CBSE
Study Material
Of
EMPLOYBALITY

CLASS IX

Part A Employability Skills (IX)

S.No	Units	Duration in Periods	Marks
1.	Unit 1: Communication Skills – I	13	
2.	Unit 2: Self-management Skills – I	07	
3.	Unit 3: Basic ICT Skills- I	13	
4.	Unit 4: Entrepreneurial Skills – I	10	10
5.	Unit 5: Green Skills – I	07	
	Total	**50**	

Unit 1: Communication Skills –I

S.No	Learning Outcome	Theory Periods	Practical Periods	Periods
1.	Demonstrate knowledge of various methods of communication.	• Methods of communication. • Verbal. • Non-verbal. • Visual.	1. Writing pros and cons of written, verbal and non- verbal communication. 2. Listing do's and don'ts for avoiding common body language mistakes.	**3**

2.	Identify elements of Communication cycle	1. Meaning of communication
		2. Importance of communication skills
		3. Elements of communication cycle–
		  i. sender,
		  ii. ideas,
		  iii. encoding,
		  iv. communication channel,
		  v. receiver,
		  vi. decoding, and
		  vii. feedback
			1. Draw a diagram of communication cycle
			2. Role plays on communication
			3. process related to the sector/job role.
				3

3.	Identify the factors affecting our perspectives in Communication	1. Perspectives in Communication. 2. Factors affecting perspectives in Communication. 3. Visual perception. 4. Language. 5. Past experience. 6. Prejudices. 7. Feelings. 8. Environment.	1. Group discussion on factors affecting perspectives in Communication. 2. Sharing of experiences on factors affecting perspectives. 3. Sharing experiences on factors affecting communication at workplace.	**4**
4.	Demonstrate the knowledge of basic writing skills	Writing skills related to the following: Phrases Kinds of sentences Parts of sentence Parts of speech Use of articles Construction of a paragraph	1. Demonstration and practice of writing sentences and paragraphs on topics related to the subject.	**3**
Total Duration in Periods				**13**

Unit 2: Self Management Skills – I

S.No	Learning Outcome	Theory Periods	Practical Periods	Periods
1.	Describe the meaning and importance of self-management.	1. Meaning of self-management. 2. Positive results of self-management. 3. Self-management skills.	1. Identification of self-management skills 2. Strength and weakness analysis.	3
3.	Identify the factor that helps in building self-confidence.	1. Factors that help in building self-confidence – social, cultural, and physical factors 2. Self-confidence building tips getting rid of the negative thoughts, thinking positively, staying happy with small things, staying clean, hygienic and smart, chatting with positive people, etc.	1. Role play exercises on building self confidence. 2. Use of positive metaphors/words. 3. Positive stroking on wakeup and before going bed. 4. Helping others and working for community.	4
Total Duration in Periods				**7**

Unit 3: Basic ICT Skills - I

S.No	Learning Outcome	Theory Periods	Practical Periods	Periods
1.	Describe the role of ICT in day-to-day life.	1. Introduction to ICT 2. Role and importance of ICT in personal life and at Workplace 3. ICT in our daily life (examples) 4. ICT tools – Mobile, tab, radio, TV, email, etc.	1. Discussion on the role and importance of ICT in personal life and at workplace. 2. Preparing posters / collages for showing the role of ICT at workplace	3
2.	Identify the various components of computer system	1. Basic components of computer system. 2. Hardware and software. 3. Primary and secondary memory. 4. Input, Output and Storage devices.	1. Identify and name the various components of computer system. 2. List few hardware and software. 3. Identify and name the primary and secondary memory. 4. Identify the various Input, Output and Storage devices.	3
3.	Identify various peripheral devices	1. Various peripheral devices and their use. 2. Examples of peripherals.	1. List various peripheral devices. 2. Give the examples of peripheral devices. 3. Practice using peripheral devices.	3
4.	Perform basic Computer operations	1. Procedure for starting and shutting down a computer. 2. Operating Systems (OS). 3. Types of OS – DOS, Windows, Linux. 4. Desktop of Windows and Linux. 5. Files and folder. 6. Keyboard and mouse operations. 7. Common desktop operations.	1. Start the computer in proper 2. sequence and get the initial screen. 3. Identify the installed OS on computer. 4. Identify the desktop and its various components. 5. Work with desktop. 6. Create file and folder. 7. Perform keyboard and mouse operations.	2

5.	Connect with the world using Internet and its Applications	1. Introduction to Internet. 2. Applications of Internet. 3. Internet Browser. 4. Websites and webpages. 5. Email applications. 6. Email accounts. 7. Sending and receiving email. 8. Introduction to social media. 9. Blog. 10. Twitter. 11. Facebook. 12. Youtube. 13. WhatsApp. 14. Digital India.	1. Introduce with Internet. 2. Explain the applications of Internet. 3. List the various Internet Browser. 4. Search the websites. 5. Create Email account. 6. Send and receive email. 7. Use Social Media for education. 8. Use Blog. 9. Use Twitter. 10. Use Facebook. 11. Use Youtube. 12. Use WhatsApp. 13. Use Digital India.	**2**
Total Duration in Periods				**13**

Unit 4: Entrepreneurial Skills – I

S.No	Learning Outcome	Theory (Periods)	Practical (Periods)	Periods
1.	Identify various types of business activities	1. Types of businesses – service, manufacturing, hybrid. 2. Types of businesses found in our community Business activities around us.	1. Prepare posters of business activities found in cities/ Villages, using pictures. 2. Discuss the various types of activities, generally adopted by small businesses in a local community. 3. Best out of waste. 4. Costing of the product made out of waste. 5. Selling of items made from waster materials. 6. Prepare list of businesses that provides goods and services in exchange for money	5
2.	Demonstrate the knowledge of distinguishing characteristics of entrepreneurship	1. Meaning of Entrepreneurship development. 2. Distinguishing characteristics of entrepreneurship. Role and rewards entrepreneurship.	1. Prepare charts showing advantages of Group discussions on role and features of entrepreneurship. 2. Lectures/presentations by entrepreneurs on their experiences and success stories. 3. Identify core skills of successful entrepreneur.	5
Total Duration in Periods				10

Unit 5: Green Skills – I

S.No	Learning Outcome	Theory Periods	Practical Periods	Periods
1.	Demonstrate the knowledge of the factors influencing natural resource conservation.	1. Introduction to environment. 2. Relationship between society and environment, ecosystem and factors causing imbalance. 3. Natural resource conservation. 4. Environment protection and conservation.	1. Group discussion on hazards of deteriorating environment. 2. Prepare posters showing environment conservation. 3. Discussion on various factors that influence our environment.	4
2.	Describe the importance of green economy and green skills.	1. Definition of green economy 2. Importance of green Economy	1. Discussion on the benefits of green skills and importance of green economy. 2. Prepare a Poster showing the importance of green economy with the help of newspaper/ magazine cuttings.	3
Total Duration in Periods				**7**

Worksheet

On the basis of your understanding of communication complete the following sentences with appropriate words. Choose from the words given in brackets.

1. Communication is the act of ……………………… in which two or more persons are involved. (talking to each other through signals when you are alone/ sharing ideas, thoughts and opinions)
2. All human beings communicate with …………….every day in different kinds of situations. (each other/ friends)
3. Communicating …………….with people at the work place is very important. (nicely/ properly/ clearly)
4. If communication is not done correctly ………….. may not happen properly.(work/ thoughts)
5. While communication with others at the work place we share opinions, …………,………….and ………. with them. (choose any 3-ideas/ information/ messages/ signals/ feelings)
6. Two people who communicate with each other are called ………….and ………………….(giver/ sender/ receiver/ communicator)
7. An effective communicator is one whose ideas, ……………… and …………….are clear and understandable. (chose any 2- messages/ opinions/images/facts….)

Worksheet 2.2

Work in pairs. Write a conversation and then perform the roles in front of the whole class for each of the following situations:

Situation 1- (for warm up)

Two friends- Simran and Jyoti are discussing a plan for a picnic. Simran is informing Jyoti about the plan. Jyoti is receiving the ideas and responding. By the end of the conversation it seems as if Jyoti is confused about the plan.

What has gone wrong in communication between the two?

Situation 2 --- **Rashmi, a Housekeeping Manager is talking to Sangeeta her subordinate, who is in charge of arranging furniture for a conference. Rashmi is giving instructions to the subordinate about the job she wants done.**

What should Rashmi keep in mind while instructing? Clues: time frame for completion, number of people attending, kind of seating required- (facing the stage or in round tables), stage arrangements etc.

Present the conversation in 2 ways-

In one situation there is a lot of confusion because of poor communication.
In the second there are clear instructions and the given job of making all the furniture arrangements is done very well.

Worksheet 2.3

Look at this conversation between 2 colleagues:

Asha : Whenever I pass by your desk, you seem to be engrossed in work. You are really working hard these days.
Sunita : (1ndignantly) You mean to say I didn't work hard enough earlier?
Asha : (Apologetically) Oh no! I was just saying how busy you have been in the last few days.
Sunita : (A little tersely) Yes! I have things to finish. (adapted from IGNOU)

Discuss the above dialogue with your partner. Pay attention to the following points-

• What is the first person trying to communicate? Is she being offensive or concerned?

• How does the second person respond? Do you think she is justified in her response?

• What does this conversation convey to you about the communication?

  • How do verbal, nonverbal and body language cues assist in communication ?
  • How do they act as disturbing factors?

Worksheet 2.4

On the basis of your understanding of the communication cycle complete the following table:

Serial no.	Element	Brief description
1	sender	person who wishes to convey an idea or message
2	idea	-------------
3	encodes	--------------
4	………..	medium through which the idea is conveyed
5	receiver	----------------
6	-----------	makes sense or meaning of what is conveyed
7	……………….	responds

Worksheet 2.5

Practice Communicating

In groups do a role- play of the following situations. Make sure that each element of the communication cycle is clear through the role play. One person in the group can be the presenter to give a brief on the roles and the situation.

1 **It is Diwali time. You plan to throw a party at your home for your friends. You need help from a close friend in making the arrangements. Convey your requirements and what she can do.**

2 **You are Lalita the Head of the IT Department of Arya Public School. You are conversing with Sarita who is a junior teacher.**

Use the following role cards-

Lalita: You want to ensure that all the computers in the lab are in proper working condition before practical exams begin. Communicate your requirements and instructions to Sarita.

Sarita: Respond to Lalita's instructions.

After having the conversations, discuss what you wanted to convey and whether your friend was able to understand everything clearly. In case you feel things were not communicated clearly and there were misunderstandings, make improvements and discuss once again. Identify all the parts of the communication cycle as you do the role plays.

Worksheet 2.6

Make a diagrammatic representation of the communication cycle and lable it.

Worksheet 2.7

PowerPoint Presentation

Make a PowerPoint Presentation on the following aspects of Communication you have learnt in this lesson-

A) What is communication
B) Its importance in daily life and at the workplace
C) The Communication Cycle
D) Include images and animations wherever possible

Do a presentation for the whole class.

Note: Ask your friends who are computer wizards or the computer teacher for assistance.

2.1: What is Communication?

Human beings do not live in isolation. They need to interact with other people in all walks of life. You communicate with your parents and siblings at home. You communicate with your friends, classmates and teachers daily. As you grow older you start communicating in formal situations in school, college or at the workplace.

At the workplace, communication is a very important function in order to manage any organization whether it is small or large. In other words, **nothing happens according to plan until proper communication takes place.**

The word communication has been derived from the Latin word commūnicāre 'to share', from "communis" which means common. It involves the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs. **Thus communication means sharing of ideas, information and messages**. It can be defined as **exchange of facts, ideas, opinions or emotions between two or more persons to create a common ground of understanding**.

Communication involves at least two persons i.e. a sender & a receiver. The sender develops & transmits a message to the receiver and the receiver receives the message, makes sense of it and responds or acts accordingly.

Communication is successful only when there is a common understanding between the sender and receiver. Otherwise the communication is faulty.

Imagine a situation in which you try to communicate a message to your friend. Your friend does not interpret the message and acts in a very different manner from the way you want her to. What happens in this situation?
Managers too need to be effective communicators while communicating with their subordinates & receiving messages from them.

(All worksheets for this lesson are given in a separate word file)

Worksheet 2.1

On the basis of your understanding of communication complete the following sentences with appropriate words.

Worksheet 2.2
Work in pairs. Write a conversation and then perform the roles in front of the whole class for each of the following situations.

Lesson 2.2 Importance of Communication

You have learnt that without communication nothing can happen properly. It is very important in all walks of life and must be done in such a way that it has the **desired result**.

You must not say anything to anyone without knowing **what you are saying**, **why** you are saying it and what **effect or result** you want of your communication. In other words the what, why and how of communication are most important.

Quite clearly communication must be effective to have the desired result. After all, why does one say something to another person? Because he wants his **thoughts or views to be heard and understood (this is known as encoding).**
And how does the other person respond? By **making sense of what is said (decoding)** and **respondin**g appropriately.

All of us can recount situations where we have felt misunderstood or have not been able to fully comprehend what the other person said. This is because the **process of making meaning is internal to each communicator** i.e. the one who says something as well as the one who listens and makes meaning.

The **art of effective communication** requires one to reduce the gap between intention (creation of message) and action to ensure that our messages are understood the way they were meant in the first place.
It is however important to note that only **messages are transmitted**; the **meanings are made by the communicators**. How wonderful it would be if our very meanings were transmitted along with our messages to those who we are communicating with! There would be no miscommunication. But because the meanings are in our heads, minds and experiences, what is meant is not necessarily what is understood! (adapted from IGNOU)

Thus it is of utmost importance to communicate in such a way that the receiver of the message is able to understand what is being conveyed so that the response is as desired or expected.

Worksheet 2.3
(in separate file)

Look at this conversation between 2 colleagues:
 Asha : Whenever I pass by your desk, you seem to be engrossed in work. You are really working hard these days.
 Sunita : (1ndignantly) You mean to say I didn't work hard enough earlier?

Asha : (Apologetically) Oh no! I was just saying how busy you have been in the last few days.
Sunita : (A little tersely) Yes! I have things to finish. (adapted from IGNOU)

Discuss the above dialogue with your partner. Pay attention to the following points-

- What is the first person trying to communicate? Is she being offensive or concerned?
- How does the second person respond? Do you think she is justified in her response?
- What does this conversation convey to you about the communication?

In reality, Asha wanted to discuss a personal issue with Sunita and was hoping to get some time to do this. But this need was not articulated. Sunita took offence at the remarks and failed to understand the reason behind the colleagues' statement.

Whose fault was it? Surely, Asha should have stated clearly that she wanted to know when Sunita would be free, so she could discuss the matter with her.

All of us can remember situations where we have felt misunderstood or have not been able to fully comprehend the other person. **This is because the process of making meaning is internal to each communicator**. In effective communication it is essential that our messages are understood the way they were meant in the first place.

Recapitulation

In this part of the lesson you have learn that in every aspect of life, especially at the work place, communication plays a very important role. It is successful if the message is conveyed correctly and also received correctly. Action taken by the receiver based on the instructions must be as expected by the sender or message giver. This becomes evident from the response of the message receiver.

Lesson 2.3 : The Communication Process

By now it must be clear that the goal of communication is to convey information. The understanding of that information —from one person or group to another person or group- completes the cycle.

This communication process is divided into three basic components: A **sender** transmits a message through a **channel** to the **receiver**. The figure given below explains it very clearly through an elaborate model.

The sender first develops an idea, which is composed into a message and then

transmitted to the other party, who interprets the message and receives meaning. Developing a message is known as **encoding**. Interpreting the message is referred to as **decoding.**

An important element in the process is the feedback. When two people interact, communication is rarely one-way only. When a person receives a message, she responds to it by giving a reply. Otherwise, the sender can't know whether the other parties properly interpreted the message or how they reacted to it. This is known as feedback

Feedback is especially significant in management because a supervisor has to know how subordinates respond to directives and plans. The manager also needs to know how work is progressing and how employees feel about the general work situation.

A critical factor in measuring the effectiveness of communication is **common understanding**. Understanding exists when all parties involved have a mutual agreement as to **not only the information, but also the meaning** of the information. Effective communication, therefore, occurs when the intended message of the sender and the interpreted message of the receiver are one and the same.

You can understand the communication process better if you think of it as consisting of the following parts:

1. The sender comes up with an idea that he/she wishes to communicate

2. The sender transforms it into a message

3. The sender transmits it

4. The recipient decodes (makes meaning) the message

5. The receiver attaches meaning to the message

6. The receiver gives feedback to the sender

Diagrammatic Presentation of The Communication Process
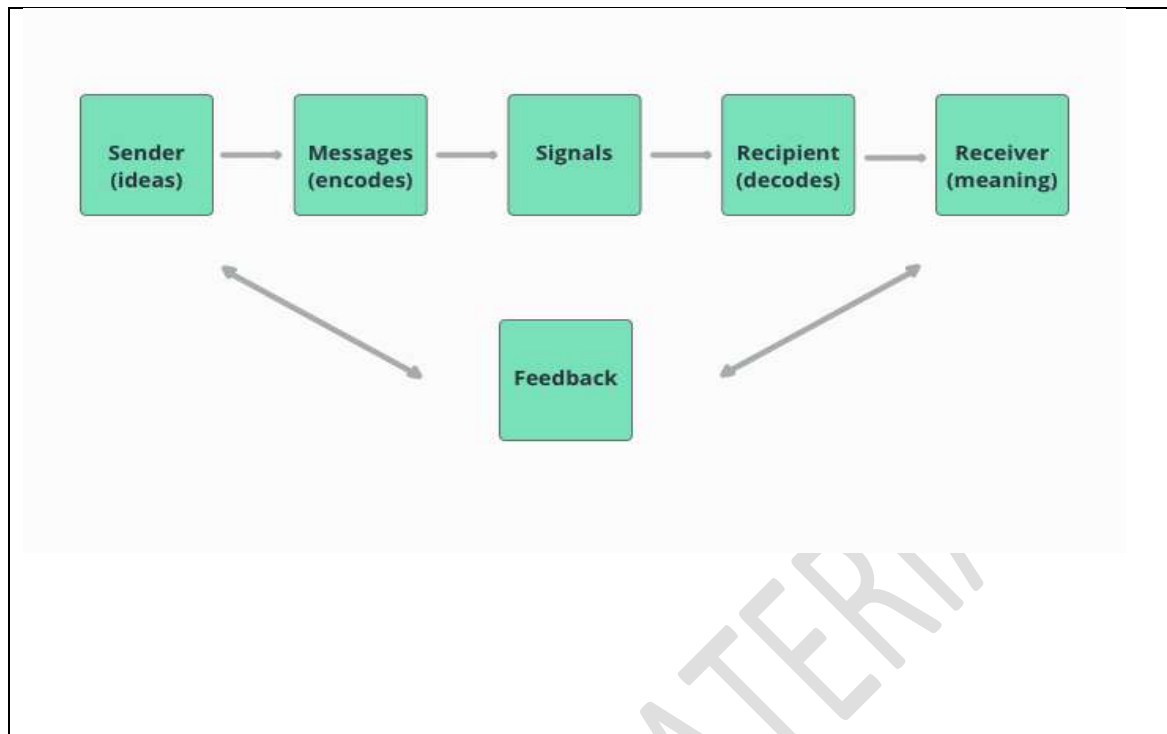
Worksheet 2.4

On the basis of your understanding of the communication cycle complete the following table. (see worksheets file)

Worksheet 2.5

Practice Communicating

In groups do a role- play of the following situations. Make sure that each element of the communication cycle is clear through the role play. One person in the group can be the presenter to give a brief on the roles and the situation. (see worksheets file)

After having the conversations, discuss what you wanted to convey and whether the receiver was able to understand everything clearly. In case you feel things were not communicated clearly and there were misunderstandings, make improvements and discuss once again.

As you do the role plays, identify all the parts of the communication cycle.

Worksheet 2.6

You have been given the task of making a diagram showing the Communication Cycle for your class Display Board.

Make a diagrammatic representation of the communication cycle and lable it. You must search the net to find interesting ways of showing the cycle.

Worksheet 2.7

Make a PowerPoint Presentation of Communication and the Communication Cycle

Make a PowerPoint Presentation on the following aspects of Communication you have learnt in this lesson-

   A) What is communication
   B) Its importance in daily life and at the workplace
   C) The Communication Cycle
      (Include images and animations wherever possible)

Do a presentation for the whole class.

Note: Ask your friends who are computer wizards or the computer teacher for assistance.

Recapitulation

The cycle of communication can be said to be, complete and communication can take place successfully only when each aspect is understood. If the person who conveys the idea or message knows what he wants to convey and conveys it correctly through words and associated cues half the job is done. But- it is also important for the receiver of the message to receive the message fully and through feedback or his actions and responses, convey that the message has been received as conceptualized. All aspects of the cycle are to be given importance in our communications.

COMMUNICATION

Worksheet 1 Warm up

Option A[A1]

1 Look at Figure 1 given below.

- **What are the people doing?**
- **For e.g. What are people doing in box 1 ?**
- **What is happening in box 2,3 and 4?**
- **Is there a common term or one word to describe the activity which all the people are engaged in ?**

Figure 1

[A2]   **visual to have no labelling**

2 Show Video : You Tube –German Coast Guard Trainee : https://www.youtube.com/watch?v=yR0lWICH3rY

Discuss what was happening in the video.

What would be the consequences? Why?

How could the situation be saved?

COMMUNICATION

3   Game :Dictation

Objective to enable learners to :

- experience a communicative activity
- understand what happens in communication[A3].
- to gain insight into the role of the 2 parties.

Note:This communication exercise is not only for the listeners but the speakers. We need to communicate and listen effectively to get the results intended. Hope this was fun!

Communication Skills Activity

Adapted from (AHealthTeacher)Seattle, WA USA

PRACTICING COMMUNICATIONS SKILLS:

Ask students tohave a blank page and pen or marker ready.
For the teacher :Phase 1

Ask all students to listen and follow your instructions carefully.

Inform them that they will be replicating a drawing by following your verbal instructions.

Call the following instructions out loud:

COMMUNICATION

1. Draw a circle
2. Draw a triangle inside the circle
3. Draw a square in the corner
4. Sign your name on the paper

Stop and then ask everyone to hold up their picture.Do not show yours!

You will find that most of the pictures are different in some way.

Inform them that none of their pictures match, so they shall give it one more try.

Also ask the students why weren't any of their drawings similar? Some possible answers could be the following:

You asked us to be silent and listen. We couldn't ask any questions.
The instructions were basic with no detail. The speaker needs to be specific.
The instructions were quick and straight-forward. We weren't given the time to think through each instruction.

Next take your students suggestions and and dictate once again.

Ask the students to flip over their paper and start again. Use the following directions:

The key communication statement to tell the group is: Everyone heard the same message, yet everyone perceived the message differently. This is why a great communication skill is to repeat back what you heard so the person talking can confirm if you heard it the way they meant it! It's important that the speaker be specific and detailed too!

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Phase 2

    1. Draw a circle 4 inches in diameter in the center of your paper.

    2. Draw a triangle is inside the circle so that all three corners are touching the circle.

    3. Draw a 1 inch square on the bottom-left corner of your paper.

    4. Sign "your name" as spelled out Y-O-U-R-N-A-M-E on the bottom-right side of your paper.

    Have everyone hold up their papers and hold up yours, bingo!

Post Activity Discussion:

- Was the person who was dictating successful?
- Were you successful in doing what was required /making the visual?
- What was the role of the person dictating?
- What was the role of the class?
- What was the purpose of the dictation? Discuss
- Compare and contrast the 2 activities.
- Which one was more successful? Why?

Conclusion :

- This communication exercise is not only for the listeners but the speakers.
- We need to communicate and listen effectively to get the results intended.

COMMUNICATION

4 Introduction Let us think about communication. When do we begin to communicate? Think about this very interesting question. Maybe we would need to go back to the times of our early childhood or even infancy to realize how communication is vital and intrinsic to man.

As a child our early efforts at communication may have been only for the fulfillment of our basic needs:to be fed when hungry, to be attended to when in pain or when uncomfortable and so on.

- Gradually these first interactions with the mother, father and then the family pave the way to speech. Speech involves the knowledge of language and it is fascinating to see how the sounds the child makes evolves into utterances using words and language.

At the same time the child's world expands and it grows from family to school. Gradually the child grows into an individual and his/her circle grows wider as more and more people come into the ever growing circle.

Pause and reflect on the vast circle of people you communicate with today! How greatly increased it is in size, nature and in fact, in all its different aspects!

Here are a few definitions of communication. Examine and discuss them with your partner. Do you agree/disagree? Give reasons.

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- Communication is the process of sending and receiving messages through verbal and/or non verbal means-speech(oral communication),writing (written communication),signs, signals and behavior.
- At the most basic level, none of us communicate without the desire for being understood.

    A new-born baby's cry indicates to the mother that the baby may be hungry , wet etc.

- In the simplest term, communication could be defined as the process of creating meaning between two or more individual
- Brent defines human communication as the process through which individuals in relationships, groups, organizations and societies create, transmit and use information which would help them function in society. (Adapted from Brent, 1988).

COMMUNICATION

Communication Skills Class 9 Worksheet 2

Communication through the Ages

- Think about yourself from the time you were born!
- What are the kinds of communication you have been engaged in since then?
- At what age do we start communicating
- Is communication essential or intrinsic to Man Why?
- Do we need to communicate all our lives? Why?
- With your partner list as many ways Man has communicated over the ages

3 Examine Figures 2 and 3 given below.

What are the different ways in which Man has communicated over time?. Using the information given as a take off point prepare a power point presentation on the topic, 'Communication through the Ages'.

COMMUNICATION

Remember to research and add the latest developments in communication today.

OR

Examine Figures 2 and 3 .Discuss with your partner how there have been many radical changes in communication over time. With your partner discuss how communication has evolved and developed over the ages.

. Figure 2
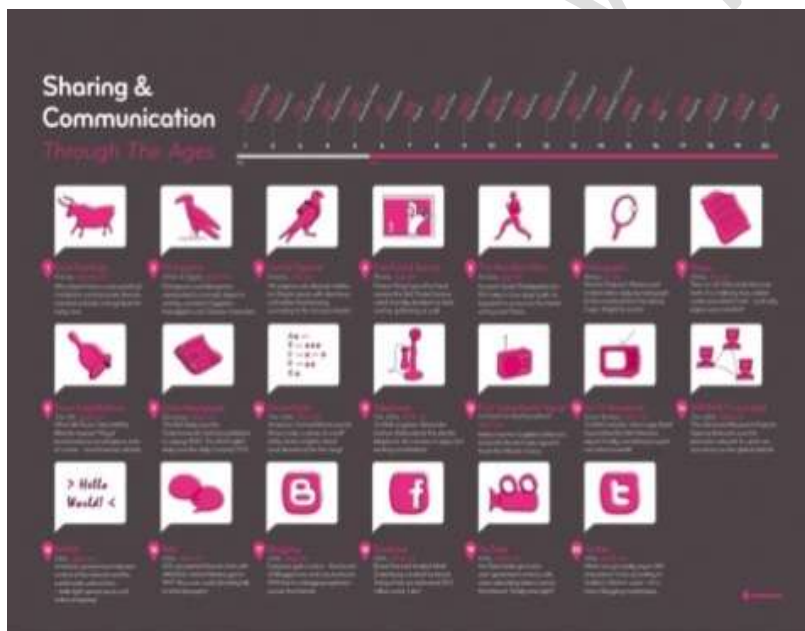
COMMUNICATION

Figure 3

COMMUNICATION

CS 9 Worksheet 3

1 In Figure 2&3 you learnt how cave paintings and pictograms were ways in which Man communicated in ancient times

Discuss the following:

- Do we continue to use Visual communication today?
- How important is Visual Communication?

2 Examine Figure 4 given below. Discuss with your partner:

- Describe what is happening in each of the boxes in the visual?
- Is communication happening?
- Who is communicating and with whom?
- What is the medium being used? Tick the correct answer

    a)verbal

COMMUNICATION

    b)visual

   c) non verbal

  Figure 4

[A4]
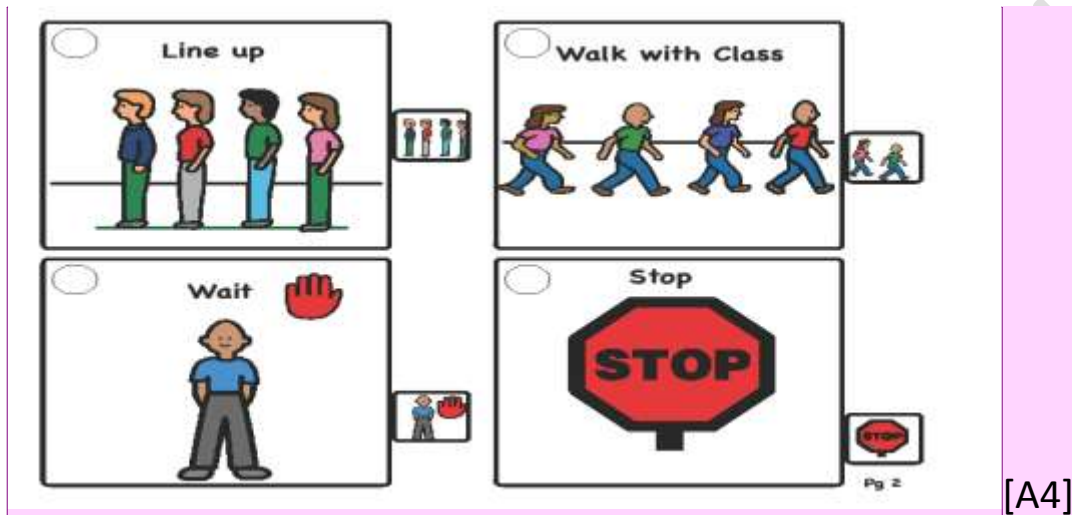
3Role Play

Student A

- You are Student A. You belong to a small town and have come to Delhi for some training.
- You have never been out of your small town.
- You will have to travel by metro for your training.
- You speak only your own regional language.
- You have come to your two friends in Delhi for advice. Tell them about your concerns about being able to commute by metro.

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COMMUNICATION

Student B and Student C

- Examine the visuals in Column A . Discuss among yourselves how best you can help your friend so that his/her experience of Delhi Metro is a positive one.

- In Column B discuss what the visual means. Jot it down in Column B.
- In Column C use the visual for giving suitable advice to your friend.

Figure 5

s.n	A visual	B what it is/means	C your advice
1			
2			
3			
4			
5			
6			

COMMUNICATION

7			
8			
9			
10			
11			

Let us examine the following definition of visual communication?

Visual communication is the transmission of information and ideas using symbols and imagery. It is one of three main types of communication, along with verbal communication (speaking) and non-verbal communication (tone, body language, etc.). Visual communication includes signs, graphic designs, films, typography, and countless other examples.

Discuss with your partner:

COMMUNICATION

- Are visual elements an integral part of our learning: think about your classes ,your textbook and also examine this specific unit on communication. Have visuals been used ?In what ways do they promote learning?
- Is visual communication a good aid to learning ?Why?
- What are the different features of visual communication? Add these features of visual communication to the mind map given in Figure 6 below.One has been done for you.
- Check your answers given at the end of the unit.

Figure 6

[A5]   **power point presentations**
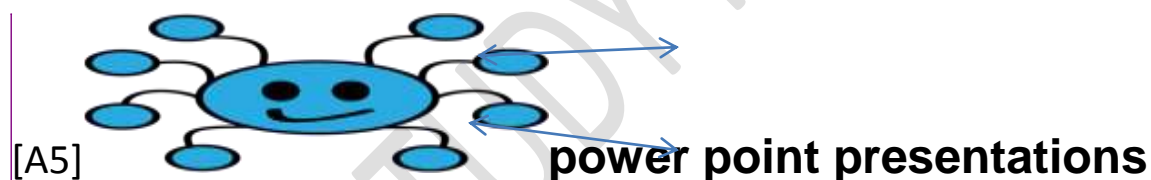
COMMUNICATION

CS Worshee 4

1 Examine the visual below. How many ways do we communicate with each other? Label the 2 main types of communication by labelling sub circles A and B .

2 Circle A is a way of communication. Can you think of its 3 aspects ? Using the visuals in the sub circles label them with the specific kind of communication.

Figure 7

[A6]

3 Thus we see there are 3 main kinds of verbal communications as illustrated in the Figure 8 below.Fill in the blanks in the figure with the two kinds of verbal communication

Figure 8

COMMUNICATION
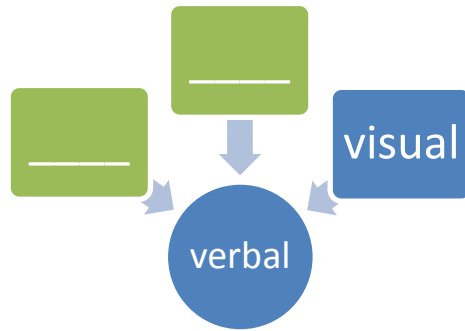
 Oral Communicationis the oldest means of communication, which is most commonly used as a medium for the exchange of information. It involves gathering or disseminating information through spoken words.

Written communication is a formal means of communication. In this type of communication the message is drafted with care and formulated according to certain formats and writing conventions. It is useful and kept for reference and legal records.

4

Examine the table given in Figure 9 below which lists the differences between Oral and Written communication.

Figure 9

COMMUNICATION

Oral Communication Vs Written Communication

BASIS FOR COMMUNICATION	ORAL COMMUNICATION	WRITTEN COMMUNICATION
Meaning	Exchange of ideas, information and message through _____ words is Oral Communication.	Interchange of message, opinions and information in written or _____ form is Written Communication.
What is it?	Communication with the help of words of _____	Communication with the help of _____.
Literacy	Not _____at all.	_____for communication.
Transmission of message	____	_____
Proof	___record of	Proper ____ of

COMMUNICATION

BASIS FOR COMMUNICATION	ORAL COMMUNICATION	WRITTEN COMMUNICATION
	communication is there.	communication are present.
Feedback	_____ feedback can be given	Feedback takes _____
Revision before delivering the message?	Not _____	_____
Receipt of nonverbal cues	_____	___
Probability of misunderstanding	Very _____	Quite _____

Adapted from Surbhi S

Worksheet 5 Non Verbal Communication

COMMUNICATION

1 a) Look at Figure10 .What do you think non verbal communication is about?

b) What are the different aspects of non verbal communication?Think about its different components.

c) Using the clues given in the boxes fill in figure 1 below label the three different aspects of non verbal communication.

Figure 10

COMMUNICATION

Can you see it in their eyes?

_____
verbal
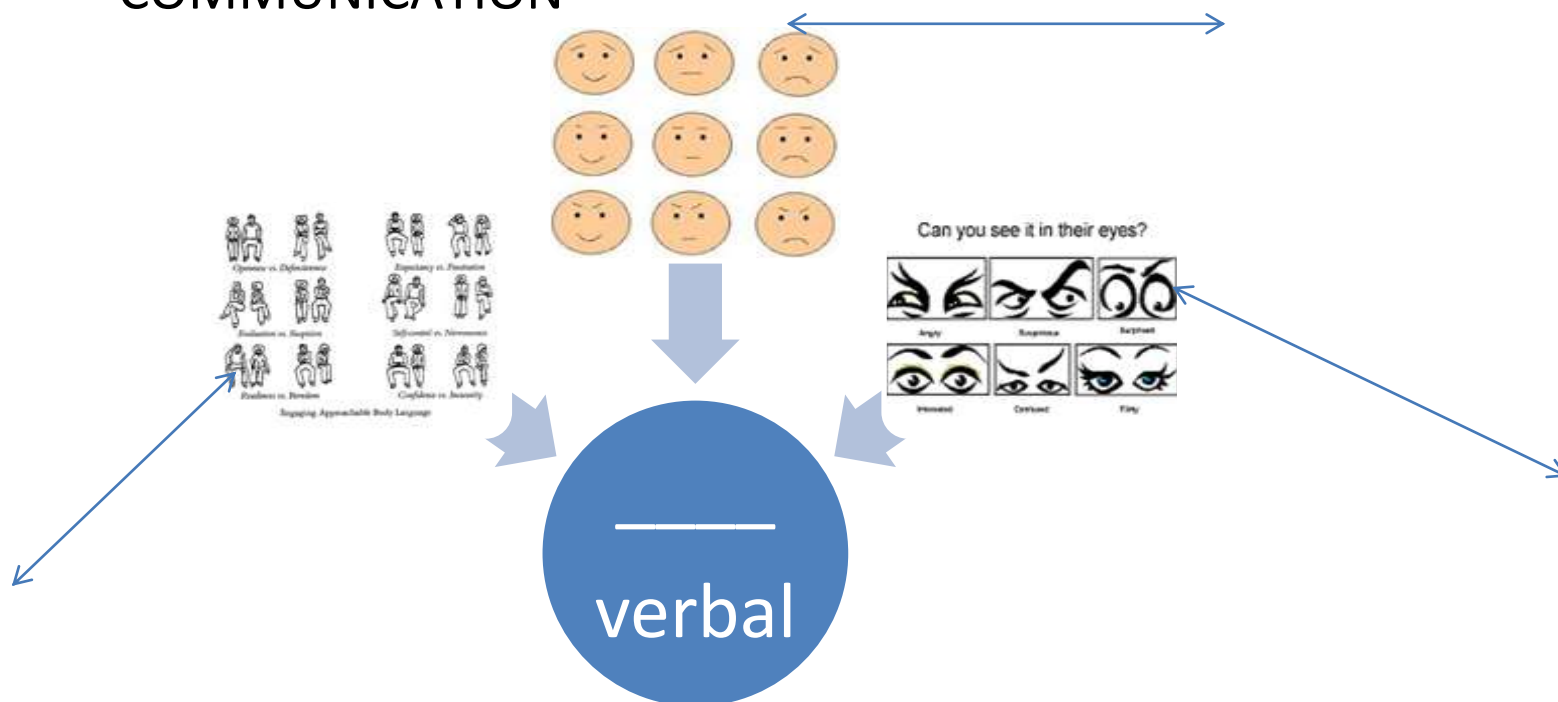
Do you know?

1 Look at Figure 11 below. It illustrates how body language and the message it conveys differ from one culture and country to another.

Examine the different aspects of body language and the kind of significance it has in different countries.

2 After you have finished examining the visual make a list of elements of body language that are considered desirable/undesirable body language in India .

Figure 11

COMMUNICATION
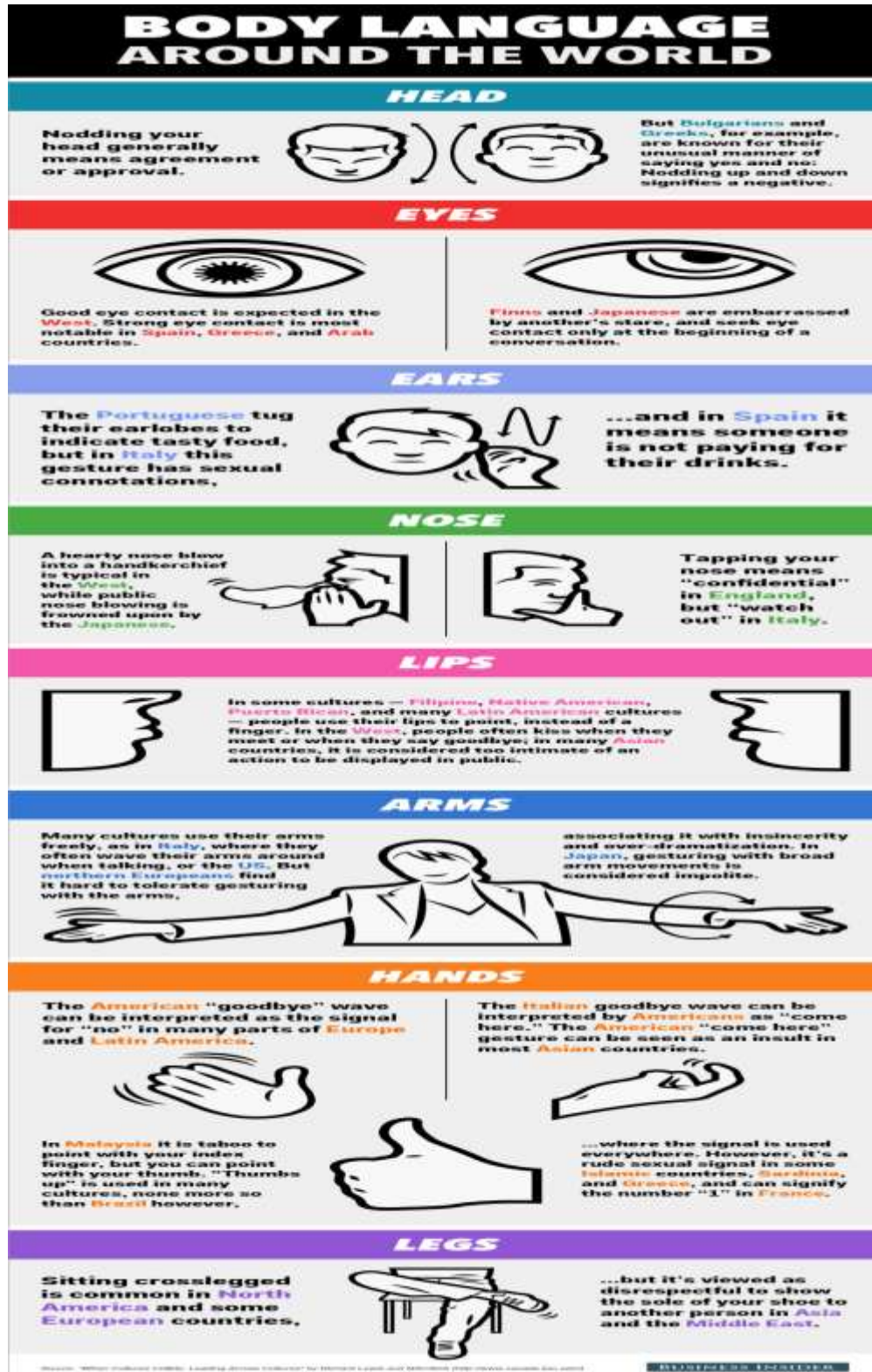
COMMUNICATION

2 This activity is called , 'Let's Role Play the situation!'

a)Look at the slip of paper or number allotted to you.In pairs think of a situation to illustrate the point .
For example in square 2 it says,' Practice using right tone of voice to talk it out with someone.'

b)You could role play this by enacting a situation where Student A realizes his/her fault and is able to set
things right by using the right tone.

c) Also role play the reverse of the situation where Student A is at fault but he/she makes it worse by
using the wrong tone and body language![A7]

Adapted from the Responsive Counsellor

OR

d) You can also use the figure to conduct a Quiz.

(i)Sit in groups.A panel of 2 or 3 students to be Quiz Masters.

(ii) Go through all the situations given below. Discuss the probable
answers.

(iii) Form 2or 3 teams.

(iv) Conduct the Quiz!

Figure 11 a
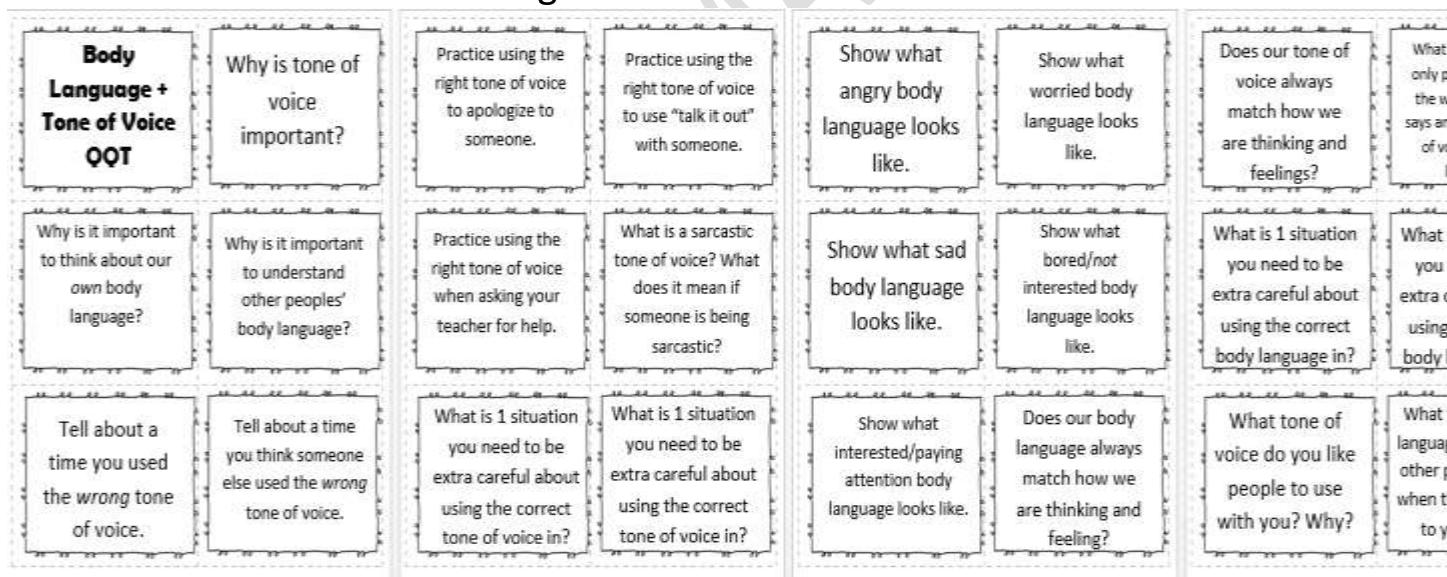
COMMUNICATION
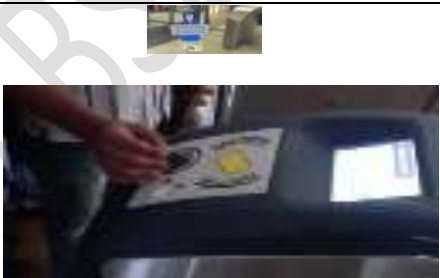
CS 9 **Answers**

Worksheet 1 Figure 1

COMMUNICATION

Worksheet 3 Figure 5

s.n	A visual	B what it is/means	C your advice
1		this is the entry gate	you need to insert token/u card for entry
2		exit	you can go o from here
3		don't spit	metro do's ar don'ts
4		follow colored footprints for different lines	these can hel even if you c read!
5		insert token	metro card ar token system

COMMUNICATION

6		metro map	you can learn about major l etc
7		see and read the colors	how to use th visuals and s
8		no photos	
9		Metro card	how to use
10		women's only	you can use –if you are a woman
11		stairs,escalator and lift facilities provided	how to use th such as esca and lifts.

COMMUNICATION

Worksheet 3   Figure 6

photographs
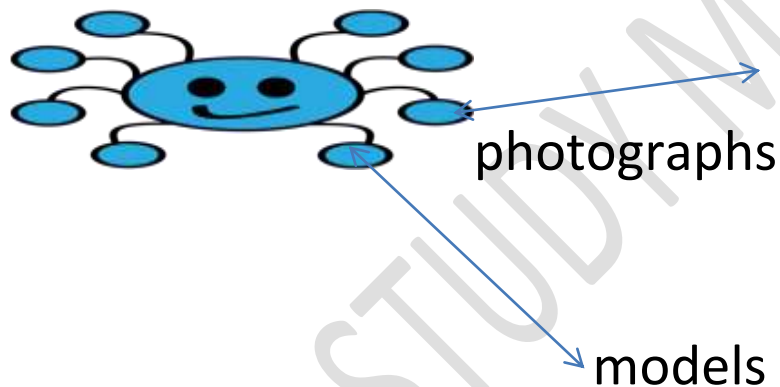
models

ADD ALL THESE TO ARROWS

Objects, Models, Graphs, Maps,Tables

Photographs,Drawings or diagrams, chalkboard,whiteboard,

COMMUNICATION

charts, graphs, pictures, or illustrations ,h**andouts**,v**ideo excerpts**

Power Point presentations, **Social media**

Worksheet 4 Figure 7

Worksheet 4 Figure 8
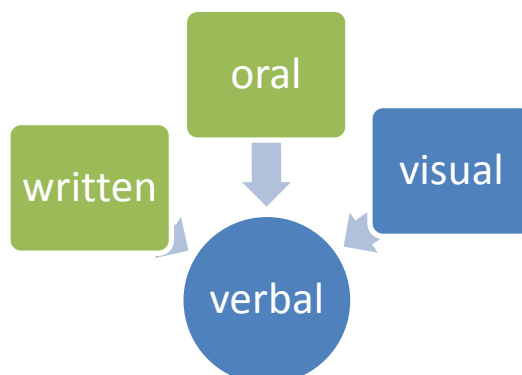
Worksheet 4 Figure 9

<u>Oral Communication Vs Written Communication</u>

BASIS FOR COMMUNICATION	ORAL COMMUNICATION	WRITTEN COMMUNICATION
Meaning	Exchange of ideas, information and message through *spoken* words is Oral Communication.	Interchange of message, opinions and information in written or *printed* form is Written Communication.
What is it?	Communication with the help of words of *mouth*.	Communication with the help of *written* form.

COMMUNICATION

BASIS FOR COMMUNICATION	ORAL COMMUNICATION	WRITTEN COMMUNICATION
Literacy	<u>Not</u> required at all.	*required* for communication.
Transmission of message	*fast*	*slow*
Proof	*No* record of communication is there.	Proper *records* of communication are present.
Feedback	*Immediate* feedback can be given	Feedback takes *time.*
Revision before delivering the message?	Not *possible.*	possible
Receipt of nonverbal cues	*Yes*	*No*

COMMUNICATION

BASIS FOR COMMUNICATION	ORAL COMMUNICATION	WRITTEN COMMUNICATION
Probability of misunderstanding	Very *high*	Quite *low*

Adapted from Surbhi S
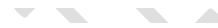
Worksheet 5 Figure 10

body posture   Facial expression

COMMUNICATION

Can you see it

non verbal

eye contact & movements

Basic Computer Operations

Session 1

As we all know that computer is a very useful machine. It is very important to properly start the computer and after finishing the work, it needs to be properly shut down. If the power of the computer is switched off, and the files you were working on were not closed, the files and the operating system may get corrupted.

Using a Computer (Procedure for starting and shutting down a computer)

Starting a Computer

1. Press the Power button of the computer.
2. When you turn on the computer, lights on the keyboard may blink for a while and you may hear a beep sound. This indicates that the Power-on-self text (POST) has started. POST is a sequence of tests that determines if the computer hardware like, keyboard, RAM, disk drives, etc are working correctly. The monitor may display a message, if a component is not functioning.
3. After the POST, the computer starts the operating system. The process of bringing up the operating system is called booting. The computer knows how to boot because the instructions of booting are built into a chip called BIOS (Basic Input/ Output System).
4. When the operating system starts, say Windows 7, Windows welcome screen appears. The first screen that appears after Windows 7 is successfully loaded is called desktop.
5. Now, you can perform various tasks on the computer.

Shutting down the computer

Before shutting down the computer, you need to save and close all the files and applications. You can completely turn off the computer, you can make it sleep or hibernate it.

To turn off the computer completely, click the Start button, and then click Shut Down.

If you choose Sleep option, the system uses very little power, the computer starts up faster and you are back to where you left. You can use sleep option if you going away for a short time. Laptops and tablets goes to sleep when you close the lid or press the Power button.

If you select Hibernate option, system uses less power than Sleep. When you start the PC again, you are back to where you left.

Operating System

An operating system is the basic software that controls the computer. It serves as an interface between the user and the computer.

Some of the functions of Operating system are:

- It manages all the devices of a computer and keeps track of the status of the device, whether it is busy or not.
- It also checks whether the device is functioning properly or not.
- It also controls software resources of the computer.
- t manages the computer memory and keeps track of which memory space is in use by which program and which space is free.
- It manages the structure of the files and directories on a computer system.
- It keeps track of the amount of disk space used by a specific file.
- It allows you to create, copy, move and delete files.

Types of Operating Systems

Some commonly used operating systems are:

DOS

DOS (Disk Operating System) is an operating system for a personal computer. Early computers were able to run one program at a time. It had a command line interface in which a user has to remember the commands to run the program and do other operating system tasks. For example, the DOS command, *dir,* will display the list of files in the current directory.

Windows

It is an operating system developed by Microsoft. Some popular versions of Windows operating system are- Windows 98, Windows, 2000, Windows XP, Windows 7, Windows 8, and Windows 10.

Linux

It is an operating system designed for personal computers. It is a free and open-source software, which means it can be modified and redistributed.

Mobile operating Systems

Some popular operating systems that are used in mobile phones are:

Android It is an operating system used in mobile phones and tablets. It is owned and maintained by Google and is an open-source operating system. The android releases were nicknamed after sweets or dessert items like Cupcake (1.5), Donout (1.6), Éclair (2.0), Frozen Yogurt (2.2), Honeycomb (3.0) and Jelly Bean (4.1), Kitkat (4.4), marshmallow (6.0),

Symbian It is an operating system used in mobile phones. Symbian was developed and sold by Symbian Ltd. It is primarily used by Nokia. It is also used by Japanese mobile phone manufacturers for handsets sold in Japan.
Windows Phone It is a mobile operating system developed by Microsoft for smart phones and pocket PCs. In February 2010, Microsoft announced the Windows Phone, the successor to Windows Mobile.

Windows 8.1 is the latest release of this operating system.

iOS It is a mobile operating system developed by Apple Inc. for iPhones, iPads, and iPods. It is supported only by Apple hardware. iOS 9 is the latest release of this operating system.

Session 2

Let us first study about Windows 7 Operating system.

Windows 7 operating system

Windows 7 is an operating system developed by Microsoft and is used on personal computers.

After loading Windows 7, the first screen that appears on the monitor is called **desktop**. From the desktop, you can access different components of Windows 7.

By default, Windows 7 has a picture for the desktop background. This is called **wallpaper**.

Small pictures on the desktop are called **icons**. These icons represent files, folders, applications, etc. At the bottom of the desktop is a long bar called the Taskbar. To the left of the taskbar is the Start button.

Components of Windows 7 Desktop are shown below:

Fig: Desktop

Let us discuss some special icons on the Desktop – Computer, Documents, My Network Places, and Recycle Bin.

Computer

It displays all the storage areas of the computer . Through the Computer icon, you can access all drives, files, and folders on the computer. When you double-click Computer icon, a window shown below appears on the screen. In the following figure, you can see that hard disk has three partitions- Local Disk (C:), Local Disk (D:) , and New Volume (F:) . Also a removable DVD Drive (E:) is there in the system.
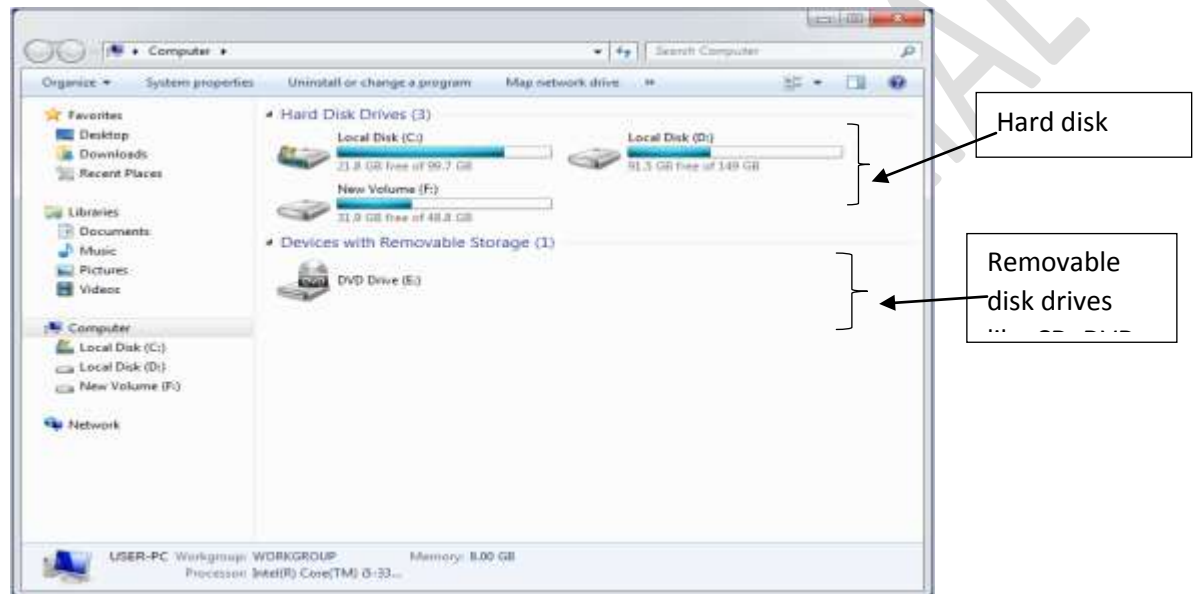

Fig Computer Window

To view the contents of any item, e.g., a particular hard disk drive partition, double-click its icon.

Documents

This contains area to store files on the computer.

My Network places

It contains information about the interconnected computers.

Recycle Bin

Files and folders deleted by the user are stored in the Recycle Bin. From Recycle Bin, you can retrieve files or folders deleted by mistake.
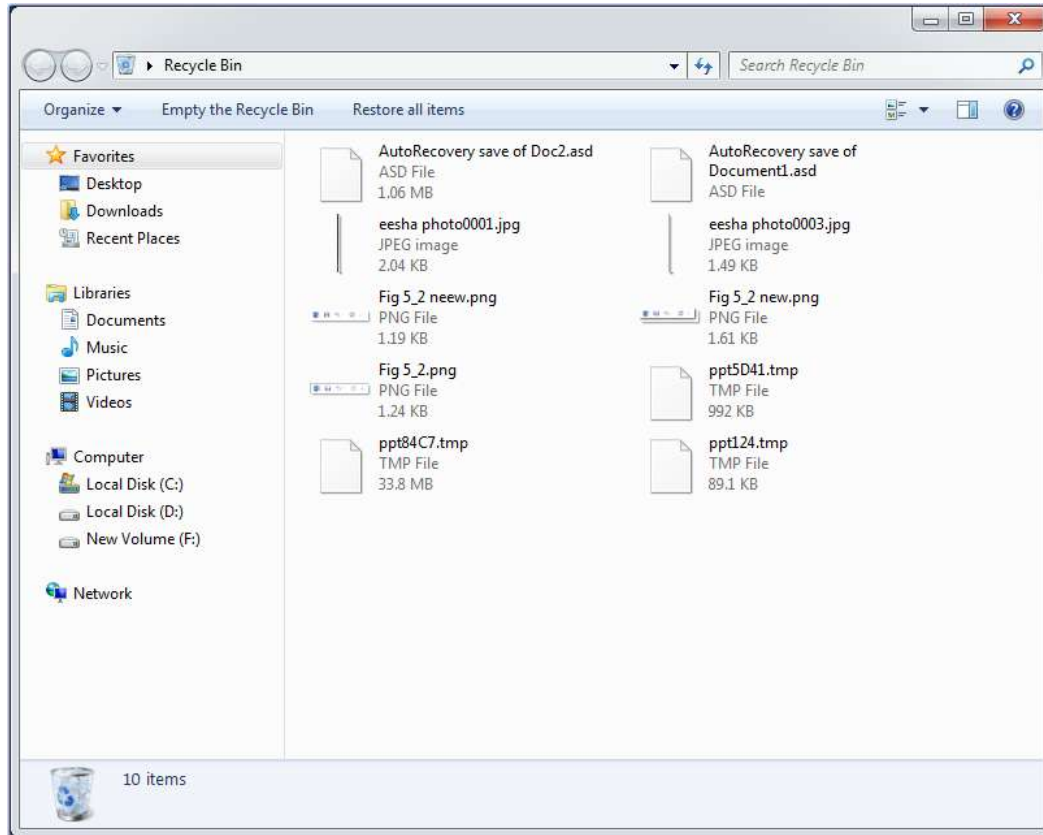
Permanently Deleting Files

You can permanently delete the contents of the Recycle Bin in any one of the following ways:

Right-click the **Recycle Bin** icon and then click **Empty Recycle Bin**.

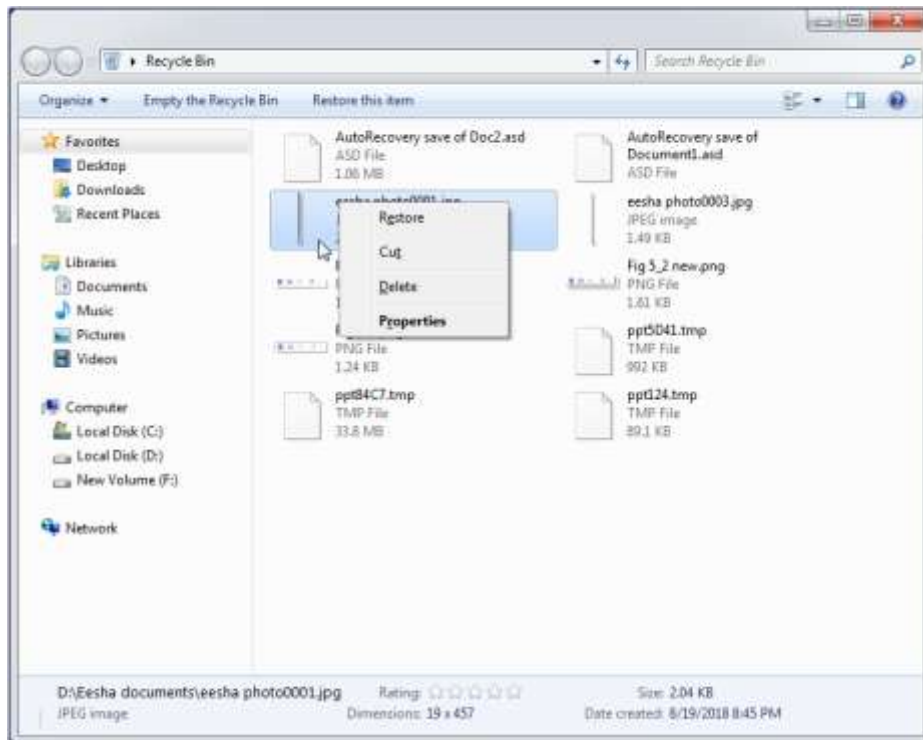**OR**

1. Double-click the **Recycle Bin** icon.
2. The **Recycle Bin window** appears.

3. Click **Empty the Recycle Bin**.

Restore Files/Folder from Recycle Bin window

To recover a file from the **Recycle Bin,** right-click the file, and then click **Restore**.

Or

Select the file and click **Restore this item**

Taskbar

Taskbar is the long horizontal bar present at the bottom of the screen. To the left is the Start button. Right of the taskbar contains Date/Time. You can also see icons of active applications and some shortcuts on the Taskbar

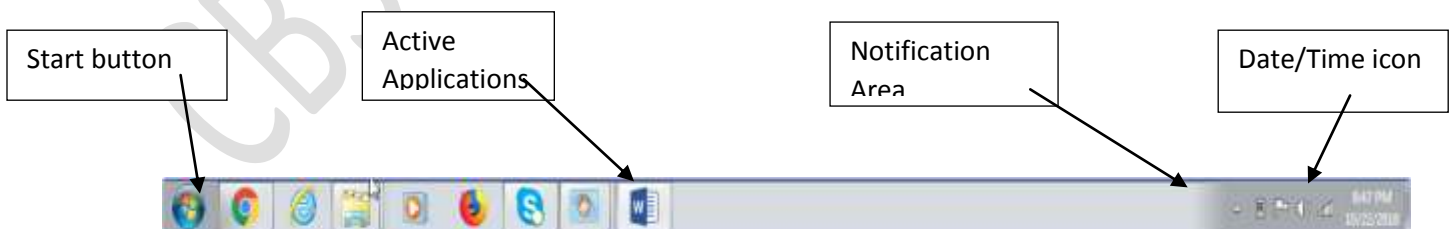The main components of Taskbar are shown in the following figure:
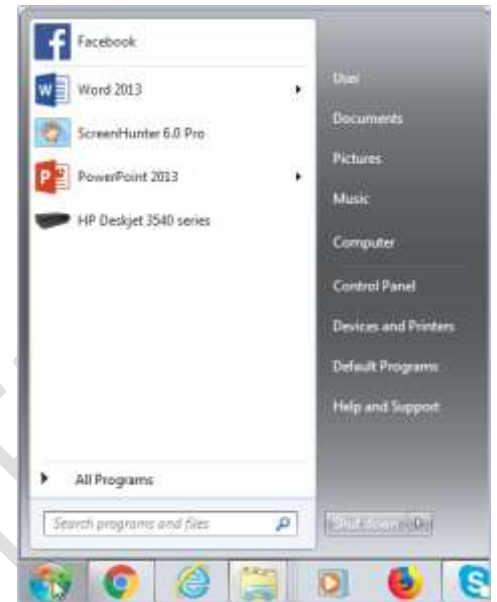

Fig Taskbar

Start button It is located on the left of the taskbar. Clicking the Start button opens the Start menu and provides access to programs and features, like:

Shut Down:- allows the user to turn off the computer

All Programs:- Provides access to all the installed programs and applications. To start an application, just click it.

Search Box:- This allows the user to search a file or a folder or run executable files.

Control panel:- This allows the user to change various settings.

Practical

1. Start your computer.
2. Name the operating system on your computer. _____.
3. Observe the icons on the desktop. Identify Computer icon, Recycle Bin, Start button, taskbar, etc.
4. Double-click Computer icon.
5. Write down the partitions of the hard disk.

   _____
   _____
   _____
   _____

6. Identify removable disks on the computer.

   _____
   _____
   _____
   _____

7. Double-click Recycle Bin.
8. Restore any one file.
9. Empty Recycle Bin.
10. Click Start button.

11. Write names of any three programs/applications installed in your computer.

   _____

   _____

   _____

12. Change the Wallpaper using following steps:
    a. Click **Start ➢ Control panel**.
    b. Under **Appearance and personalization**, click **Change desktop background.**
    c. In the window that appears, select the desired picture.
    d. Click **Save Changes** button.

Unit 3 Identify various Peripheral devices

Session 1

Peripheral devices

A peripheral device is an internal or external device that connects directly to a computer but does not contribute to the computer's primary function, such as computing. It helps end users access and use the functionalities of a computer.

For example, a computer mouse, keyboard, monitor, printer and scanner.

Different peripheral devices, fall into following three general categories:
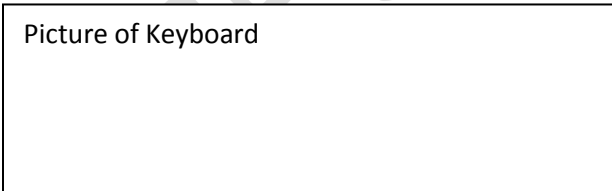
1. Input devices, such as a mouse and a keyboard
2. Output devices, such as a monitor and a printer
3. Storage devices, such as a hard drive or flash drive

Input Devices

Keyboard

A keyboard is a device used to enter data directly into the computer. First six alphabets of first row of alphabet keys contains alphabets Q, W, E, R, T, Y. That is why it is known as QWERTY keyboard.

Picture of Keyboard

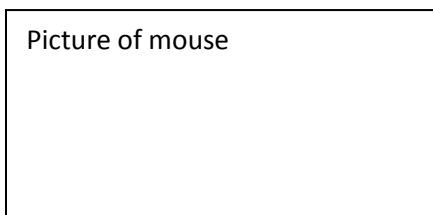Different types of keyboards are available but keyboards with 101 keys is the most popular one.

Different types of keys of the keyboard are:

- **Alphanumeric keys** are used to type alphabets, numbers and special symbols like $, %, @, A etc.
- **Special keys** such as Shift, Ctrl, Alt, etc. are used for special functions.
- **Function keys** such as Fl, F2, F3 etc. are used to give special commands and these commands may be different for different softwares.

- **Cursor Movement keys.** These keys are used to move the cursor in a document. These include the arrow keys, PAGE UP, PAGE DOWN, etc.

Numeric keypad. The numeric keypad is present to the right of the keyboard and can be used to enter numbers quickly.

Mouse

A mouse is a pointing device and is used to move mouse pointer on a computer monitor. When you move the mouse on a flat surface, the mouse pointer on the computer monitor moves in the direction of the mouse's movement.
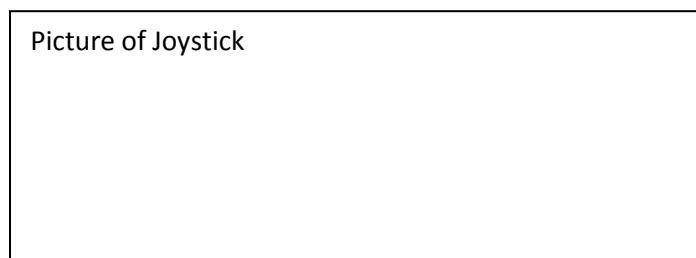
Picture of mouse

A computer mouse may be connected to a computer using wire and connected to PS/2 or USB post. Some of the computer mouse are wireless.

A mouse usually has two buttons with a scroll wheel in the center.

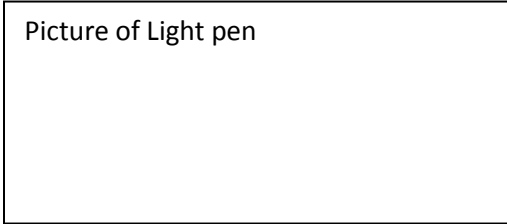When you move the mouse, the mouse pointer moves in the same direction on the screen.

Joystick

A Joystick is used to play games on the computer. It consists of a vertical stick that is moved to control objects on the computer screen.

Picture of Joystick

Light pen

A light pen is a pointing device. It is used to draw directly on the screen. It can also be used to point to an object or option directly on the computer screen.

Picture of Light pen

Graphics Tablet

A graphic tablet is used to create digital drawings by hand drawing image on a flat surface called the tablet using a special pen. This special pen is called stylus.
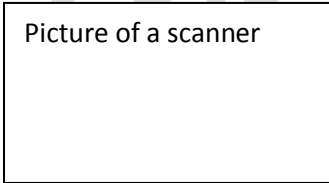
Picture of Graphic Tablet

Scanner

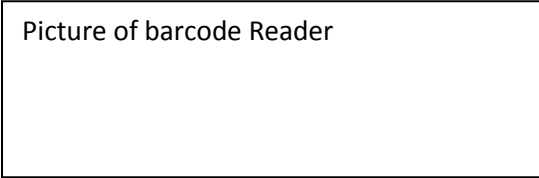A scanner is a device that is sued to convert text or image into a digital file.

Picture of a scanner

Barcode Reader

A barcode consists of a combination of thick and thin vertical lines found on products. The bar code identifies the product and the manufacturer. These barcodes can be read by a device called Barcode reader.

Picture of barcode Reader

Microphone

A microphone is a device used to record your voice and save it in the form of a digital file in the computer.

Picture of Microphone

Lets Try It

1. **Use any Typing tutor software to practice typing and learn using different keys of the keyboard.**

Tux Typing tutor is a software used to teach typing to children and even adults. Regular practice will help you to increase typing speed and reduce the mistakes while typing.

Before learning typing, you should learn how to place your fingers properly on the keyboard.

Before typing we should always place our fingers on the second row of alphabet keys.

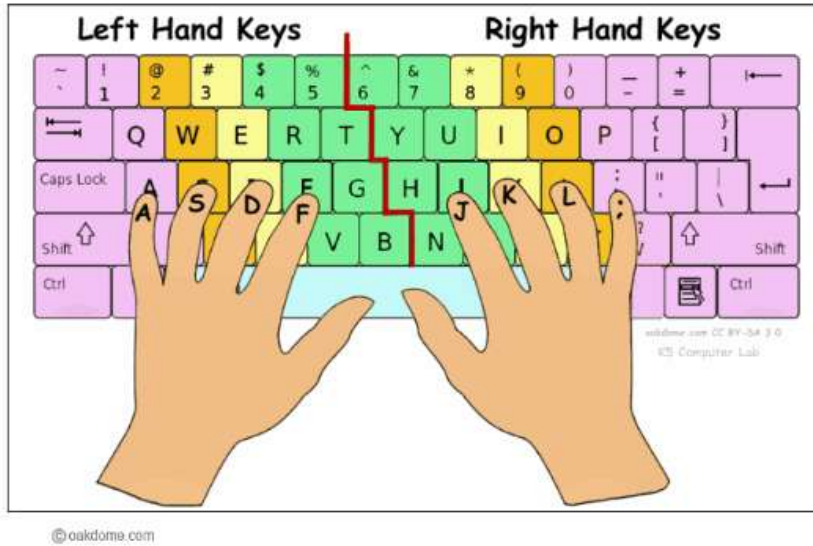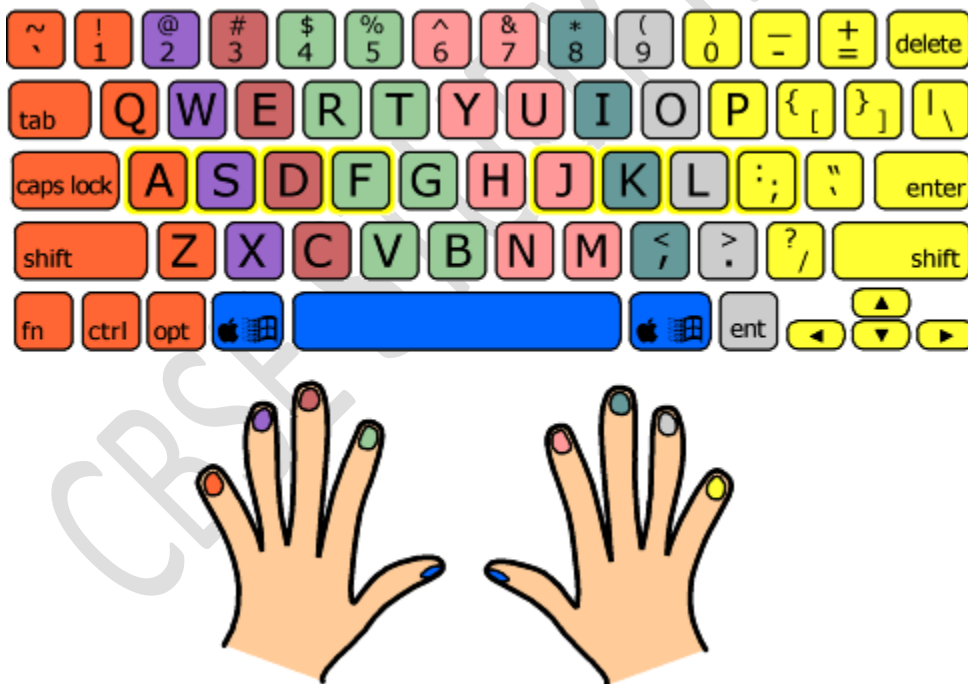## Proper Finger Placement on the Keyboard

Fig Placing fingers

The figure shown below shows which figure is used for which key.

Fig

    a. **Start Tux Typing**

    b. The **Tux Typing** main window appears (Fig   ).

Fig Tux Typing main window

c. Click **Lessons**. The **Lessons mode** window appears (**Fig **).

Fig Lessons mode window

d. A number of lessons are available. Start from lesson 1 and then try other lessons.

2. **Recording your voice using Sound Recorder in Windows 7.**
   a. Make sure that microphone is properly attached to the computer.
   b. Select **Start ➢ All Programs ➢ Accessories ➢ Sound Recorder**.
   c. The Sound Recorder window appears (Fig   )

Fig Sound recorder

d. Click **Start Recording** button to click start your recording. (Fig   )

Fig Recording

   e. To finish recording, click Stop Recording button.
   f. The Save As dialog box appears (Fig   )

Fig   Save As dialog box

g. Select the drive and folder. Type the filename and click Save button.
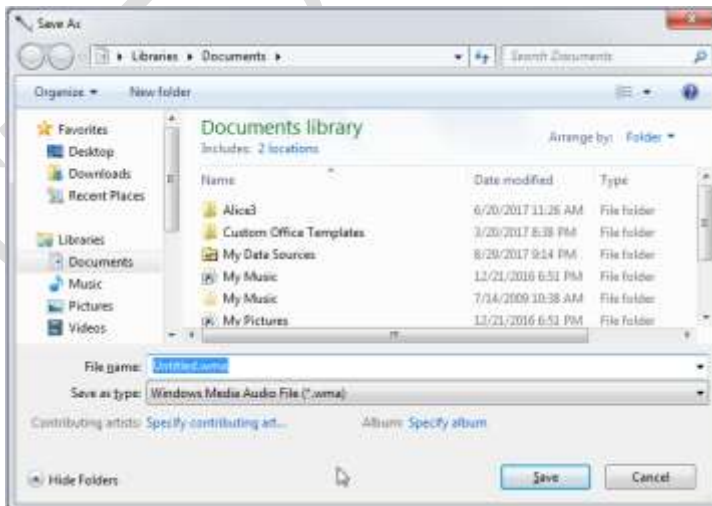3. Go to a grocery shop/ store. Ask the accountant to demonstrate the use of barcode reader to read the barcode. Note what happens/appears on the computer screen when he clicks the barcode.

Worksheet

1. A peripheral device can be _____ or internal.
2. Different categories of peripheral devices are:

   _____

   _____

   _____
3. Name the device used to enter data directly into the computer. _____
4. Name the device used to play games on the computer. _____
5. What is the name given to thick and thin lines on any grocery item called? Name the device used to read these lines.

   _____

   _____
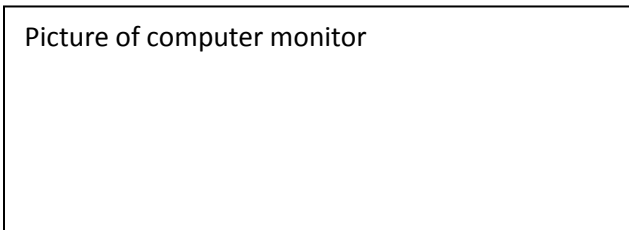
Session 2

Output Devices

Computer Monitor

A computer monitor, resembles a TV screen and can display both text and images. The output displayed on computer screen is called the soft copy.

The size of a computer monitor is measured in diagonal length of the screen. Computer monitors are available in different sizes, 14 inch, 15 inch, 17 inches, etc.

Picture of computer monitor

Printer

A printer is a device used to print the files stored on the computer on paper. The output produced on paper is called the hard copy.

Commonly used printers are:

- Dot matrix printer
- Inkjet printer
- Laser printer

Dot matrix printer

It is the most commonly used character printer, i.e, it prints one character at a time. Most of the dot matrix printers are bidirectional, i.e., they print one line of text from left to right and then the next line from right to left.

Picture of Dot matrix printer

Inkjet Printer

These printers use a continuous stream of ink drops to print on paper.

Picture of Inkjet printer

Laser Printer

These printers print one page at a time and are very fast.

```
Picture of laser printer



```

Plotters

A plotter is a device used to print large size engineering and architectural drawing on a paper or a polyester film.

```
Picture of plotter


```

Speaker

A speaker is a device used to listen sound from the computer.

```
Picture of speaker



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Lets Try It

1. Discuss various input and output devices and their uses.
2. Attach a speaker to your computer and listen to the sound file you created in the previous session.
3. Identify with the help of your teacher, the type of printer in your computer lab.

4. Teacher can open any document on computer and demonstrate to the students how to take a print out.

Worksheet

1. Name the device used to listen sound from the computer.
2. Name the printer that prints one page at a time.
3. Differentiate between hard copy and soft copy.
4. Name the printer that prints one character at a time.
5. Name the printer that uses a continuous stream of ink drops to print on paper.

Session 3

Storage Devices

CDs/DVDs

Compact Disc (CD) and Digital Versatile disc (DVD) are optical media that is used to record data from computer. Data can then be read from the CD. To read data from the CD, we need to have a CD Drive in our computer.

There are two variations of CD-

- CD-R and
- CD-RW

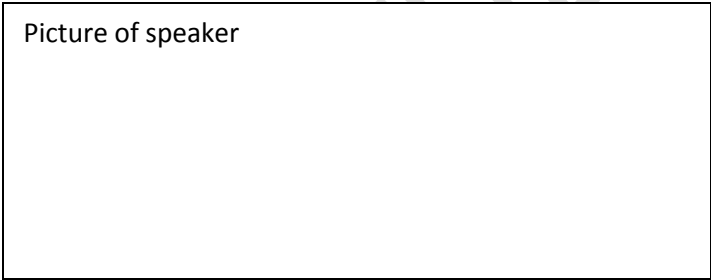In CD-R, data once recorded can be read only and cannot be erased. In CD-RW, previously recorded data can be erased and new data can be recorded.

Both CD and DVD look same in appearance but DVDs can hold much more data than CDs.

To read data from the DVD, we need to have a DVD drive in our computer system. We can read a CD using DVD drive but we cannot read a DVD using CD drive.

A CD can store upto 700 MB of data whereas a DVD can store 4.7 GB of data.

> Picture of CD and DVD

Pen Drive/Flash Drive

A pen drive is a very small and portable device used to store data from a computer. It can also be used to access and transfer data. Pen drives are available in various capacities- 1 GB, 8 GB, 16 GB, 32 GB, etc.

> Picture of Pen Drive

External hard disk

An external hard drive is a storage device located outside of a computer that is connected through a USB cable or wireless connection. An external hard disc has a high storage capacity compared to flash drives and are mostly used to take backup of computer files and other important data. External hard disk of capacity upto 1TB and 2TB are available.

> Picture of external hard disk

Let's Try It

1. Discuss the need of secondary storage devices.
2. Discuss use of various secondary storage devices.
3. Insert a CD in CD/DVD drive in your computer system. Teacher should demonstrate how to view the contents of the CD/DVD?
4. Open Paintbrush software. Draw any figure using tools available in Paintbrush. With the help of your teacher, save the file in your pen drive.

Worksheet

1. Name any two external storage devices.
2. Which has more capacity- CD or DVD?
3. If you have to take your project from home to school in a digital form, which storage device is best suited for this purpose/
4. What is the use of external hard disk?
5. Which device has more storage capacity?
   a. 16 GB pen drive or a CD
   b. 16 GB pen drive or 1 TB hard disk

Unit 1 – Role of ICT

Session 1

Introduction to ICT

ICT stands for Information and Communication Technology which deals with the use of electronic media like computer, smart phone, ipad, etc. to store process, and retrieve data or information.

Role and Importance of ICT

ICT applications are found in every field – education, health, business, design, manufacturing, science, environment.

ICT in education

ICT for education refers to the development of information and communications technology specifically for teaching/learning purposes.

ICT has also become integral to the teaching-learning process. ICT, to some extent, has replaced traditional chalkboards with interactive digital whiteboards,

Students are also using their own smart phones or other devices for learning during class time.

The concept of "flipped classroom" is becoming popular in many countries where students watch lectures at home on the computer and use classroom time for more interactive exercises.

Using ICT tools can lead to

- higher order thinking skills
- provide creative and individualized options for students to express their understandings
- Students are better prepared to deal with ongoing technological change in society and the workplace.

Some of the advantages of ICT in education are:

- Complex topics can be easily explained to the students with the help of pictures, videos, presentations, etc.
- Images and videos used for teaching improves the retention memory of the students.
- Practical demonstration can be given to the students .
- If the teaching process in the class is interactive, it will make the lesson more enjoyable.
- An e-learning program allows students to learn at their own pace, at any convenient time, and from any place.

ICT in Healthcare

ICT plays an important role in healthcare. Some of the uses of ICT in health care are:

- Through the right communication media, a doctor can easily deliver treatment and care to the patient who is located far away. Doctor can also continuously monitor the patient's history, diagnostic report, and track the current health condition. The Doctor can also interact with patient, recommend to take medical examination and prescribe medicine.
- Using the ICT tool or a suitable communication system, government can make efforts to create awareness among the public about the communicable diseases, prevention measures and various current diagnostic & etc.
- ICT in healthcare research helps to find the possible prevention measures to eradicate and reduce the spread of diseases.
- Through ICT, the traditional healthcare systems can be eliminated and new models can be formed for effective quality care.
- Hospitals can use different electronic media to store medical data. This helps to retrieve the information easily. This data can be transferred to the patient or to the Doctors for consultation.
- MRI, CT-scan, ultrasound are done in hospitals, diagnostic centres, to diagnose the diseases.
- Life support systems are provided to the patients
- You can search information on any disease, medicines, etc. on the internet.

ICT in Governance

ICT in governance means using Internet, other electronic media buy the central and state governments, by local administrative bodies to improve the efficiency, transparency, efficiency of the government.

ICT in governance can be help:

- Deliver government services efficiently
- E-governance sites enable people to perform various tasks such as filling a form, applying for passport, paying bills, property tax, etc. even sitting at home.

ICT in Business

ICT in business can be used for the following purposes:

- Keep records of the stock
- Prepare accounts and balance sheets
- Maintain database of staff and customers
- E-commerce enables people to buy and sell products online. This service is available 24 x 7.
- E-banking facility helps to make banking transactions at any time of the day .

Impact of ICT on society

ICT has affected the society in both positive and negative way. We have already discussed the use of ICT in various fields.

ICT has divided the society into two groups:

1. Persons who can do their personal and professional work efficiently. They are efficient in using services like, e-banking, e-learning, e-governance sites, etc.
2. People who do not have access to a computer and internet. They also do not have knowledge to use facilities available on the internet.

This has resulted in digital divide, which refers to the gap between people who have access to latest information technologies, like, computer, smart phones, internet, ipad, etc. and have knowledge to use them and people who do not have access to use these devices.

Lets Try It

Discuss the role of ICT in different fields.

Worksheet

1. Name any three latest information technologies.
2. What do you mean by digital divide?
3. How is ICT helpful in education?
4. What is the use of ICT in business?
5. What is the role of ICT in e-governance?

Session 2

ICT Tools

ICT tools are devices that are used in Information and communication technology. For example, computer, smart phone, radio, television, ipad, tablets, etc.

Some of these are discussed below:

Mobile

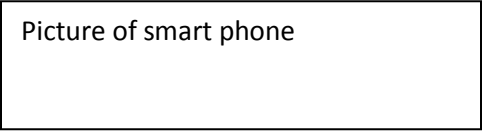Mobile phones are the easiest and simplest way of communication. It is small in size, lightweight and portable. You can stay in touch with your friends, relatives, anytime and anywhere.

Mobile phones are useful in studies. Students can access the internet on their mobile phones and get knowledge on any topic.

You can even create documents, make presentations, etc on your smart phones as you do on your computer.
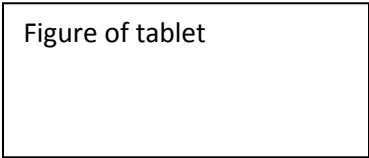
Picture of smart phone

Tablets

Tablets are small personal computers with a touch screen. Tablets allow user to input data and instructions through keyboard or mouse. Learning software called apps can be downloaded onto tablets. You can also watch videos relevant to your subject.
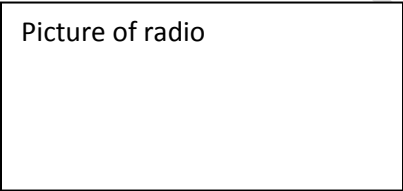
Figure of tablet

Radio

Radio is the oldest tool used to provide entertainment and information to people. You can listen to music, radio shows, etc. on radio.
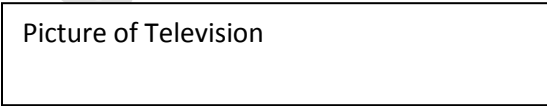
Picture of radio

TV

Television is another important ICT tool. You can watch music, view programs, etc. on television.

Picture of Television

Newspaper

Newspaper is another most important ICT tool. News related to all the issues , national, international, sports, space, etc, are printed in newspapers.

Email
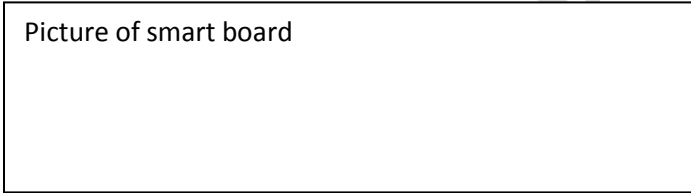
Email is the most common way of communication in today's world. It is the official way of communication. Some of the advantages of using email are:

- You don't have to pay anything extra for sending or receiving email. You just pay for the internet connection.
- You can send bulk mails
- The receiver may not be online when you send the email.
- You can send documents, presentations, images, videos, etc. as an attachment to email.
- When you send an email, it reaches, the receiver at any part of the world in few seconds.

Interactive White Boards (Smart Boards)

These boards a allow to project computer . Also handwritten notes can be taken on the board and saved for later use.
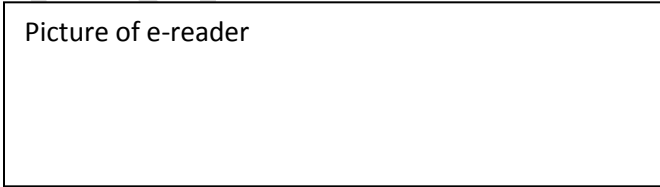
Picture of smart board

E-readers

E-readers are electronic devices that can hold hundreds of books in digital form. E-readers are portable, have a long battery life.

Picture of e-reader

Lets try it

1. Discuss the role and importance of ICT in personal life and at workplace.
2. Discuss use of various ICT tools.

Worksheet

1. Name any three ICT tools.
2. Name the electronic device that can hold hundreds of books in digital form.
3. Mention any three advantages of email.
4. Mention use of tablets.

Session 3

Prepare poster or collage to show the role of ICT at workplace

Session 1
COMPONENTS OF COMPUTER SYSTEM

A computer is an electronic device that has devices to enter data, store data and process raw facts and figures according to the given instructions and give the desired result on an output device.

Data: Data refers to raw facts and figures. For example, 123, "English", etc.
Information: Information refers to processed data. For example, total marks and percentage of a student

A computer system comprises the following components:

- **Computer hardware –** Physical parts of a computer such as Input devices, output devices, central processing unit and storage devices are called computer hardware.
- **Computer software** – Software are the programs or applications that run on computer. For example, MS Word, MS PowerPoint, Operating systems, etc.

Computer hardware

The physical components of a computer system are called hardware. A computer basically consists of following physical components:

- Input unit
- Processing unit
- Storage unit
- Auxiliary storage
- Output unit
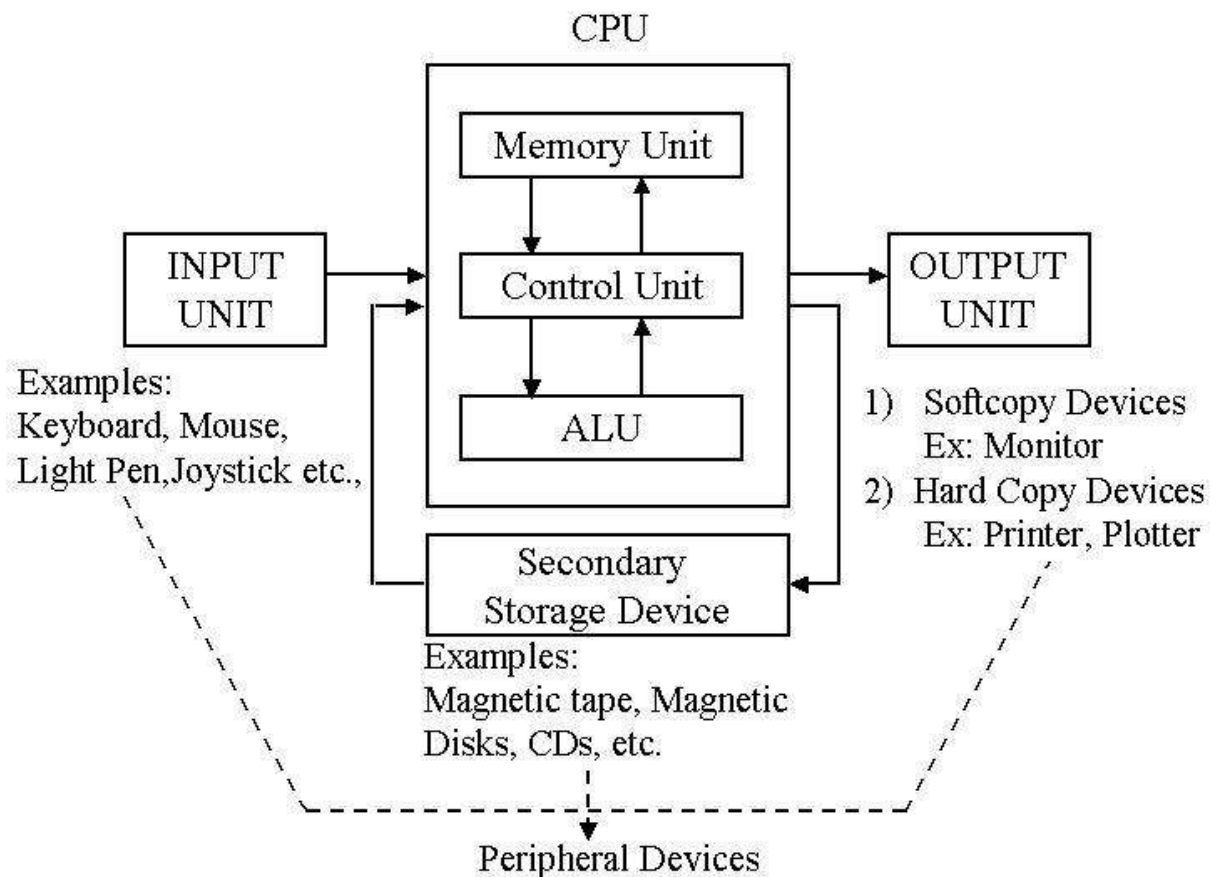
Input devices

Input devices are used for entering data or instructions into the computer.

Keyboard is the most commonly used input device.

Another most important device that is commonly used is the mouse. It is a pointing device that is used to point to an object or menu option on the computer screen.

Scanners are another important hardware devices that are used to convert a picture or text in a book or page in a digital form.

The Central Processing Unit (CPU)

The Central Processing Unit is the brain of the computer system.

Functions of Central Processing Unit are:

- It controls the sequence of operations within the computer
- It gives commands to other parts of the computer
- It controls the use of main memory for storing data and instructions

It consists of the following main units:

- Arithmetic and Logic unit (ALU)
- Control Unit (CU)
- Main Memory Unit

Arithmetic and Logic Unit (ALU)

All the calculations and comparisons are done in this unit.

The ALU performs all the following arithmetic operations:

+ (addition)

- (subtraction)

*(multiplication)

/(Division)

^(Exponent)

The ALU also performs the following logical operations:

< (less than)

<(greater than)

<= (less than or equal to)

>= (greater than or equal to)

<> (not equal to)

Control Unit

The control unit controls the flow of data from the input devices to memory and from memory to output devices. It does not process the data.

When the processing begins, the first instruction of the program is selected and fed into the control section of the primary storage area. It is then interpreted there and then the signals are sent to other components to perform the necessary action.

The next instruction, is then selected, interpreted, and executed. This is continued till all the instructions are processed.

Registers

These are temporary storage areas found in CPU of modern computers.

Lets Try It

1. Identify various components of a computer system.
2. List few hardware devices.
3. List names of few softwares.

Worksheet

1. Give full form of het following:
    a. ALU
    b. CU
    c. CPU
2. Name the unit of computer that controls the flow of data from input device to memory.
3. Name logical operations that can be performed in ALU.
4. Identify the following arithmetic operations:
    a. *
    b. ^
    c. /
5. Which unit of computer is called the brain of the computer?
6. Identify as hardware or software.
    Monitor
    MS Word
    Operating system
    Mouse
    Keyboard
    MS PowerPoint
7. Differentiate between hardware and software.
8. What is the difference between data and information/
9. Name the unit of computer where arithmetic operations are performed.
10. Name any three input devices.

Session 2

Storage Unit

The storage unit consists of the following components:

- Primary storage
- Temporary Storage

Primary Storage

The primary storage is also called the primary memory. It is directly accessible by the CPU. It can be:

- RAM (Random Access Memory)
- ROM (Read Only Memory)

Functions of primary memory are:

- Here data is fed and held until it is ready to be accessed.
- It is used to hold the data being processed and the intermediate results of processing.
- It holds the result of the processing.
- It holds the processing instructions.

Memory Units

Units of computer memory are:- Bit (Binary Digit), Byte (Kilobyte, Megabyte, GigaByte, TeraByte, PetaByte, ExaByte, ZettaByte, YottaByte)

The elementary unit of memory is a bit. A group of 4 bits is called a nibble and a group of 8 bits is called a byte.

One byte is the minimum space required to store one character.

1 Byte = 8 bits

One kilobyte (KB) = 1024 bytes

One Megabyte (MB) = 1024 KB = 1024 x 1024 bytes

One Gigabyte (GB) = 1024 MB =1024 x 1024 x 1024 bytes

One Terabyte (TB) = 1024 GB = 1024 x 1024 x 1024 x 1024 bytes

One petabyte (PB) = 1024 TB=1024 x 1024 x 1024 x 1024 x 1024 bytes

One ExaByte (EB)=1024 PB=1024 x 1024 x1024 x 1024 x 1024 x 1024 bytes

One ZettaByte (ZB)=1024 EB)= 1024 x 1024 x 1024 x1024 x 1024 x 1024 x 1024 bytes

Random Access Memory (RAM)

RAM is used to hold active information of data and instructions. Information in RAM is stored in random order, that is why it is known as Random Access Memory.

It is a temporary memory. When power supply is switched off, the information stored in RAM is lost, so it is also known as volatile memory.

It is also known as read/write memory as information can be read from RAM and also written onto it. Information stored in RAM may be erased or written over.

Read-Only memory (ROM)

ROM is a part of computer's main memory. It is used to store the instructions provided by the manufacturer to check basic hardware and to load operating system from appropriate storage device.

The storage of data and instructions in ROM is permanent until it is written over.

The contents of the ROM are not lost when power supply is switched off. That is why, ROM is called non-volatile memory.

Secondary Storage

Since the computer's main memory stores the data and information temporarily, the secondary memory is used. Secondary memory is sued to store bulk of information.

The information stored in secondary memory is not lost, so it is also a non-volatile memory.

Secondary storage devices include hard disk, CD, DVDs, Pen drive , etc.

Output Unit

The output unit comprises of devices such as Monitor, Printer, speaker, etc. to display information to the user.

Lets Try It

1. Name few secondary storage devices.
2. Name a few external storage devices.

Worksheet

1. Give full form of the following:
    a. RAM
    b. ROM
2. Which memory- RAM or ROM is called the volatile memory and why?
3. Name the parts of primary memory.
4. What is one byte?
5. Complete the following:
    a. 1 KB=_____Bytes
    b. 1 GB = _____ bytes
6. Arrange in increasing order of storage capacity.
   TB, MB, GB, KB, Byte
7. Name the memory which is also known as read/write memory.
8. Name few output devices.
9. Write three functions of primary memory.
10. Name the elementary unit of memory.

Session 3

Software

Software is a set of computer programs that perform a particular task.

Following are the categories of softwares:
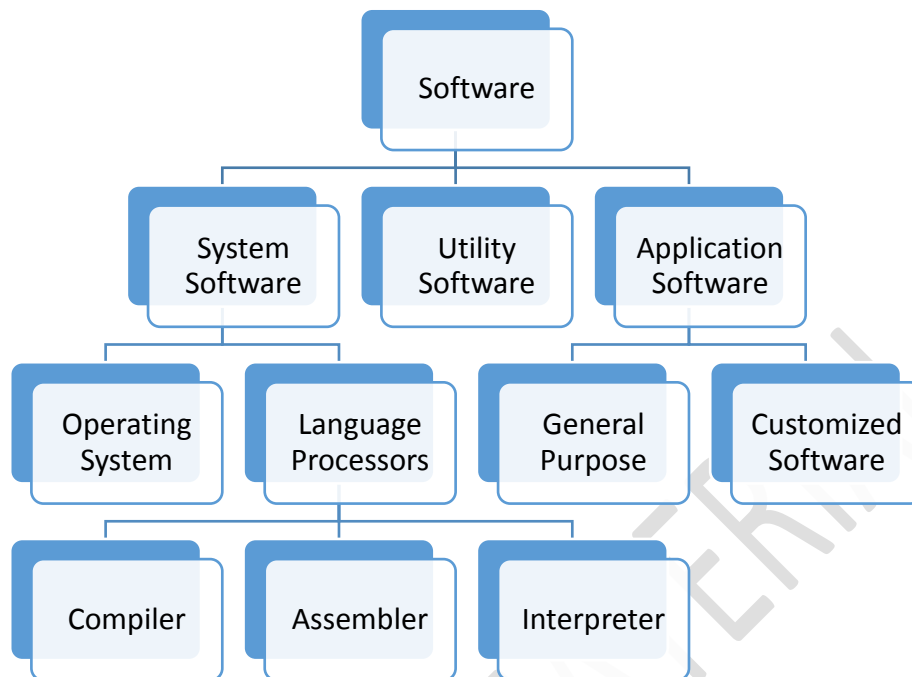
System Software

System software is a set of one or more programs designed to control the operation of a computer system.

Operating systems and language processors come under the category of system software.

Operating System

Operating system is a master control program that runs the computer. When the computer is switched on, operating system is the first program loaded into the computer's memory.

Examples of operating system are Windows, UNIX, MS-DOS, Mac OS, Solaris, etc.

Language Processors

A computer understands instructions in the form of machine code, i.e., 0 and 1. The programs are written in English like high level language called source code. The source code must be converted into machine language in order to be executed. The translator program that is used to convert source program

written in high level language to machine code is called language processor. The program translated into machine code is called the object program.

Language processor is of three types:

1. **Assembler**:- It is a program that translates an assembly language program into machine language.
2. **Compiler**:-It is a program that translates a high-level language program into machine language. For example C++ compiler.
3. **Interpreter**:-It is a program that translates a high-level language into machine language program line by line. For example, Visual basic Interpreter.

Application Software

Application software is a computer program that is designed to perform a certain type of work. This type of software pertains to one specific application. For example, software written to calculate salary of the school employees cannot be used to prepare school result.

Application softwares can be classified as General purpose software and Specific purpose application software.

General purpose application software includes word processing software, like, Microsoft Word., spreadsheet software, like, Microsoft Excel, etc.

Specific Purpose Application software

Specific purpose application software are the softwares that perform a particular task. Examples of specific purpose application software are Accounting management software, Reservation system, Payroll system, etc.

Utility Program

A utility program is used to perform maintenance work on a system or on the components of the computer.

Examples of Utility program are;- anti-virus software, file management programs, etc.

Antivirus software:- This program helps in detecting and removing viruses. For example, Norton antivirus, McAffee virus scan, etc.

File management tools:-These tools help in storing, searching, and sorting files and folders on the system. For example, Windows Explorer.

Compression:- This program helps in compression of large files so that they take less storage space. For example, WinZip.

Disk Management Tools:- These programs include

- **Disk Cleaner**:-This utility scans for the files that have not been used since long. These files may be occupying large amount of space. It prompts the user to delete such files to create more disk space.
- **Disk Defragmenter**:-It rearranges the files and free space on the computer so that files are stored in contiguous and free space is consolidated in one contiguous block. This speeds up the disk access.
- **Backup**:- backup means making a duplicate of the files and data stored on the computer. This program is used to take backup copy of the data. In case the original data is lost, the backed up data can be used.

Lets Try It

1. Identify and name application software(s) installed in your computer.
2. Identify and name anti-virus software installed in your computer.
3. Identify few Utility softwares in your computer system.
4. Discuss different types of softwares.

Worksheet

1. What is the difference between system software and application software?
2. Name any three disk management tools.
3. Name the program that rearranges the files and folders in the computer system.
4. Give example of file management tool.
5. Name the types of language processors.

Basic Computer Operations

Session 1

As we all know that computer is a very useful machine. It is very important to properly start the computer and after finishing the work, it needs to be properly shut down. If the power of the computer is switched off, and the files you were working on were not closed, the files and the operating system may get corrupted.

Using a Computer (Procedure for starting and shutting down a computer)

Starting a Computer

1. Press the Power button of the computer.
2. When you turn on the computer, lights on the keyboard may blink for a while and you may hear a beep sound. This indicates that the Power-on-self text (POST) has started. POST is a sequence of tests that determines if the computer hardware like, keyboard, RAM, disk drives, etc are working correctly. The monitor may display a message, if a component is not functioning.
3. After the POST, the computer starts the operating system. The process of bringing up the operating system is called booting. The computer knows how to boot because the instructions of booting are built into a chip called BIOS (Basic Input/ Output System).
4. When the operating system starts, say Windows 7, Windows welcome screen appears. The first screen that appears after Windows 7 is successfully loaded is called desktop.
5. Now, you can perform various tasks on the computer.

Shutting down the computer

Before shutting down the computer, you need to save and close all the files and applications. You can completely turn off the computer, you can make it sleep or hibernate it.

To turn off the computer completely, click the Start button, and then click Shut Down.

If you choose Sleep option, the system uses very little power, the computer starts up faster and you are back to where you left. You can use sleep option if you going away for a short time. Laptops and tablets goes to sleep when you close the lid or press the Power button.

If you select Hibernate option, system uses less power than Sleep. When you start the PC again, you are back to where you left.

Operating System

An operating system is the basic software that controls the computer. It serves as an interface between the user and the computer.

Some of the functions of Operating system are:

- It manages all the devices of a computer and keeps track of the status of the device, whether it is busy or not.
- It also checks whether the device is functioning properly or not.
- It also controls software resources of the computer.
- t manages the computer memory and keeps track of which memory space is in use by which program and which space is free.
- It manages the structure of the files and directories on a computer system.
- It keeps track of the amount of disk space used by a specific file.
- It allows you to create, copy, move and delete files.

Types of Operating Systems

Some commonly used operating systems are:

DOS

DOS (Disk Operating System) is an operating system for a personal computer. Early computers were able to run one program at a time. It had a command line interface in which a user has to remember the commands to run the program and do other operating system tasks. For example, the DOS command, *dir,* will display the list of files in the current directory.

Windows

It is an operating system developed by Microsoft. Some popular versions of Windows operating system are- Windows 98, Windows, 2000, Windows XP, Windows 7, Windows 8, and Windows 10.

Linux

It is an operating system designed for personal computers. It is a free and open-source software, which means it can be modified and redistributed.

Mobile operating Systems

Some popular operating systems that are used in mobile phones are:

Android It is an operating system used in mobile phones and tablets. It is owned and maintained by Google and is an open-source operating system. The android releases were nicknamed after sweets or dessert items like Cupcake (1.5), Donout (1.6), Éclair (2.0), Frozen Yogurt (2.2), Honeycomb (3.0) and Jelly Bean (4.1), Kitkat (4.4), marshmallow (6.0),

Symbian It is an operating system used in mobile phones. Symbian was developed and sold by Symbian Ltd. It is primarily used by Nokia. It is also used by Japanese mobile phone manufacturers for handsets sold in Japan.
Windows Phone It is a mobile operating system developed by Microsoft for smart phones and pocket PCs. In February 2010, Microsoft announced the Windows Phone, the successor to Windows Mobile.

Windows 8.1 is the latest release of this operating system.

iOS It is a mobile operating system developed by Apple Inc. for iPhones, iPads, and iPods. It is supported only by Apple hardware. iOS 9 is the latest release of this operating system.

Session 2

Let us first study about Windows 7 Operating system.

Windows 7 operating system

Windows 7 is an operating system developed by Microsoft and is used on personal computers.

After loading Windows 7, the first screen that appears on the monitor is called **desktop**. From the desktop, you can access different components of Windows 7.

By default, Windows 7 has a picture for the desktop background. This is called **wallpaper**.

Small pictures on the desktop are called **icons**. These icons represent files, folders, applications, etc. At the bottom of the desktop is a long bar called the Taskbar. To the left of the taskbar is the Start button.

Components of Windows 7 Desktop are shown below:

Fig: Desktop

Let us discuss some special icons on the Desktop – Computer, Documents, My Network Places, and Recycle Bin.

Computer

It displays all the storage areas of the computer . Through the Computer icon, you can access all drives, files, and folders on the computer. When you double-click Computer icon, a window shown below appears on the screen. In the following figure, you can see that hard disk has three partitions-Local Disk (C:), Local Disk (D:) , and New Volume (F:) . Also a removable DVD Drive (E:) is there in the system.

Fig Computer Window

To view the contents of any item, e.g., a particular hard disk drive partition, double-click its icon.

Documents

This contains area to store files on the computer.

My Network places

It contains information about the interconnected computers.

Recycle Bin

Files and folders deleted by the user are stored in the Recycle Bin. From Recycle Bin, you can retrieve files or folders deleted by mistake.

Permanently Deleting Files

You can permanently delete the contents of the Recycle Bin in any one of the following ways:

Right-click the **Recycle Bin** icon and then click **Empty Recycle Bin**.

OR

1. Double-click the **Recycle Bin** icon.
2. The **Recycle Bin window** appears.

3. Click **Empty the Recycle Bin**.

Restore Files/Folder from Recycle Bin window

To recover a file from the **Recycle Bin,** right-click the file, and then click **Restore**.

Or

Select the file and click **Restore this item**

Taskbar

Taskbar is the long horizontal bar present at the bottom of the screen. To the left is the Start button. Right of the taskbar contains Date/Time. You can also see icons of active applications and some shortcuts on the Taskbar

The main components of Taskbar are shown in the following figure:

Fig Taskbar

Start button It is located on the left of the taskbar. Clicking the Start button opens the Start menu and provides access to programs and features, like:

Shut Down:- allows the user to turn off the computer

All Programs:- Provides access to all the installed programs and applications. To start an application, just click it.

Search Box:- This allows the user to search a file or a folder or run executable files.

Control panel:- This allows the user to change various settings.

Practical

1. Start your computer.
2. Name the operating system on your computer. _____.
3. Observe the icons on the desktop. Identify Computer icon, Recycle Bin, Start button, taskbar, etc.
4. Double-click Computer icon.
5. Write down the partitions of the hard disk.

   _____

   _____

   _____

   _____

6. Identify removable disks on the computer.

   _____

   _____

   _____

   _____

7. Double-click Recycle Bin.
8. Restore any one file.
9. Empty Recycle Bin.
10. Click Start button.

11. Write names of any three programs/applications installed in your computer.

    _____

    _____

    _____

12. Change the Wallpaper using following steps:
    a. Click **Start ➤ Control panel**.
    b. Under **Appearance and personalization**, click **Change desktop background.**
    c. In the window that appears, select the desired picture.
    d. Click **Save Changes** button.

Unit 3 Identify various Peripheral devices

Session 1

Peripheral devices

A peripheral device is an internal or external device that connects directly to a computer but does not contribute to the computer's primary function, such as computing. It helps end users access and use the functionalities of a computer.

For example, a computer mouse, keyboard, monitor, printer and scanner.

Different peripheral devices, fall into following three general categories:

1. Input devices, such as a mouse and a keyboard
2. Output devices, such as a monitor and a printer
3. Storage devices, such as a hard drive or flash drive

Input Devices

Keyboard

A keyboard is a device used to enter data directly into the computer. First six alphabets of first row of alphabet keys contains alphabets Q, W, E, R, T, Y. That is why it is known as QWERTY keyboard.

Picture of Keyboard

Different types of keyboards are available but keyboards with 101 keys is the most popular one.

Different types of keys of the keyboard are:

- **Alphanumeric keys** are used to type alphabets, numbers and special symbols like $, %, @, A etc.
- **Special keys** such as Shift, Ctrl, Alt, etc. are used for special functions.
- **Function keys** such as Fl, F2, F3 etc. are used to give special commands and these commands may be different for different softwares.

- **Cursor Movement keys.** These keys are used to move the cursor in a document. These include the arrow keys, PAGE UP, PAGE DOWN, etc.

Numeric keypad. The numeric keypad is present to the right of the keyboard and can be used to enter numbers quickly.

Mouse

A mouse is a pointing device and is used to move mouse pointer on a computer monitor. When you move the mouse on a flat surface, the mouse pointer on the computer monitor moves in the direction of the mouse's movement.

Picture of mouse

A computer mouse may be connected to a computer using wire and connected to PS/2 or USB post. Some of the computer mouse are wireless.

A mouse usually has two buttons with a scroll wheel in the center.

When you move the mouse, the mouse pointer moves in the same direction on the screen.

Joystick

A Joystick is used to play games on the computer. It consists of a vertical stick that is moved to control objects on the computer screen.

Picture of Joystick

Light pen

A light pen is a pointing device. It is used to draw directly on the screen. It can also be used to point to an object or option directly on the computer screen.

Picture of Light pen

Graphics Tablet

A graphic tablet is used to create digital drawings by hand drawing image on a flat surface called the tablet using a special pen. This special pen is called stylus.

Picture of Graphic Tablet

Scanner

A scanner is a device that is sued to convert text or image into a digital file.

Picture of a scanner

Barcode Reader

A barcode consists of a combination of thick and thin vertical lines found on products. The bar code identifies the product and the manufacturer. These barcodes can be read by a device called Barcode reader.

Picture of barcode Reader

Microphone

A microphone is a device used to record your voice and save it in the form of a digital file in the computer.

Picture of Microphone

Lets Try It

1. **Use any Typing tutor software to practice typing and learn using different keys of the keyboard.**

Tux Typing tutor is a software used to teach typing to children and even adults. Regular practice will help you to increase typing speed and reduce the mistakes while typing.

Before learning typing, you should learn how to place your fingers properly on the keyboard.

Before typing we should always place our fingers on the second row of alphabet keys.

Proper Finger Placement on the Keyboard

Fig Placing fingers

The figure shown below shows which figure is used for which key.

Fig

a. **Start Tux Typing**
b. The **Tux Typing** main window appears (Fig   ).

Fig Tux Typing main window

c. Click **Lessons**. The **Lessons mode** window appears (**Fig**   ).

Fig Lessons mode window

d. A number of lessons are available. Start from lesson 1 and then try other lessons.

2. **Recording your voice using Sound Recorder in Windows 7.**
   a. Make sure that microphone is properly attached to the computer.
   b. Select **Start ➤ All Programs ➤ Accessories ➤ Sound Recorder**.
   c. The Sound Recorder window appears (Fig)

Fig Sound recorder

d. Click **Start Recording** button to click start your recording. (Fig)

Fig Recording

e. To finish recording, click Stop Recording button.
f. The Save As dialog box appears (Fig)

Fig   Save As dialog box

g. Select the drive and folder. Type the filename and click Save button.
3. Go to a grocery shop/ store. Ask the accountant to demonstrate the use of barcode reader to read the barcode. Note what happens/appears on the computer screen when he clicks the barcode.

Worksheet

1. A peripheral device can be _____ or internal.
2. Different categories of peripheral devices are:

   _____

   _____

   _____
3. Name the device used to enter data directly into the computer. _____
4. Name the device used to play games on the computer. _____
5. What is the name given to thick and thin lines on any grocery item called? Name the device used to read these lines.

   _____

   _____

Session 2

Output Devices

Computer Monitor

A computer monitor, resembles a TV screen and can display both text and images. The output displayed on computer screen is called the soft copy.

The size of a computer monitor is measured in diagonal length of the screen. Computer monitors are available in different sizes, 14 inch, 15 inch, 17 inches, etc.

Picture of computer monitor

Printer

A printer is a device used to print the files stored on the computer on paper. The output produced on paper is called the hard copy.

Commonly used printers are:

- Dot matrix printer
- Inkjet printer
- Laser printer

Dot matrix printer

It is the most commonly used character printer, i.e, it prints one character at a time. Most of the dot matrix printers are bidirectional, i.e., they print one line of text from left to right and then the next line from right to left.

```
Picture of Dot matrix printer
```

Inkjet Printer

These printers use a continuous stream of ink drops to print on paper.

```
Picture of Inkjet printer
```

Laser Printer

These printers print one page at a time and are very fast.

> Picture of laser printer

Plotters

A plotter is a device used to print large size engineering and architectural drawing on a paper or a polyester film.

> Picture of plotter

Speaker

A speaker is a device used to listen sound from the computer.

> Picture of speaker

Lets Try It

1. Discuss various input and output devices and their uses.
2. Attach a speaker to your computer and listen to the sound file you created in the previous session.
3. Identify with the help of your teacher, the type of printer in your computer lab.

4. Teacher can open any document on computer and demonstrate to the students how to take a print out.

Worksheet

1. Name the device used to listen sound from the computer.
2. Name the printer that prints one page at a time.
3. Differentiate between hard copy and soft copy.
4. Name the printer that prints one character at a time.
5. Name the printer that uses a continuous stream of ink drops to print on paper.

Session 3

Storage Devices

CDs/DVDs

Compact Disc (CD) and Digital Versatile disc (DVD) are optical media that is used to record data from computer. Data can then be read from the CD. To read data from the CD, we need to have a CD Drive in our computer.

There are two variations of CD-

*   CD-R and
*   CD-RW

In CD-R, data once recorded can be read only and cannot be erased. In CD-RW, previously recorded data can be erased and new data can be recorded.

Both CD and DVD look same in appearance but DVDs can hold much more data than CDs.

To read data from the DVD, we need to have a DVD drive in our computer system. We can read a CD using DVD drive but we cannot read a DVD using CD drive.

A CD can store upto 700 MB of data whereas a DVD can store 4.7 GB of data.

Picture of CD and DVD

Pen Drive/Flash Drive

A pen drive is a very small and portable device used to store data from a computer. It can also be used to access and transfer data. Pen drives are available in various capacities- 1 GB, 8 GB, 16 GB, 32 GB, etc.

Picture of Pen Drive

External hard disk

An external hard drive is a storage device located outside of a computer that is connected through a USB cable or wireless connection. An external hard disc has a high storage capacity compared to flash drives and are mostly used to take backup of computer files and other important data. External hard disk of capacity upto 1TB and 2TB are available.

Picture of external hard disk

Let's Try It

1. Discuss the need of secondary storage devices.
2. Discuss use of various secondary storage devices.
3. Insert a CD in CD/DVD drive in your computer system. Teacher should demonstrate how to view the contents of the CD/DVD?
4. Open Paintbrush software. Draw any figure using tools available in Paintbrush. With the help of your teacher, save the file in your pen drive.

Worksheet

1. Name any two external storage devices.
2. Which has more capacity- CD or DVD?
3. If you have to take your project from home to school in a digital form, which storage device is best suited for this purpose/
4. What is the use of external hard disk?
5. Which device has more storage capacity?
   a. 16 GB pen drive or a CD
   b. 16 GB pen drive or 1 TB hard disk

Unit 5 – Internet and its Applications

Internet is a network of networks. It is an interconnection between several computers of different types belonging to various networks all over the world. The Internet is a medium of communication and exchange of information.

Exploring information on the web is called web surfing.

Some common terms related to Internet

WWW (World Wide Web)

WWW stands for world wide web is a network of world wide computers.
Web site

A web site is a collection of two or more related web pages. Web pages of a web site are linked together through hyperlinks.

Web page

An individual page of a web site is called a web page. It is written in a special computer language called HTML (Hyper text markup Language).

There are two types of web pages:

- Static web pages
- Dynamic web pages

Static web page is a web page in which all the information is presented to the user exactly as it is stored. For example, any tutorial web site.

Dynamic web page is a web page which shows different content each time you visit the page. For example, shopping web sites.

Home Page

The first web page of a website is called the home page.

Protocol

Protocol is a set of rules to be followed while communicating or transferring data on internet.

HTTP (Hyper Text Transfer Protocol): This protocol defines the rules to be followed while transferring the information. The information may be in the form of text, images, videos, etc.

This is the most commonly used protocol over world wide web.

HTTPs is the secured version of http. It ensures better protection against data theft.

URL (Uniform Resource Locator)

Each web page has a unique address which identifies its location on the network. This unique address is called the URL.

The URL has two parts:

- Protocol identifier: It identifies the name of the protocol used.
- Resource name: It specifies the complete address to the resource on the Internet.

For example,

http://www.mywebsite.com

here, http is the protocol

www.mywebsite .com is the resource name

Web Browser

A web browser is a program that is used to view the web sites. It acts as an interface between the web server and the world wide web. Some commonly used web browser are – Google Chrome, Microsoft Internet Explorer, Microsoft Edge, opera, etc.

A web browser performs the following tasks:

1. It connects to the web server and sends a request for the information.
2. It displays the information on the computer.

Applications of Internet

Various services provided by internet are:

- Email
- Chatting
- Video conferencing
- Social networking
- E-learning
- E-shopping
- E-reservation
- E-banking, etc.

E-mail (Electronic mail)

E-mail stands for electronic mail. It is a message in an electronic form that is sent or received from one computer to another. Some of the advantages of e-mail are:

- It is fast and easy to use.
- It is the fastest means of communication. A message can reach any part of the world in a fraction of a second.
- You can send text message, pictures, sound messages across the globe.
- Message can consist of few lines or more. It is not charge by weight.
- You don't have to pay anything extra for the sending or receiving the email. You just pay for the internet connection.
- You need not be on your computer or online to receive the e-mail.
- E-mails are eco-friendly as no paper is used.
- You can also send bulk messages to a large number of people at the same time.

To send or receive email messages, you first need to open your email account and have your email address.

Email address

An email address has two main parts:

- User name
- Host name

These two parts are separated by @ symbol.

For example, consider the following email address:

myemail@gmail.com

In the above email address, **myemail** is the user name and gmail.com is the host name.

Email program

An email program enables you to send and receive email messages. Some of the popular email programs are:

Gmail.com

Yahoo.com

Rediff.com

To send an email, you first open your email account. Then click Compose option. The following window opens.
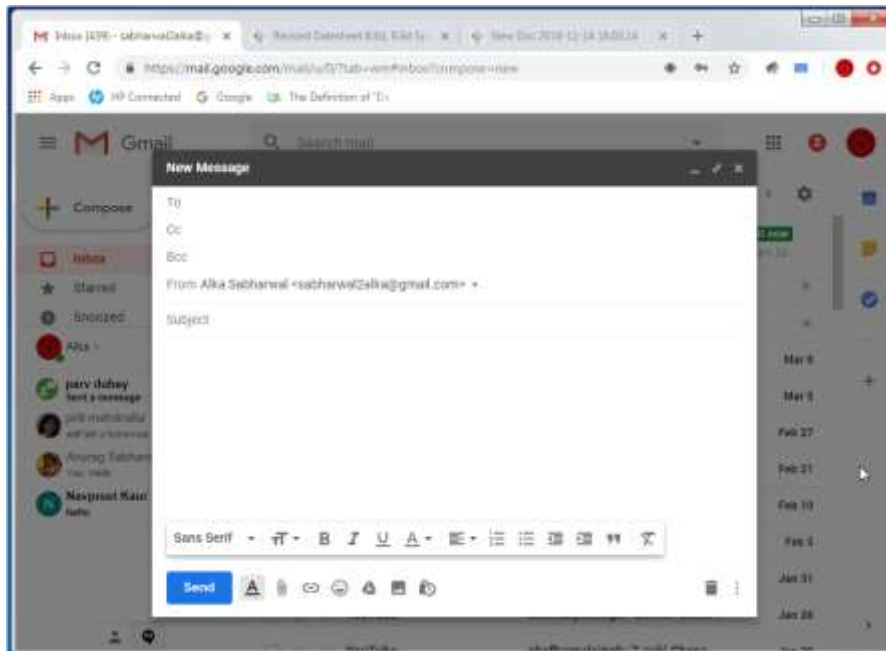
Some of the options while composing an email are:

To This option allows you to write the email address of the person you want to send the message to.

Cc It stands for carbon copy. This option allows you to send the same message to several persons at the same time and every recipient will know all the recipients of this mail. The multiple email addresses are separated by semicolon.

BCc It stands for Blind Carbon copy. This option allows you to send the same message to several persons at the same time but a recipient will not know who the other recipients of this message are.

Subject This option allows you to write in few words about the content of the message.

Attachment This icon helps you to attach files such as, documents, presentations, images, videos, etc with your email message.

Introduction to Social media

Social media refers to different online communications channels that are dedicated to community-based input, interaction, content-sharing and collaboration.

Blog

A blog is a website which is maintained by an individual. The person who creates and maintains the blog is called the blogger.

Twitter

Twitter is a social networking service that allows you to send short messages to communicate with your friends or followers. You can send short messages of upto 140 characters, which are called tweets. Twitter is sued by people to inform others about the latest happenings in their lives.

Facebook

Facebook, founded by Mark Zuckerberg, is the most popular social networking site. To use Facebook, you need to first create an account. Then add other users as friends. You can then exchange messages, pictures, etc. with your friends on the Facebook.

Companies also setup their own Facebook pages to connect and communicate with customers and clients.

Youtube

You tube allows people to watch and share self-created videos.

Companies are also using You tube to launch and advertise their product.

WhatsApp

WhatsApp is a free messenger app for smartphones. WhatsApp uses internet to send text messages, pictures, audio or video. You can make audio and video call to any person having WhatsApp in their smartphone, in any part of the world. You don't have to pay anything extra for sending message or making calls. You just pay for the internet connection.

Digital India

Digital India is a campaign launched by the Government of India in 2015, to ensure that the Government's services are made available to citizens electronically by improved online infrastructure. It also aims at increasing Internet connectivity and making the country digitally empowered in the field of technology.

Lets Try It

1. Discuss various applications of Internet.
2. List names of various Internet browsers
3. Demonstrate how to search information on a website.
4. Demonstrate how to create an email account, compose and send a message and also open the received message.
5. Discuss various social media.

Self-Management Skills – I

na kashchit kasyachin_mitram, na kashchit kasyachidripuḥ |
vyavahāréṇa jāyante, mitrāṇi ripavastathā ||
No one is anyone's friend, no one is anyone's enemy.
Friends and enemies are born by your conduct.

Hitopadéshaḥ (Mitralābhaḥ 72)

Self-Management refers to management of or by oneself; taking of responsibility for one's own behavior and well-being. It also means managing yourself with the people and resources around you. It aims at conducting oneself for the greater good of the individual, family and the society. A Self-managed person not only manages himself well but also behaves responsibly towards people around. Self- Management is needed by everyone around us and it is needed in all stages and walks of life. Self-managed person is like a tree who is taking care of itself and is also helping others to lead a comfortable life.

The reasons behind promotion of self-management are as follows:

1. We do not want the individual to be dependent on anybody else, when life poses dilemmas or difficult situations.
2. Self-management instills self-confidence in individual to deal with his or her life and develop ways to tackle his or her own problems.
3. Self-management provides a long term and sustainable mechanism of handling personal life.
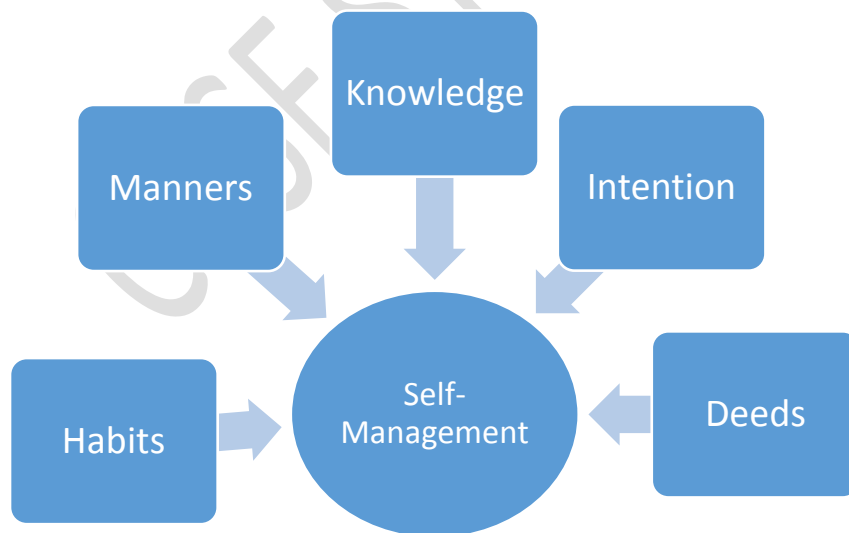
Fig 1: Exhibitors of Self-Management

Self-management is exhibited by our habits, manners, knowledge, intentions and our deeds. Good habits like brushing teeth, taking bath, eating balanced diet and getting up and sleeping at right time every day, helps us maintain good health and physique. Good manners like being kind and friendly, helping others, being a good listener, respecting, sharing, saying please and thank you, are key to maintaining good relations with others. Being responsible for knowledge acquisition and learning increases self-esteem and develops an inquisitive mindset and curious approach. Good intentions guide us to do the right things. They help us identify the right path and right approach to handle situations. A good deed done to help others is worth more than a million good words spoken. All these elements together exhibit, how well an individual manages himself.

Positive results of self-management

Parents, teachers and guardians are not always along the child to guide him/ her. In that case principles of self-management guide the individual day in and day out, on how to respond to the environmental forces. These environmental forces for students can be the class schedule, assignments, competitions, exams, different students and their behavior etc. Students can sail through various situations in life comfortable by taking following benefits from self-management…
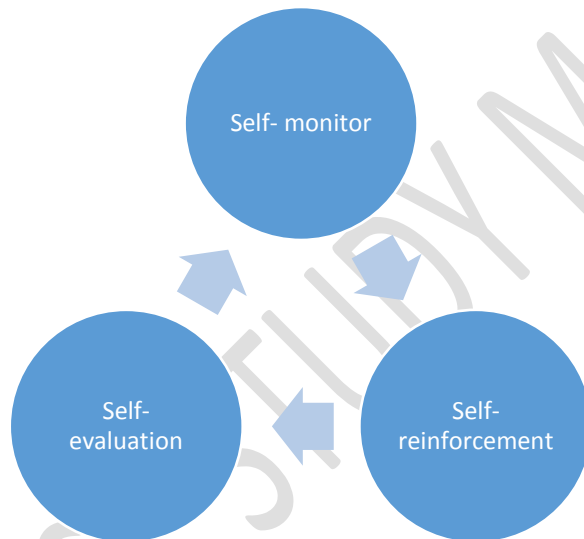
- It guides individuals to self-monitor their conduct and behavior
  Students, once become aware that they are responsible for their behavior, they become pro-active.
    o Prepares individual to complete the task independently.
    o Instills ownership to the task and the consequences amongst individuals.
- It helps in self-evaluation
  Self-management makes individuals realize that they need to do course correction by themselves if they do not get desired goals. Once the goals are achieved as desired, it also motivates individuals.
    o Helps in setting individual goals
    o Directs evaluation of performance, objective resetting and enhances self-esteem.
- It leads to self – reinforcement of positive behavior

Self-management reinforces appropriate behavior of students as per the time, situation and people involved. It motivates individuals to take up right things and refrains from getting indulged into negative things, keeping long term consequences in focus.
- o Enforces self-learning for goal achievement
- o Self-reliance is enhanced and which reinforces the behavior.

Self-management skills

Following are the self-management skills that individuals should possess to enjoy the fruits of self-management.

- Self Confidence
  It refers to trusting one capabilities and potentialities to achieve the necessary goals, objectives and challenges in life and being worthy of leading a happy life.
    - o Initiating a new activity, like writing a blog can boost your confidence
- Stress Management
  It refers to a state of psychological tension and discomfort originating from unforeseen, difficult, confusing and challenging situations.
    - o Doing homework well in time, will give you more free time which you can enjoy without the shadow of homework hanging on you.
- Independent Working
  This typically means is when an individual is assigned a task(s), he/she takes ownership and doesn't require constant assistance or supervision to complete that task(s).
    - o Preparing for a test, a competition or learning something new on your own shall help enhance self-reliance.
- Team Player
  A person who conforms well with norms of a team and contributes to the attainment of the common goals in an efficient and effective way is called as a team player.
    - o While doing a group project, you can develop your team work skills as well as you can learn from someone else
- Time Management
  It is conscious effort to prioritize task according to the time at hand to increase productivity, efficiency and effectiveness.
    - o While studying, you need to plan for sports and relaxation activities. Proper time management for all of them will leave you with more positive energy.
- Self-Motivation
  Motivation is defined as a driving force responsible to do something. The students who are motivated to achieve their academic goal, their future is much better than others.
    - o Making lists and study notes in advance
- Personality management
  General neatness, grooming, appropriate dressing, apt verbal and non-verbal communication are components of good personality.
    - o Dressing in a prim proper way for school, friend's place or for playground creates good and favorable impression.

SELF-CONFIDENCE

Realistic belief and trust of an individual in one's own judgement, capabilities and worthiness is self-confidence.

Factors that help in building self confidence

- Social
  Interactions with family and social environment, like friends, relatives, teachers and media influences self-confidence of individuals. Development of confidence on self is a process which results from the experiences of individuals while interacting with others.
- Cultural
  Cultural factors comprise of values, beliefs and customs. Indians give higher importance to family values, believe in the philosophy of "Vasudhev Kutumbhkam" and follow custom of celebrating Diwali. Conforming to cultural values, beliefs and customs enhances self-confidence.
- Physical
  Physical self-efficacy, physical activity and social physique anxiety are found to be influencing self-confidence of individuals. Physical activity is found to be directly related to self-confidence. Physical self-efficacy refers to physical potential to complete a given task. Social physique anxiety is a concern amongst individuals about perceived evaluation of one's physical self by the society.

Self-confidence building tips

Mind is like a fertile land, if you do not plant good thoughts there, weeds are bound to grow.

- Getting rid of negative thoughts
  Going away from negative thoughts takes individuals closer to a peaceful positive mind. To travel away from negative thoughts, individuals need to involve themselves in an activity – take a walk, draw, sing, dance, chat, watch, read or talk.
- Thinking positively
  Positive thinking brings brain to a peaceful stance and increases productivity and performance. When individuals start thinking positively, they feel happy from within and their self-confidence boosts up.
- Staying happy with small things
  An individual who is full of gratitude for every small blessing in his life feels contended. Being thankful towards people and the world, instills confidence in individuals.
- Staying clean, hygienic and smart
  Personal hygiene is the first key to a confident person. Keeping hair, teeth, fingers, body and skin clean and well maintained is an easy and effective way to be at best.

- Chatting with positive people

Interacting with positive people brings forth a fresh and progressive perspective to life. People in similar stages of life go through similar issues. Some positively handle these situations, and interacting with them shall help boost confidence.

Lets' do it

Hands on exercises to understand the concept better

2 sessions

Session A. Identification of self-management Skills(Strength and Weakness Analysis)

Strengths	Weakness	Steps taken to overcome weakness	Steps planned for overcoming weakeness

Session B. Skit on building self confidence

     a. Using positive metaphors/words
     b. Positive stroking on wake up and before going to bed
     c. Helping others and working for community

Suggested topics:

     a) The day my mother/ parents/teacher felt proud of me
     b) One beautiful/memorable day of my life

ENTREPRENEURIAL SKILLS

Introduction

A basic question arises as to who can be a successful entrepreneur? What are the skills required by an individual to make him/her a successful entrepreneur? To answer this question it is important to understand the concept of entrepreneurship. If someone wants to start a business it becomes essential for that individual to possess specific skills like creativity, leadership attributes, social skill etc. But before we see in detail the skills an entrepreneur should possess, let us first understand the concept of a business. Whole idea here is to understand the sources of business and its relationship with entrepreneurship.

What is a Business?

A business can be understood through different means but the basic features of any business are remain the same and they are as follows:

1. Business is a trade-related activity.
2. It involves the purchase and sale of goods or services.
3. Business is done to earn profits and therefore it is referred to as a source of income.
4. Business is mainly run to maximise profits by creating value for customers through goods or services.

TYPES OF BUSINESS

There are different types of business engaged in different sectors of the economy. Broadly they can be classified as follows (AccountingVerse, 2018):

1. **Service:**
   These are the businesses which deal in providing of services e.g. banking, transportation, accounting, education, healthcare, insurance etc.

2. **Manufacturing:**
   These are the businesses which deal in the production of goods. Production of goods requires the conversion of raw material, labour, capital and other resources into the finished goods. These finished goods are then offered to the end-consumers e.g. Apparels and accessories, automobiles, spare parts etc.

3. **Merchandising:**
   These are the businesses that do not produce the goods themselves but purchase the goods for selling it to end-consumers. They act as the link between the producers and consumers. Some examples of such businesses are retail stores, departmental stores and distributors.

4. **Hybrid:**

Hybrid businesses are the mix of two or more types of businesses. They are engaged in service as well as manufacturing business. They neither offer pure intangible nor pure tangible commodities. For example in the case of restaurants, they offer services in the form of a dining experience and food served is the product.

The features of different types of businesses are given in table 1.

Table 1: Features of different types of businesses

	Services	**Manufacturing**	**Merchandising**
Prime Activity	Provision of service	Production of goods	Buying and selling of goods
Inventory	No inventory.	Three forms of inventory – Raw material, Work-in-progress and Finished goods	Only finished goods
End-products	Intangible	Physical goods (Tangible)	Physical goods (Tangible)
Labour	Skilled professionals and Experts	Skilled and unskilled labourers	Sales person
Location	Close to clients	Where labour and raw material cost is low	Close to end-consumers
Customer demand	Provides services as per the demands of the clients	Produce goods based on demand forecast	Sell the goods produced

(Source: Compiled from different sources)

Activity 1

1. Identify the various types of activities adopted by the businesses in your locality.

2. How does the activities adopted by service businesses differ from those adopted by manufacturing businesses?

FORMS OF BUSINESS ORGANISATIONS

Business organisations are classified under different forms based on their type of ownership as shown in Figure-1.

Figure 1: Forms of business organisations

1. Sole proprietorship:
A sole proprietorship is the simplest form of business organisation with only a single owner. It does not require any registration and can be opened without any legal formalities.

Advantages of Sole proprietorship (Tulsian& Pandey, 2009)

• **Easy Formulation**
• **Full control**
• **Quick Decisions**
• **Flexible Management**
• **Profits**

Disadvantages of Sole proprietorship (Tulsian& Pandey, 2009)

• **Unlimited liability**
• **Limited resources**
• **Lack of stability**

2. Partnership:
A partnership firm is a business entity owned and operated by two or more individuals for the purpose of earning profits. A partnership firm is governed under the Indian Partnership Act, 1932 which states that "Partnership is the relation between persons who have agreed to share the profits of a business carried on by all or any of them acting for all" (Partnership Act). This relationship should be voluntary. Each individual in the firm is called "Partner" and collectively it is called as "Firm".

Advantages of partnership (Tulsian& Pandey, 2009)

- **Resources**
- **Flexible Management**
- **Decision making**.
- **Risk-sharing**
- **Formulation**

Disadvantages of partnership (Tulsian& Pandey, 2009)

- **Dissolution**
- **Conflicts**
- **Implied Authority**
- **Unlimited Liability**
- **Minor**

3. Joint Hindu Family Business

It is a form of a business entity owned and operated by the members of a joint Hindu family. It is governed by 'Hindu Law' and is only prevalent in India. It is also known as 'Hindu Undivided Family Business' or HUF – business. (Tulsian& Pandey, 2009). There are two forms of Joint Hindu family business – 'Mitakshara system' which is applicable to the whole country except Bengal and Assam where 'Dayabhaga System' is prevalent. Under Mitakshara system, any male member born in the family acquires the right of ownership in the ancestral property whereas in Dayabhaga system a son can get the rights only after the death of his/her father (Basu, 2010). A family where all members are descendants of a common ancestor is called a Hindu undivided family. It includes the male members, their wives and unmarried daughters.

Advantages of HUF (Basu, 2010)
- **Stability:** Business is not dissolved in case of death of Karta and next senior-most coparcener takes the place of Karta.
- **Existence:** No registration is required for a HUF business as it arises by the status of its member.
- **Minor:** Even minors can be coparceners as a person acquires the membership in joint Hindu family business by mere birth into the family.
- **Limited Liability of coparceners:** Coparceners of a joint Hindu family business are only held liable for the debts of business up to the limit of their share in the ancestral property. Their personal assets are not charged against the liabilities of the business.

Disadvantages of HUF (Basu, 2010)

- **Unlimited Liability of Karta:** Karta is personally responsible for the debts of business in case the assets of the business are insufficient. His/her personal assets can be used to repay the debts.

- **Implied Authority:** In case of a joint Hindu family business, Karta has the implied authority to bind all members for his/her act. Thus, they have to face the impact of his/her wrongdoings.
- **Female Members:** Female members of the family have restricted rights in the ownership of the business. They are not treated at par with their male counterparts. They can get the ownership only under certain circumstances. However, under the Dayabhaga system, they have more rights as compared to Mitakshara system where they can get the rights on the death of male coparcener.

4. Cooperative Society:

According to the Indian Co-operative Societies Act, 1912, "Co-operative society is a society which has the objective of promoting the economic interests of its members in accordance with cooperative principles. It is a voluntary organisation of individuals to promote a common interest. The minimum number of persons required to form a cooperative society is 10. Cooperative societies can get themselves registered with the Registrar of Co-operative Societies in the State where their registered office is situated (Tulsian& Pandey, 2009). However, registration is not mandatory but a registered society has more benefits than an unregistered society. A co-operative society enjoys the status of a separate legal entity and has perpetual succession and a common seal. A registered co-operative society enjoys the benefits of tax-exemption (Basu, 2010).

Advantages of Co-operative society (Tulsian& Pandey, 2009)

- **Stability:** A co-operative society has a separate identity from its members and therefore has no impact on its working by entry or exit of any member. It has a perpetual life.
- **Limited liability:** The liabilities of the members are limited to the extent of the capital contributed by them. No charge is made against their personal wealth.
- **Open – membership:** Any person can be the member of the society provided s/he shares the common objectives and subscribe to the shares.
- **Easy formulation:** Setting up of a co-operative society is easy as any 10 individuals can voluntarily form the society and get it registered.
- **Social service:** Such societies are formed for providing monetary as well as non-monetary help to its members.

Disadvantages of co-operative society (Tulsian & Pandey, 2009)

- **Inefficient Management:** The management of business affairs of the society lacks efficiency as the members of the managing committee may not have business experience.
- **Absences of Motivation:** Members lack the motive to carry the business efficiently and effectively as there is no direct relationship between efforts and rewards.
- **Conflict among members:** There might be a possibility that groups are formed between the members. This leads to a problem when personal interests take over the common interest of the society.

5. Joint-Stock Company

A Joint-Stock company is a form of voluntary association governed under The Companies Act, 2013. As per The Companies Act, 2013, "Company means a company formed and registered under this/her Act or an existing company. An existing company means a company formed and registered under any of the previous Companies Acts." Hence, it can be noted that the registration of the company is mandatory. A company is an organisation of the individuals or a group of individuals to undertake some industrial, trading or commercial activity with a motive for earning profits (Basu, 2010). Company's capital is fixed under its Memorandum of Association and is divided into a number of shares. A company has a separate legal entity, perpetual life and a common seal. The liabilities of the members of the company can be – i) Limited by shares ii) Limited by guarantee or iii) Unlimited (Tulsian & Pandey, 2009).

There are two kinds of companies – Private Company and Public Company. A private company is a company whose shares are non-transferable and are not issued to the general public. A public company is a company which is not a private company. In public companies, shares are transferable and issued to the general public through invitation. The minimum number of members for a private company is 2 and maximum number is 200 persons whereas in public company, a minimum number of members are 7 people and there is no limit for maximum members (COMPANIES ACT, 2013).

Advantages of a company

- **Pool of resources:** A company can tap on a large number of resources due to its form. It can raise funds either by issuing more shares or by issuing more debentures and hence can invest more in acquiring resources.
- **Limited Liability:** The liability of the shareholders is limited to the number of shares subscribed by them or by the amount of guarantee given by them.
- **Transferability of shares:** In the case of public companies, members can transfer their shares to others which provide liquidity to an investment made by members.
- **Stability:** A company has a perpetual life and its existence is not affected by the death or insolvency of any members.
- **Future growth:** A company has better opportunities for expansion and growth because of a large amount of financial as well as non-financial resources.
- **Effective management:** Companies are led by the individuals who have immense experience in running a business and are highly qualified.

Disadvantages of company

- **Complex Formulation:** Setting-up a company is not an easy job. It requires time and efforts. There are a number of compliances which have to be completed before a company is incorporated.

- **Rigidity:** A company has to function on the exact lines of the objectives decided in its memorandum of association and article of association. Hence, in order to deviate from the path, it has to take consent from its shareholders in its General Meetings.
- **Government interventions:** Since the interest of a large number of people is vested the company, their functioning is monitored by the government.
- **Decision making:** Companies have different levels of management working in a single organisation. This/her creates a hierarchy of communication which often delays the decision

ENTREPRENEUR

The word "entrepreneur" is derived from the French verb 'enterprendre' which means 'to undertake' (Khanka, 2012). The term entrepreneur is used to define a person who undertakes risk to start a business of his/her own. If the business fails, s/he assumes all the risks and if the business is a success then he reaps all the benefits.

Peter Drucker says "Entrepreneur is one who always searches for change, responds to it and exploits it as an opportunity. Innovation is a specific tool of entrepreneurs, the means by which they exploit change as an opportunity for different business or service." (Gordon & Natarajan, 2017)

The meaning of the term entrepreneur has evolved over a period of time. The earliest concept of an entrepreneur was about risk-taking which later evolved to entrepreneurs been seen as organizers. Entrepreneurs were considered as organizers because of the efforts they put in coordinating, organizing and supervising their business ventures. The present-day concept depicts entrepreneurs as innovators. They are seen as somebody who brings something new to the market. They commercialize breakthrough innovations. Therefore, it can be said that an entrepreneur is the one creates something new, organizes production and handle uncertainties and risk involved in running the business (Khanka, 2012).

ENTREPRENEURSHIP

The process of creating business enterprises is called entrepreneurship (Charantimath, 2016). It is the act of establishing and managing a new enterprise while undertaking various risks and rewards associated with it (Khanka, 2012). It involves the way in which an entrepreneur thinks and acts. One of the main aspects of entrepreneurship is to master the art of planning the business (Desai, 2016). Figure 1 depicts the concept of entrepreneurship as given by Desai (2016).

Figure 2: Concept of Entrepreneurship
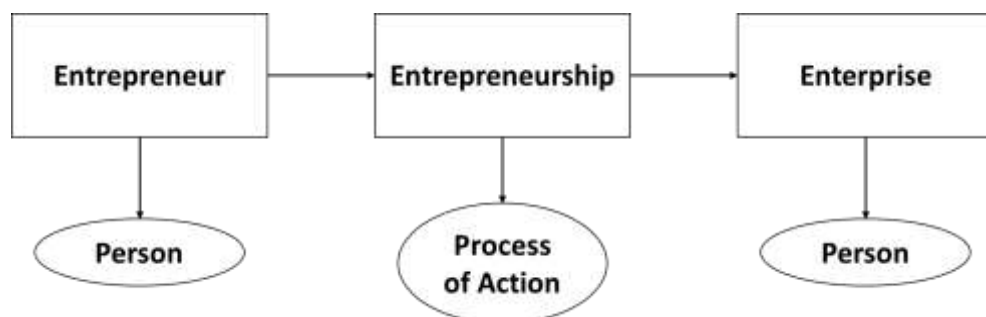
The two elements of entrepreneurship are 'Innovation' and 'Risk-bearing' (Khanka, 2012).

a. **Innovation:** Innovation is the act of introducing something new. It can be a new product, service or a process. Innovation is considered a necessary condition for being an entrepreneur. Every entrepreneur must add something new in order to achieve success. They should innovate to meet the changing demands of their customers in a better manner.

b. **Risk-bearing:** Starting something new always involves risks and uncertainties. The reason for this/her is that the new business may incur profits or losses. It can also be because of the shortage of supplies for production or excessive cost incurred. Sometimes, entrepreneurs miscalculate the demand for their products which can lead to losses. Risk and uncertainties can also be because of external factors like competitors, market crash etc.

The term entrepreneur and entrepreneurship are often used interchangeably but they tend to differ conceptually which is shown in table 1.

Table 1: Difference between Entrepreneur and Entrepreneurship

Entrepreneur	Entrepreneurship
Person	Process
Organiser	Organisation
Innovator	Innovation
Risk- bearer	Risk-bearing
Motivator	Motivation
Creator	Creation
Visualiser	Vision
Leader	Leadership
Imitator	Imitation

(Source: Khanka, 2012*)*

TYPES OF ENTREPRENEURS

At present, there are a large number of entrepreneurs spread all over the world. These entrepreneurs have been classified into different types based on the qualities and work culture they adopt. Although there are various classifications, the most popular has been given by **Clarence Danhof (1949).** He provided this classification based on a study of American agriculture. As per his/her classifications, there are four types of entrepreneurs:

1. **Innovative entrepreneurs:** These are the entrepreneurs who take the route of innovation for their enterprise. They believes in creating a new product, adding to an existing

product, introducing a new process or technique or create a new market for his/her product or service. Innovation is the process of commercializing a new invention. Entrepreneurship involves innovation and not invention.

2. **Imitative or Adoptive entrepreneurs:** These are the entrepreneurs who adopt the already introduced innovations of the innovative entrepreneurs. They do not innovate anything themselves but they imitate successful innovations. Such type of entrepreneur is found in developing countries where resources are scarce to innovate things on their own.

3. **Fabian entrepreneurs:** These are the entrepreneurs who prefer to change things only in circumstances when they are incurring losses. They do not like facing risks and resist changing anything about their business. They will only adopt new things when they are sure that by not doing so they will suffer loss.

4. **Drone entrepreneurs:** These are the entrepreneurs who will not change under any circumstances even if they are incurring losses. They follow the traditional methods of business and do not adapt at all.

Activity 2

1. Identify the famous entrepreneurs of the present time and study their entrepreneurial journey.

2. Think about an idea which could lead to a future enterprise.

ENTREPRENEURIAL MANAGEMENT

Effective management of an enterprise is the most important role of an entrepreneur. Poor management may lead to failure of the business. Thus, managing an enterprise requires policies on four major areas (Desai, 2016).

   i.   Need for an environment which is suitable for innovation and adaptable to changes.
   ii. Systematic measurement of performance of the business and finding ways to improve performance.
   iii. Well-built organizational structure with the focus on policies for staffing and compensation and reward structure.
   iv. Innovation does not take the focus away from the existing business model. Innovation should be in line with existing business.

ENTREPRENEURSHIP DEVELOPMENT

Entrepreneurship development is the process of strengthening the entrepreneurs by over viewing their entrepreneurial journey. It involves training the entrepreneurs in order to improve their skills and knowledge which in turn will enable the entrepreneurs to run their business effectively and efficiently.

The **main objectives** of Entrepreneurship development are (Charantimath, 2016):

- Creating a business environment which is suitable for entrepreneurship.
- Adjusting the rules and policies for helping new enterprises established in the dynamic economy.
- Providing incentives, tax benefits and subsidies to new enterprises.
- Increasing the rate of investments in research and development.
- Providing financial assistance from institutions
- Aiding in the availability of technology or raw material
- Educating the entrepreneurs about the process of entrepreneurship
- Training the entrepreneurs for developing the required skills for running the business.
- Ensuring the infrastructure is adequate for entrepreneurial activities
- Developing the motivational needs of entrepreneurs so as to maintain the quality of entrepreneurial activities.
- Helping the entrepreneurs in learning the skills required for managing the enterprise.
- Helping the entrepreneur in creating a business plan
- Providing incubation to new ideas.
  Figure 3 gives the concept of entrepreneurship development.

Figure 3: Concept of entrepreneurship development

PHASES OF ENTREPRENEURIAL DEVELOPMENT

The process of entrepreneurial development is divided into 3 phases which are as follows: Stimulatory phase, Support phase and Sustenance phase (Charantimath, 2016).

1. **Stimulatory phase**

   This phase involves generating interest and awareness among the potential entrepreneurs. It is called stimulatory phase because it includes activities which stimulate the individual's need for being an entrepreneur.

2. **Support phase**

   This phase is all about supporting the new enterprises in their establishment. Various activities such as registration of enterprises; development of the product prototype; arrangement of finance, land, shed, power, and common facility centre; offering management consultancy services, and marketing support; guidance for selecting plant and machinery; and getting approvals and licenses comprise this phase.

3. **Sustenance phase:**

   This phase helps the enterprises to grow after they have been established. It helps in continuous and efficient functioning of enterprises within a society. It includes activities such as modernization, diversification, expansion, getting additional finance, and research and development support to help an enterprise survive, develop and grow.Figure 4 shows different phases of entrepreneurial development.

Figure 4: Phases of Entrepreneurial Development
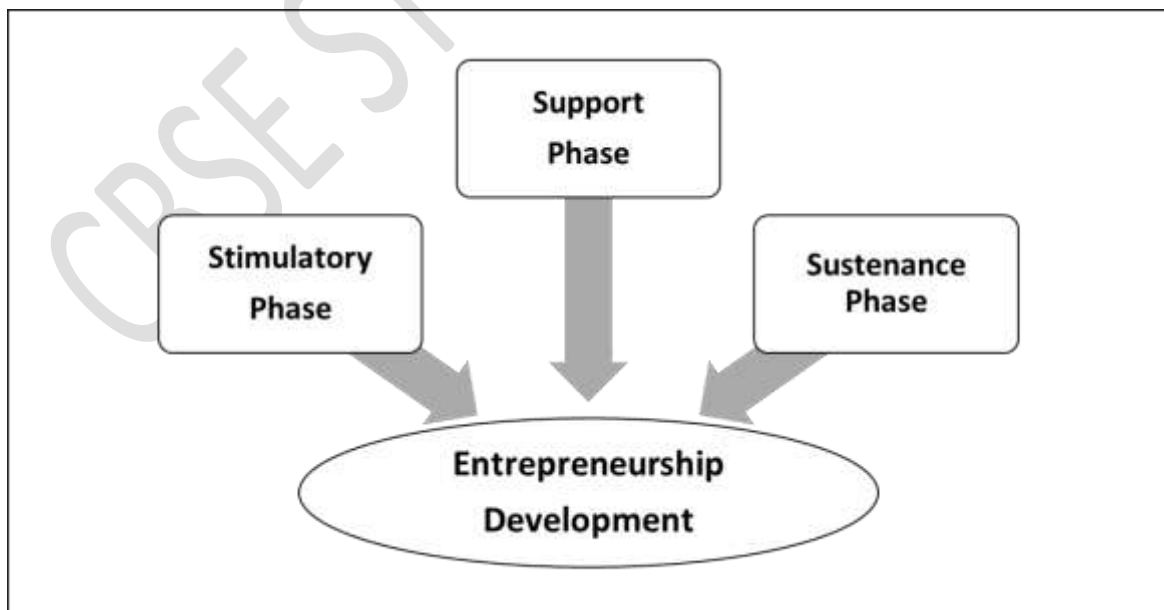
(Source: Charantimath, 2016)

ENTREPRENEURSHIP DEVELOPMENT INITIATIVES

Various entrepreneurship development initiates have been started to stimulate, support and sustain the young enterprises. A few of the initiatives adopted by the Government of India to help the entrepreneurs are (GES 2017):

• Start-up India

• Make in India

• Atal Innovation Mission

• Support to Training and Employment Programme for Women (STEP)

• Jan Dhan – Aadhar –Mobile (JAM)

• Digital India

• Biotechnology Industry Research Assistance Council (BIRAC)

• Stand-up India

• Department of Science and Technology (DST)

• Trade-related Entrepreneurship Assistance and Development (TREAD)

• Pradhan MantriKaushalVikasYojana (PMKVY)

• National Skill Development Mission

• Science for Equity Empowerment and Development (SEED)

ENTREPRENEURIAL SKILLS

Any person can be an entrepreneur but it takes a lot of efforts in becoming a successful entrepreneur. A successful entrepreneur possesses or should possess a certain set of qualities which makes him/her different from other entrepreneurs. An entrepreneur must be a 'Doer' and not merely a 'Dreamer'. The basic quality which every entrepreneur must have is the willingness to do hard work. Every entrepreneur functions in his/her own unique way but the following qualities are found common in all successful entrepreneurs (Khanka, 2012; Gordon & Natarajan, 2017):

1. **Hard-Work:** In order to be successful, an entrepreneur must be very hard working. Successful entrepreneurs adapt to the habit of hard work from a very early stage.
2. **Need for Achievement:** Entrepreneurs should have a strong need for achievements. They should be motivated to reach higher goals. This need for achievement is the reason for other qualities. This motivates an entrepreneur in surpassing obstacles, suppress anxiety, repair misfortunes and develop a successful business plan.

3. **Highly Optimistic:** Successful entrepreneurs should have a positive approach to life. They should not be afraid of any adverse situations in business. They should think optimistically about the future of the business.

4. **Independence:** Successful entrepreneurs like to function at their own will and rules. They dislike being guided by others. They do not prefer working for others and are the masters of their own.

5. **Foresight:** An entrepreneur should have a good foresight to predict the future of the business. He should have the vision to foresee changes in future environment likes changes in consumer preferences, technological developments, changes in government policies and act on them within time.

6. **Organising abilities:** Running a business requires procurement of resources form different people. Thus, an entrepreneur must possess good organizing abilities to accumulate various resources and ensure smooth business operations.

7. **Innovative:** An innovation is an integral part of entrepreneurship. Thus, in order to achieve success, entrepreneurs should be able to innovate. Innovation is the answer to the dynamic needs of customers and in order to satisfy those an entrepreneur keeps on researching new things.

8. **Perseverance:** Successful entrepreneurs never quit his/her venture even if s/he fails. They keep on finding ways to succeed. They show perseverance in their pursuit. They never give up easily.

9. **Team Spirit:** Efforts put in by the team results in synergy. A successful entrepreneur always knows the value of team-work and knows the way through which s/he can obtain maximum synergy. They must know how to work in teams as collective efforts ensure success.

10. **Risk – takers:** Entrepreneurship involves risk and uncertainties. In order to succeed in the entrepreneurial venture one must be habitual of facing risks.

11. **Energetic:** Entrepreneurs should possess a high level of energy as they have to put in more hard work and time for making their venture a success.

12. **Networking:** A successful entrepreneur should create his/her network of potential investors, suppliers, customers, and creditors. He should also maintain good relations with employees and society at large.

13. **Communication skills:** An Entrepreneur should have good communication skills so that he can put his/her views and ideas with clarity and precision.

14. **Leadership:** A good entrepreneur must be a leader. Running a business successfully is an outcome of an efficient teamwork. To be successful, an entrepreneur should be able to lead his/her team in a right way.

15. **Persuasion:** Entrepreneurs should develop powers of persuasion to convince other people about their idea, investing funds, buying the products or service and in their competencies.

16. **Problem-solving:** Entrepreneurs should be able to identify problems beforehand and find the best possible solution to overcome the problem.

17. **Self-confidence:** An entrepreneur should have a strong belief in his/her abilities. He must not deviate from his/her decisions too early in case success is delayed rather he must trust his/her competencies and hard work.

18. **Adaptability:** Business environment has been evolving rapidly. Thus, in order to ensure the success of a venture, entrepreneurs should be able to adapt to the changes in the environment. They should be flexible with their way of working.

Role of Entrepreneurship in Economic Development

Economic development is one of the most important agenda of a country. Economic development means the development of agriculture and industry in the country leading to a rise in GDP. Human resources are the key for economic development but they can function on their own. Thus, there arises the role for entrepreneurs and entrepreneurship in the frame of economics (Gordon & Natarajan, 2017).

Economic development has been divided into four phases of development – Agrarian society, early industrialization, mature industrialization and service economy. All of these depict different entrepreneurial activities are shown in table2.

Table 2: Entrepreneurship and Economic development

	Agrarian	Early industrialization	Mature industrialization	Service
Level of entrepreneurial activity	Low	Medium	Medium	High
Small Business Formation	Low	High	Medium	Low
Entrepreneurship and Innovation	Nil	Low	Medium	High

(Source: MS-93: Management of Small and Medium Enterprises, IGNOU, 2017)

Entrepreneurs adopt the following roles for the purpose of economic development:

1. **Coordinating role:**

An entrepreneur has to coordinate the various factors for production. It involves selection of the best possible combination of factors.

2. **Agent's role:**
   Entrepreneurs are perceived as 'Agents of Change'. They identify the opportunities, establish enterprises and build-up industries which in turn lead to overall development of the economy.

3. **Innovator's Role:**
   Entrepreneurs as innovators bring new products or service to the market or improve existing products or services. They act as market leaders and play the role of pioneers. Innovation in the industry results in higher production efficiency which has led to an increase in employment and income levels.

4. **Risk assumption role:**
   A risk is involved in every venture. The economic reward of risk bearing is profit. Entrepreneurs retain some amount of the profits earned and put it back in business. This ultimately leads to the capital formation which is necessary for economic development. Therefore, by assuming risk entrepreneurs contribute to the economy.

5. **Imitating role:**
   In developing nations, entrepreneurs usually imitate or adopt the innovations done by the entrepreneurs of the developed nations. By doing so, they adapt these innovations to the local conditions and hence overcome the entrepreneurial ills.

6. **Capital formation role:**
   Entrepreneurs enable the formation of capital by mobilising the idle savings for the purpose of carrying on business. The mobilisation of wealth leads to an increase in capital of company and development of assets. This helps in carrying on trade and development of the economy.

7. **Balancing role:**
   Entrepreneurs provide for the regional developments by starting small-scale industries. India needs the decentralized structures to remove regional imbalances in the economic development.

8. **Status transformation role:**
   Entrepreneurs generate employment, income and wealth which improves the overall standard of living in the society. Improved standard of living leads to economic development as it reduces the disparity in income.

9. **Employment Generation role:**
   Establishment of business enterprises leads to the generation of employment opportunities as various human resource professionals are needed to run the business

effectively. Thus, entrepreneurship leads to the reduction in unemployment levels which is a known cause for hindrance in the development of the economy.

Rewards of Entrepreneurship

Entrepreneurship comes with its own rewards. It is associated with the 'Self-Actualisation' need of the 'Need Hierarchy Theory of Motivation' proposed by Abraham Maslow. It is a form of self-employment and hence comes with flexibility and independence. The following rewards are associated with entrepreneurship (Khanka, 2012):

1. **Independence:** Entrepreneurship enables one to be his/her own master. It allows one to achieve what is important to him/her. Entrepreneurs know that they are the reason for their success.

2. **Make a difference:** Entrepreneurs often create their business ventures on opportunities which they think is different from what others are doing. Thus, entrepreneurship leads to the provision of new and distinguished ideas to the society which may hold some value to them.

3. **Self-Actualisation:** Entrepreneurs are empowered by the sense of owning and controlling a business. They know that the only limitation they have is their own creativity, enthusiasm and vision. A person undertakes entrepreneurship to fulfil his/her need for self-expression.

4. **Contribution to society:** Entrepreneurs often contribute to the society in the form of creating jobs, utilizing idle resources, reducing regional imbalances, promoting equal income distribution and by improving the overall standard of living.

5. **More profits:** Research has shown that entrepreneurs earn more income in the form of profit as compared what they would have been earning if they would have taken wage employment.

SUMMARY

There are several business enterprise operations all around us. These businesses could be service, manufacturing, merchandising or hybrid businesses. Business isalso divided on the basis of their type of ownership. They are classified as – Sole proprietorship, Partnership, Joint Hindu family business, Co-operative society and Joint Stock Company.

Entrepreneurs are the individuals involved in the process of creation of business enterprises while undertaking risks. The whole idea of entrepreneurship is driven by innovation and uncertainties. Underdeveloped countries usually have adoptive entrepreneurs who imitate the

innovations from developed nations. Entrepreneurs need to be trained in order to turn their enterprises into success. Entrepreneurship development is the concept of developing and training the entrepreneurs and creating a favourable environment for their growth. The whole process of development is bifurcated into three phases – Stimulatory, Support and Sustenance.

An entrepreneur must have a certain set of traits to achieve success. These competencies are hard-working, perseverance, persuasion, self-confidence, persistence, innovative, communicator, leader, flexible, independent, foresight, motivation, organizer, risk-taker, energetic and optimism. Entrepreneurship not only benefits the individual but plays crucial role in development of overall economy of the country.

QUESTIONS FOR DISCUSSION

1. Which form of business organisation is better than the other?
2. Discuss how economy of the nation is affected by the entrepreneurial activities.
3. Discuss different types of entrepreneurs existing in present times.
4. Discuss the growth of entrepreneurship in India.
5. What are the different skills an entrepreneur should possess to be a successful entrepreneur?

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Main Sectors of the Green Economy

- E-waste management
- Green transportation
- Renewal energy
- Green construction
- Water management

Green economy's objective is to reduce environmental risks and ecological scarcities that aim for sustainable development, without degrading the environment. To achieve efficiency in energy usage, to development of new environmental dependent business sectors such as food and tourism

The term "Green economy" was first coined in 1989, by a pioneering committee in a report entitled 'Blueprint for a Green economy 'for the UK government, the committee consisted of environment economists (Pearce, mark, Markendy,Barbier 1989)
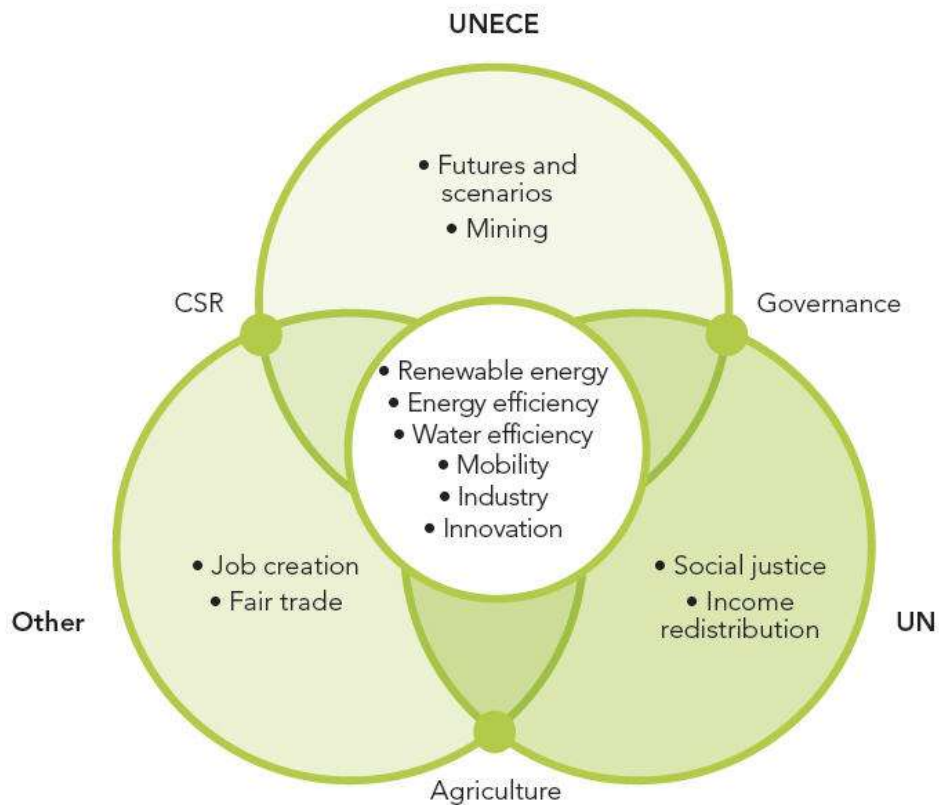
Figure 3.9 Defining green economy: Gaps in understanding? (Source: EEA, 2011).

Green economy is not just about wind turbine or solar farms, its next industrial revolution. Green Economy provides opportunities for the environmental goods and services Aims at achieving efficiency in resources, e.g. green homes will be powered by new energy systems, other examples are ; development of 'Green Index' and Green finance etc.

Main Sectors of Green Economy

E-waste Management:

E waste comprises of discarded electronic devices. Which can be reused, resale, salvaged, or recycled or disposed.

Green Transport:

Green transport refers to making efficient and effective use of resources, modification of transport structure and making healthier travel choices. Green transport factors in climatic and environmental impact globally. Green transport is also termed as Smart transportation that supports and enhances walkable urbanization. It reduces congestion, reduces our dependency on cars and foreign oil, green transport is safer and less costly and helps save our planet.

smart cycle

Renewable energy:

Energy that is collected from renewable resources, which are naturally replenished on a human timescale, sunlight, wind tide, rain waves, geo thermal heat.

Green construction:

Green construction is also referred as sustainable building; includes both the structure and processes that are environmental friendly, responsible and resource efficient through the building lifecycle i.e. from design, operation, maintenance renovation and demolition.

Water Management:

Water management is also referred as optimization of water usage. It's management of water resources under a set of policies and regulation. Water once an abundant natural resource is becoming a valuable resource, due to draughts and over use.

Policy initiatives for Greening Economy in India

Stakeholders of Green Economy

Key stakeholders and partner Organizations are ;

- Government
- Environmental protection and Natural resources committee.
- Economic policy committee.
- Agriculture Committee
- Ministry of environment
- Ministry of Energy and natural resources.
- Ministry of Economic and natural Resources

International organization

- International Centre for environmental research.
- Economic vision, the union for Sustainable Development.

Role of Government in Greening Economy

Government has important role for setting policies that serve, advance and protect the public's interest in transitioning towards an energy system that is more sustainable from both a supply and environmental standpoint. Government can play crucial role in helping to plug gaps by conducting research.

Private Agencies:

Amongst the many stakeholders involved in city development, the Private Sector plays important part. In fact cities and private sector need each other; private sector is required to develop alternative cities, create wealth and employment and increase revenue resources through transparent and accountable taxation.

Private sector is a key player in strengthening city governance; private sector has innovation potential to develop solutions that fit the new urban challenges.

The government focusses on the need for participative governance at local level looking for private partnership at all levels of cities development process, from planning and budgeting to implementing and monitoring.