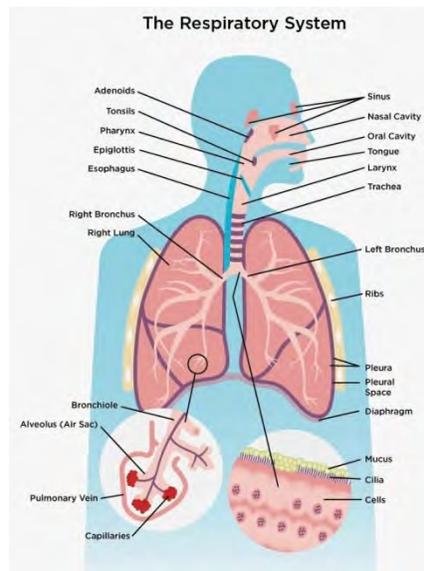




many small, grape-like sacs that are attached to the alveolar ducts.

Lungs: The lungs are the principal organs of respiration. These spongy, pinkish organs look like two upside-down cones in your chest. Lungs are divided into two parts

1. **Right lung:** The right lung is made up of three lobes
2. **Left lung:** The left lung has only two lobes to make room for your heart.



Diaphragm: The diaphragm is a thin skeletal muscle that separates the abdomen from the chest. It contracts and flattens when you inhale. This creates a vacuum effect that pulls air into the lungs. When you exhale, the diaphragm relaxes and the air is pushed out of lungs.

8.4.2 CIRCULATORY SYSTEM

The **circulatory system** is a network consisting of blood, blood vessels, and the heart. This network supplies the tissues in the body with oxygen and other nutrients, transports hormones, and removes unnecessary waste products.

Do you know?

Arteries - blood vessels that carry oxygenated blood from the heart

Arterioles - a small branch of an artery leading into capillaries.

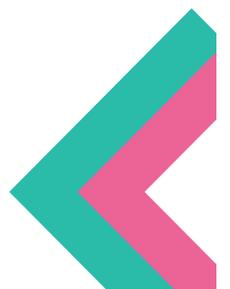
Capillaries - any of the fine branching blood vessels that form a network between the arterioles and venules.

Venules - a very small vein, especially one collecting blood from the capillaries.

Veins - blood vessels that carry deoxygenated blood back to the heart

The Heart

The **heart** is made of specialized cardiac muscle tissue that allows it to act as a pump within the circulatory system.



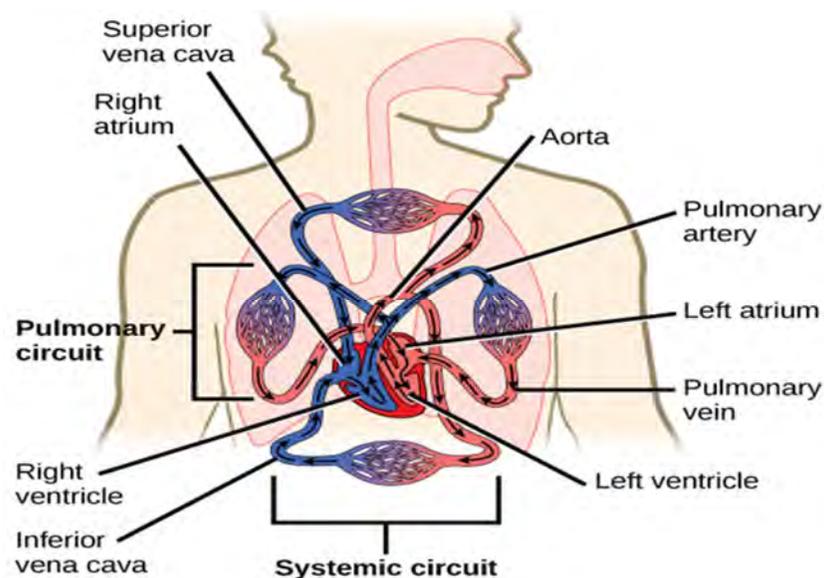
The human heart is divided into four chambers. The two sides of the heart are separated by a thick muscular wall called the septum.

There are two chambers – one atrium and one ventricle – on each side of the heart.

The atria receive blood and the ventricles pump blood.

The human circulatory system consists of several circuits:

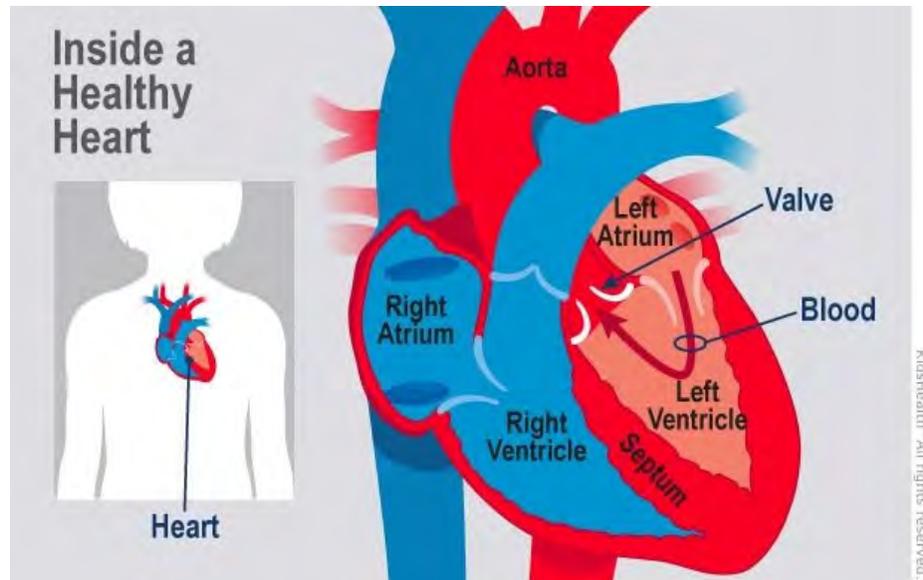
- The pulmonary circuit pumps blood to the lungs and back to the heart.
- The systemic circuit pumps blood to the body and back to the heart.
- The coronary circuit pumps blood to the heart.



Blood and Blood Vessels

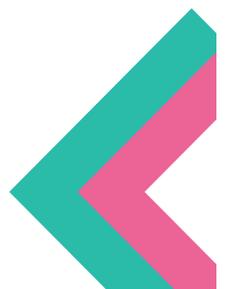
Blood from the heart is pumped throughout the body using blood vessels. Arteries carry blood away from the heart to the body using smaller arterioles and capillaries. They provide oxygen (and other nutrients) to tissue and cells.

Once blood is de-oxygenated, it travels back to the right chambers of the heart through a network of veins. From the heart, blood is pumped into the lungs where it is re-oxygenated and returned to the heart.



I. Tick the correct answer.

1. Trachea is also known as
 - a. Windpipe
 - b. Voicebox
 - c. Pharynx
 - d. Nose
2. The movement of air into and out of the lungs
 - a. External respiration
 - b. Ventilation
 - c. Internal respiration
 - d. Respiration
3. The principal organ of respiration is
 - a. Nose
 - b. Larynx
 - c. Trachea
 - d. Lungs
4. The heart is made up of
 - a. Connective tissue
 - b. Epithelial tissue
 - c. Cardiac tissue
 - d. Muscular tissue
5. The heart has ___ chambers
 - a. Three





- b. Four
- c. Five
- d. Six

II. Answer the following questions briefly.

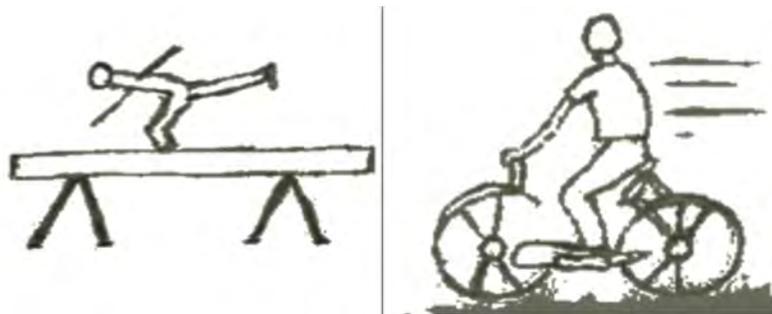
1. Define respiration.
2. Write a short note on pharynx.
3. Explain the function of the diaphragm in breathing.
4. Define circulatory system
5. Write a brief note on the heart.
6. What is the difference between Arteries and Veins?

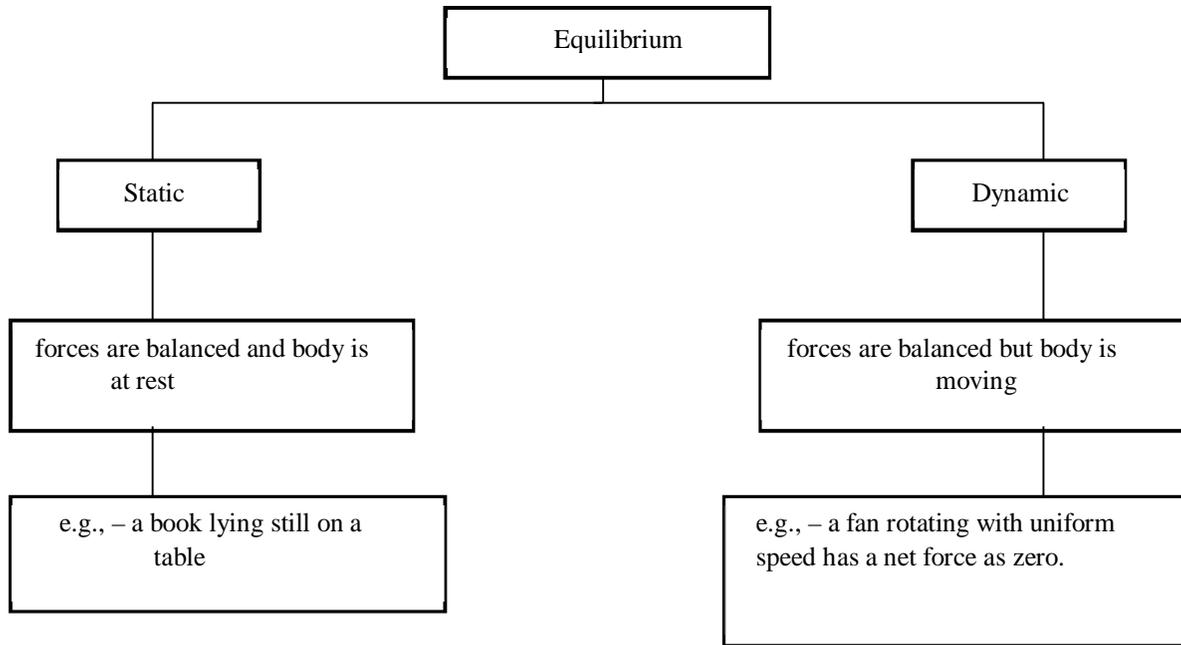
III. Answer the following questions in 150-200 words.

1. What are the functions of respiratory system?
2. What are the functions of the heart?
3. Describe the circulatory system.

8.5.1 EQUILIBRIUM

- Equilibrium refers to the state of any object when all forces acting upon it result in zero change of motion for the object.
- In other words, when the sum of all forces is zero, the object is in a state of equilibrium.
- In all activities whether stationary or moving, balance is an important factor.
- All activities demand stability and sometimes, instability depends on its purpose.

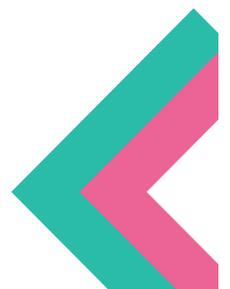
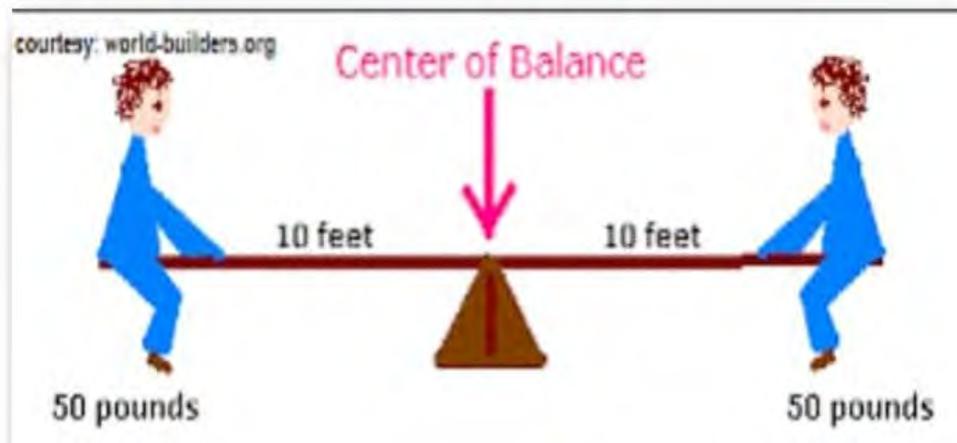




Static Equilibrium	Dynamic Equilibrium
1. When the sum of forces acting upon the object and sum of the movement acting upon the body is both equal to zero, then the body is said to be in static equilibrium.	1. When all the forces acting on an object are balanced, and the body is in motion, then the body is said to be in dynamic equilibrium.
2. In other words, Static balance is maintaining equilibrium when stationary. e.g., Yoga	2. In other words, dynamic balance is maintaining equilibrium when moving. eg. jump shot in basketball.
3. e.g., A gymnast performing ‘T’ position on the balancing beam, because the gymnast is not making any movement.	3 e.g., A cycle is moving with uniform velocity.

8.5.2 APPLICATION OF EQUILIBRIUM IN SPORT

- Two people balancing on a see-saw.

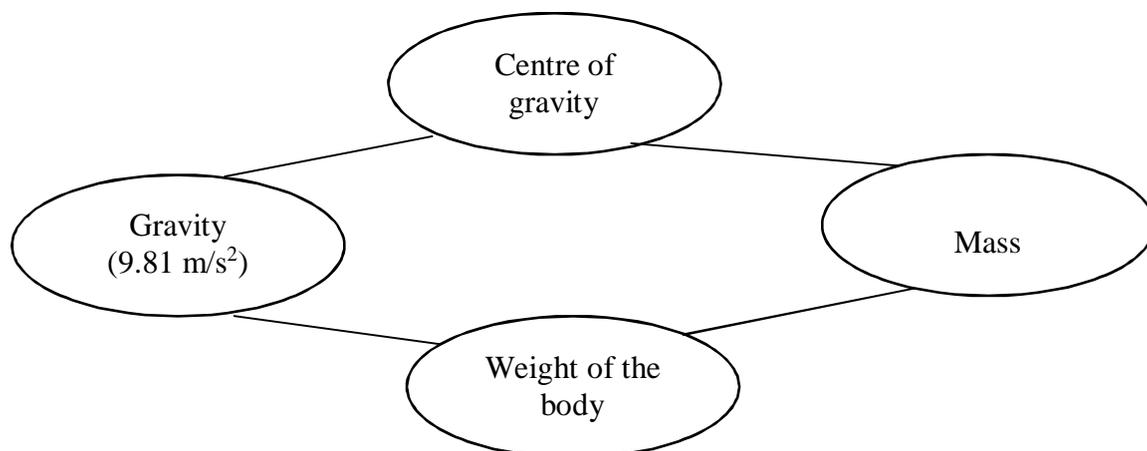




2. In every sport, the athletes maintain stability by lowering the centre of gravity by bending their knees.
3. Boxers can lose balance if they shift their weight on heels because the centre of gravity must fall within the line of base of support for greater stability.
4. Dynamic equilibrium is required by a tennis player to change her/his position after hitting a shot.

8.5.3 CENTER OF GRAVITY

1. Centre of gravity is a point at which a body balances or the point at which the weight of body is equally distributed.
2. It is a point in the body or system around which its weight is evenly distributed or balanced and through which the force of gravity acts.
3. Centre of gravity is the intersection point of all the three planes and axis.
4. The centre of gravity is the average location of the weight of an object.
5. The position of centre of gravity changes depending up on the position of the body or object.



Application in Sports

1. An athlete who bends legs will lower his/her centre of gravity which will result in greater stability for the athlete.
2. Centre of gravity needs to be lowered for greater stability in sports like wrestling.
3. A jumper's centre of gravity must lie on the base of support for greater stability while take-off.

I. Tick the correct answer.

1. When the sum of force acting upon the object and sum of the movement acting upon the body is both equal to zero then the body is said to be in
 - i. equilibrium
 - ii. static equilibrium
 - iii. dynamic equilibrium
 - iv. zero force



2. The position of centre of gravity changes depending upon the
 - i. position of force
 - ii. position of the body
 - iii. position of intersection of force
 - iv. position of stability
3. Centre of gravity is the average location of the ___ of an object
 - i. weight
 - ii. force
 - iii. balance
 - iv. velocity

II. Answer the following questions briefly.

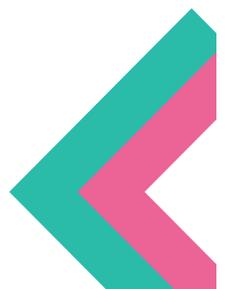
1. What do you understand by equilibrium? What are the types of equilibrium?
2. Give suitable examples of type of equilibrium applied to sports /games.
3. Define centre of gravity.

III. Answer the following questions in 150-200 words.

1. Write down the factors on which the centre of gravity depends with suitable examples.

Suggested Readings :

- Dhananjay Shaw (2000), Mechanical Basis of Biomechanics, Sports Publication, Delhi,
- Lutlegen, & Nancy, H. (1997). Kinesiology: Scientific Basis of Human Motion. Mc Graw Hill.
- *Physical Education and Yog (373)*. (n.d.). Retrieved 11 25, 2020, from National School of Open Learning:
[https://www.nios.ac.in/online-course-material/sr-secondarycourses/physical-education-and-yog-\(373\).aspx](https://www.nios.ac.in/online-course-material/sr-secondarycourses/physical-education-and-yog-(373).aspx)
- Thompson, & Floyd. (2017). *Manual of Structural Kinesiology*. Mc Graw Hil.





UNIT-IX PSYCHOLOGY & SPORTS

Content

- Definition & Importance of Psychology in Physical Education & Sports.
- Define & Differentiate between Growth & Development
- Developmental characteristics at Different Stage of Growth and Development
- Adolescent Problems & their Management

Learning Outcomes

At the end of the unit, students will be able to:

1. identify the role of Psychology in Physical Education and sports
2. correlate the psychological concepts with the sports and athlete specific situations
3. differentiate characteristics of growth and development at different stages.
4. determine the issues related to adolescent behaviour
5. recognise different management strategies for adolescent related issues

Discussion

Read the newspaper clipping given below regarding the role of Sports Psychology in an athlete's performance.

In a First, Psychologist on Tour with India's Women's Hockey Team

BENGALURU: In a much-appreciated move, the Sports Authority of India has assigned a psychologist to travel with the Indian women's hockey team as they head to Spain, and for subsequent matches.

A career in sports can be incredibly stressful, and not just because there's a pressure to perform. Players often experience homesickness, loneliness, the mental effects of incapacitating injuries, and the after tremors and competitive failure, to name a few. Unaddressed, these things could wreak havoc in a player's life.

A psychologist off the pitch can certainly work on improving group dynamics and addressing individual concerns. But a psychologist who's on the pitch can, in chief coach Sjoerd Marjine's words, "analyse how the group dynamics are when we play consecutive matches and how the players react to victory and defeat." This opportunity, which had been missing previously, can now provide a better understanding of the team and what issues to work on.

Discuss in your group

- Think of a sports team from your school/state/country.
- Are they confident of winning, and often win, over teams said to be stronger than them?
- Is the team repeatedly making the same mistakes/ losing constantly?
- Are athletes more at risk of mental health issues than the general public? Why/why not?
- Do all athletes have similar problems, or do they differ according to their age or gender?
- Based on the news clipping and your discussion above, can you think how a sports psychologist can help improve the performance of athletes?

Present your ideas to the class.



9.1.1 DEFINITION AND CONCEPT OF PSYCHOLOGY IN PHYSICAL EDUCATION AND SPORTS

Sportspersons often display different behaviour on the field. Let us consider the following cases.

Case 1: Luis Suarez, an International soccer player, began his career in Europe with Groningen in Holland. In the career of this Barcelona striker there have been three biting incidents on the sports field. The first occurred while he played for Ajax Amsterdam in a game against PSV Eindhoven. Suarez bit midfielder Otman Bakkal. The second incident was when Suarez bit Branislav Ivanovic while playing for Liverpool against Chelsea in 2013. The third incident was when Suarez bit Giorgio Chiellini during the World Cup in Brazil in 2014 while Uruguay played Italy.

In his book, *Crossing the Line*, Suarez attempted to justify the action by saying, “The adrenaline levels in a game can be so high; the pulse is racing and sometimes the brain doesn’t keep up. The pressure mounts and there is no release valve..... I was frustrated because we were drawing what was a very important game, and we were on a bad run. I wanted to do everything right that day, and it felt as though I was doing everything wrong. The pent-up frustration and feeling that it was my fault reached a point where I couldn’t contain it anymore.”

Case 2: MS Dhoni, popularly known as Captain Cool, has always remained composed under pressure and carried India out of delicate situations single-handedly. Whether he was chasing or defending a total in a cricket match, Dhoni, unlike others, was usually seen to be cool and unflappable, concentrating on guiding his teammates to deal with pressure. Unlike the brash aggression of some of the other players, Dhoni did not lose his cool on the field. In an interview Dhoni revealed that he, too, experienced the same emotions as the other players -- frustration, anger, disappointment -but he rather focussed his energy into thinking what should be done. "Whatever the format may be, I get into the process of what can be done now, depending on the situation. In Test cricket, you get a slightly longer duration to chalk out your plan. In one-day cricket, you do have some time constraints and in T20s, everything happens very quickly. So the demands are very different," Dhoni explained. "I would say I feel equally frustrated, angry and times, disappointed as well. But for me, none of these are very constructive and what is more important for me is that what needs to be done right now, that mostly matters. And once I get into that process of thinking I manage to handle my emotions in a much better way. I am like everyone else, but I tend to control my emotions better than others," Dhoni added.

Sports are played by athletes, and athletes are only human. Like other humans, they are capable of great feats of courage, strength and heroism, just as they are prone to making mistakes. What, then, are the factors that lead to unrestrained aggression amongst some players, and restraint and exemplary behaviour in others? Is aggression caused due to intrinsic physiological factors? Or, is it due to psychological factors like mental stress? Is it the demand of the situation? Do you feel aggression and assertiveness can be gainfully channelised through training?

Games and sports have always occupied an important place in human life and have flourished in all cultures since times immemorial. However, even a non-trained





sportsperson, who is not involved in competitive sports, needs a psychological commitment to participate in regular physical exercise. It is this involvement keeps her/him physically and mentally healthy and helps her/him pursue day-to-day tasks with confidence. This sense of well-being and enhanced confidence provides the intrinsic motivation the the individual to participate in physical activity. Participation in sports also influences the culture of a society, and its influence can be seen in the individual's relation to society or vice versa. In the same way, psychology of a sportsperson can influence the society or social culture can influence the psychology of a sports person. Sports Psychology also attempts to define those factors which motivate not just an individual but also a social group. e.g., success of athletes from a particular area in a particular field of sport effects the psychology and interest of general masses in particular sports. People relate to the success and this works as motivation for exercise adherence for general masses. Thus, understanding the behaviour and mental process of people who participate in sports and physical exercise can answer questions like: "Is there any particular kind of sport or exercise which suits certain personality traits?" or "Does participation in sports and exercise influence the behaviour of an individual or a group?"

Extension Activity

Choose any two sports of your interest and complete the table below

Name of the Sports	International Competitions/ Medals won	Names of Athletes	Region they belong to	Factors that led to their success

Knowledge of psychology helps not just athletes achieve optimal performance but also addresses the needs, objectives and quality of action to achieve excellence and highest performance in any competition.

Let us first try and understand the meaning of the terms **sport** and **psychology**. The term **Sport** can be described as *physical activity for the purposes of recreation, health, competition and education*. The term **Psychology**, on the other hand, is derived from the Greek word *psyche* meaning *soul* and *logos* meaning *study*.

So, psychology was considered as *study of soul*. This concept was promoted by Greek philosophers under the branch of *Philosophy* as they believed that the soul was the essence of a person, and it decided how the individual behaved. It was during the late 19th century, that philosophers shifted their interest towards trying to understand how the body is influenced by what is "inside the body" – *the mind*, and by the events "outside the body" – *the environment*. They started inquiring about the link between



the body and the mind. Psychology, then, came to be explained as a *study of the mind*.

Do you know?

Goal: a desired aim or outcome, something that you are trying to achieve

Motivation: the desire required to be successful; a driving force that makes you do something and decide how much effort to put in.

Intrinsic motivation: motivation that comes from simply doing the activity itself, rather than to gain external rewards or praise. Extrinsic motivation: motivating forces that come from outside the person and the activity, such as prizes, trophies, praise from others or fame.

Reward: something given to someone to recognise their achievement.

Incentive: something that motivates or encourages someone to do something.

Psychology as a scientific study of behaviour and mental processes has three important aspects to be discussed.

- Firstly, it is scientific in nature; this means it has a scientific approach to acquiring knowledge involving certain key values and standards which are universally accepted and reliable.
- Secondly, it is the study of behaviours which are observable actions and reactions.
- Thirdly, it also includes study of cognitive processes, which involve different aspects of mental life, like memory, reasoning, intelligence, attention etc.

In the modern context, psychology is a science about “*understanding of behaviour*”.

The European Federation of Sports Psychology defines it as “*the study of the psychological basis, processes and effects of sport.*”

Sport psychology, therefore, is an interdisciplinary science that draws on knowledge from the fields of Kinesiology (the scientific study of movement) and Psychology. It includes the study of the manner in which psychological factors affect performance and the way in which participation in sport and exercise affect psychological and physical factors. Sport psychology is used for team sports as well as individual fitness endeavors.

It was in 1925 that Coleman Griffith, often called the “Father of Sport Psychology”, set up the Athletic Research Laboratory at the University of Illinois. The field of Sport Psychology became an area of proficiency that uses psychological knowledge and skills to address performance and well-being of athletes, developmental and social aspects of sports participation, and systemic issues associated with sports settings and organizations. □ Sports Psychology is the study of psychological factors that affect the learning and performance of motor skills. Due to its important role in the enhancement of performance in the sports field, it is necessary for us to understand the broader meaning and scope of Sports Psychology.





According to the American Psychology Association (APA, 2009), the field of psychology focusses on two main areas:

- (a) helping athletes use psychological principles to achieve optimal mental health and to improve performance (performance enhancement) and,
- (b) understanding how participation in sport, exercise and physical activity affects an individual's psychological development, health and well-being throughout life.

9.1.2 DEFINITION OF SPORT PSYCHOLOGY

Exercise and Sports Psychology is the scientific study of the psychological factors that are associated with participation and performance in sport, exercise, and other types of physical activity.

APA (2009)



A field of study in which the principles of psychology are applied in a sports setting.

R Cox (2007)

Sports Psychology is concerned with the psychological foundations, processes and consequences of the psychological regulation of sport related activities of one or several persons acting as the subject(s) of the activity.



The European Federation of Sports Psychology (1996)

Sports Psychology is a science in which the principles of psychology are applied in a sport or exercise setting.

Richard. H. Cox (2012)

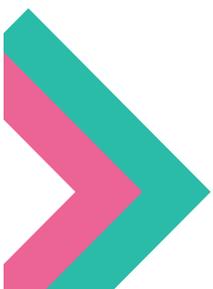
Sport and exercise psychology is the scientific study of people and their behaviours in sport and exercise activities and the practical application of that knowledge.

Weinberg and Gould (2011)

9.1.3 ROLE OF PSYCHOLOGY IN PHYSICAL EDUCATION AND SPORTS

The European Federation of Sport Psychology (1996) recognises three interrelated tasks for sport psychologists.

- **Research** – investigation into all aspects of the psychology of sport, both theoretical and applied.
- **Education** – teaching students, officials and athletes about sport psychology.
- **Application** – assessment of and intervention in psychological problems connected to sport. Sport psychology involves consulting to whole teams or counselling of individuals.





9.1.4 APPLICATION OF PSYCHOLOGY IN PHYSICAL EDUCATION AND SPORTS

Many strategies and procedures are used to address problems faced by athletes and other sports participants. Some of the applications of psychological concepts and theories in physical education and sports are:

Cognitive and behavioural skills training for performance enhancement

Counselling and clinical interventions

Consultation and training

1. **Cognitive and behavioural skills training for performance enhancement** include
 - Concentration and attention control strategies
 - Goal setting
 - Imagery Training
 - Cognitive-behavioural self-regulation techniques
2. **Counselling and clinical interventions** include support for managing:
 - Athletic motivation
 - Over-training and burnout
 - Eating disorders and weight management
 - Substance abuse
 - Grief, depression, loss and suicide
 - Sexual identity issues
 - Aggression and violence
 - Athletic injury and rehabilitation
 - Career transitions and identity crises.
3. **Consultation and training** include
 - Team building Programmes for sports teams and organisations.
 - Sports organization consultations for behaviour economics





- Systems interventions with parents and families involved in youth sports participation
- Education of Physical Educators, Coaches and Trainers regarding role of interpersonal and leadership skills for talent development
- Education of Physical Education and sports professionals towards early identification and prevention of psychological difficulties.

9.1.5 IMPORTANCE OF PSYCHOLOGY IN SPORTS AND EXERCISE

A. Benefits of Exercise and Physical Activity:

- Physical Aspect:** (a) Exercise leads to improvement in physiological efficiency by conditioning the various systems in the body. It strengthens the cardiovascular and muscular systems and lowers the risk of many diseases. (b) It leads to anatomical growth and development. e.g., strong bones, lean body mass, strong muscular system. (c) Due to physiological and anatomical enhancement, there is improvement in motor performance. e.g., improved strength, speed and endurance.
- Cognitive Aspect:** The benefits of physical activity go beyond health and wellness of the body. Research suggests that physical activity positively impacts the brain and improves cognition, mood, attention, problem-solving abilities, strategic planning and academic achievement in students.
- Emotional Aspect:** Physical Activity provides positive feelings and counters negative moodstate, depression and anxiety because of increased engagement in recreational, health-related and competitive activities. Sports psychology enhances physiological capacities such as strength, speed, flexibility, etc. as motivation plays a major role in the enhancement of the physical capacity of sportspersons. Acute bouts or short duration of exercise are also beneficial, but chronic or regular exercise is required for maintaining long term benefits.

Extension Activity

1. Choose a sport or activity in which you regularly participate. Explain the motivational forces that have driven you when you have achieved your best.
2. Are the motivators you chose the same as for all your class mates? Why/why not?
3. Think of times when you have been anxious and nervous when facing a challenge. What strategies did you employ to overcome your anxiety? Do you think athletes utilize similar strategies? Why/why not?

Share your ideas with the class.

- Social Interaction:** Exercise as an activity provides opportunity for people to participate in both group as well as individual exercise programmes. e.g., participating in a team event, group exercise programme or an individual activity in a social structure. Group Exercise experience is pleasurable for participants; hence it is good for mental health and social wellbeing. However, choice of individual exercise is preferable and beneficial for people low in self-esteem or suffering from anxiety related to body image and physical self-concept. In addition, spectators and fans at a match or sports activity also bond socially.



- v. **Distraction Ability:** Exercise provides opportunity for distraction from the current mood state. Acute dose or short duration of exercise is helpful in reducing anxiety through the distraction ability of exercise; regular exercise has long term benefits.

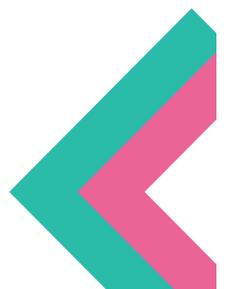
Art Integration – WRITING A STORY

Choose an Indian athlete who has won a medal in the International arena – Olympics, Paralympics or Special Olympics. Research and write the story of the athlete highlighting the factors that made her/him succeed.

B. Psychological Advantages of Sports Participation

- i. **Life skills:** Sports participation and competitions help to develop sense, sensitivity and sensibility among participants which helps them to approach and tackle the issues and challenges of life with positivity.
- ii. **Developmental aspects:** Sports participation experience provides opportunity among the participants to develop social relationships including making friends and enjoying team atmosphere; it also helps in developing a spirit of healthy competition.
- iii. **Behaviour modifications:** Sports participation increases perceived competence and self-efficacy. Positive sports experience enhances intrinsic motivation.
- iv. **Cognitive and Motor Skill acquisition:** Repeated training and playing sports helps in:
 - improving attention deficit disorder
 - developing memory
 - developing reasoning ability
 - developing decision making skills

C. Performance enhancement of athletes





Developing athletes for prolonged participation in sports with optimal performance is always possible through various cognitive and behavioural intervention techniques and other psychological skill training methods along with goal setting principles. This helps in developing and maintaining psychological aspects influencing sports performance which include

- self-confidence and self-efficacy
- intrinsic motivation
- aggression management
- anxiety and arousal control
- stress management
- psychological response to injury and rehabilitation
- team cohesion
- leadership and communication

D. Exercise adherence through psychological interventions

Regular exercise is an essential component for a healthier lifestyle and the concept of following a culture of exercise and physical activity throughout life is appreciated uniformly across the world. However, there may be still a large population whose exercise level must be low or some of those who have begun exercise, but may not continue for long, and many who may lose steam in between. Psychological theories and research understand the determinants of exercise adherence and non-adherence to help participants maintain a lifelong commitment to regular exercise, and may also be used to identify potential drop outs.

I. Tick the correct option.

1. Psychology as study of behaviour was defined by
 - i. JB Watson
 - ii. Plato
 - iii. Skinner
 - iv. Pavlov
2. Who known as father of experimental psychology?
 - i. Wilhelm Wundt
 - ii. John B Watson
 - iii. Richard H Cox
 - iv. Sigmund Freud

II. Answer the following questions briefly.

1. Define psychology?
2. Define sports psychology?

III. Answer the following questions in 150-200 words.

1. In what ways could knowledge of sports psychology benefit athletes?

**9.2.1 CONCEPTS OF GROWTH AND DEVELOPMENT**

Growth and development of human beings is a natural process which brings changes in mental, emotional, social, physical and moral aspects of life. Growth and development are complimentary to each other for human wellbeing. However, growth is structural and absolute in measure with limitations in progression, while development is functional and coordinate with various systems of the body through life. Growth and development are processes common to all, intimately linked with each other in time and space but practically independent of each other.

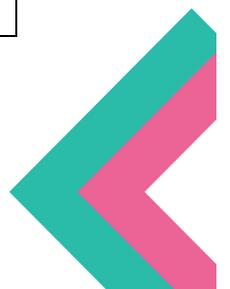
Both are, however, interrelated with genetic and environmental factors and modifications.

In Psychology, growth refers to the changes in physical aspects in terms of size and shape, whereas development is multi-dimensional in approach which refers to all types of changes.

Changes in height, weight, size of body, organs are referred to as growth, on the other hand, development refers to changes in behaviour, intellect, emotional or social aspects of life.

9.2.2 DIFFERENCE BETWEEN GROWTH AND DEVELOPMENT

Elements	Growth	Development
Meaning	Growth refers to change in size	Development refers to change in ability
Process	Growth is non-continuous and limited	Development is lifelong
Measure	Growth is quantifiable and measurable with objectivity	Development is qualitative in nature and subjective in assessment
Variables	Growth refers to increase in physical variables like height, weight etc.	Development refers to increase in skill and functions
Nature and Aspects	Growth is related to physical aspects	Development is related to mental, social, emotional aspects
Direction	Direction of growth can have positive or negative values	Direction of development is always positive
Progression	Growth is structural and absolute, can have spurts	Development is progressive and sequential
Learning influence	Growth is not affected by past or new learning	Development is affected by past and new learning and experiences





The term “Growth and Development” is many times used interchangeably in the field of Psychology and Sports, as also in various other areas like Education etc., as they are interrelated and are dependent on each other. It is essential to understand the difference between the two terms from various perspectives for holistic understanding of an individual and for wider opportunity to exploit the potentials of an individual. In physical education and sports, the term growth refers to change in quantity, size and shape of an object or individual e.g., height, weight etc. whereas the term development refers to change of quality in ability to perform, move, think, feel etc. In sport for example, quantitative change in height of an athlete refers to growth whereas change in the ability and performance skills or change in cognitive abilities and changes in emotional aspects are reflections of development. One of the major differences between growth and development is in its process – growth aspects are non-continuous and limited whereas development is a never ending and lifelong process. Most of the social, mental and emotional aspects are developmental in nature and are, therefore, progressive and sequential. Thinking ability, group cohesion, aggression control etc. are abilities and functions that are affected by past and new learning experiences and are considered as developmental elements. The term development applies to the changes that have a direction and hold definite relationship with what precedes it, and in turn, will determine what will come after. On the contrary, progress of growth elements is visible but may not be influenced by past or new learning.

9.2.3 CONCEPTS OF GROWTH AND DEVELOPMENT IN SPORTS AND PHYSICAL EDUCATION

Concerns

Physical educators and coaches need to be aware that children grow at different rates through varying stages of development. These stages are physical, emotional and mental and impact all areas of a child’s academic and athletic life. Sport readiness will vary from child to child and coaches need to be aware that it is not enough to assume every child reaches a certain stage of development at a given age.

Children who participate in Programmes that are beyond their developmental capabilities can suffer injury, discouragement and disappointment, leading to their giving up sports altogether. It may also result in their developing wrong techniques, thereby hindering technical skill advancements.

Extension Activity

Identify people who have participated in a variety of physical activity challenges — for example, rock climbing, skydiving or rafting. Interview or write to these people to find out how such challenges influenced their physical, social and emotional development.

- Which physical activity/activities did you find challenging?
- Why were they challenging to you?
- How did you prepare yourself to meet these challenges?
- Have you changed since participating in these activities? How?



- How have you benefited physically from these challenges?
- What were the social benefits, if any, of participating in these activities?
- What were the emotional benefits of participating in these activities?

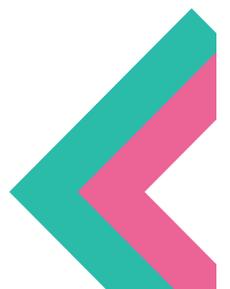
Share your findings with the class.

9.2.4 APPLICATION OF PSYCHOLOGY IN AN ATHLETE'S GROWTH AND DEVELOPMENT

For the reasons given above, it is important to introduce sports to different age groups with equipment variations, length of time spent playing and practicing, avoidance of specialization and changing the focus of sports from competition to fun, and to create transition or developmental sports models to facilitate easy transition of athletes from recreational sports to professional sports without pushing them towards dropping out of sport altogether.

Therefore, it is essential to provide :

1. scientific knowledge of different developmental stages related to physical, cognitive, emotional, and social aspects to sports and physical education professionals.
2. facilitation of social and emotional growth to athletes through a supportive and positive sporting experience, which will encourage a lifelong participation in physical activity. The following aspects are important for consideration:
 - awareness about social influences acting on young athletes, both positive and negative e.g., drugs and alcohol.
 - tailor detailed explanations of tactics, skills and rationales to suit the age appropriate development of athletes.
 - Athlete support system to help build realistic and achievable goals during different stages of growth of development.
3. understanding about emotional outbursts due to frustration, when learning new skills, and hormonal mood swings during adolescence.
4. understanding about factors creating anxiety among adolescents that may negatively affect performance.
5. providing all athletes with responsibility and age appropriate leadership opportunities as student athletes mature. This can be achieved by
 - understanding athletes, recognising the importance of independence and personal responsibility and providing the same understanding to the athletes.
 - giving athletes opportunities to run part of practice sessions and participate in the decision-making process regarding team policies.





I. Tick the correct option.

1. Which of the following is an aspect of growth?
 - i. Intelligence
 - ii. Emotion
 - iii. Height
 - iv. Leadership
2. Growth refers to
 - i. change in emotion
 - ii. change in physiology
 - iii. change in ability
 - iv. change in maturity

II. Answer the following questions briefly.

1. Define Growth and Development?
2. Discuss the importance of Growth and Development in Sports?

III. Answer the following questions in 150-200 words.

1. Differentiate between Growth and Development?
2. Describe various elements of growth and development?.

9.3.1 CHARACTERISTICS OF GROWTH AND DEVELOPMENT

Growth and development are multidimensional requiring integration and coordination between the various aspects. To understand the growth and development of an individual, it is helpful to understand the four main areas of development.

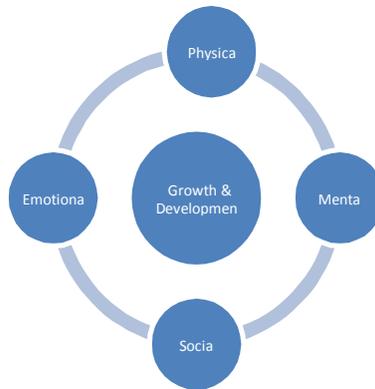


Figure-1: Schematic illustration of the interaction between the four main areas of development

S. No.	Areas of Growth and Development	Characteristics
1.	Physical	height and weight
2.	Mental	thinking and understanding
3.	Social	interacting with others
4.	Emotional	feelings and attitudes



As is illustrated in Figure 1, the overall development of an individual is influenced by a constant interaction between the four areas of development. Growth and development of an individual is the result of interaction between physical, mental, emotional as well as social aspects of development.

What is physical development?

Development of physical aspects includes of the various physiological changes occurring to an individual starting from birth till death. Measurement and assessment of physical aspects of development includes factors such as height, weight, strength, flexibility and other motor abilities. Changes in body composition due to change in age influences various other aspects of development. Most of the physical developments are quantifiable and measureable in terms of size, shape and weight, therefore have standard tools to assess them. With the change in age, there are observable changes in physical aspect which have a structure and pattern. Any deviation from the patterns of growth associated with that particular age group or gender can be identified and diagnosed and remedial measures can be applied. Various aspect of physical development may have stagnation after certain age, whereas spurts are also observable at particular stage of growth.

What is cognitive development?

Cognitive, or its extended term mental development, is an essential aspect of an individual's development. It includes abilities such as memory, perception, language, information processing, and thinking which influence decision-making abilities. According to change in biological age, these abilities keep changing along with growth and maturation. There is a general pattern of mental development, but each individual develops their mental abilities in a unique pattern which is influenced by genetic factors, social environment and experience available to an individual during different stages of growth. The important aspect about cognitive aspect is that, all the abilities are inter-related and they develop as a unit.

What is social development?

Social development refers to the aspects wherein an individual interacts with the society and which results in development in various aspects of an individual at different stages of life. Social development is also the ability to communicate effectively with the members of the society and to observe societal norms of the community according to one's age group. Appropriate social behaviour consists of being able to get along with members of the society, as well as showing respect for societal rules and understanding one's roles and responsibilities. The development of social aspects are affected by various stages of growth, thus different varieties of social skills are reflected by individuals.

What is emotional development?

Emotion refers to responses consisting of physiological reactions and expressive behaviours which may be subjective in nature. Emotional development is part of a person's personality development and it refers to the ability to express and control one's emotions. It includes control over psycho-physiological reactions of the body with respect to the conditions, environment and situations surrounding them. From





childhood to old-age, individuals acquire new skills to manage feelings and emotions as it is highly affected by the environment and conditions around an individual. A wide variety of emotions are expressed by individuals at different stages of growth and display. Age and gender along with quality of emotional experiences are major factors affecting the emotional decisions an individual.

9.3.2 STAGES OF GROWTH AND DEVELOPMENT

Change is the one inevitable thing in life. Change could be visible, as in physical aspects, involving weight, height gain or muscle and fat mass reduction and increase etc., or it could be related to cognitive abilities, i.e., the ability to understand, the emotional ability to respond to different stimuli, or the ability related to social aspects and the capability to choose groups and individuals, or the ability to evaluate the moral aspects and to value and respect people and happenings with rationale regarding ethical and moral principles. These changes are commonly described according to various stages of development based on different age groups. If we observe the behaviour of people living around us, we see they are not similar in their behaviour. Most of the changes or differences are because everyone is in different stages of development. The developmental stages are considered to be temporary and consist of characteristics which are dominant at a particular stage. Individuals differ with respect to time and rate of development, but they are expected to attain these developments within their stages. Thus, these accomplishments become social expectations which are known as developmental milestones.

It is interesting to understand that certain milestones or characteristics are acquired easily whereas certain skills or milestones become difficult to acquire within a specific stage.

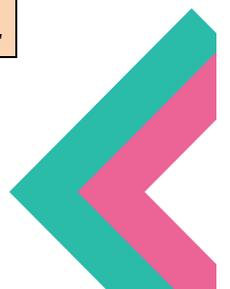
From the perspective of physical education and sports, these changes influence participation and performance in physical activities, exercise and sports. Therefore, a detailed understanding of the changes which occur at different age groups or different stages of growth and development is very essential and critical for optimal growth and development of an individual.

While there is no consensus in classification of different stages of growth and development, broadly speaking, the stages of human life span can be divided into:

- Infancy (birth to age 2)
- Childhood (2-11 years)
 - Early childhood (2 to 6 years)
 - Middle childhood (6 to 11 years)
- Adolescence (11 years to about 20 years)
- Adulthood (20-65 years)
 - Young Adulthood (20 to 40 years)
 - Middle Adulthood (40 to 65 years)
 - Late Adulthood (65 years and above)



Stages	Developmental milestones
Infancy : 0-2 yrs	<p>Physical: The child's body weight increases to almost triple the birth weight, and increase in height is about one-third during the first year alone. Growth of brain size is also rapid during first 18 months.</p> <p>Linguistics: Children start developing language ability and learn through their sense organs. They explore the world in their own ways and express their intellect by making various sounds like gurgling, cooing, etc.</p> <p>Social & Emotional: Expressing joy, anger, sadness is achieved by 6 months.</p> <p>Motor skills: The infant first controls his head and trunk, then lift his chest, sits upright, crawls, creeps, stands with help, stands holding some objects and starts walking.</p>
Early Childhood: 2-6yrs	<p>Physical: The child develops athletic appearance and loses baby chubbiness. Brain and head grow rapidly during this period.</p> <p>Cognitive: The child develops ability to classify objects, people and events. They are imaginative, animated and create their own hypothetical world. Psycho Social: He/She is able to express his/her feelings and emotions and communicate needs and feelings with others.</p> <p>Linguistic: The child develops the ability to speak in complete sentences. Motor skills: The child has better control of his/her physical movement and can have better coordination of body parts.</p>
Late Childhood (Pre-Adolescence) 6-11yrs	<p>Physical: There is an increase in strength as body parts become stronger.</p> <p>Cognitive: By this age children develop concrete thinking abilities, in which they develop ability to think logically and use mental operations to solve problems. However, they still lack abstract thinking ability.</p> <p>Psycho Social: The child develops gender identification and social comparison to identify themselves from others.</p> <p>Motor skills: They have developed the ability to use body parts with appropriate speed.</p>
Adolescence (11-20 years)	<p>Physical: Boys and girls develop height, weight, muscles and achieve maturity but in growth is in spurts. The onset of this stage is marked by the onset of puberty.</p> <p>Psycho Social: At this stage boys and girls are argumentative and they have a tendency to find fault with the authority figures. They are self-conscious and influenced by their peer</p>





	group. Cognitive: Boys and girls become innovative and take great interest in learning various skills. They also develop the ability of abstract thinking. Motor: They develop strength, speed, endurance, flexibility, coordination at a rapid rate.
Early Adulthood (20 -40)	By the time they reach adulthood, individuals are responsible, mature, self-supporting and well-integrated into society.
Middle Adulthood (40-65 years)	This period is characterised by strong social networking, relatively stable personality, and life is dominated by work and family.
Old Age (65 and above)	This period is marked by decline of health and faculties, and individuals often plan to retire. It is marked by inactiveness and people are prone to various physical limitations.

Infancy: This stage of infancy starts from the time child is born and extends till the age of two years. Physical aspects develop at a rapid rate, especially increase in body weight and height during this period and the infant gains three times its body weight during the first year alone. There is also a rapid growth in brain size during the first two years. According various research, the brain size of a two year old is found to attain 55% of its adult size, whereas at around six years of age, the child brain attains 90% of the adults size. An new born infant does have reflexes and sensory capacities to help him interact with the environment from the moment of birth. All healthy babies are born with certain reflexes, or inborn automatic responses to particular forms of stimulation. These reflexes are essential for survival and can the infants to survive until it is capable of more complex behaviours. Children at this stage start developing language ability and start learning through their sense organs and explore the world in their own ways. They also start expressing themselves by making various sounds like gurgling, cooing, etc and by smiling. Newly infants are found to be emotional, but during this stage they have no control over their emotions. When they attain the age of six months, they reflect psycho-social development through activities like expressing joy through laughter, or anger and sadness through crying. Motor development in infants is reflected through the initial control of head and trunk, followed by lifting their chest, sitting upright, crawling, creeping, standing with help and walking. By the age of two years, a child is able to walk up and down stairs and kicks aball.

Early Childhood: This (2-5 years) is the phase post-infancy, wherein changes inphysical appearance occur as the child loses the chubbiness associated with infancy. Brain develops rapidly and the child has better control over his/her physical movements along with improved coordination of his/her body parts. Psycho-social development involves development of feelings, emotions and the ability to communicate their needs and feelings with others. Cognitive ability develops rapidly and the child can count, name colours, and can also make few decisions on their own, such as choosing an outfit to wear. Basic time concepts and sequencing (e.g., before and after) are understood at this age group. They do start enjoying use of humour in



stories and are able to predict what next in the stories they listen. Because they can think symbolically, they enjoy pretend play and inventing elaborate characters and scenarios. Curiosity toward new and unknown is one of the reflective elements of mental development occurring during this stage of growth. According to Jean Piaget's theory on cognition, 2–3 year olds are described as egocentric, meaning that they do not have an awareness of others' points of view. Whereas, children between 3 and 5 years old can understand that, people have thoughts, feelings, and beliefs that can be different from their own. Cognitive abilities to classify objects, people or events are developed along with qualities of being imaginative, animated and creative by being in their own hypothetical world. They have a well-developed language ability and are able to say full sentences, and sing songs and recite rhymes from memory.

Late Childhood: Between 6-11 years, physical development can be seen in an increase in strength as the body becomes stronger. However, there are often fluctuations in physical development between children. One child can be in a completely different growth phase than another child who is the exact same age. The disparity in physical development may continue well into adolescence, when growth patterns even out. Physical growth and development supports motor development and the individual can train at appropriate speed and intensity. Psycho-social development plays a major role as child develop gender identification and initiates social comparisons to identify him/herself from others. Child develops cognitive abilities through development of ability to think logically and use mental operations to solve problems, but lacks abstract thinking.

Adolescence: Adolescence is an important stage of growth and development wherein an individual goes through a transition from childhood to adulthood due to which a large amount of physical, mental, social and emotional changes occur at a very rapid pace along with physical growth spurts. The term adolescence is derived from the Latin word *adolescere*, meaning to grow up. Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood. While adolescence is marked with onset of puberty, it is usually associated with the teenage years. However, its onset may vary from individual to individual due to physical, psychological or cultural variations and may begin earlier and end later with individuals. Also, boys generally attain puberty around 12-13 years of age, whereas, girls attain puberty at a much younger age of 10-11 years. Boys indicate attainment of puberty through appearance of whiskers whereas in girls the onset of puberty is identified by the beginning of menstruation. Adolescent boys and girls develop height, weight, muscle mass and bones at a high rate of maturity but with growth spurts, due to which motor development is also rapid. Puberty occurs due to various hormonal changes during this stage of development. Hormones like testosterone among boys and oestrogen among girls are released during this stage for helping puberty development, and are closely associated with various emotional or psycho-social behaviours among both boys and girls. Adolescents tend to be more argumentative and have a tendency to find fault with the authority figures. Self-consciousness and increased influence of peer group are common scenarios during this stage of development. Aggression and depression are closely associated among adolescents leading to various issues of juvenile delinquencies which will be discussed in the later part of the chapter. Parents, school, and society have to play a positive role



and strengthen relationships for optimal development of adolescents. Since adolescence results in various changes in their appearance and abilities, adolescents develop various cognitive aspects like becoming more innovative and taking an interest in learning various skills with enhanced involvement. They develop abstract thinking ability wherein they start creating their own understanding of the world as they start accumulating knowledge through interaction and apply the learned concepts to new tasks.

Adulthood: An adult is someone who is responsible, mature, self-supporting and well-integrated into society. Since all characteristics and attributes do not develop in all individuals at the same time and at the same rate, so to understand this stage better, its further divided into two sub- stages as “early adulthood” and “middle adulthood”. In early adulthood stage, development of physical health, strength and energy is at the peak and sensory and motor systems are at their peak. Physical characteristics are reflected through weight gain and height increase, whereas psychosocial development is reflected through family-oriented behaviours and commitment towards relationships. This stage is also marked with choices regarding career options, selection of lifestyle etc. Middle adulthood is a later stage reflecting gradual decline in physical abilities, efficiencies and motor components. Women in this stage go through various hormonal changes which results in menopause. This stage reflects relatively stable personality and strong social networking as are largely well-settled as responsible individuals and citizens.

Developmental Characteristics and Stages of Growth and Development: A Sports Model

In sports, an athlete’s growth and development at different stages of life is an essential component to be considered while planning training, selection of activity, grouping of athletes according to abilities etc.

The growth and development stages of athletes can be grouped into four categories:

- *below 9 years* Fun Phase
- *10-12 years* Foundation Phase
- *13-15 years* Formative Phase
- *16-19 years* Final Phase

By identifying and understanding the main characteristics of each of these developmental stages, athletes’ needs can be better taken care off.

Key Features

Fun Phase: Below 9

Elements	Physical	Motor Skill	Cognitive	Psycho-social
Characteristics	Slow but steady increase in height and weight	Learns basic motor skills	Short attention span.	Sensitive to criticism



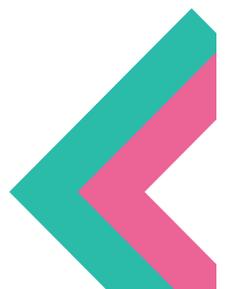
Teaching/ Coaching Pedagogy	Add minimal physical conditioning	Plan fun-oriented activities to develop motor skills	Add variation and variety in drills	Create stress free atmosphere
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Foundation Phase: 10-12 years

Elements	Physical	Motor Skill	Cognitive	Psycho-social
Characteristics	Growth spurt and changes due to puberty	Motor skill development at different rate	Increased perception and Logical	<ul style="list-style-type: none"> • High Self-Confidence • Tendency to self-evaluate and compare one self with others
Teaching/ Coaching Pedagogy	Plan low intensity physical conditioning	Focus on skill refinement and development	Introduction of Small Sided Games (SSG); Allow guided discovery	Avoid winning and losing; Give positive feed backs

Formative Phase: 13-15 Years

Elements	Physical	Motor Skill	Cognitive	Psycho-social
Characteristics	Physical and hormonal changes	Increase in adaptation	Development of ability for abstract thinking	<ul style="list-style-type: none"> • Sensitive to peerpressure • High level of criticism • Self-centred
Teaching/ Coaching Pedagogy	Plan Training at match speed Add fitness component	<ul style="list-style-type: none"> • Practise in Real match situations • Add tactics and Strategy 	Schedule long and intense playing hours	Allow increased decision making



**Final Phase : 16-19 Years**

Elements	Physical	Motor Skill	Cognitive	Psycho-social
Characteristics	All round development (Automatic capacity). Specified gym drills prerequisite	Autonomic phase of skills acquisition	Abstract reasoning skills	<ul style="list-style-type: none"> Emotional autonomy Able to take positives/negatives
Teaching/ Coaching Pedagogy	Prepare for High intensity match- related drills	Develop Motor perceptual abilities; Develop tactical and actual game scenarios.	Involve and allow decision making during scheduling of training	Assign Individual roles and responsibilities

The phases may differ slightly between males and females as females tend to mature more quickly than males, thus reaching adolescence at an earlier age.

I. Tick the correct option.

1. Infancy stage is for the age group
 - i. 2-6 years
 - ii. 6-11 years
 - iii. 11-20 years
 - iv. 0-2 years
2. Change in memory and perception are indicators of
 - i. social development
 - ii. physical development
 - iii. mental development
 - iv. emotional development
3. Peer interaction and relationship reflects
 - i. group dynamics
 - ii. physical growth
 - iii. moral values
 - iv. emotional development

II. Answer the following questions briefly.

1. Define concepts of Growth and Development?



2. Explain characteristics of Growth and Development?
3. Which type of activities can be undertaken in early childhood? Why?

III. Answer the following questions in 150-200 words.

1. Discuss the developmental characteristics of early childhood and their impact on learning.

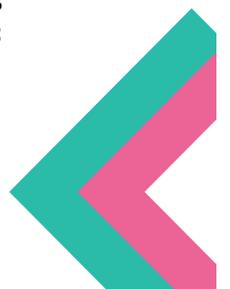
9.4.1 ADOLESCENT PROBLEMS AND THEIR MANAGEMENT

Adolescence as defined by WHO includes individuals between the age group of 10-19 years, a period of transition from childhood to adulthood. It is marked by the onset of puberty, which now occurs earlier, on an average, than in the past. This age group is considered critical because it marks the developmental transition of an individual from childhood to adulthood, which involves physical, psychological, social and neuro developmental changes.

Raman is a 14-year-old who has just entered Class 9 in his Secondary School. He has noticed that his body is going through some physical changes. As a result, he has become self-conscious about his physical appearance. He has also begun taking measures to insure more privacy at home. For example, he locks the door every time he enters the bathroom, and he always takes his phone calls in his room with his door closed. He also values his relationships with his friends and has begun spending more time with them. He started valuing his freedom, thus gets aggressive or irritated with restrictions by family members on certain tasks. His parents understand the behaviour changes, thus creating space for him at home and listening to his thoughts and ideas. They involve him in sports and outdoor activities to channelize his energy. Raman's behaviour and physical changes are common during adolescence.

Adolescence stage is a critical time of life, when a child transforms into an independent individual, develops new relationships, enhance social skills and acquires behaviours which will be everlasting throughout life. Due to these various changes, adolescents need explicit attention and support to help them contribute positively to society.

Physical growth and development during adolescence is marked by changes in height and weight, body composition, skeletal mass, and sexual maturation. The biological changes during adolescence that occur due to the onset of puberty, mark the transition of the child into an adult. The growth spurt associated with puberty, which results in physical and hormonal changes is also marked by remarkable changes in energy levels, thus developing in the individual a strong recognition of personal identity, moral and ethical value sets, and a feeling of self-esteem. The hormonal changes are linked to the cognitive and psycho-social changes, wherein adolescents develop stronger reasoning skills, logical and moral thinking, and become more capable of abstract thinking and making rational judgements. This stage of adolescence surely creates opportunities for significant developments because of wide chronological age range, but it also creates space for dissatisfactions too, thus creating turbulence in the adolescent which can be reflected in behavioural as well as





emotional aspects. They are exposed to a variety of substance abuse like tobacco, drugs etc. They face greater risk of violence and can experience different types of emotional drainage leading to depression and suicide tendencies.

Do you know?

Adolescent health

Coming of age: adolescent health



24 September 2018 -- The world now has more young people than ever before -- of the 7.2 billion people worldwide, over 3 billion are younger than 25 years, making up 42% of the world population. Around 1.2 billion of these young people are adolescents aged between 10 and 19 years. Adolescence is a critical time of life. It is a time when people become independent individuals, forge new relationships, develop social skills and learn behaviours that will last the rest of their lives. It can also be one of the most challenging periods. "Coming of age" examines these issues facing adolescents.

Read "Coming of age"



9.4.2 SUB-STAGE OF ADOLESCENCE

To understand the psycho-social and cognitive developments and concerns, it is suitable to review the three sub-stages or periods of adolescence presented by Ingersoll (1992) as early adolescence (10-14 years), middle adolescence (15-17 years), and late adolescence (18-21 years).

Psycho-social Processes and Substages of Adolescence				
Substage	Emotionally Related	Cognitively related	Socially related	Morally related
Early Adolescence	Adjustment to a new body image; adaptation to emerging sexuality	Concrete thinking; early moral concepts	Strong peer effect	Pre-conventional
Middle Adolescence	Establishment of emotional separation from parents	Emergence of abstract thinking, expansion of verbal abilities and conventional morality;	Increased health risk behaviour; sexual interests in peers; early	Conventionally moral



		adjustment to increased school demands	vocational plans	
Late Adolescence	Establishment of a personal sense of identity; further separation from Parents	Development of abstract, complex thinking; emergence of postconventional morality	Increased impulse control; emerging social autonomy; establishment of vocational capability	Post-conventional moral

Source: Adapted and reprinted from Ingersoll GM, Psychological and social development. In: McAnarney E. Textbook of adolescent medicine © 1992, with permission from Elsevier.

Extension Activity

Answer the following questions.

- How important is it for you to be accepted by your peers?
- What are some situations in which you have, or someone you know has, experienced peer pressure?
- Why do you think it's so difficult to withstand peer pressure?
- What would you do if one of your friends began pressuring you to do something you didn't want to do, or didn't approve?
- If someone were consistently trying to pressure you to do something you were uncomfortable with, would you consider that person a friend? Why or why not?
- Why do you think peer pressure is so often associated with negative behaviour?
- What are some ways to avoid negative peer pressure?
- Is there positive peer pressure?
- What are the ways in which friends could have a positive influence?

Share your views with the class.

Early Adolescence (10-14 yrs) is the initial stage wherein a child like Raman starts adjusting to the rapid body changes and adapts to sexual changes. This stage is very suitable for cognitive development, the child develops concrete thinking, and an ability to understand the perspective other than their own. They also fall short of problem-solving skills related to behaviour modifications. They develop early moral concepts about there being just no one right view, instead there can be different opinions regarding similar concerns. At this stage, a strong peer effect is also reflected through development of relationships among peer group/ friends and admiring celebrities.

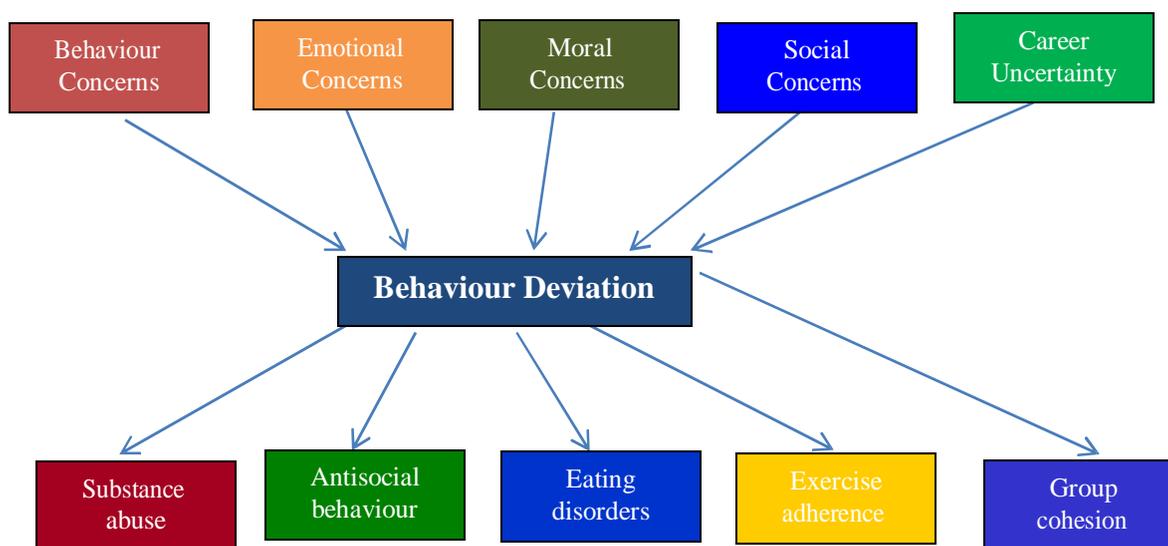




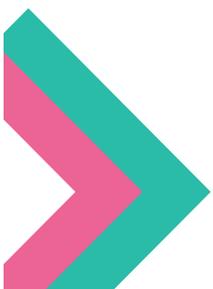
Middle adolescence (14-17 yrs) is the stage wherein puberty has passed, thus creating a consciousness in the adolescents about their physical appearance and sexual attractiveness. This stage is very critical, as it establishes emotional separation from the parents and a desire for being independent and need for space. This period is also marked by development of abstract thinking, ability to use verbal communication effectively, and development of conventional morality. With the development of conventional morals, importance of peer pressure and peer acceptance and approval increases. They start focusing on maintaining social order but will surely like to match their behaviour with their beliefs by trying the things which they consider as “bad”. Due to this, individuals in this age group are prone to engage in social problems including addiction to smoking, drug abuse and other health-risk behaviours.

Late adolescence (17-19 yrs) is the stage where the adolescent develops a personal sense of identity as the biological development concludes for most. Thus, he/she is now better able to cope with situations of peer group pressure, body imaging and behaviour impulses. They move on from concrete thinking to abstract thinking which prompts them to set their own moral guidelines without any need for social acceptance. This stage is also marked by increased behaviour control, consistency and stability leading to creating space for themselves within the society.

Adolescence Problems



Adolescence problems: When various problems like behaviour issues, emotional problems, moral dilemmas, social concerns along with career uncertainty combine together, they create behaviour deviations among the adolescents and raise concerns and problems among the society members at home, at school, in the sports teams etc. These behaviour deviations lead to problems such as substance abuse which have negative effects on health, developing of eating disorders leading to anorexia nervosa or bulimia nervosa, indulging in anti-social behaviour due to aggression and anxiety, non-adherence to outdoor activity, sports and exercise. The various types of concerns associated with adolescence at different stages are to be understood and supported by family, friends, teachers, coaches, relatives in accordance to the needs and demands of the individual. Any deviation in any of the mentioned aspects of the adolescent leads





to different types of problems which need appropriate understanding and management.

The problems associated with adolescence due to behaviour deviations can be many, but a few major issues along with their management are discussed below.

1. **Substance abuse** is one of the major concerns among the adolescence. It is behaviour that is neither ethical nor socially acceptable. Drugs have addictive properties, and have lethal effects on health. Alcoholism, smoking, drugs etc attract the adolescence age group due to peer pressure and various other factors.

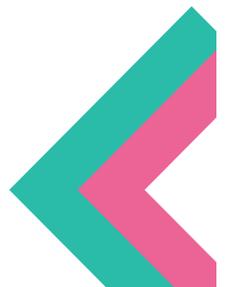
Management: The issues related to intervention include a combination of cognitive and behaviour techniques.

- The **cognitive techniques** include expression of concern for individuals by coaches and parents, setting limits on unacceptable behaviour and developing behaviour policies for class, team or group.
 - The **behaviour techniques** include involvement of peer for transfer of accepted behaviours, engagement of individuals during free time through participation in sports, exercise, recreation or any outdoor or indoor activities for constructive modification.
2. **Eating Disorders** are the result of various psychological aspects like anxiety, depression etc. due to which the adolescent develops eating disorders like
 - a. **Anorexia nervosa** which is reflected in bizarre eating patterns and habits like unusual starvation due to social or physique anxiety for weight loss
 - b. **Bulimia Nervosa** which is presented by binge eating patterns due to depression and other psychological fluctuations.

Eating disorders can be found among addicted exercisers when they stop exercising, start dieting and develop anorexia or bulimia due to depression, and in females especially, who develop consciousness towards physical appearance and sexual appearance.

Management: These issues concerned with eating disorders can be managed through two essential processes

- **Diet Awareness** is essential towards management of eating disorders. It can be done through promotion of awareness about dietary habits among the adolescents at various levels including at school, home, residential organizations and at community events involving adolescents.
 - **Promotion of Fitness:** Physique and physical appearance have no substitute other than exercise and physical activity along with a healthy diet pattern. Promotion of fitness activities and participation in sports or outdoor activities need to be facilitated at all levels of community interaction opportunities.
3. **Anti-Social Behaviour** is a prominent pattern reflected among the adolescents due to the psychological turbulence happening along with sudden spurts of physical changes during adolescence when not adequately supported by the





community and associated members. Issues of aggression have a larger impact on the adolescent due to change in cognition abilities.

Management:

Catharsis: Aggression can be regulated through fulfilment or discharge of negative feelings, or catharsis. Individuals should be given an opportunity to speak and express their emotions, as suppressing of emotions and provision of opportunities for adolescents to share their thoughts along with their peer group.

Circular Effect: Aggression has a circular effect, as one act of aggression leads to another. Therefore, there is a need to break the circle so that it is not repeated again. Ideal recommended style to break the circle is through positive reinforcement.

Management:

- Break the violence cycle as soon as frustration is reflected i.e., aggressive behaviour of seniors is reflected on juniors or of one player on another.
- Provide space for players to speak and express their opinion and the manager/coach must listen to it positively.

4. **Exercise Adherence:** With the growth in physical aspects and development in social, mental, cognitive aspects in adolescence, energy channelization is essential for cohesive development. Participation in outdoor and indoor activity along with participation in sports and exercise is essential for lifelong learning towards wellness. Dropout rate from participation of sports and exercise is a common reflection among the adolescence. The general reasons identified for the dropouts are:

a) Intrapersonal Constraints:

- (i) Lack of fun and enjoyment or getting bored;
- (ii) Low perceptions of physical competence;
- (iii) Low intrinsic motivation and high stress level;
- (iv) Negative feelings towards team or coach;
- (v) Anxiety and nervousness due to excessive criticism.

b) Interpersonal Constraints:

- (i) Family or peer pressure;
- (ii) Social priorities;
- (iii) Excessive alternate opportunities;

c) Structural Constraints:

- (i) Time available for training;
- (ii) Sports related injuries;
- (iii) Financial feasibility;
- (iv) Insufficient facilities and infrastructure;
- (v) Overuse/Burnout;



Adherence Management: Support of family, teachers, coaches, trainers is essential towards helping adolescence towards exercise adherence as an essential component towards life.

Adoption	Maintenance
<ul style="list-style-type: none"> • Access to facility and time • Self-motivation • Social influence • Self-efficacy • Behaviour coping skills 	<ul style="list-style-type: none"> • Knowledge about importance of healthy life style, exercise and sports • Positive attitude towards exercise and sports • Confidence to succeed in vigorous exercise Programme/sport

Group Cohesion: Belonging to a peer group is a key need for an adolescent, which can be dynamic in both structure as well as process. Group cohesiveness and its norms help to facilitate the group to achieve more than individuals would be able to on their own. The purpose of a group is towards bringing a change along with providing support and insight into either the individual, the group as a whole, or the environment. Working in groups may well encounter internal problems and conflict at certain stages, but with effecting group functioning strategies, they provide a positive and supportive environment to develop and learn new interpersonal skills. *Teams* are special kinds of groups, members of teams often have complementary skills and are committed to a common goal or purpose and they are mutually accountable for their activities. In teams, there is a positive synergy attained through the coordinated efforts of the members.

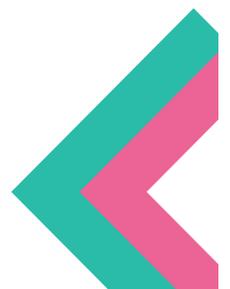
Group Management:

a. Goal Setting

- i. Set teams goals and take pride in their accomplishment.
- ii. Each player must be aware of their roles and make them believe it is important
- iii. Take time to learn something personal about an individual

b. Avoid formation of cliques

- i. Promote regular meetings and interactions
- ii. Positive encouragement on losing and avoiding public punishment
- iii. Avoid personal prejudice or scape goats usage
- iv. Provide equal opportunity
- v. Focus on maximum transparency
- vi. Develop team drills and activities to promote team cooperation
- vii. Highlight areas of success even during failure.





I. Tick the correct option.

1. Rajita regularly binges on large meals. She then makes herself vomit and follows up with two hours of exercise. Rajita is most likely suffering from which eating disorder?
 - i. Toxaemia
 - ii. Obesity
 - iii. Bulimianervosa
 - iv. Anorexianervosa
2. Which of the following is the age group for Early Adolescence?
 - i. 6-9 yrs
 - ii. 10-14 yrs
 - iii. 14-17 yrs
 - iv. 17-19 yrs
3. Which one of the following is NOT a problem related to adolescence?
 - i. Eating Disorder
 - ii. Substance Abuse
 - iii. Anti Social Behaviour
 - iv. Lack of Language development

II. Answer the following questions briefly.

1. Define Adolescence as per WHO?
2. Explain the different stages of adolescence?
3. List some of the problems of adolescence.

III. Answer the following questions briefly.

1. Describe various adolescence problems? How can they be managed?

Suggested Reading

- Baron. R.A. (2008). "Psychology" Pearson Education South Asia, New Delhi.
- Cox. R.H. (2012). "Sport Psychology: Concepts and Applications" Mc Graw Hill, New York, USA.
- Jarvis. M.(2006). "Sport Psychology" Routledge, New York, USA.
- Weinberg. R.S; Gould.D. (2003). Foundations of Sport and Exercise Psychology" Human Kinetics, Champaign. USA.



UNIT-10

TRAINING AND DOPING IN SPORTS**Content**

- Meaning and Concept of Sports Training
- Principles of Sports Training
- Warming up & Limbering Down
- Skill, Technique & Style
- Concept and Classification of Doping
- Prohibited Substances and their Side Effects
- Dealing with alcohol and Substance Abuse

Learning Outcomes

At the end of this unit you will be able to:

- Identify the need of training in sports
- Recount principles of sportstraining
- Explain the significance of warming up and coolingdown
- Differentiate between skill, technique and style
- Identify doping and types of doping
- Recognize side effects of prohibited substances
- Recognize the effect of alcohol abuse and substance on sports performance

Discussion

Do you follow a fitness routine? Complete the given routine and share your information within your group. After discussion, is there anything you would like to change? If so, why/why not?

Personal Details

Name	Age	Gender			
Physical Fitness Goals					
What are your short term physical fitness goals? (3 months)	What are your medium term physical fitness goals? (6 months)	What are your long term physical fitness goals? (a year)			
Your current lifestyle/stat					
How would you describe your current level of fitness?	Unfit	Below average	Average	Good	Very good



How important is exercise to you?	Not all important	Slightly important	Moderately important	Very important	Extremely important
How often do you exercise?	1-2 times a week	2-3 times a week	3-4 times a week	4-5 times a week	Everyday
What barriers, if any, prevent you from exercising more regularly?	I don't have enough time	I can't stay motivated	I have an injury	I don't really enjoy exercising	I exercise regularly with no barriers
Would you say you eat a healthy balanced diet?	Not really	Sometimes	Fairly often	Often	Always

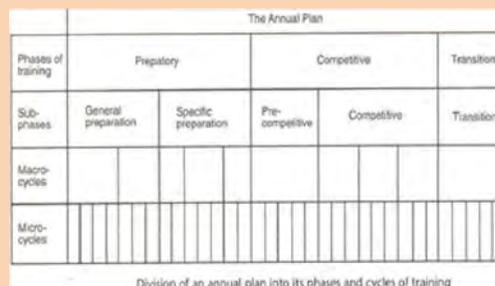
10.1.1 MEANING AND CONCEPT OF SPORTS TRAINING

Training is the process of preparing human resources for performing a particular task or activity. Sports performance training simply is a type of training that is designed to improve the sportsperson's fitness level and ability to perform in a given sport. It includes corrective and restorative exercises, strength training, conditioning and cardiovascular training, sports specific technique sand drills, periodization, nutritional advice, mental and psychological training by a qualified trainer.

Do you know?

MODERN SPORTS TRAINING is a method of developing an athlete's performance. And for improvement of performance it is important to know about the **Periodization**.

Periodization means dividing the training plan of an athlete in order to enable him/her to achieve his/her optimum performance during the main championship. It includes a preparatory period, competition period and transitional period in one periodization cycle.





Preparatory period is the longest phase where players work on their fitness components, sports technique and tactics. During the **Competition period**, players play minor competitions before playing the main competition.

Minor competitions help an athlete to identify his/her own error and to rectify it before the main competition. **Transitional period** is at the most a month which starts just after the end of the main competition. It is an active rest period of an athlete where recreational activities are advised. Players need to enjoy and help their body and mind to recover.

Sports Training is not a new concept; it has been implemented and assessed from ancient times. During the times of Ancient Olympics, players trained themselves for achieving high levels of performance. They were required to report at the venue one month prior to the commencement of the Games for training together.

Do you know?

The preparations of an ancient Olympic athlete started many months, even years, before the opening of the festival, in the gymnasium. The Ancient Greek gymnasium was a public location used for training, education, exercise and socialising – something like the modern community centre. In Ancient Greek society, achieving a harmonious balance between body and mind was an important aspect of an individual's personal development. The gymnasium therefore hosted wrestling matches and provided weight lifting training as also music rehearsals and philosophy lectures.

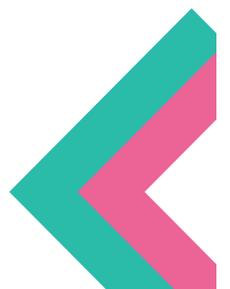
Now a days, as you know competition has increased in all the fields. Similar is the case with sports. Modern sports training has become very scientific and systematic with well-designed equipment and means for developing the performance of an athlete as per his/her abilities. This is the reason why proper training schedules are now designed on an annual or Olympic period basis. In these periods, training is divided into different phases for better acquisition or adaptation of skills, and to attain optimum results during the main competition.

Extension Activity

Sport training is a process of preparation for a sport performance, put simply. It consists of four parts:

- Conditioning training (strength training, endurance training, flexibility training)
- Training of technique (Technical preparation)
- Training of tactics (Tactical preparation)
- Psychological training (Mental preparation)

Working in groups, interview ten sports persons from your school, or another near by school, who have participated in CBSE's Zonal Competitions (or, any equivalent Competition). Find out details of their training under the heads given above.





Today sports training is not only related to the training of physical exercises, but is a complex process which includes a sequential way of training where an athlete develops his physiological and psychological adaptation through working on different areas such as individual care, specific fitness and conditioning, technical help, utilising appropriate machine equipment, considering climate conditions, special athletic diet plan, safety means, emotional stability in competition, feedback, increased participation in competition, rehabilitation treatment, motivating forces, overload etc. All these factors are inter-related and produce high levels of performance in the competitions. In the present competitive world, these factors are as important as physical training/exercises for improving the performance of an athlete which is the ultimate aim of sports training.

As you are aware, though exercises and training are different in nature, they are related to each other. In fact, exercise is a part of training. Exercise is a short-term physical activity which results in increasing the breathing rate, heart rate, blood pressure, blood flow and fatigue etc. On the other hand, training is a long-term process which involves a number of scheduled days and results in decreased breathing rate and resting heart rate, lowering of blood pressure, quick recovery and reduced risk of disease.

According to Harre, “Sports training, based on scientific knowledge, is a pedagogical process of sports perfection which through systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsman to high and the highest performance.”

Matweyew, “Sports training is the basic form of an athlete’s training. It is the preparation systematically organized with the help of exercises, which in fact is a pedagogically organized process of controlling an athlete’s development.”

Martin, “Sports training is planned and controlled processing which, for achieving a goal, changes in complex sports motor performance, ability to act and behaviour are made through measures of content, methods and organisation.”

Hardial Singh, “Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsmen for higher performances in sports competitions.”

According to G. Thiess and G. Schnabel, “Sports training is a scientific based and pedagogically organised process through which planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition.”

According to Todd Townes, “Sports training is a targeted approach to training focused on your sport of choice.”

According to P. Garrison, “Sports training is training designed specifically to increase performance and minimize injury of general sports performance as well as specialised sports performance.”

“Sports training is the preparation of an athlete on scientific based principles in sequential manner to attain optimum performance in their desired competition.”



So, in broad terms it can be said that, training is a well-planned, systematic, pedagogical (educational) process through which optimum performance can be achieved by an athlete in sports and games by working on implementing scientific principles. In simple word “Sports training is an organised procedure by which people learn skills for a definite purpose.”

I. Tick the correct options

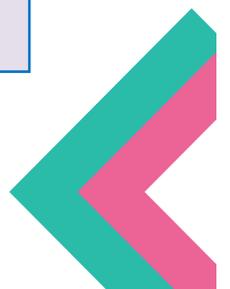
1. In order to develop the best performance of an athlete in competition, sports training has become
 - i. scientific and systematic
 - ii. disorganised and irrational
 - iii. complex and painstaking
 - iv. easy and approximate
2. Exercise is a short-term activity which results in
 - i. normalising the heart rate
 - ii. decreasing blood pressure
 - iii. increase in blood flow
 - iv. decrease in heart rate
3. Due to systematic training the resting heart rate of a Marathon player will
 - i. remain normal
 - ii. decrease
 - iii. increase
 - iv. become critical
4. The main benefit of systematic and scientific sports training is an increase in
 - i. performance
 - ii. injuries
 - iii. physical labour
 - iv. supervision

II. Answer the following questions briefly.

1. What do you understand by the term sportstraining?
2. What is the need for sportstraining?
3. Differentiate between Training and Exercise.

III. Answer the following questions in 150-200 words.

1. In what ways does sports training become an essential part of a trainee's life in sports?
2. Why is systematic sports training required for an athlete?
3. Apart from training, list the factors, that contribute to a successful plan?
4. “Scenario of sports training is changing day by day.” Justify the statement.





10.2.1 PRINCIPLES OF SPORTS TRAINING

In order to prepare a sportsperson for his/her highest performance in the *desired* tournament a certain process has to be followed; that is called training. Sports training nowadays demands certain technicalities and to make the process simpler, yet effective, few principles should be kept in mind. These principles facilitate a trainer in successfully employing an efficient training Programme.

Do you know?

endurance – the ability to work for a longer duration of time under the condition of fatigue.

strength - the ability to overcome from resistance.

flexibility – the ability to cover maximum range of motion of joints.

speed - the ability to perform any task in minimum possible time

coordination – the ability to maintain stabilised and generalised pattern of motor control

performance - the manner in which sport participation is measured.



1. **Principle of Continuity:** Sports training is a regular phenomenon that should be done consistently, without irregular breaks. Though, it is a continuous process that includes planned intervals, the breaks should not be long as that can reduce the capability of the sportsperson. The important point to be kept in mind is that only an uninterrupted training can lead to an optimum/desired performance.
2. **Principle of Individual Differences:** Every individual is different. Each one possesses different qualities and capabilities, and responds differently to exercise and training. Some people handle higher volume of training while others may respond better to higher intensities. Therefore, a training plan must be constructed by keeping in mind the principle of individual differences. While building a plan a trainer must keep in mind the trainee's age (both chronological and athletic), gender, predominance of muscle fibre types and other related factors.



- Principle of Cyclicity:** A training plan is constructed by incorporating various training cycles. These cycles are: micro, meso and macro; where micro is the shortest cycle which may last for 3-10 days. Meso cycle is the medium duration cycle and may be done for 3-6 weeks. Lastly, macro cycle, this is the longest duration cycle that lasts up to 12 months or a year. A macro cycle consists of different micro and mesocycles.

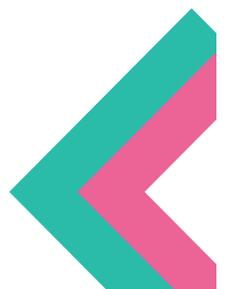


- Principle of Overload:** Load, in sports training, is known as the demand, that can be physical, physiological or psychological, put on the body to enhance the performance of the individual. The key point to note, while planning a training session, is the load should be greater than the normal load to aid adaptation process and thus facilitate the performance enhancement.
- Principle of Progression of load:** As we discussed above, training load must be greater than the normal load. This principle testifies that training load must be increased gradually in order to avoid any unwanted tension on the muscles of the individual by increasing the load slowly and in accordance with the capabilities of the sports person.



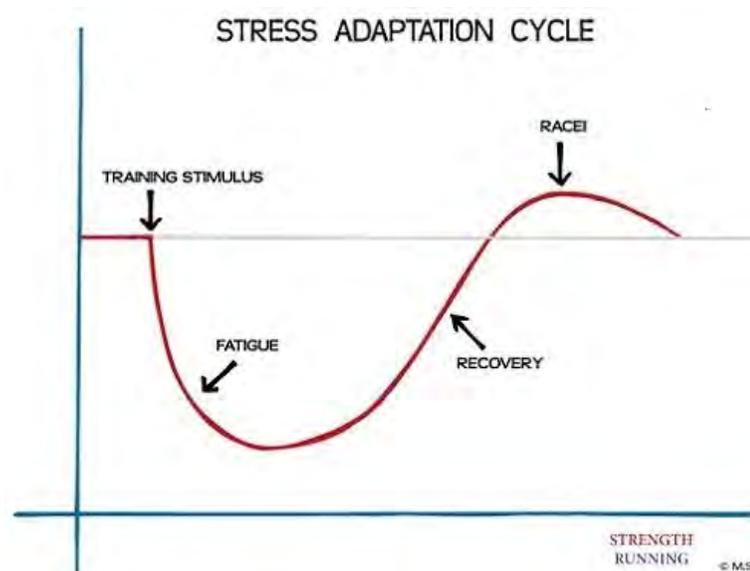
Also, this principle highlights the significance of rest and recovery in between the training sessions. Without optimum rest, there is higher risk for the athlete of getting injured. **Therefore, while increasing the load, rest and recovery should be given required importance too.**

- Principle of Active Involvement:** The performance of an athlete is not merely because of the coach's skills. A training plan results best and is effective only when the coach's knowledge blends with athlete's efforts. This principle lays stress on the athlete's ready participation in the training design. Also, this principle incorporates the "Law of Readiness" since this type of involvement prepares the athlete to perform upcoming tasks willingly.





7. **Principle of Variety:** Training is along-standing process that can turn in to aboringerr and. Therefore, to avoid monotony and to make a training design successful, a coach must incorporate variety in to it. The change can be made by introducing different exercises and drills, changing the time of the day of the session or training group etc. But, it is important to keep in mind that the change must be done according to the load and adaptation process and also facilitate performance enhancement.
8. **Principle of Specificity:** This principle lays emphasis on the notion "practice makes a man perfect". It further states that working on a particular muscle or fitness component will predominantly develop that part. Therefore, to enhance a specific skill or component one must practise it to achieve desired outcomes. E.g., a boxer must focus on punching and dodging skills whereas a basket baller must practise dribbling and shooting.
9. **Principle of General and Specific Preparation:** In order to enhance sports performance both general and specific preparation of an athlete is required. General preparation provides the base for the specific preparation. General preparation focuses on the development of overall fitness components whereas the specific preparation will enhance the functional capacity of the body systems which further improves the performance.
10. **Principle of Warm Up and Cool Down:** Warm up and cool down play vital role in delivering optimum performance. These two are an unavoidable part of training design. Warming up before a training session prevents muscle tenderness by increasing blood flow to the working muscles and therefore, prevents injury. On the other hand, cooling down helps an athlete to return to normal level by transferring blood from the working musclesto vital organs. It also helps in removing waste products from the body.



11. **Principle of Rest and Recovery:** It is evident that during rest, the body restores itself and become better and stronger than before. Both short periods, like hours between multiple sessions, and longer periods, like days or weeks to recover from a long season, are required to ensure that the athlete does not suffer from



exhaustion or an overuse injury. Therefore, a training plan must be designed in such a manner that proper rest recovery can take place in between the training sessions.

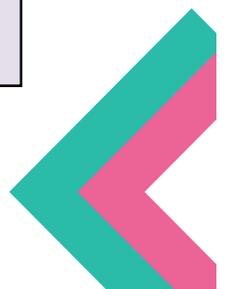
12. **Principle of Ensuring Results:** The pinnacle of sports training is to achieve desired result of delivering optimum performance. Therefore, a training Programme must be made by keeping in mind the goal of performance enhancement. This principle ensures achievement and maintenance of optimum performance only when all the above-mentioned principles are implemented while designing a training plan.
13. **Principle of Periodization:** Periodization is the blue print of a training plan. Its aim is to reach best possible performance in the most important competition. It comprises of following three phases:
 - i) **Preparatory Phase:** In this phase, a sportsperson works on his/her motor fitness and specific preparation. This phase provides the base for the competition phase.
 - ii) **Competitive Phase:** In this phase the sportsperson participates in variousp re-competitions and main competitions.
 - iii) **Transition Phase:** This phase is used to facilitate psychological rest, relaxation and biological regeneration as well as to maintain general level of fitness.

I. Tick the correct options.

1. Meso cycle is a training of
 - i. one week
 - ii. 4 to 10 days
 - iii. 3 to 6 weeks
 - iv. 3 months
2. Transitional Phase is a
 - i. rest and recovery period
 - ii. training period
 - iii. competition period
 - iv. fitness period
3. General preparation focuses on
 - i. personality
 - ii. functional capacity
 - iii. cardio vascular efficiency
 - iv. over all fitness component

II. Answer the following questions briefly.

1. What do you understand by Principle of Meso Cyclicity?
2. List the phases of Principle of periodization.
3. What do you mean by progression of load?





4. Differentiate between general and specific preparation.

III. Answer the following questions in 150-200 words.

- All players diligently follow the principles of training. What are the important principles of training which followed by coaches and players during training to attain good results in a championship?
- Specify the factors that should be kept in mind while preparing a training plan.

Extension Activity

For a week, every day in the morning you/all will do 30 minutes physical activity, in which you will follow the schedule designed by your sports teacher. At the end of the week compare the pre-andpost - training effect on your body.

	Strength	Flexibility	Speed	Coordination	Performance
Pre-training					
Post-training					

List the Principles of Training that you applied to improve your performance.

- _____
- _____
- _____
- _____

10.3.1 WHAT IS WARMING UP

Warming up includes a set of physical activities or exercises performed prior to any sports competition, game or training through which an athlete prepares his/her muscles to move efficiently. These exercises also enable the nerve impulses of the person respond quickly and effectively. In short, warming up is the process of heating up the body temperature of a sportsperson before the competition or training for optimum performance. Warming up is short term in nature and activities performed while warming up are of low intensity with little repetition of specific exercises. It prepares the athlete physically, physiologically and psychologically before indulging in sports activity reducing the possibility of error and injury during the main sport or competition.

Do you know?

Warming up is a preliminary exercise of physical and mental preparation for a strenuous exertion.

Limbering Down/Cooling Dow is an easy exercise, done after a more intense activity, to allow the body to gradually transition to a resting or near-resting state.



Art Integration – STAGING A PLAY ABOUT FAIR PLAY IN SPORTS

Games and contests become opportunities to strive – with opponents – for excellence. Those who cheat or take performance enhancing drugs do not play the game. Fair Play means more than just following the rules.

- A sportsperson who plays fair:
- respects the Rules
- respects the officials and accept their decisions
- respects opponents
- gives everyone an equal chance to participate
- maintains self-control at all times

Choose a situation where an athlete

- broke rules
- cheated/took drugs
- Or, helped an opponent.

Write a play about her/him.

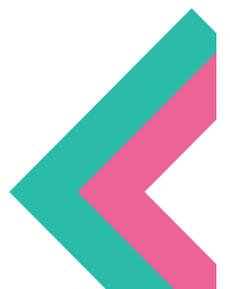
Perform the play during Special Assembly of your school.

10.3.2 TYPES OF WARMING UP

Warming Up includes the following types.

1. **Passive Warming Up:** Passive Warming Up helps increase body temperature before the competition or training without performing any physical activity. This involves drinking warm water, hot beverages (tea, coffee, etc), taking a team bath, wearing heavy (extra) warm clothes, massage and sun bath etc. It enables the player to save his/her energy. This technique is usually preferred before events like pole vault, long jump etc.
2. **Active Warming Up:** Active Warming Up involves increasing the body temperature by performing different low intensity, repetitive exercises. These exercises or activities increase muscle efficiency and reduce risk of injuries. Although the intensity, repetition of exercises, and duration of warm up depends on individual difference, it is advisable to perform the activities for 10 to 30 minutes. The sequence of exercises must move from simple to complex at slow pace.

Active warming up is further divided into two types.





- (i) **General Warming Up** is performed before all types of activities and includes walking, jogging, running, jumping, striding, wind sprints, callisthenics, upper and lower limb movements such as rotation, stretching etc. It increases the coordination among different body muscles, mobility of joints, muscle tone and flexibility.
- (ii) **Specific Warming Up** is performed specially according to the sport and event and is aimed at toning all those specific muscles which play a major role in a particular sport. e.g., in basketball players attempt lay-up shot, jump shot, rebounding, dribbling, overhead etc. This reduces the chance of ankle twisting, shoulder dislocation, knee injuries which are common in basketball.

Do you know?

Some specific warming activities include

Hockey: Stick rotation, dribbling, stopping the ball with stick, scoops

Badminton: Tossing, high clear, low clear, smashing, drop shot
Tennis: Knocking, wall practise, slice, lob return.

Kho-Kho: Dodging, Zig-Zag running pole to pole running. Volley ball: Blocking, passing, smashing etc.

10.3.3 METHODS OF WARMING UP

There are various methods through which an athlete can warm up his/her body.

1. **Physical Activities** are activities which involve some set of exercises for the body parts through which the body gets prepared to perform any task at optimum level. These exercises must be done at slow pace and low intensity to prevent fatigue or overload before the competition or sports event. This is the best



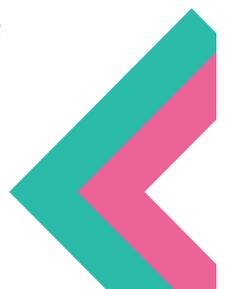
method which allows the athlete to increase his body temperature at required level.



Find out and name the warming up activities in the picture

Physical warming up activities include

- (i) **Jogging** is generally done at slow pace for 5 to 10 minutes to increase the body temperature.
 - (ii) **Bending and Stretching Exercises** include limb and trunk exercises like stretching of shoulder muscles, arm muscles, clavicle muscles, back muscles, hip muscles and leg muscles and include movements like flexion, extension, abduction and adduction circumduction, and rotation.
 - (iii) **Striding** is best before events requiring explosive effort. The athlete may run around 30 to 40 meters at sub maximum intensity at least 3-4 times with proper rest in between.
 - (iv) **Wind Sprints** are sprinting exercises performed for short distance with spikes onas the athlete moves from a walk or slow run to a faster run and repeatedly reverses.
2. **Massage** increases and regulates blood flow in the body, thereby increasing the athlete's body temperature for producing efficient movement. Different techniques of massage include effleurage, petrissage, kneading, friction, vibration andpercussion.
 3. **Beverages** Drinking of beverages including warm water, tea, coffee etc stimulates the body functions. However, care must be taken to consume these in limited quantity to avoid any discomfort.
 4. **Bath** Hot bath therapy is usually very common in sports in cold countries. It can be performed before and after the task. A hot bath before the event may improve



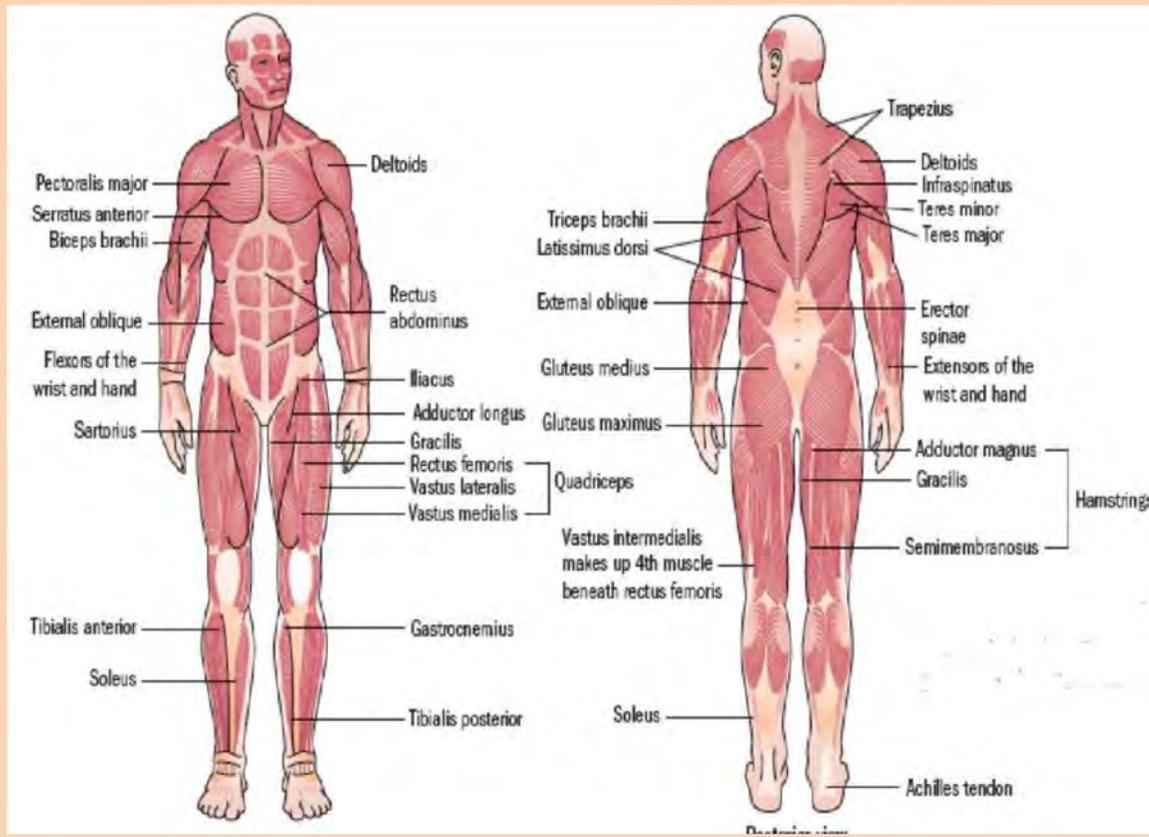


the blood flow, increase body temperature and muscle activation of the athlete. After the task, it may help an athlete to cure muscle tension and reveal relaxation to the body.

Do you know?

The Muscular System

Do you know the names of some important muscles in the body? Find out from the illustration given below.



10.3.4 IMPORTANCE OF WARMING UP

Warming up plays a vital role in sports training or competitions.

1. **Psychological preparedness:** Performing a set of routine or specific activities/ exercises before the training and competition helps an athlete plan and build himself /herself to competing readiness, thereby eliciting optimum output.

Extension Activity

During your games period, take part in 100m race without doing any jogging and stretching activities.

In the next game period, do warm up before participating in the 100m race.

Record the difference in body efficiency.



2. **Reduces anxiety and tension:** Warming up reduces anxiety and tension and increases motivational levels of a sports person.
3. **Facilitate optimum performance** by increasing the speed of nerves impulses and metabolic rate improving the reaction time of a sports person.
4. **Prevents sports injuries** Adequate warming up before training period or competition prevents loosening and tearing of muscles and reduces muscle cramping.
5. **Assists flexibility** and increases the range of motion helping a sportsman to exert force up to maximum reach.
6. **Enhances mechanical efficiency** by increasing the suppleness of muscles.
7. **Facilitates motor fitness components** like strength, endurance, flexibility, coordinative abilities and speed.
8. **Increases muscle temperature** as a result of which muscles both contract more forcefully and relax more quickly, reducing the risk of over stretching a muscle and causing injury. It also improves muscle elasticity; this can enhance speed and strength.
9. **Increases blood temperature and lactic acid** leading to weakening of the binding of oxygen to haemoglobin. So oxygen is more readily available to working muscles, which may improve endurance.
10. **Blood vessels dilate** increasing blood flow and reducing stress on the heart.
11. **Increases range of motion** allowing large joints such as shoulders and knees to reach their maximum movement potential.

10.3.5 LIMBERING DOWN

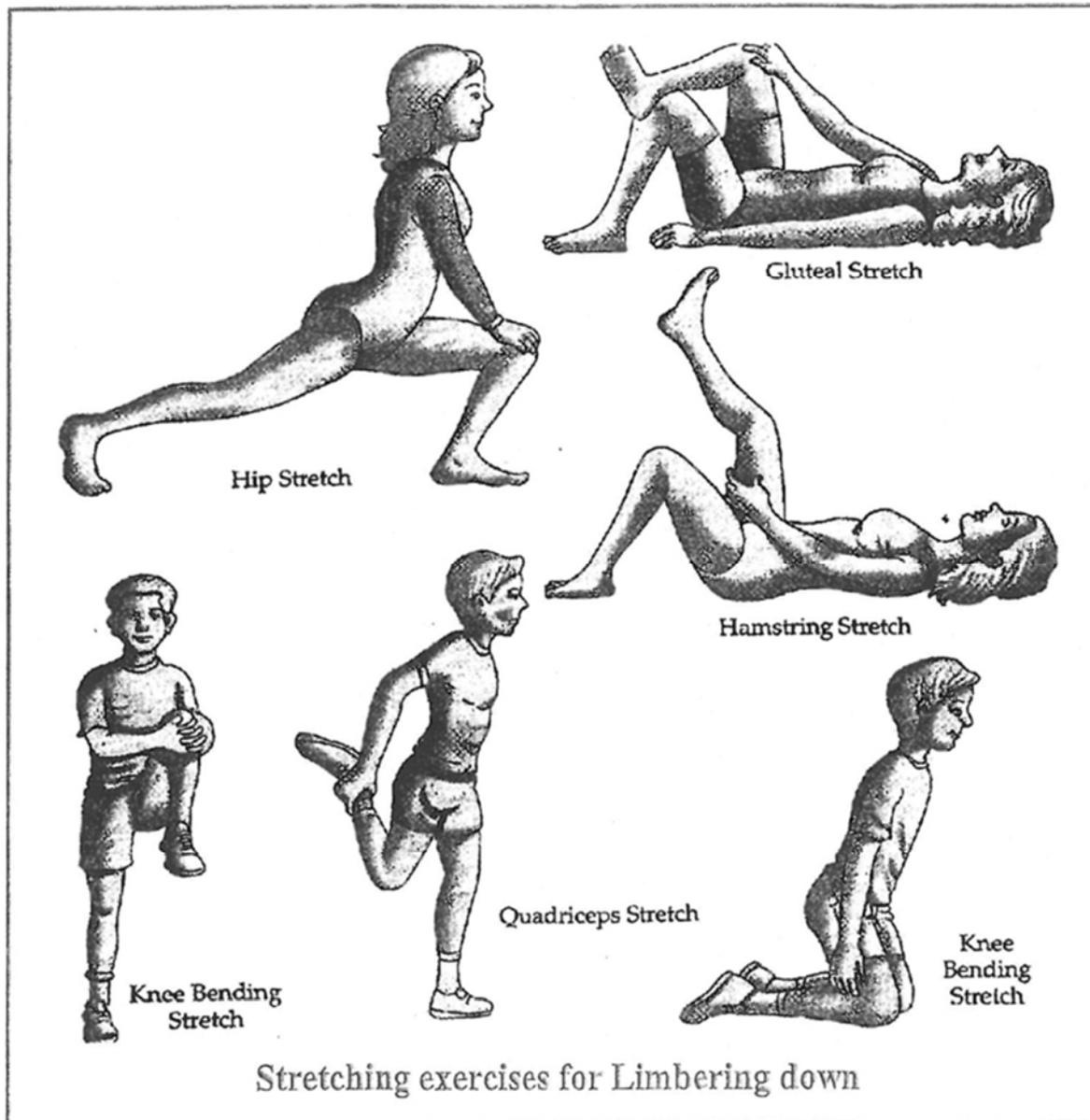
Limbering Down or Cooling Down refers to activities or exercises performed by an athlete or sportsperson after training or competition to gradually transition from an exertion state to a resting or near resting state. Due to training, some physiological changes occur in an athlete's body. To get the body to normal or resting condition, cooling down is a necessary activity. Depending on the intensity of the exercise undertaken, cooling down can involve as low jog or walk, or after a sports activity of lower intensity, stretching, especially static stretching allows muscles to be elongated and lengthened. Rehydration is an essential part of the procedure and should be done either during stretching and light intensity or after these steps. Players take a cooling bath, ice bath or cryotherapy for relaxing their muscles.





There are some exercises designed for cooling down or muscle relaxation after a competition. In cooling down stretching exercises plays vital role as well.

1. **Ham Strings:** Lying on your back, raise and straighten one leg directly above hips. Holding the calf high, press the heel towards ceiling as you pull the leg back towards the chest. Do the same for other leg.
2. **Chest:** Standing straight, interlace fingers behind your back. As you straighten out your arms, lift your chin towards ceiling.
3. **Glutes:** Lying on your back, cross right leg over bent left knee. Then bring the left knee to chest, holding onto the back of your thigh, gently pressing right knee wide. Do the same for other leg.
4. **Quadriceps:** Lying on your right side, pull left into left glute, feeling the stretch in front of the thigh. Repeat with the right leg.
5. **Triceps/Shoulders:** Take one arm overhead, bend at elbow, and extend palm down centre of your back, gently pulling elbow with opposite hand. Take same arm across the chest, gently pulling at the elbow joint, to extend through the shoulder. Switch arms.

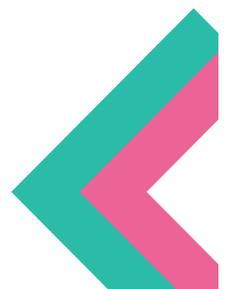


Do you know?

Dynamic stretche – controlled leg and arm movements that involve active tightening of muscles to move joints through their full range of motion; used to engage muscles and mobilise joints; improves speed, agility, and acceleration. e.g., torso twists, walking lunges. **Static stretche** – involve gradually easing into the stretch position and maintaining it without pain for 15-20 seconds; a very effective way to increase flexibility. It must be noted that using static stretching post- event will help prevent injury. e.g., hamstrings stretch, quadricepsstretch.

10.3.6 BENEFITS OF LIMBERING DOWN

1. **Reduces body temperature:** Appropriate cooling down or limbering down helps in reducing the body temperature.





2. **Reduces chances of unconsciousness:** Proper cooling down reduces the heart rate slowly and blood does not pool in the legs and feet. It continues to flow back to the heart through veins and consequently such process reduces the chances of dizziness or fainting.
3. **Restores supply of oxygen:** Proper cooling down restores blood supply and oxygen to the muscles, restoring them to the position they were in before performing training.
4. **Removal of waste products:** Proper cooling down reduces the accumulation of waste products like lactic acid, uric acid, phosphates, sulphates, chlorides and carbon-dioxide etc. from the muscles.
5. **Reduces tension:** Proper cooling/limbering down reduces the muscular tension and mental tension.

Extension Activity

On the picture of the musculo-skeletal system given below, add arrows and labels to show the parts involved in warming up and limbering down exercises as shown.

I. Tick the correct option

1. Warming up is performed to
 - i. generate heat in body
 - ii. decrease metabolic rate
 - iii. lower the body temperature
 - iv. increase oxygen supply to the muscles
2. Cooling down activity is performed at
 - i. maximum intensity
 - ii. sub-maximum intensity
 - iii. low intensity
 - iv. unplanned intensity

II. Answer the following questions briefly.

1. What is the difference between active and passive warmup?
2. What do you understand by the term specific warmup?
3. List the names of any four muscles that relax during cooling down.

III. Answer the following questions in 150-200 words.

1. "Warm up gives a strong acceleration to the body, to perform at its best." Justify the statement?
2. Define Cooling Down. Enlist the benefits of cooling down.
3. How is general warming up is different from specific warming up?



10.4.1 SKILL, TECHNIQUE AND STYLE

Skill, Technique and Style are essential attributes for an athlete to perform at optimum level in sports. Some people are born with a natural ability for a particular game or sport such as speed, agility, coordination, flexibility, balance, reaction time. But they still need to develop and perfect their skills with frequent practice to bring about the result they wish to achieve. In simple words, skill is a learned and practised ability that helps an athlete or sportsperson achieve the desired result with maximum certainty and efficiency. Technique is the way of performing that fundamental skill/activity in sport involving a well-timed and coordinated sequence of muscle actions so that the movements involved produce the best performance and are least likely to cause injury. Style, on the other hand, is the individual's way of adapting skill and technique to develop his/her performance in a smartway.

Skill

Skill is the fundamental ability that enables an individual to perform a large movement with correct technique. It comprises a whole movement of motor action, the ease of which is the result of long hours of practice. Skill is, thus, the result of repetitive practice to get automatised movement, by which a performer spends the least energy on a required task. If an athlete requires a great effort, or struggles to perform any activity, then, it clearly indicates that there is a lack of skill efficiency in the task. In simple words, a motor action which is performed smoothly, with the least error is called skill.

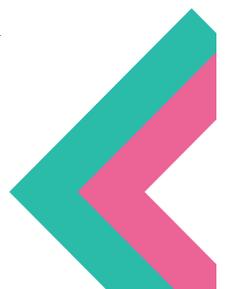
Champions possess this quality of movement that enables them to produce graceful movement with minimum effort. Skills which are complex in nature can be learned or performed more easily, if the different elements of the movement can be separated and adapted through “learning-by-parts” method. Once mastered, the “parts” may be combined to perform the whole skill. With practice, the movement or motor action of an athlete become accurate and sometimes even automatic.

Do you know?

Anders Ericsson, a psychologist, writes that it takes 10,000 hours of practice to become an expert. In other words, an athlete training for 5 hours a day, for 7 days a week over 365 days a year would take about 5.5 years to acquire expertise in her/his chosen sport or game.

Technique

Technique is the mechanical model of doing any task through which an athlete minimises his energy expenditure and produces remarkable output. It involves a well-timed and coordinated sequence of muscle actions which have been developed through the experience of players, coaches and the analysis provided by sports science. These techniques have evolved and been refined so that the movements involved

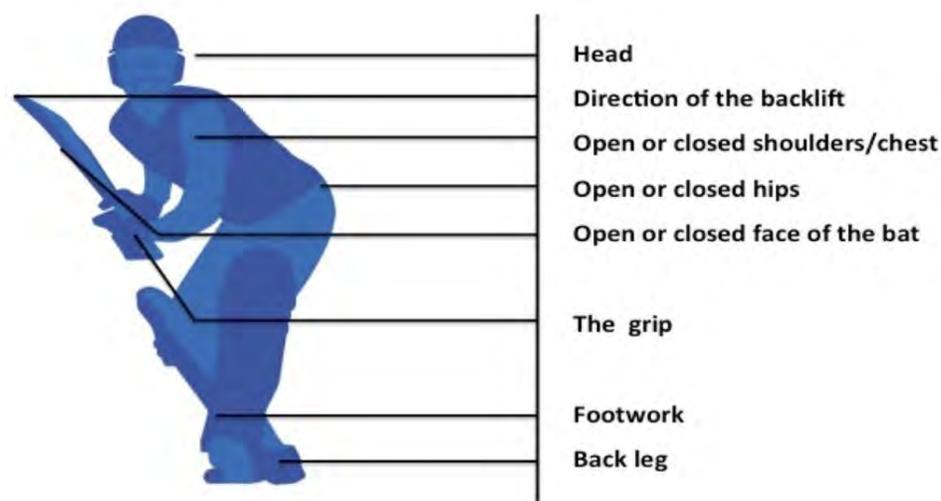




produce the best performance and are least likely to cause injury. Using good technique in sport is beneficial because it promotes high performance and reduces the risk of injury.

“Technique is an imaginary model of performing any task in cyclic manner which is ideally based on scientific principles to attain effective movement in sports with least energy expenditure.” e.g., in cricket, a batsman should play the ball with a straight bat, aiming to connect the ball with the middle of the bat for a sound drive. Or, in ice or roller skating, athletes need to bend their body to keeping the central of gravity (COG) lower for efficient and effective balance and speed.

Study the picture below, where the player demonstrates correct batting stance and technique.



Style

Style is the unique ability of an athlete to perform many activity in his/her own distinctive manner according to his/her individual technique and ability. It may or may not have a scientific basis. It is just the way the player adapts the movement according to his/her anatomical structure or other factors, and performs it in a unique manner. This unique technique becomes “style”. Thus, style is a particular movement started by some one as an innovation, and if the movement becomes popular, it comes to be known after the athlete. e.g., in cricket, M S Dhoni’s “helicopter shot” has become his style. The popular Parry O’Brien style of shotput is named after the American athlete, Parry O’Brien. Similarly, in high jump, American athlete, Dick Fosbury, has given his name to the Fosbury flop.



MS Dhoni



Parry O'Brien



Dick Fosbury

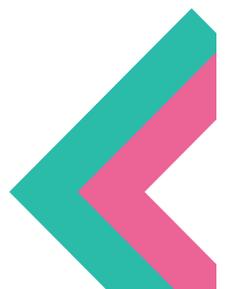


	Skill	Technique	Style
Meaning	<ul style="list-style-type: none"> • Skill refers to the whole movement of motoraction. 	<ul style="list-style-type: none"> • A mechanical model of doing any task in sequential way based upon scientific principle. • It requires practice of particular task scientifically. 	<ul style="list-style-type: none"> • A personalised way of performing any task (signature step). • A player's/ athlete's own expression of presenting the technique
Example – Cricket	<ul style="list-style-type: none"> • Batting is a skill. 	<ul style="list-style-type: none"> • Foot movement, back foot defence, covers shot, straight drive etc are different techniques of playing shots. 	<ul style="list-style-type: none"> • Each individual has an imaginary model in his/her mind about batting technique, but they all act differently because of individual differences. e.g., MS Dhoni and Sachin Tendulkar have their own style of foot movement while playing drives
Example – Basketball	<ul style="list-style-type: none"> • Shooting is a skill 	<ul style="list-style-type: none"> • Lay-up shot is holding the ball in hand and taking one or two step towards the basket with jump to attempt basket. 	<ul style="list-style-type: none"> • different players have unique style of performing it. Like dunk shot is a style in it.

Skill, technique and style all are inter-related as technique and style are a part of skill. In fact,

$$\text{Skill} = \text{Technique} + \text{Style}$$

Acquiring style is a long and continuous process in which a player sets an imaginary mechanical model in his/her mind for performing any skill. Then, through repeated practise he/she adapts the skill in his/her unique style. In the initial phase of learning the technique, an athlete may make many mistakes. However, through practise and proper supervision by coach or teacher, these errors are minimised. Thereafter, a player is able to learn and execute that particular technique in his own style with least energy and error. An athlete can perform at his best if he follows the complete process of skill acquisition by interlinking skill, technique and style.



**I. Tick the correct answer.**

1. Style is
 - i. a mechanical model of doing anything
 - ii. a unique, personalised expression
 - iii. an automatised of movement
 - iv. a natural ability for a particular game
2. In basketball, shooting is required to score goals. Shooting is a
 - i. technique
 - ii. style
 - iii. skill
 - iv. tactic

II. Answer the following questions briefly.

1. Define Technique.
2. How they are Skill and Techniques inter-related to each other?
3. Elucidate style in brief.

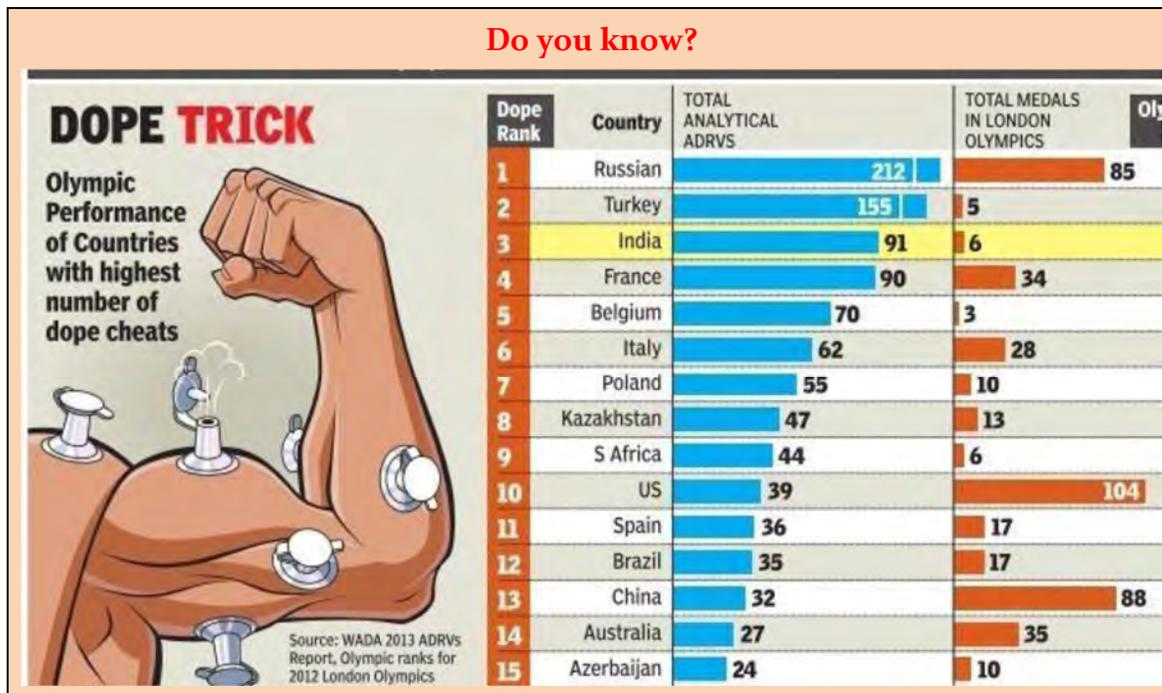
III. Answer the following questions in 150-200 words.**10.5.1 DOPING**

Doping in sports is not a new phenomenon; it goes as far back as the first Olympic Games in ancient Olympia. Since the inception of the competition in 776 BC, historians have written about use of performance-enhancing substances. There were experts who offered nutritional components to athletes in order to provide them an advantage over their competitors. Athletes in those times took herbal infusions to increase their muscle mass etc. Increasing performance by taking mushrooms and opium was also a very common method in those days. In 100AD Roman gladiators used stimulants and hallucinogens to delay fatigue and to prevent injuries.

Do you know?

Doping was punished even in ancient times. If athletes were caught cheating, they were banned from the games and their names were often engraved into stone and placed in a pathway that led to the stadium. To this day, stone pedestals line the entranceway to the Olympic stadium in Olympia, Greece, site of the ancient Olympics (776 BC-394 AD). Inscribed on each pedestal is the offending athlete's name, his wrong doing, and the names of family member.

Similarly, in modern times athletes use various techniques to get a winning edge over their competitors. In the late 19th century, French cyclists and lacrosse players took wine and coca leaves – source of cocaine and related alkaloids – to counter fatigue. Vin Mariani was even called “the wine for athletes” as it is a fusion of wine and coca leaves.



In Modern Olympics, the first case of doping came to light in 1904 when runner Thomas Hicks collapsed after winning the marathon and nearly died. It was later found that he was using a blend of brandy and strychnine (a stimulant). The use of a mixture of strychnine, heroin, cocaine and caffeine in various proportions was a common practice until 1920 when heroin and cocaine became available only by prescription. In 1960 Summer Olympic Games, held in Rome, Knut Jensen, the Danish cyclist, died and traces of an amphetamine known as Ronicol was found in the autopsy. In 1967, British cyclist, Tommy Simpson, consumed excess of amphetamines and brandy to fight the effects of an illness. Simpson collapsed and died during the race at the age of 29.

In 1928, IAAF (International Association of Athletics Federation) became the first governing body to prohibit doping. Later in 1967, after the much-hyped death of Tommy Simpson, the IOC (International Olympic Committee) established a commission for anti-doping. As a result, the first doping test was done in 1968 Winter Olympics. In 1988, the Canadian sprinter, Ben Johnson was stripped off his gold medal at the Olympic Games in Seoul and suspended for two years initially after he was found positive for an anabolic steroid called stanozolol. Later, he was banned for life after testing positive for the second time in 1993. In the year 1999, World Anti-Doping Agency was established as an independent international anti-doping agency to be fully operational for Sydney Olympics 2000. The list of athletes who indulged in doping is a vast one after that. Famous athletes who were found guilty include Lance Armstrong, Marion Jones, Maria Sharapova, Martina Hingis, Tyson Gay, Diego Maradona, Carl Lewis, Shane Warne, Michael Phelps among others.

Doping in sports is a critical issue putting an athlete's health at risk, maligning the integrity of clean athletes and damaging the spirit of sports. Doping can be defined as the use of a substance or technique to enhance the sports performance illegally.





It is a deliberate attempt by an athlete to win at any cost, even if it is by using life threatening substances or methods.

International Olympic Committee defined doping as “**the use of any method or substance that might harm the athlete, in a quest to gain an unfair advantage, over his/her fellow competitors.**” In other words, it can be said that doping is the use of such substances or methods that are custom-made to increase the abilities of an athlete, both physical and mental, and/or to cover the use of such substances while in training.

According to World Anti-Doping Agency (WADA) REFERENCE YEAR, “Doping is defined as the occurrence of one or more of the anti-doping rule violations set forth in Article 2.1 through Article 2.8 of the anti-doping code. These are as follows:

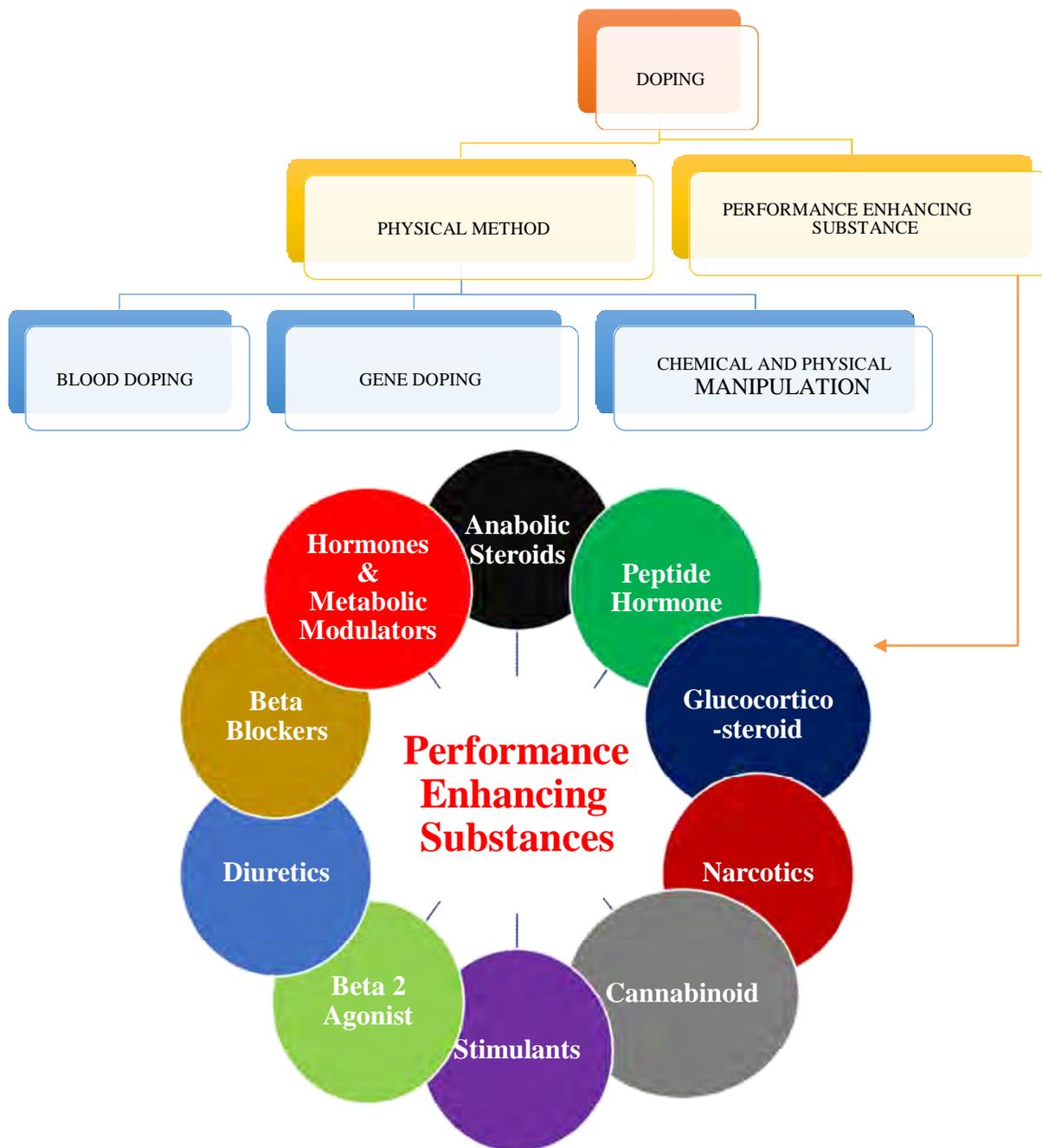
- I. Presence of a prohibited substance or method.
- II. Use or attempt to use a prohibited substance or method.
- III. Refusing to submit sample collection after being notified.
- IV. Failure to file athlete’s whereabouts after being notified.
- V. Tampering with any part of the doping control process.
- VI. Possession of a prohibited substance or method.
- VII. Trafficking a prohibited substance or method.
- VIII. Administering or attempting to administer a prohibited substance or method to an athlete.

Thus, according to the anti-doping code, it is clear that doping is not only about using a prohibited substance or method to improve performance, but also about breaking any of the rule(s) listed by WADA.

10.5.2 CLASSIFICATION OF DOPING

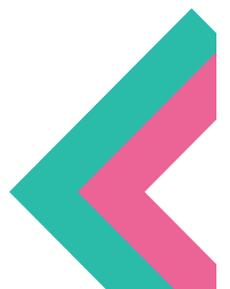
Doping can be classified into two major categories.

1. **Performance Enhancing Substances:** These are the drugs or medicines that can be used to enhance athletic performance. Some of the examples of performance enhancing substances are anabolic steroids, stimulants, narcotics etc.
2. **Physical Methods:** These are the techniques used by athletes to increase the performance by unfair means. The same methods include blood doping, gene doping and chemical and physical manipulation.



I. Tick the correct answers.

1. The first case of doping in Modern Olympics came to light in
 - i. 1904
 - ii. 1908
 - iii. 1912
 - iv. 1916
2. A famous athlete who was recently found guilty in the dope test is
 - i. Sachin Tendulkar
 - ii. Martina Hingis





- iii. Usain Bolt
- iv. MC Mary Kom
3. The Canadian sprinter named Ben Johnson who won a gold medal at the 1988 Seoul Olympics, which was later rescinded, tested positive for
 - i. anabolic steroid
 - ii. diuretic
 - iii. cannabinioids
 - iv. blood doping
4. In which Olympic Games, was the doping test first done by IOC under the Anti Doping Agency Campaign?
 - i. 1960 Summer Olympic Game
 - ii. 1960 Winter Olympic Games
 - iii. 1968 Summer Olympic Game
 - iv. 1968 Winter Olympic Game

II. Answer the following questions briefly.

1. Of the eight athletes in the 1988 Olympic 100 metres final, only two were not disqualified. Why?
2. Is doping only about using a prohibited substance or is it a method to improve performance? Comment.
3. Enlist any three (WADA) Anti-Doping Codes which are mentioned in Articles 2.1 to 2.8.
4. Classify the methods of doping in brief.

III. Answer the following questions in 150-200 words.

1. Doping at the Olympics is not a new phenomenon. Discuss.
2. Compare the substances used for doping in ancient times with those used in the modern era.
3. Has doping become a critical issue in sports? Explain the role of WADA in controlling doping.
4. List the rules laid down by WADA in the anti-doping code.

**Extension Activity****Survey of Doping in Sports.**

Talk to at least 15 sportspersons or athletes from your school, or a nearby school. You could also talk to persons who regularly go to a Gym for a workout. Fill up the following questionnaire.

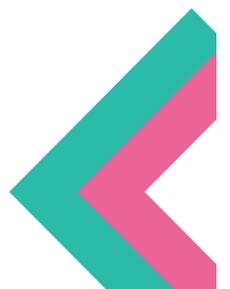
	No	Don't know	Maybe	Probably	Yes
Do you think doping is necessary to achieve the best results?					
Does anyone you know use performance enhancing drugs?					
Are you aware of the substances you cannot use in competitions?					
Do you think your performance would improve by banned substances?					
Have you ever tried any banned substances to improve performance?					
Are you aware of the side effects of doping?					
Is the NADA doping test available for the tournaments/competitions you participate in?					
According to you who recommends performance enhancing drugs to players?					
Have you felt a pressure to use banned substances?					

Based on the survey above, and your own ideas, make a PPT on Sports.

10.6.1 WHAT ARE PROHIBITED SUBSTANCES

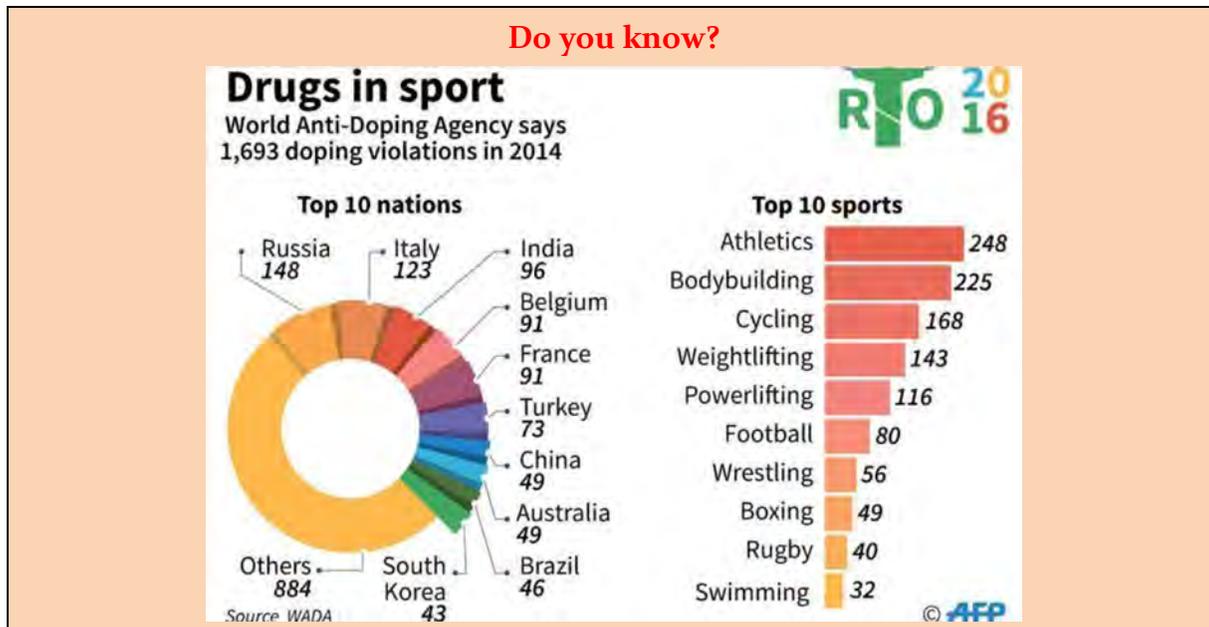
Prohibited substances are the drugs, supplements and other techniques which are banned from use in sports as these might enhance the performance of the players through use of unfair means. World Anti-Doping Association (WADA) is responsible for regulating the consumption or use of these substances or methods worldwide. Every year WADA updates and publishes a prohibited items list, which is the paradigm that outlines the substances that are prohibited in sports. A substance or method is added in the list if

- it enhances sports performance;
- it damages the athlete's health;
- violates spirit of sports.





Do you know?



There are certain substances and methods that are prohibited only during the competition period whereas others depend on the technique or method of imbibing the substance like inhalation, taking tablets or injection. If an athlete is taking any such substance for medicinal purpose, he must apply to the International Federation of the concerned sport for exemption. Also, it must be verified by the physician on the following basis:

- The athlete would face critical health problems if he does not take such drug or substance.
- There is no appropriate alternative for that drug.
- There is no significant enhancement of the sports performance due to taking that drug.

Extension Activity

Look at the pictures of some athletes who have been disqualified for taking Performance Enhancing Drugs (PED). Find out

- the sport they participated in.
- what drugs they took and why.
- for how long were they banned.



Lance Armstrong



Maria Sharapova



Tyson Gay



Diego Maradona



Anderson Silva



Ben Johnson



Shoaib Akhtar



Shane Warne



Kunjarani Devi

10.6.2 PROHIBITED SUBSTANCES AND SIDE EFFECTS

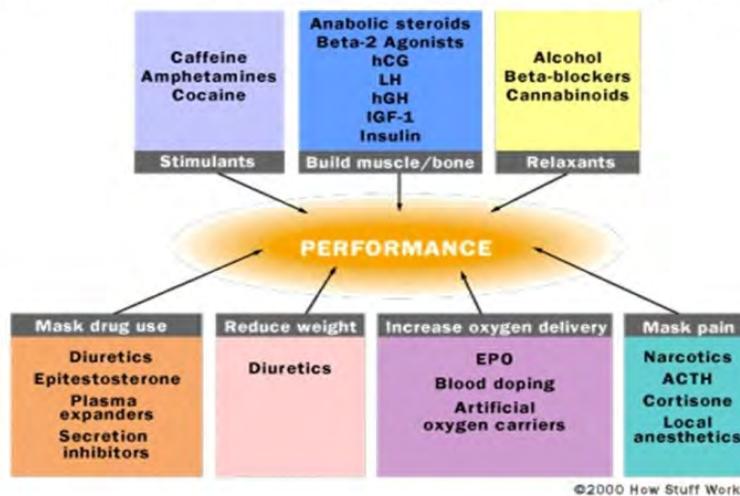
Substances Prohibited In and Out of the Competition	Methods Prohibited In and Out of the Competition	Substances Prohibited During Competition	Substances Prohibited in Particular Sports
<ul style="list-style-type: none"> • Anabolic Steroids • Peptide Hormones • Beta-2 Agonists • Diuretic • Hormones & Metabolic Modulator 	<ul style="list-style-type: none"> • Blood Doping • Gene Doping • Chemical and Physical Manipulation 	<ul style="list-style-type: none"> • Stimulants • Narcotics • Cannabinoids • Glucocorticosteroids 	<ul style="list-style-type: none"> • Beta Blockers

1. **Anabolic Steroids** are synthetic human made variations of the male sex hormone that include natural androgens like testosterone as well as synthetic androgens that are structurally designed to provide similar effects. Anabolic steroids are used to increase muscle mass, performance and endurance and to reduce recovery time in between the training sessions.





Performance Enhancing Drugs



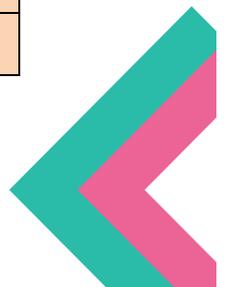
- Peptide hormones** such as erythropoietin, human growth hormone (HGH), insulin, human chorionic gonadotropin and adrenocorticotrophic hormone (ACTH) are the substances produced by the various glands and when circulated by blood can affect organs and tissues to alter bodily functions. These are banned because they can stimulate various bodily functions such as growth rate and sensitivity to pain. They stimulate the production of naturally occurring hormones, increase strength and production of red blood cells, therefore, increasing oxygen carrying capacity that results in improving endurance level of an athlete.
- Beta 2 Agonists** are majorly used for medicinal purposes for treating asthma because they open up the bronchial tubes of the lungs and hence clear the air passage. In sports, they are used for improving the breathing by relaxing the muscles around air passages and thus widening them. Athletes take these to boost their respiratory functions. They also accelerate the will to win insports.
- Diuretics** help athletes by increasing excretion of water from the body. They are also known as “water pills” as they increase production of urine. Athletes use diuretics to flushout the remains from steroids and to facilitate temporary weight loss by shedding water from the body. They are majorly used in sports such as boxing, wrestling, weightlifting etc.
- Hormones and Metabolic Modulators** are used to alter the effects of hormones or to quicken or slow down certain enzyme function such as supressing the conversion of male sex hormone (testosterone) into female sex hormone (estrogen), there by helping in building muscle mass.
- Stimulants** are also known as “uppers” as they enhance sports performance by stimulating the mind and body artificially. They basically increase the activities of Central NervousSystem(CNS)resulting in improved alertness, reaction time and energy. Some of the most commonly used stimulants are cocaine, amphetamines etc. These are taken by either swallowing in tablet form or injecting in liquid formor, they may even be,crushed and snorted.



7. **Narcotics** was at ermoriginally used to refer to any psychoactive compound with sleep inducing properties and used for medical purposes. In sports, when used in small amounts, narcotics may result in relieving severe pain. However, overdose can result in respiratory problems and even death.
8. **Cannabinoids** are a class of diverse chemical compounds that alter neurotransmitter release in the brain. They help in reducing anxiety, leading to a feeling of relaxation and decreasing pain sensation. The most common example of a cannabinoid is Marijuana.
9. **Glucocortic osteroids** are majorly used for treating allergies, asthma, skin disorders and inflammatory conditions and other such ailments. In sports, these are primarily used as pain relievers and to improve the pain threshold of an athlete.

10.6.3 SIDE EFFECTS OF PROHIBITED SUBSTANCES

Substance	Side effects
Anabolic Steroids	<p>Continuous use of anabolic steroids may result in serious health issues. Anabolic steroids</p> <ul style="list-style-type: none"> • elevate blood pressure • reduce high density lipoprotein(HDL) • lead to several cardio vascular diseases like atherosclerosis and may even result in a cardiacattack • increase aggressiveness, sexual desire and may lead to criminal behaviour • cause jaundice, liver tumour andcancer. • lead to mood swings, depression, withdrawal symptoms and dependence onothers
Peptide Hormones	<p>Use of peptide hormones may lead to</p> <ul style="list-style-type: none"> • blood clots due to increased blood viscosity • increased risk of heart attack • overgrowth of limbs and face • musculo-skeletal enlargement • low blood sugar levels • shortness of breath • brain damage and death • headache and joint pain • ulcer, cataract and osteoporosis
Beta 2 Agonists	<p>Prolonged use of Beta 2 Agonists may result in</p>

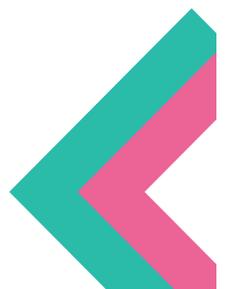




	<ul style="list-style-type: none">• increased risk of cardiac arrest• trembling (specially in hands)• headache• palpitations• muscle cramps
Diuretics	<p>Side effects of diuretics may vary from mild to severe. Some of these effects include</p> <ul style="list-style-type: none">• headache• dizziness• too little or too much potassium in blood• diarrhoea• unusual thirst and dehydration• muscle cramps• kidney failure• increased cholesterol and blood sugar• irregular heart beat• skin rashes
Hormones and Metabolic Modulators	<p>Use of hormones and metabolic modulators may cause</p> <ul style="list-style-type: none">• cardiac problems• osteoporosis• abnormal vaginal bleeding• shortness of breath• hotflashes• swelling/numbness• anxiety• rapid heartbeat• moodswings• blurry vision• loss of consciousness, if severe can lead to coma.
Stimulants	<p>The side effects of using stimulants include</p> <ul style="list-style-type: none">• exhaustion• addiction• increased heart rate and palpitation• irregular heartbeat• hypertension• heart failure



	<ul style="list-style-type: none">• headache• upsetstomach• anxiety and insomnia• depression
Narcotics	Use of narcotics may result in <ul style="list-style-type: none">• nausea and vomiting• drowsiness• constipation• failing to recognize injury due to increased pain threshold• increased heartrate• physical and psychological dependence leading toaddiction• hallucination
Cannabinoids	Cannabinoids lead to <ul style="list-style-type: none">• increased risk of heart diseases• lung cancer• impaired memory• decreased concentration• respiratory issues• increased heart rate• poor coordination and reaction of reflexes• moods wings• distorted sense of space and time
Glucocorticosteroid	Prolonged use may lead to <ul style="list-style-type: none">• loss of muscle mass• weakening of injured area• decreased rate of growth in young people.
Beta blockers	Prolonged use of Beta Blockers may result in <ul style="list-style-type: none">• increased stress on heart• blood clotting• stroke



10.6.4 METHODS OF IMBIBING PROHIBITED SUBSTANCES

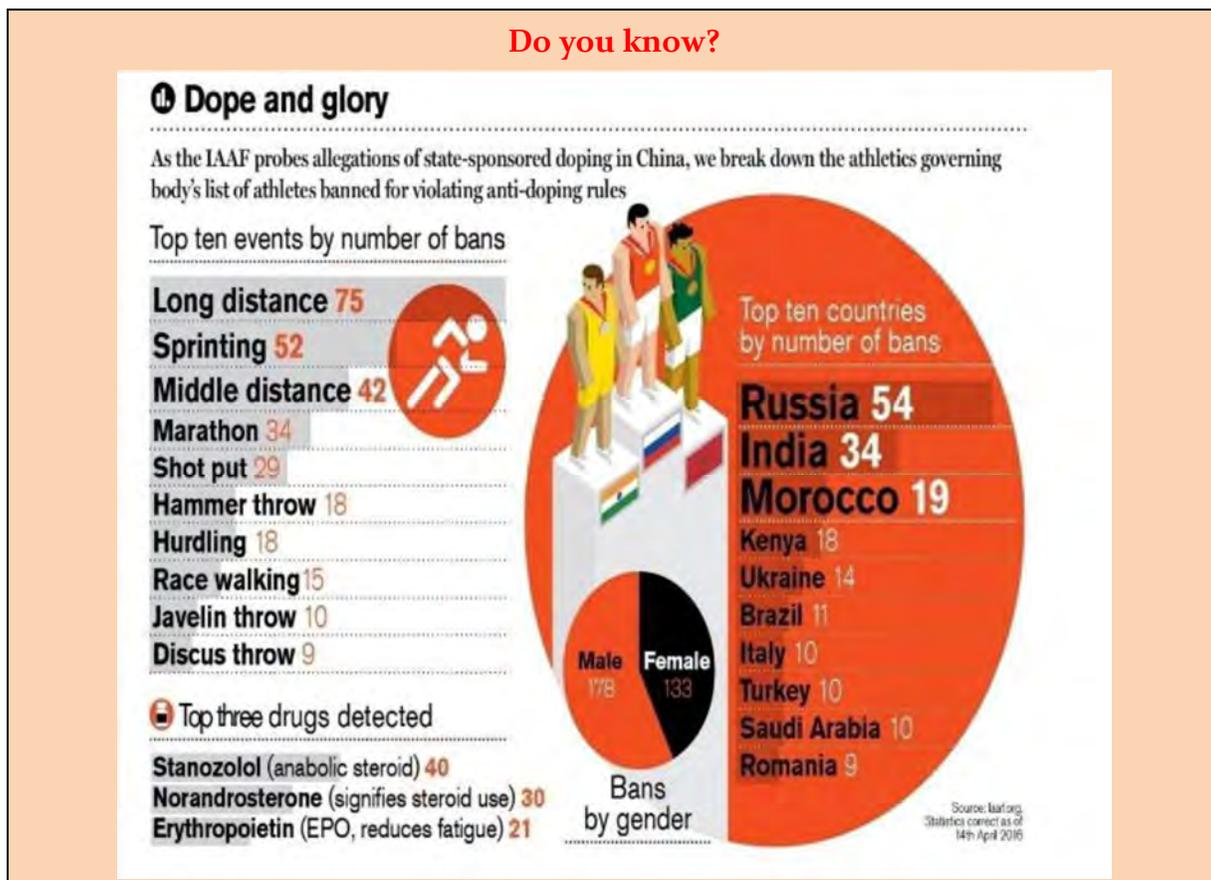
1. **Blood Doping** is an attempt to enhance sports performance by infusing oxygenated blood into an athlete before an event. This leads to increased red blood cell count resulting in higher oxygen carrying capacity and thus, improving endurance.

The two basic types of blood transfusion are

- **Autologous:** The athlete's own blood, which was drawn and stored for future use is transfused.
- **Homologous:** An athlete is transfused with someone else's blood of the same blood group.
- **Injections:** Other examples of blood doping include Erythropoietin injections and injections of Synthetic Oxygen Carriers.

Side effects of Blood doping:

- Increased risk of bloodclots
- Stroke
- HIV/AIDS
- Hepatitis B
- Various Allergies
- Hypertension

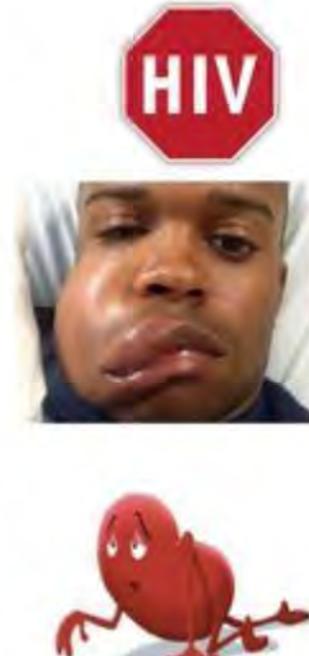




Do you know?

Side-Effects of Blood Doping

- Increased blood viscosity (thickness) , Heart attack
- Stroke, Infections
- Risk hepatitis C, B and HIV)
- Fever, hypertension,
- vasoconstriction,
- impaired oxygen delivery to *tissues*,
- kidney damage
- Chest pain
- fever
- headache
- increased blood pressure
- shortness of breath
- swelling of the face, fingers.
- weight gain



2. **Gene Doping** is the practise of transferring genes, or genetically altered cells, into an athlete as a possible method of enhancing sporting performance. It plays a vital role in the growth and development of musculo-skeletal structure. **Side effects of Gene Doping:**

- Heart failure
- Cancer
- Leukemia
- Immune Dysfunction

3. **Chemical and Physical Manipulation** include tampering or attempt to tamper the integrity or validity of the samples collected during doping control procedure. Also, intravenous injections of more than 100 ml per 12 hours are prohibited. The only exception is, if the athlete is dependent on the drug for medical treatment.

Side effects of chemical and physical manipulation:

- Infection in urethra, bladder or kidney
- Cardiac Issues
- Chronic Systemic Inflammation
- Hepatitis
- HIV/AIDS





I. Tick the correct option.

1. The performance enhancement drug generally used by boxers and judo players to reduce their weight is
 - i. diuretic
 - ii. peptide hormone
 - iii. anabolic steroid
 - iv. Beta-2 agonist
2. Stimulants benefit performance by
 - i. increasing heart and respiratory rates and suppressing the symptoms of fatigue
 - ii. having a painkilling and sedating effect
 - iii. releasing hormones promoting growth, healing and body repair
 - iv. preventing the release of adrenaline
3. Some of the side effects of using narcotics include
 - i. suppressed appetite, increased blood pressure and body temperature
 - ii. addiction, suppressed appetite, toxicity
 - iii. impotency, infertility, arteriosclerosis, heart disease, liver and kidney cancer
 - iv. a damaging effect on endurance, heart disease
4. Sports which are well known for the use of anabolic steroids
 - i. Sprinting
 - ii. Soccer
 - iii. Archery
 - iv. Shooting

II. Answer the following questions briefly.

1. Players using peptide hormones to enhance performance suffer from serious side effects. What are these side effects?
2. List the names of prohibited substances according to WADA (latest).
3. While it is easy to reduce weight through diuretic substance, it may have serious consequences. Explain the side effects associated with diuretic abuse?
4. What is prohibited substance? How does it affect the sports person's performance?

III. Answer the following questions in 150-200 words.

1. Adopting illegal ways to enhance performance by taking Performance Enhancing Drugs may lead to severe side effects. List the major side effects of Doping.
2. Comment on how harmful doping is for health.
3. Explain any two doping Steroids. Mention five side effects of each.



10.7.1 ALCOHOL AND SUBSTANCES ABUSE

Substance abuse refers to the injurious use of psychoactive substances including alcohol and illegal drugs, or other such substances as are harmful to the individual himself/ herself or others. Abuse results when a person uses a substance in a way that is not recommended, or uses more than the prescribed amount. In other words, it can be said that a person can use a substance and still not be addicted.

Substance abuse interferes with every facet of life. Drug and alcohol abuse affect an individual's health, work and social relationships. The person who uses drugs hurts people around him emotionally, or even physically. Thus, substance abuse can wreck relations and financial health. Substance abuse often leads to addiction and causes serious health issues, even death.

Do you know?

psychoactive substance is a substance that changes brain function and results in alterations in perception, mood, consciousness, cognition, or behaviour. These substances include caffeine, alcohol, cocaine, LSD, nicotine and cannabis.

Classes of drugs frequently used recreationally include: Stimulants, which activate the central nervous system. These are used recreationally for their euphoric effects. Some categories of psychoactive drugs are prescribed by physicians and other healthcare practitioners. e.g., anesthetics, analgesics, anticonvulsant, antidepressants, and stimulant medications. Some psychoactive substances may be used in the detoxification and rehabilitation Programmes for persons dependent on or addicted to other psychoactive drugs.

Addiction is a maladaptive pattern of using any substance in a harmful way. Therefore, substance use is considered to be substance abuse when the repeated use results in

- Health issues
- failure to meet responsibilities
- risky use
- disabilities
- impaired control
- social issues

Most commonly abused substances are: alcohol, cocaine, marijuana, tobacco, heroin etc.

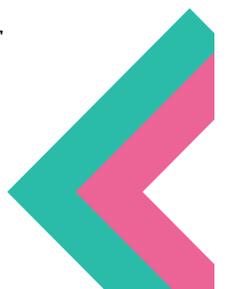
10.7.2 SIGNS AND SYMPTOMS OF SUBSTANCE ABUSE

Signs and symptoms of substance abuse include

- increased confusion
- moods swings
- weakness or fatigue
- anaemia
- severe nerve damage
- depression
- memory impairment
- sleeping disorders
- abnormal blood results
- dizziness
- dementia

10.7.3 DEALING WITH ALCOHOL AND SUBSTANCE ABUSE

Some psychoactive drugs may have actual performance-enhancing side effects in the short-term. However, many actually decrease performance, primarily because of





adverse cardiovascular effects and impaired judgment. Athletes and nonathletes alike may be knowingly or unknowingly exposed to psychoactive substances if they use over-the-counter, recreational, or prescription drugs. Psychoactive substances often bring about subjective changes in consciousness and mood that the user may find rewarding and pleasant, e.g., euphoria or a sense of relaxation, or advantageous, e.g., increased alertness and are thus reinforcing. Substances which are both rewarding and positively reinforcing have the potential to induce a state of addiction – compulsive drug use despite negative consequences.

Substance abuse can be life threatening if not controlled in time. Therefore, it is important to monitor a person's behaviour for the signs mentioned above. In order to deal with alcohol and substance abuse, National Institute of Drug Abuse (NIDA) maintains a list of principles of effective treatment and management. It states the basic information for overcoming addiction. Moreover, it is a process that should be followed to avoid the fatal consequences of alcohol and substance abuse. The process consists of following steps:

1. **Detoxification:** This is the first step in overcoming substance abuse or addiction. It is basically designed to end body's physical dependence on an intoxicating substance like alcohol.
2. **Rehabilitation:** The purpose of rehabilitation is to change the behaviour of an individual who is recovering from addiction especially when he/she feels stressed, runs into triggers and experiences cravings. Most of this behaviour retraining involves therapy both group and individual. Types of therapy that can be given include
 - Cognitive Behavioural Therapy
 - Motivational Enhancement Therapy
 - Family Counselling etc.

NIDA recommended staying in a rehabilitation Programme for a period of at least 90 days.

3. **Supportive environment:** A supportive environment can be prove to be a great support when dealing with alcohol and substance abuse. Such support can be provided by the people who are close to the abuser such as family members, friends, relatives, teachers etc. All they need to do it to provide a happy and healthy environment and motivate the person to keep up with the process.
4. **Medication:** Some times a person reverts to the addictions often that reducing craving will help him stay sober for a longer period of time. Naltrexone and acamprosate are the main drugs prescribed to maintain sobriety.
5. **Aftercare:** Once the detoxification and rehabilitation are successfully completed, one should find emotional support to stay sober. In addition to support from the family and friends, attending mutual support groups, going to an individual therapist, and finding complementary practices like yoga and meditation can help the person to stay on the track.



I. Tick the correct options.

1. The full form of NIDAis
 - i. National Institute of Drug Abuse
 - ii. National Institute of Dramatic Art
 - iii. National Institute of Developmental Administration
 - iv. National Institute of Drug Anabolic
2. The term psychoactive refers to
 - i. a drug that alters mood, cognition and/or behaviour.
 - ii. a drug that lowers the threshold of pain.
 - iii. a particularly active psychopath.
 - iv. a drug-induced hallucination.
3. When you are dealing with the people of Substance abuse, what will be your initial step?
 - i. Detoxification
 - ii. Supportive Environment
 - iii. Rehabilitation
 - iv. Medication

II. Answer the following questions briefly.

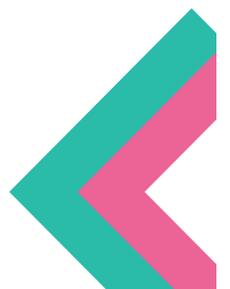
1. Define substance abuse.
2. How can you identify the sports person who is suffering from substance abuse?
3. What do you understand by the term Rehabilitation?
4. List the signs and symptoms of substance abuse.

III. Answer the following questions in 150-200 words.

1. What do you understand by substance abuse. List the health issues arising out of use of psychoactive drugs.
2. If a 21-year-old boy is suffering from substance abuse, what role can you play to help him overcome his addiction?
3. Discuss your views on Doping.
4. With training in sports, how we can achieve the target to produce better results in 2024 Olympic Games. Share your views.

Suggested Reading

- Barrow, H. M., & McGee, R. (2000). Barrow and McGee's Practical Measurement and Assessment . Lippincott Williams and Wilkins.
- Bompa, T. O., & Buzzichelli, C. (2019). *Periodization Theory and Methodology of Training*. Human Kinetics.
- Harre, D. (1986). *trainingslehre*. Berlin: Sportverlag
- Singh, H. (1991). *Science of Sports Training*. New Delhi: DVS Publications.







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