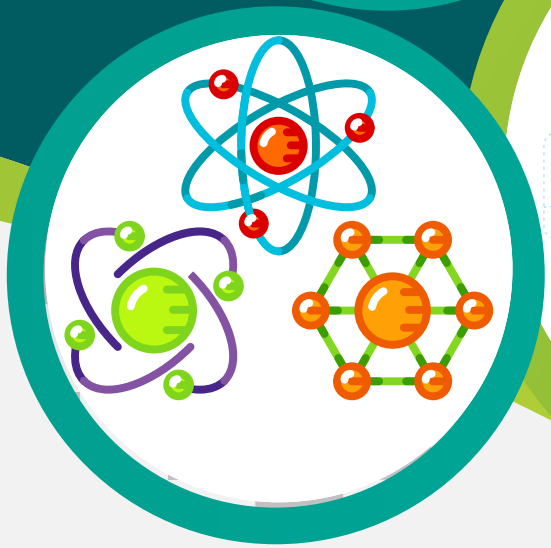

Curriculum Aligned Competency Based Test Items

Science

Class - 8

Central Board of Secondary Education

Sri Aurobindo Society
Creating the Next Future

ACER

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Curriculum Aligned Competency Based Test Items
Class 8
Foreword

The National Education Policy (2020), Government of India, envisions transforming school education by equipping students with 21st century skills. The endeavour is to shift focus from rote-learning to acquisition of competencies with a resolve to make education more meaningful and relevant.

The Central Board of Secondary Education (CBSE) in its continuous endeavour to improve the quality of education has already introduced some initiatives in this direction. Strengthening these efforts, the Board had signed an MoU with Sri Aurobindo Society (SAS), Pondicherry in November 2019. As a part of this initiative, SAS is supporting CBSE to develop resource materials, train teachers and take other measures that would facilitate adoption of Competency Based Education in schools. SAS has engaged with Australian Council for Educational Research (ACER) as its knowledge partner for this project.

CBSE, in collaboration with SAS and ACER, has prepared this resource material- ***Curriculum Aligned Competency Based Test Items (Class 8)*** in February, 2022 which is a compilation of assessment items in Science that are aligned to the NCERT/CBSE curriculum. These tasks based on authentic real life situations focus on developing critical understanding among learners in the discipline. Each test covers about 10 questions from a chapter. The assessments, useful for students' practice, are also exemplars for teachers who with their ingenuity can develop many similar items.

— Team CBSE

About CBSE

The Central Board of Secondary Education (CBSE) is a national Board under the Ministry of Education, Government of India. The Board has more than 27,000 schools affiliated to it in India and overseas, in 25 countries. These include the Kendriya Vidyalayas, the Jawahar Navodaya Vidyalayas, schools run by Central Government organizations such as The Army, Navy, Air Force etc., schools run or aided by the State Governments and independent private schools. The Board's mission is to encourage quality of education focussed on holistic development of learners. It motivates schools and teachers to adopt learner centric enquiry-based pedagogies and use innovative methods to achieve academic excellence. The Board is committed to providing a stress-free learning environment to develop competent and confident students who emerge as enterprising citizens of tomorrow, promoting harmony and peace in the world.

About SAS

Sri Aurobindo Society (SAS) is an international, spiritual, and cultural, not-for-profit NGO. SAS has been recognised by the Government of India as a Charitable Organisation, a research institute and an institute of national importance. Sri Aurobindo Society has more than 300 centres and branches across the country, with its head office in Puducherry. SAS is setting up models, centers of excellence and training institutions that are sustainable, scalable and replicable in the country.

About ACER

Australian Council for Educational Research (ACER) is a leading and pioneer international organization working in the field of competency based learning. ACER has been instrumental in coordinating a consortium of international organizations for the implementation of the Programme for International Students Assessment survey in 2000, 2003, 2006, 2009 and 2012.

Table of Contents

Test Item

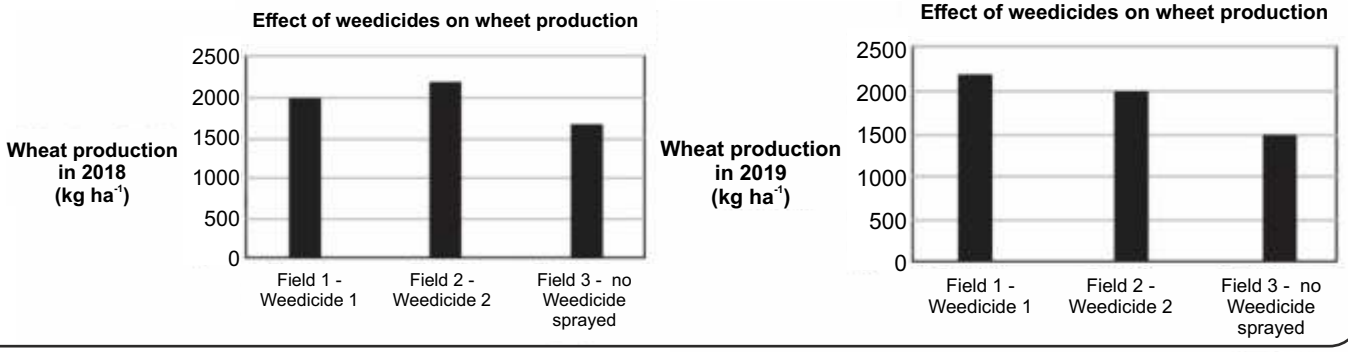
Scoring Key

केंद्रीय माध्यमिक शिक्षा बोर्ड
CENTRAL BOARD OF SECONDARY EDUCATION

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 1
Crop Production and Management

Weedicides are chemicals that are sprayed on crop fields to remove weeds.
A farmer wanted to test the effect of two different weedicides on wheat production.
He sprayed each weedicide on two different fields. No weedicide was sprayed on field 3.

The graph shows the production of wheat crop from each field over two years.



SAS21S080101

1 Why did the farmer not spray any weedicide on Field 3?

_____

_____

SAS21S080102

2 What can the farmer conclude from his tests?

A. Weedicides 1 and 2 were not effective in controlling weeds.
B. Wheat production was better in fields sprayed with weedicide.
C. Crop production decreased in Field 3 as the soil was not fertile.
D. Weedicide 1 was more effective than Weedicide 2 in controlling weeds.

SAS21S080103

3 The farmer's friend suggested that the farmer should have tested Weedicide 1 on wheat field and Weedicide 2 on mustard field. Will this suggestion help improve the experiment? Explain your answer.

_____

_____

SAS21S080104

4 Why are weedicides generally sprayed on weeds before they start producing flowers and seeds?

A. Weedicides can kill only young weeds.
B. Weedicides can kill the crops if not sprayed early on.
C. The weeds cannot be killed after they start producing flowers and seeds.
D. The flowers produce more seeds and the seeds germinate to form more weeds.

A farmer wants to grow crops in his field between the months of June and July.
The chart below shows a list of crops and different agricultural practices.

SAS21S080105

5 Select two crops from the list that grow best during June and July.

Crop 1_____Crop 2_____

_____

SAS21S080106

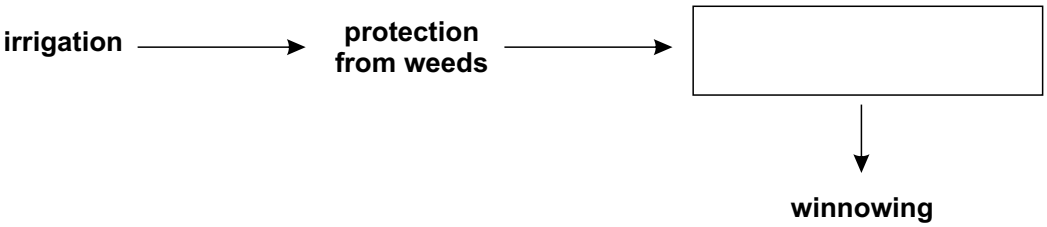
6 The farmer prepared the soil in his field by turning and loosening the soil.
How does turning and loosening the soil help in growing plants?

_____

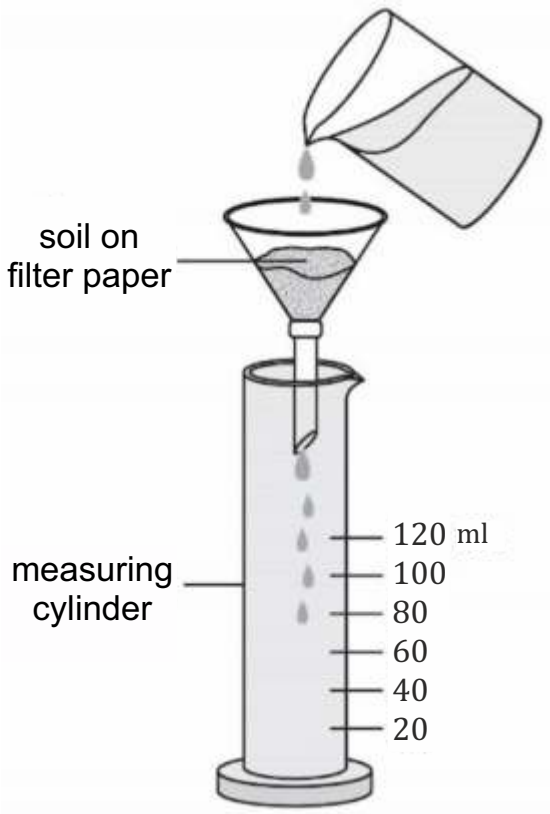
_____

SAS21S080107

7 Farmers follow a sequence of agricultural practices to grow crops. A part of the sequence is shown below.
Choose an appropriate agricultural practice from the chart above to fill in the box.



Soham investigates the water holding capacity of four different types of soils.
He sets up an experiment for each type of soil as shown in the diagram.
Soham records his observation in a table.



	Soil type			
	Clay	**Loam**	**Sand**	**Silt**
Amount of water added to the soil (ml)	150	150	150	150
Amount of water collected in the measuring cylinder (ml)	30	60	105	50

SAS21S080108

8 Which type of soil absorbs the most water?

A. Clay
B. Loam
C. Sand
D. Silt

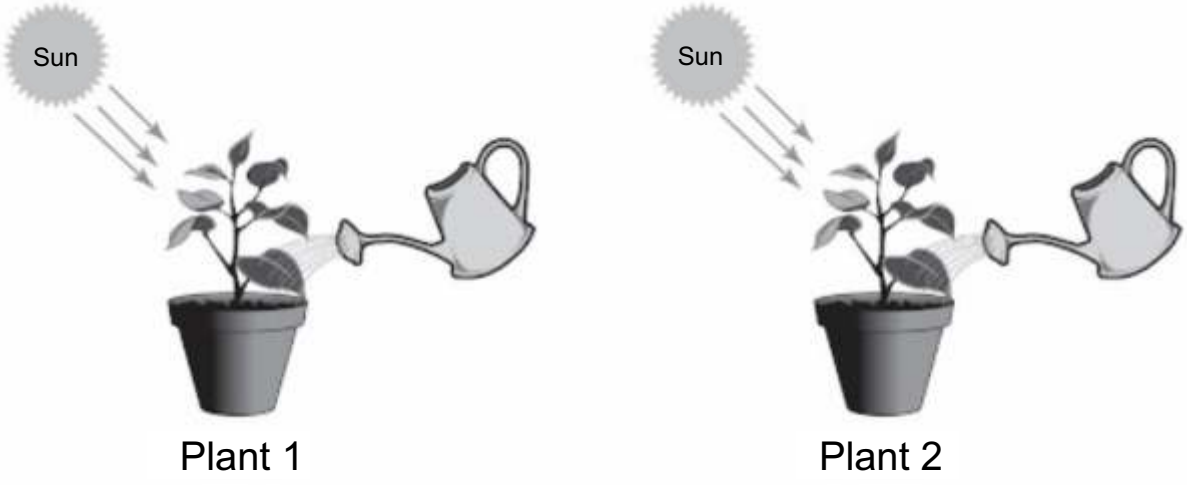
SAS21S080109

9 Soham added the same amount of water to each type of soil.
State one more thing that Soham needs to keep the same in his experiment.

_____

_____

Nisha performs an experiment with two potted plants. She keeps the pots in sunlight and waters them equally. She adds manure to the soil in Pot 1.



She creates a table to record her observations.

	Manure added	Height of the plant at the start of the experiment	Height of the plant after 4 weeks
Plant 1	yes	_____	_____
Plant 2	No	_____	_____

SAS21S080110

10 What is Nisha investigating?

A. Does manure make soil porous?
B. Does manure help plants grow better?
C. Do plants need sunlight and water to grow?
D. Is manure better than chemical fertilisers for plant growth?

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 2
Microorganisms: Friend and Foe

A trash can contains the following materials.

- Plastic straw
- Aluminium foil
- Tissue paper
- Glass bottles
- Chicken bones

SAS21S080201

1 Select the materials from the list that can be decomposed by microbes?

_____

_____

SAS21S080202

2 Rohit is suffering from stomach ache and is passing watery stool. What should Rohit do to prevent the spread of infection to other family members?

A. He should eat properly cooked food.
B. He should wear a mask all the time.
C. He should maintain distance from other family members.
D. He should wash his hands with soap after using the bathroom.

Suman wants to see how quickly carrots lose colour. Loss of colour shows rotting of carrot.
She observes carrot slices on a plate under three different conditions as shown below.

She notes how long the carrot slices on each plate take to change colour.

	Under the sun	In a moist room at 25°C	In the refrigerator
Time carrot slices take to change colour	2 days	5 days	8 days

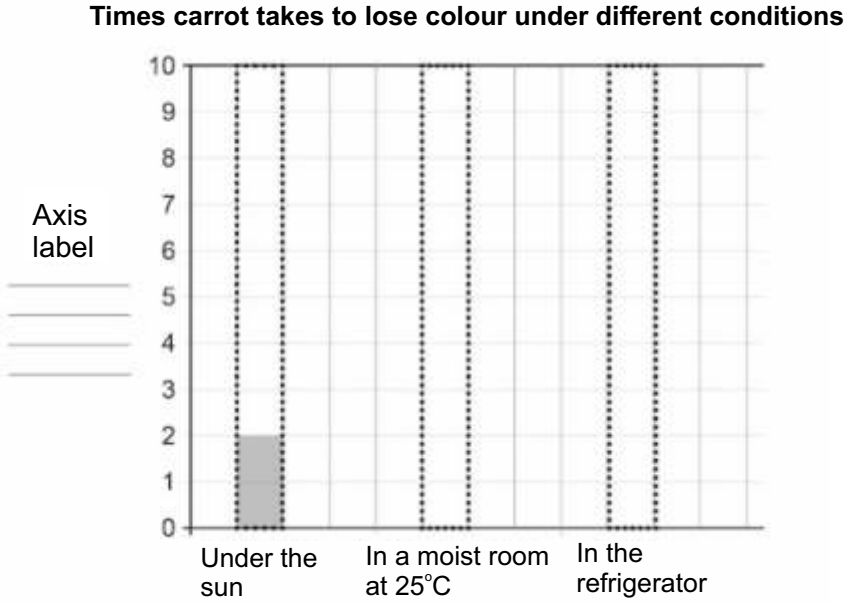
SAS21S080203

3 What can Suman conclude from her activity?

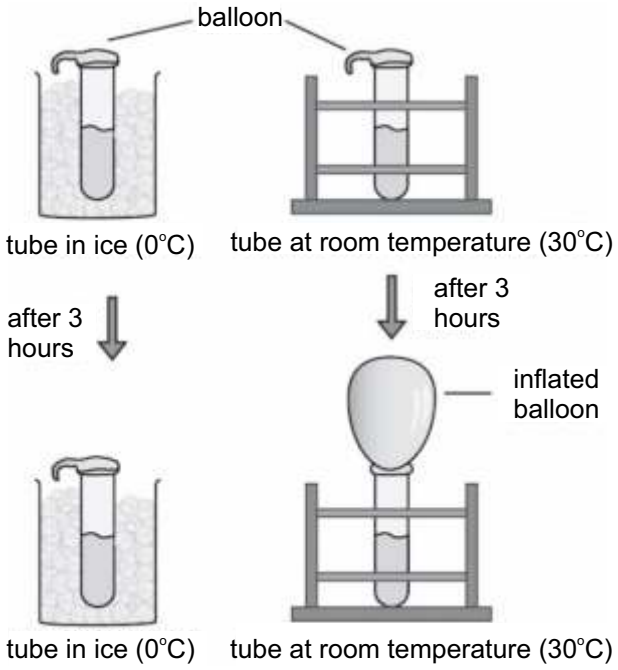
A. Carrots when kept under the sun do not rot easily.
B. Carrots at room temperature lose colour more quickly.
C. Carrots can be best preserved in hot and moist conditions.
D. Carrots take more time to lose colour under cold conditions.

SAS21S080204

4 Use the results of the activity to finish the graph below. The first bar is drawn for you.
Put a label in the space provided for the axis on the left.



Manoj adds some yeast to two test tubes containing sugar solution.
One test tube is kept in ice and the other at room temperature.
The picture shows what happens after three hours.



SAS21S080205

5 What is Manoj investigating?

A. Does yeast grow in sugar solution only?
B. Does yeast convert sugar into alcohol?
C. Does temperature affect the growth of yeast?
D. Which gas is produced as yeast grows in sugar solution?

SAS21S080206

6 How can Manoj confirm if the gas produced in the test tube at room temperature was due to the yeast growing in it?

A. She should repeat the same experiment.
B. She should leave the test tube undisturbed for six hours.
C. She should repeat the experiment with test tubes containing more sugar solution.
D. She should keep an extra set of test tubes with sugar solution but without the yeast.

SAS21S080207

7 What should Manoj keep the same in both the test tubes for a fair experiment?
Circle 'Yes' or 'No' for each row.

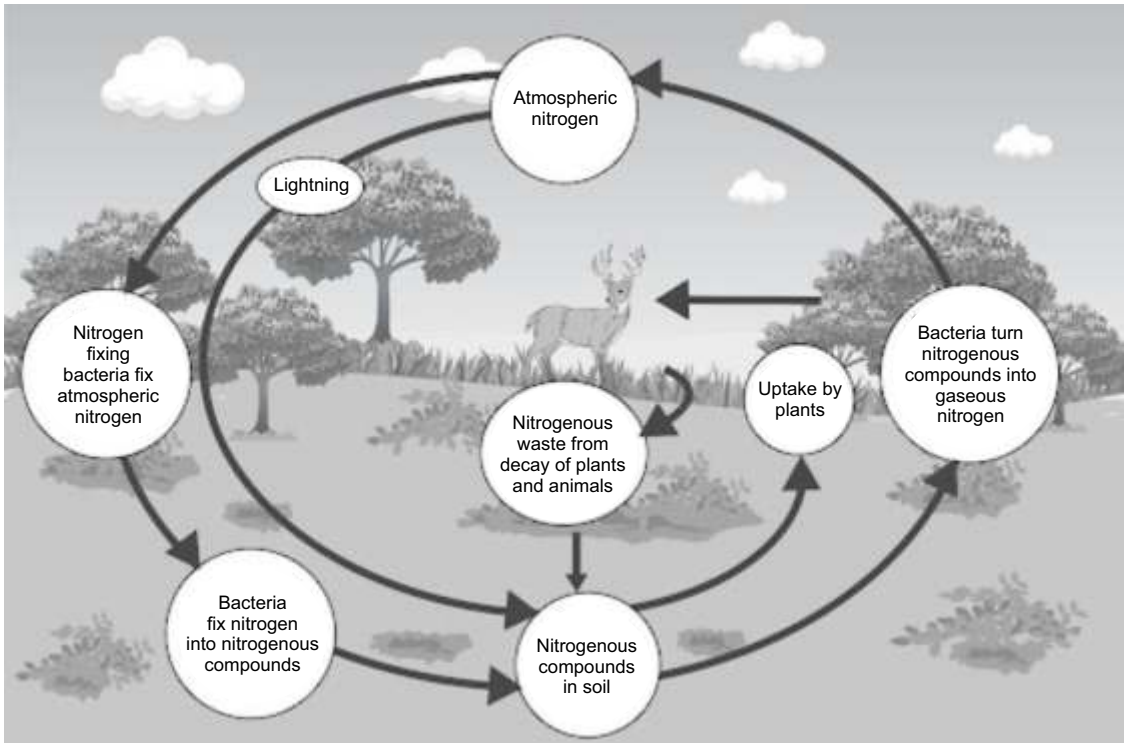
Should this be kept same for both the test tubes?	Yes or No
The concentration of sugar solution	Yes/No
The colour of the balloons	Yes/No
The amount of yeast added to each test tube	Yes/No

SAS21S080208

8 What type of organism is yeast?

A. Fungi
B. Algae
C. Bacteria
D. Protozoa

The picture shows the nitrogen cycle.



SAS21S080209

9 How do plants take up nitrogen?

A. She should repeat the same experiment.
B. She should leave the test tube undisturbed for six hours.
C. She should repeat the experiment with test tubes containing more sugar solution.
D. She should keep an extra set of test tubes with sugar solution but without the yeast.

SAS21S080210

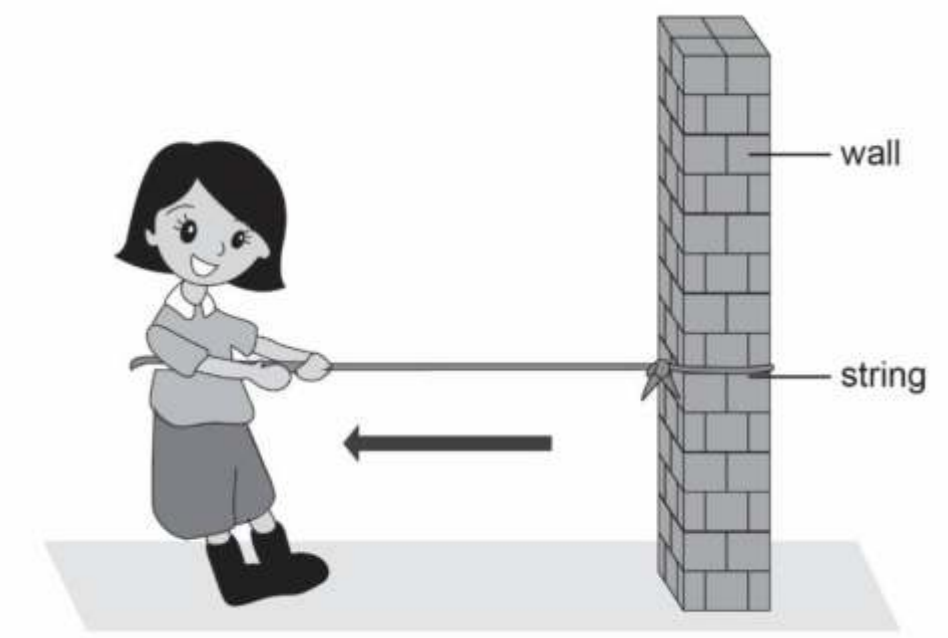
10 Plants and animals are continuously using nitrogen. Will there be a depletion of nitrogen in the environment due to this continuous use? Explain your answer.

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 3
Synthetic Fibres and Plastics

Ameeta ties four strings made of different materials to a wall.
She then pulls each string until it breaks.
The arrow shows the direction of the force.

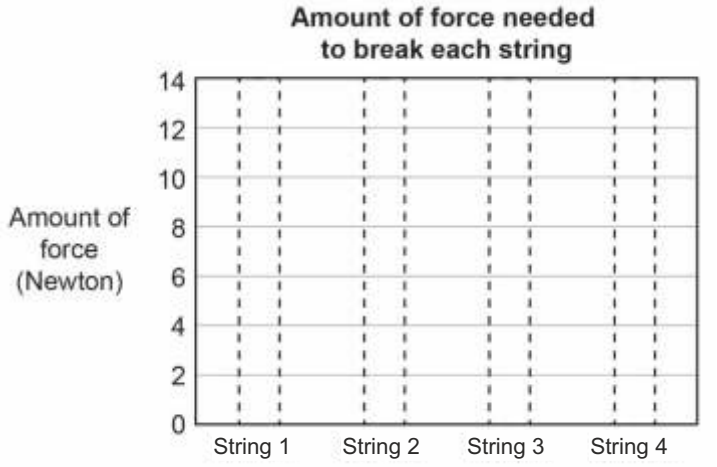


The table shows the amount of force needed to break each string.

String	Amount of force needed to break the string (Newton)
String 1	10
String 2	2
String 3	14
String 4	4

SAS21S080301

1 Draw the bars in the graph below to show the observations of Ameeta's activity.
Fill in the dotted columns to show the correct values along the Y- axis.



SAS21S080302

2 Which string is made of the strongest fibre?

A. String 1
B. String 2
C. String 3
D. String 4

SAS21S080303

3 What must Ameeta keep the same in her activity?

A. Colour of the strings
B. Length of the strings
C. Thickness of the strings
D. Height of the strings from ground

SAS21S080304

4 Which of the following statements is/are true about polymers?
Circle 'Yes' or 'No' to mark your response.

Is the statement correct?	Yes or No
All synthetic fibres are polymers.	Yes/No
Some natural fibres are polymers.	Yes/No
Polymers are made of multiple small chemical units.	Yes/No

Sujoy had four different fabrics.
He lit each fabric on fire and observed what happened.

Fabric 1	Fabric 2	Fabric 3	Fabric 4
Burned completely, some ash left behind	Melted into a sticky substance	Burned completely, some ash left behind	Melted into a sticky substance

SAS21S080305

5 What is Sujoy trying to find out?

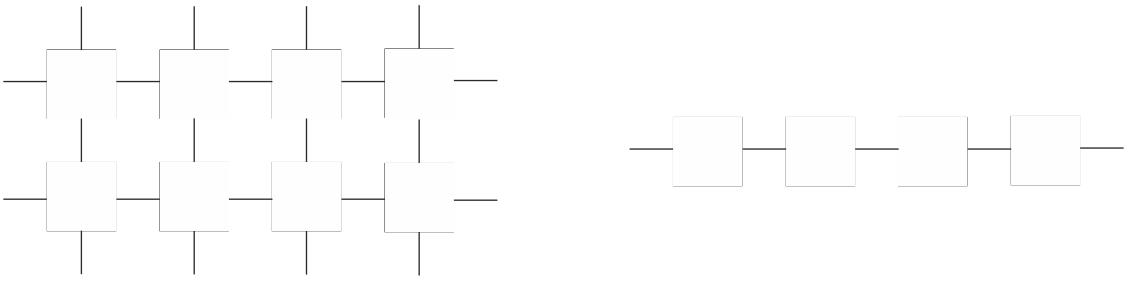
A. Which fabric is a polymer?
B. Which fabric is the strongest?
C. Which fabric is natural and which fabric is synthetic?
D. Which fabric is most comfortable to wear in summers?

SAS21S080306

6 Which of the following activities is dangerous while wearing a shirt made of fabric 2?

A. Riding a bicycle
B. Cooking on a gas stove
C. Watering plants in a garden
D. Painting with water colours

The pictures show the arrangement of chemical units in two types of plastics.



= Single Chemical Unit

SAS21S080307

7 What terms are used to describe the arrangement in Type 1 and Type 2 plastics?

Type 1 = _____

Type 2 = _____

SAS21S080308

8 Which of these features is/are essential to classify a plastic as thermoplastic?
Circle 'Yes' or 'No' to mark your response.

Is this feature essential for classifying a plastic as thermoplastic?	Yes or No
It bends easily on heating.	Yes/No
It does not react with air and water.	Yes/No
It is a good conductor of heat.	Yes/No

Erik dumped four types of domestic waste in separate land pits.
He covered the pits and left them undisturbed for a year.
The table below shows what he observed after a year.

Waste 1	Waste 2	Waste 3	Waste 4
Fully decomposed	Not decomposed at all	Fully decomposed	Not decomposed at all

SAS21S080309

9 Which type of waste(s) is most likely to cause soil pollution?

_____

_____

The 5 R principle is about environment - friendly practices.
The key components of the principle are as follows.

- Reduce
- Reuse
- Recycle
- Recover
- Refuse

SAS21S080310

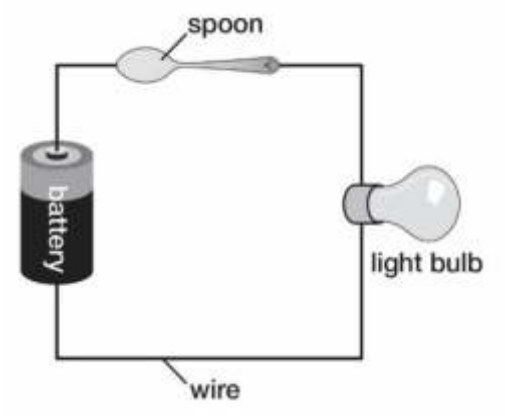
10 The government advises people to stop using plastic bags for grocery shopping.
Which component of the 5 R principle is this advice related to?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 4
Materials: Metals and Non-metals

Sajid has four teaspoons made of different materials.
He used each spoon to close an electric circuit one by one.



The table below shows if the light bulb glows for each spoon in the circuit.

Spoon in the circuit	Does the light bulb glow?
Spoon 1	No
Spoon 2	No
Spoon 3	Yes
Spoon 4	Yes

SAS21S080401

1 Which of these is supported by the results of Sajid's activity?

A. Spoon 1 is made of metal and Spoon 2 is made of non-metal
B. Spoon 2 is made of metal and Spoon 3 is made of non-metal
C. Spoon 3 is made of metal and Spoon 4 is made of non-metal
D. Spoon 4 is made of metal and Spoon 1 is made of non-metal

SAS21S080402

2 Will the results of the activity change if two batteries are used in the circuit in place of the single battery? Explain your answer.

_____

_____

Peter hammered four balls made of different materials.
He then heated each ball for a minute.
The table below shows what Peter observed.

Ball	What happens to the ball when hammered?	Temperature of the ball when heated for a minute
Ball 1	Flattens	85 °C
Ball 2	Breaks	45 °C
Ball 3	Breaks	35 °C
Ball 4	Flattens	75 °C

SAS21S080403

3 What can be concluded from the table?
Circle 'Yes' or 'No' for each statement.

Can this statement be concluded from the table?	Yes or No
Materials that break when hammered get heated quickly	Yes/No
Materials that flatten when hammered get heated quickly	Yes/No
Materials that break when hammered get heated slowly	Yes/No

SAS21S080404

4 Two of the four balls are made of ceramic and wood respectively.
Which two balls are they likely to be?

_____

_____

The equations below show four chemical reactions.

(i) Copper sulphate + Zinc → Zinc sulphate + Copper
(ii) Copper sulphate + Iron → Iron sulphate + Copper
(iii) Iron sulphate + Copper → no reaction
(iv) Zinc sulphate + Copper → no reaction

SAS21S080405

5 What can be concluded from the above reactions?

A. Copper is less reactive than both zinc and iron
B. Zinc is less reactive than iron but more reactive than copper
C. Copper is less reactive than zinc but more reactive than iron
D. Iron is less reactive than both zinc and copper

SAS21S080406

6 Why is example (i) regarded as a displacement reaction? Explain your answer.

_____

_____

A scientist injected nitrogen dioxide gas in water.
He dropped a blue litmus paper in the water after the reaction was over.
The litmus paper turned red.

SAS21S080407

7 What can be concluded from the experiment?

A. A salt is produced by the reaction.
B. An acid is produced by the reaction.
C. Nitrogen gas is produced by the reaction.
D. Hydrogen gas is produced by the reaction.

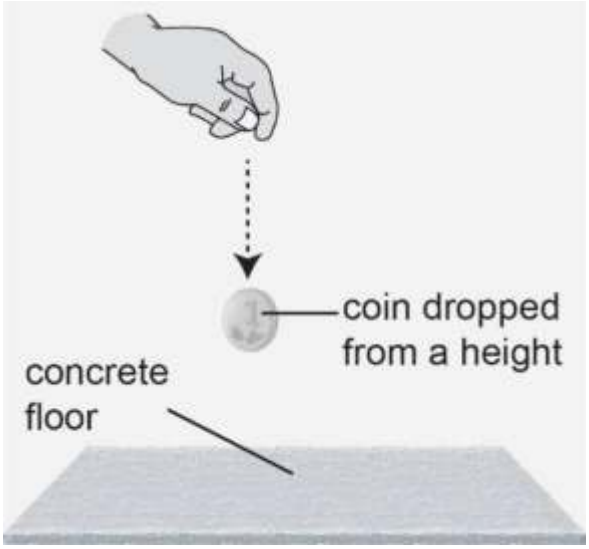
SAS21S090508

8 The scientist heated the water after the reaction was over. Will there be any change in the colour of the litmus paper that turned red? Explain your answer.

_____

_____

Mayank dropped four coins from the same height onto a concrete floor.



The table below shows the type of sound that each coin produced after hitting the floor.

Coin	Temperature of the ball when heated for a minute
Coin 1	Ringing sound
Coin 2	Damp sound
Coin 3	Damp sound
Coin 4	Ringing sound

SAS21S080409

9 Which coins in Mayank's activity are made of metal?

A. Coin 1 and Coin 2
B. Coin 2 and Coin 3
C. Coin 3 and Coin 4
D. Coin 4 and Coin 1

SAS21S080410

10 On which type of floor will Mayank's activity produce the same results?

A. Glass
B. Sand
C. Grass
D. Carpet

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 5
Coal and Petroleum

The table shows two groups of natural resources.

Group 1	Group 2
Air, Sunlight, Water	Coal, Petroleum, Natural gas

SAS21S080501

1 How is group 1 different from group 2?

	Group 1	Group 2
A.	Cannot be used as energy sources	Can be used as energy sources
B.	Will not exhaust even if used continuously	Will exhaust if used continuously
C.	Take thousands of years to form	Take millions of years to form
D.	Contain high percentages of carbon	Contain low percentages of carbon

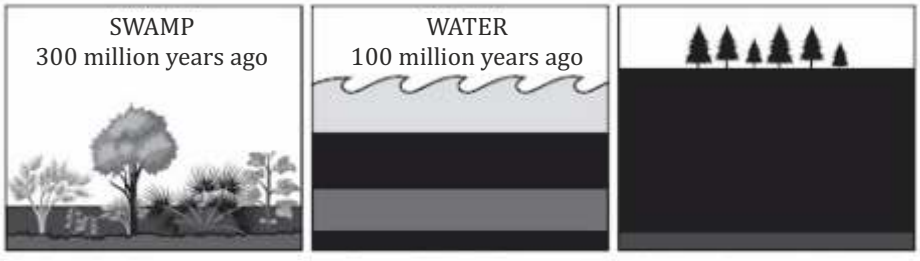
SAS21S080502

2 Which resource in group 2 will cause the least amount of air pollution on burning?

_____

_____

The table shows two groups of natural resources.



Before the dinosaurs, many giant plants died in swamps.

Over millions of years, the plants were buried underwater and dirt.

Heat and pressure turned the dead plants into coal.

SAS21S080503

3 Which of these statements is true about coal?
Circle 'Yes' or 'No' for the correct response.

Is this true about coal?	Yes or No
Dirt makes up a large part of coal.	Yes/No
Coal is produced from plant fossils.	Yes/No
Formation of coal requires heat and pressure.	Yes/No

SAS21S080504

4 Where is a coal reserve most likely to be found?

A. Inside volcanoes
B. Beneath glaciers
C. On ocean floors
D. Under land surfaces

SAS21S080505

5 Which gas is **mainly** emitted during the combustion of coal?

_____

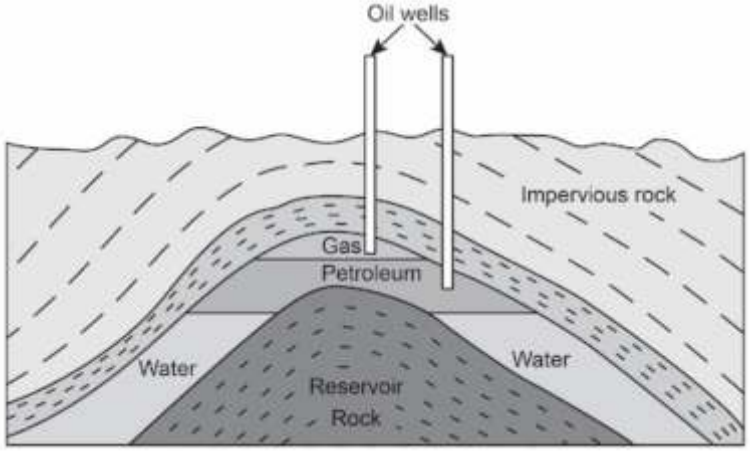
_____

SAS21S080506

6 Coke is a product obtained by the processing of coal.
Which of these is a by-product of making coke?

A. Coal tar
B. Bitumen
C. Coal gas
D. Kerosene

The picture shows how petroleum and natural gas are extracted through oil wells



SAS21S080507

7 Which of the following statements are supported by the picture?
Circle 'Yes' or 'No' for the correct response.

Is this statement supported by the picture?	Yes or No
Petroleum is insoluble in water.	Yes/No
Natural gas is denser than petroleum.	Yes/No
Petroleum and natural gas deposits are found under rock layers.	Yes/No

SAS21S080508

8 Which of these conditions is required for the formation of natural gas?

A. Low pressure
B. Presence of air
C. High temperature
D. Presence of water

SAS21S080509

9 Which of these petroleum products is used for heavy motor vehicles?

A. LPG
B. Diesel
C. Petrol
D. Kerosene

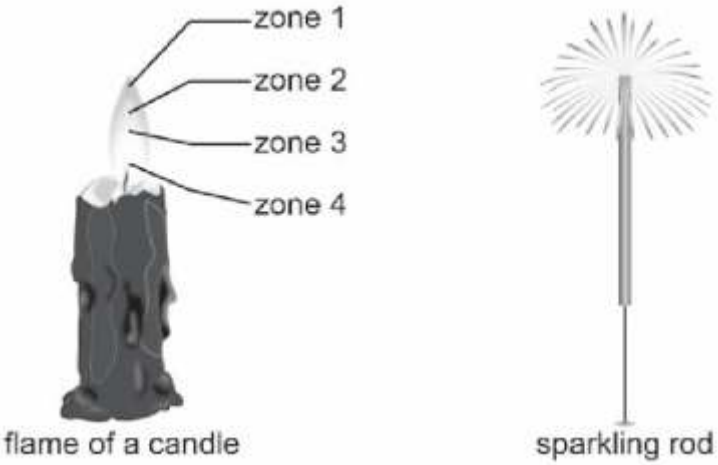
SAS21S080510

10 What is the advantage of using CNG instead of petrol in light motor vehicles?

A. It can be stored easily
B. It can be extracted easily
C. It causes less air pollution
D. It releases more energy on combustion

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 6
Combustion and Flame

Sparkling rods light up when inserted in a flame.
The hotter the flame, the quicker the rod lights up.
The picture shows four different zones of a flame.



SAS21S080601

1 In which zone should a sparkling rod be inserted to light it the **fastest**?

A. Zone 1
B. Zone 2
C. Zone 3
D. Zone 4

SAS21S080602

2 Why does the flame of a candle go off when all the wax melts?

_____

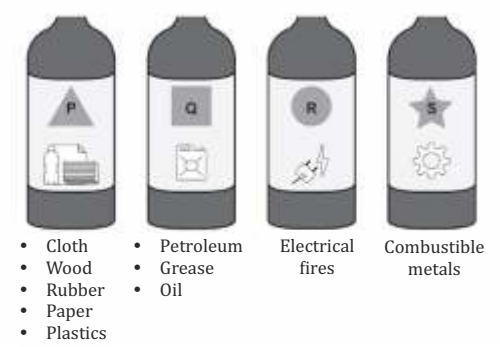
_____

SAS21S080603

3 Which of these is true about spontaneous combustion?
Circle 'Yes' or 'No' for the correct response.

Is this true about spontaneous combustion?	Yes or No
No fuel is required.	Yes/No
No oxygen is required.	Yes/No
No external heat source is required.	Yes/No

The picture shows four types of fire extinguishers.
Each extinguisher is suited for specific sources of fire.



SAS21S080604

4 A tailor has money for any two of the fire extinguishers.
Which pair of fire extinguishers should he buy for his tailoring shop?

A. P and Q
B. Q and S
C. P and R
D. S and R

Fire extinguisher K is suitable for kitchen fires.

SAS21S080605

5 Which fire extinguisher can perform most of the work of K?

A. P
B. Q
C. R
D. S

SAS21S080606

6 How does dumping sand on fire extinguish the flame?

_____

_____

SAS21S080607

7 Which of these materials is combustible?

A. Steel
B. Wood
C. Glass
D. Marble

The table shows the calorific value and pollutants released by four types of fuels.

Fuel	Calorific value (kilojoule / kg)	Pollution factor
Type 1	25000 - 33000	Co_2, sulphur oxides and Nitrogen oxides
Type 2	55000	Co_2, Water vapour
Type 3	45000	Carbon monoxide, CO_2, Nitrogen oxides
Type 4	35000 - 40000	Co_2 and Methane

SAS21S080608

8 Which fuel can boil the water in a vessel the **fastest**?

A. Type 1
B. Type 2
C. Type 3
D. Type 4

SAS21S080609

9 Which fuel can cause acid rain on combustion?

A. Type 1 only
B. Type 4 only
C. Both Type 1 and Type 3
D. Both Type 2 and Type 4

SAS21S080610

10 Which fuel type is likely to be biogas?

A. Type 1
B. Type 2
C. Type 3
D. Type 4

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 7
Conservation of Plants and Animals

The table shows two groups of natural resources.

Wildlife Sanctuary	National Park
Protects certain specific species of animals	Protects all plants, animals, landscape and historical objects
Restricts killing and capturing of animals	Restricts all kinds of disturbances for animals, plants and historical objects
Visitors are allowed without permission	Visitors are allowed only after authorized permission
Found in all types of terrain	Found in all types of terrain

SAS21S080701

1 Radha visited a protected forest area where she can -
- enter at her own will
- can collect samples of herbs

Which type of protected forest area did Radha visit? Explain your answer.

_____

_____

SAS21S080702

2 Which of these statements is supported by the table?

A. Mining is allowed in National Parks.
B. Zoo is an example of a Wildlife Sanctuary.
C. National Parks are larger than Wildlife Sanctuaries.
D. Wildlife Sanctuaries are always found in river basins.

SAS21S080703

3 A tiger Reserve is a forest area where the tiger population is protected.
Why did Indian government declare parts of many forests as Tiger Reserves?

A. Tiger is a mammal.
B. Tiger is our national animal.
C. Tiger is an endangered species.
D. Tiger is the top predator of forest ecosystems.

SAS21S080704

4 Which of these are the effects of deforestation?
Circle 'Yes' or 'No' for the correct response.

Is this an effect of deforestation?	Yes or No
Decrease in the fertility of soil	Yes/No
Decrease in the occurrence of floods	Yes/No
Increase in the occurrence of droughts	Yes/No

SAS21S080705

5 Which of these books keeps a record of all the endangered animals and plants?

A. Red Data Book
B. Blue Data Book
C. White Data Book
D. Green Data Book

The table shows an example of the different types of threat for the Gangetic Dolphin.

Type of threat	Example of the threat
Habitat degradation	Construction of dams in rivers
Human-Dolphin conflict	Getting caught in fishing nets
Water pollution	Dumping of chemical wastes

SAS21S080706

6 Surface runoffs containing pesticides also threaten the survival of the Gangetic Dolphin.
Which type of threat in the table does this belong to? Explain your answer.

_____

_____

SAS21S080707

7 The Gangetic Dolphin is a freshwater aquatic mammal.
Which of these measures will protect the Gangetic Dolphin species?
Circle 'Yes' or 'No' for the correct response.

Will this measure protect the Gangetic Dolphin?	Yes or No
Setting up industries near the riverbanks	Yes/No
Transporting the dolphins to seas and oceans	Yes/No
Making protected areas in certain stretches of the river	Yes/No

SAS21S080708

8 How can reforestation occur without any human involvement?

_____

_____

SAS21S080709

9 Which term is used for the species that are found only in a particular area?

A. Extinct
B. Endemic
C. Vulnerable
D. Threatened

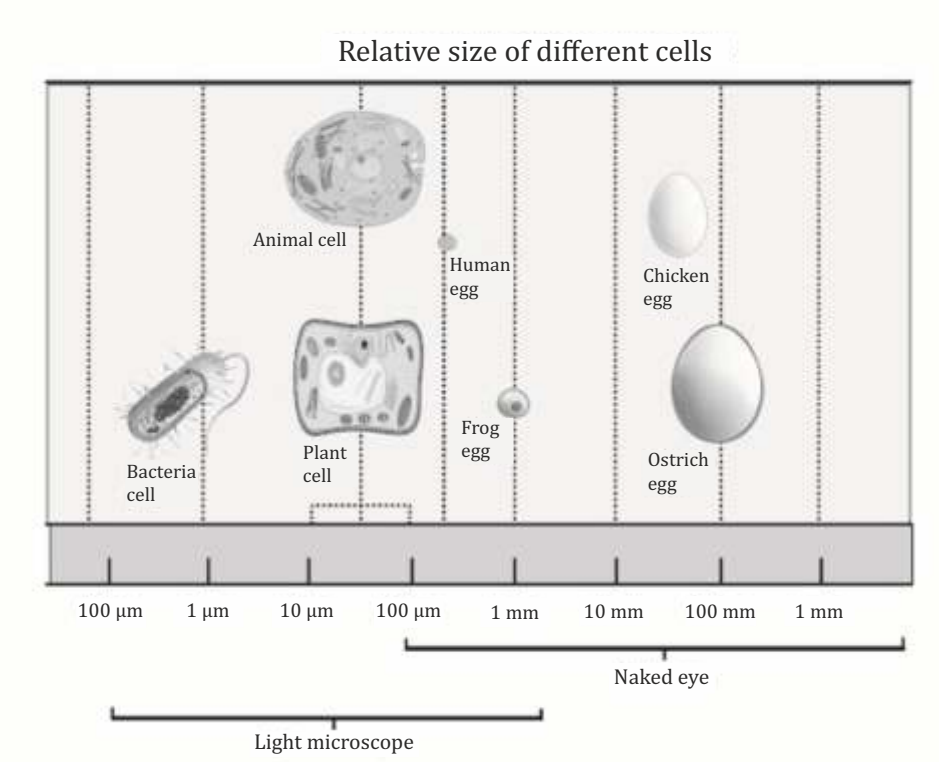
SAS21S080710

10 Why should we recycle paper?

A. Paper is biodegradable.
B. Recycled paper is stronger.
C. Production of paper requires lot of wood pulp.
D. Recycling of paper produces useful by-products.

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 8
Cell – Structure and Functions

The picture shows the relative size of different types of cells between 100 **nm** and 100 **mm**.



SAS21S080801

1 What can be concluded from the picture?
Circle 'Yes' or 'No' for the correct response.

Can this be concluded from the picture?	Yes or No
An egg is a type of cell.	Yes/No
Some cells are visible to the naked eyes.	Yes/No
Animal cells are much smaller than plant cells.	Yes/No

SAS21S080802

2 Which egg's length **cannot** be measured with a ruler?

A. Human egg
B. Frog egg
C. Chicken egg
D. Ostrich egg

The picture shows three types of cells.

SAS21S080803

3 Which cell is **most likely** to be an amoeba?

_____

_____

SAS21S080704

4 Which of these is the correct order of arrangement from smallest to largest?

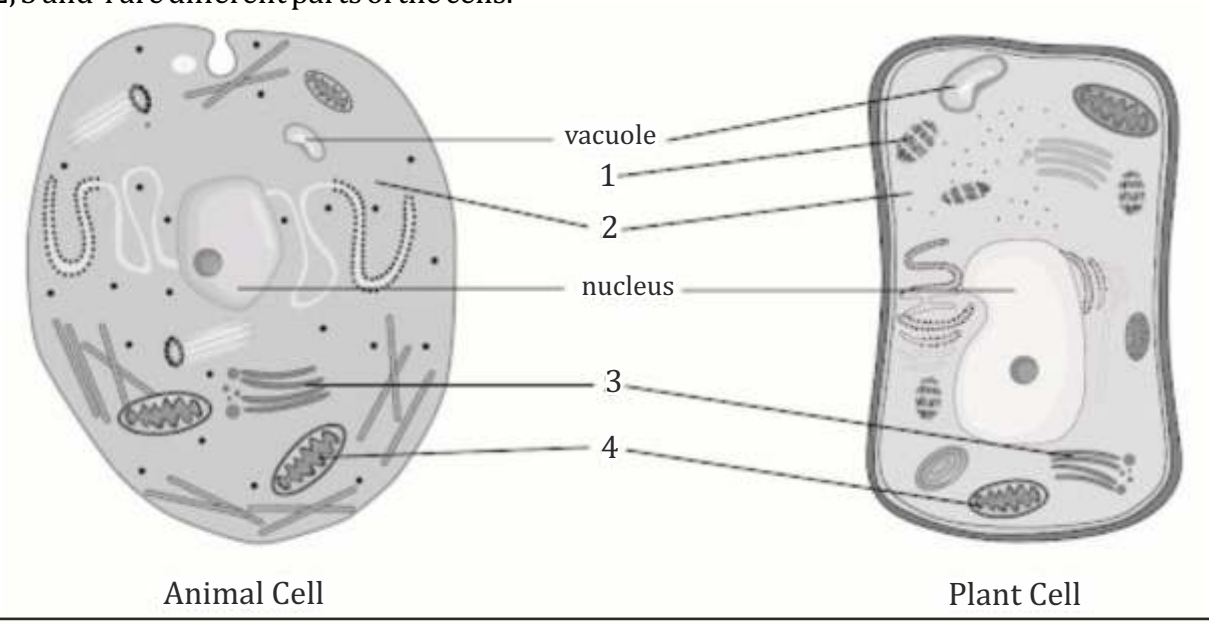
A. cell→organ→tissue
B. tissue→cell→organ
C. cell→tissue→organ
D. organ→tissue→cell

SAS21S080805

5 Which scientist discovered cells in living organisms?

A. Louis Pasteur
B. Robert Hooke
C. Gregor Mendel
D. Charles Darwin

The picture shows some labelled parts of an animal cell and a plant cell.
1, 2, 3 and 4 are different parts of the cells.



SAS21S080806

6 Which labelled part is a chloroplast?

A. 1
B. 2
C. 3
D. 4

SAS21S080807

7 Which of these statements is supported by the picture?

A. Vacuoles in animal cells are smaller than in plant cells.
B. Nucleus of animal cells is much larger than that of plant cells.
C. Animal cells have a fixed shape but plant cells have irregular shape.
D. Animal cells have two outer layers but plant cells have only one outer layer.

SAS21S080808

8 Rakesh has brown eyes.
Which labelled part contains the components responsible for this feature?

_____

_____

SAS21S080809

9 Which of these is a feature found **only** in prokaryotic cells?

A. Absence of cell wall
B. Absence of nucleus
C. Presence of vacuoles
D. Presence of mitochondria

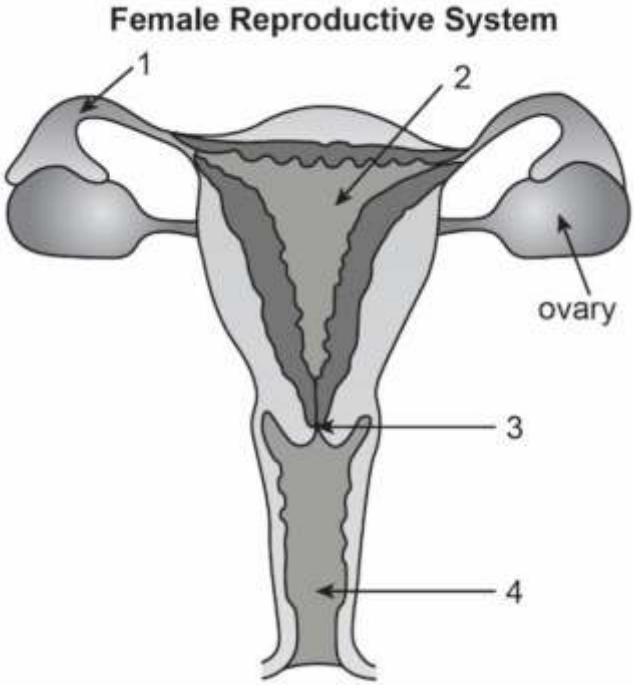
SAS21S080810

10 Which of these correctly describes a protoplasm?

A. Nucleus only
B. Nucleus and cell membrane
C. Nucleus and other cell organelles
D. Nucleus, cytoplasm and cell membrane

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 9
Reproduction in Animals

The picture shows the relative size of different types of cells between 100 nm and 100 mm.



SAS21S080901

1 A mature egg and a sperm unite to form a zygote.
In which part of the female reproductive system does a zygote form?

A. 1
B. 2
C. 3
D. 4

SAS21S080902

2 How many eggs are usually released each month by the ovary of a woman?

A. One
B. Two
C. Fourteen
D. Twenty-four

SAS21S080903

3 In which part of the female reproductive system does an embryo implant?

A. 1
B. 2
C. 3
D. 4

SAS21S080904

4 Which of these statements is true about a **foetus**?
Circle 'Yes' or 'No' for the correct response.

Is this statement true about a foetus?	Yes or No
All body parts can be identified properly.	Yes/No
It is covered by a hard shell of protective layers.	Yes/No
It resembles a large ball made of millions of cells.	Yes/No

SAS21S080905

5 Where does the fertilisation of egg occur in the process of **In Vitro Fertilisation (IVF)**?

A. Ovary
B. Water
C. Uterus
D. Petri dish

The table shows the processes of external fertilisation and internal fertilisation.

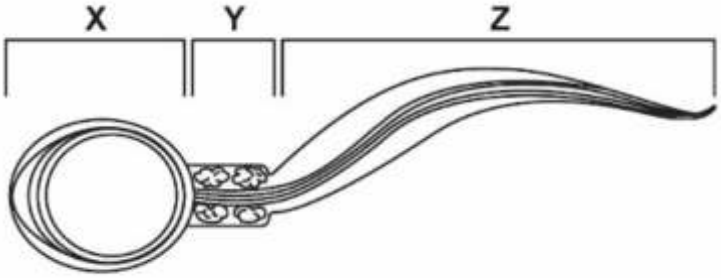
External fertilisation	Internal fertilisation
The female releases the eggs (ova) outside its body. The male releases the sperms on the eggs. Fertilisation takes place outside the female body.	The male releases the sperms inside the body of the female. Fertilisation takes place inside the female body.

SAS21S080906

6 Which of these is true about external fertilization and internal fertilization?

	External fertilization	Internal fertilization
A.	Both parents are necessary	Both parents are necessary
B.	Embryo is not formed	Embryo is formed
C.	Involves development of eggshell	Involves development of eggshell
D.	Takes place among invertebrates	Takes place among vertebrates

The picture shows the basic parts of a salmon fish sperm.



SAS21S080907

7 Which part of the sperm helps it to swim in water and reach the egg?

_____

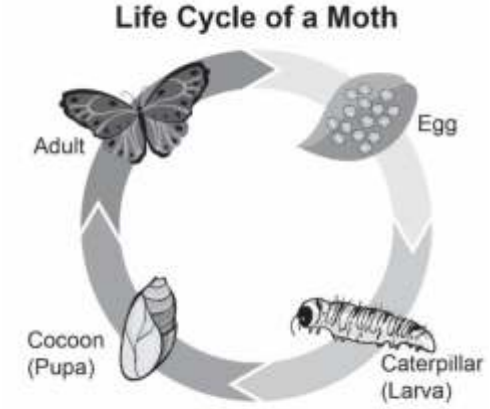
_____

SAS21S080908

8 Which of these animals reproduce by external fertilization?

A. Snake
B. Frog
C. Horse
D. Elephant

The picture shows the life cycle of a moth.

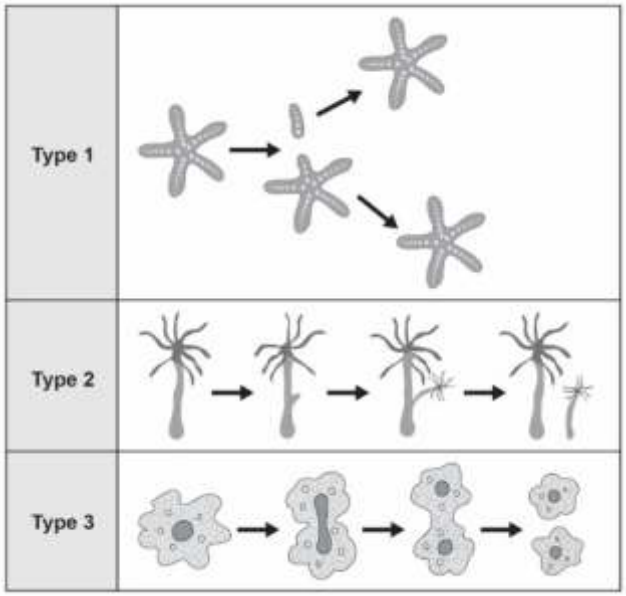


SAS21S080909

9 What can be concluded from the picture?
Circle 'Yes' or 'No' for the correct response.

Can this be concluded from the picture?	Yes or No
Moth is an oviparous animal.	Yes/No
A moth looks different in each stage of its life cycle.	Yes/No
There are two different stages in the life cycle of a moth.	Yes/No

The pictures show three types of reproduction in animals.



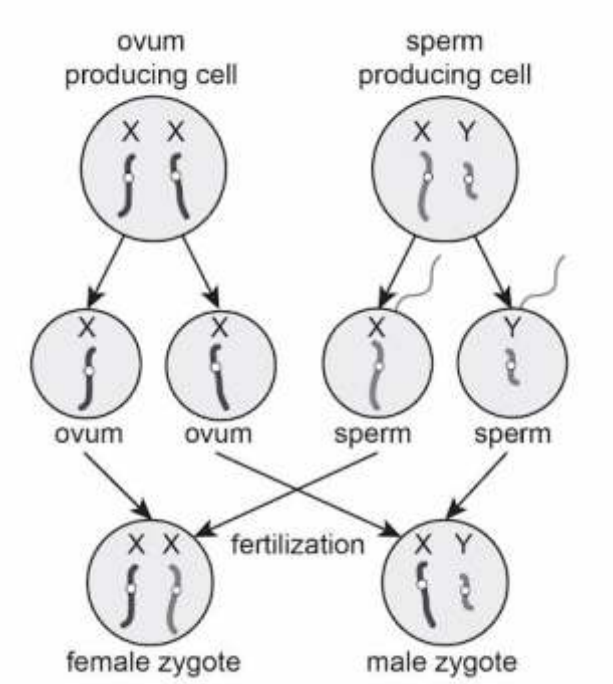
SAS21S080910

10 Which of these statements is true?

A. Type 1 reproduction is called binary fission.
B. Type 2 reproduction produces two non-identical offspring.
C. Type 3 reproduction involves unequal distribution of genetic materials.
D. Types 1, 2 and 3 methods of reproduction involve single parent only.

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 10
Reaching the Age of Adolescence

An ovum contains one X chromosome.
A sperm contains an X or a Y chromosome.
A sperm can fertilize an ovum to produce two different zygotes.



SAS21S081001

1 Which chromosome does the female zygote receive from the mother and the father?

	Mother	Father
A.	X chromosome	Y chromosome
B.	Y chromosome	X chromosome
C.	X chromosome	X chromosome
D.	Y chromosome	Y chromosome

SAS21S081002

2 In which body part of a woman does a fertilized ovum get embedded?

_____

_____

SAS21S081003

3 Which of these statements is supported by the picture?
Circle 'Yes' or 'No' for the correct response.

Is this Statement Supported by the Picture?	Yes or No
The father's sperm decides the gender of the zygote.	Yes/No
The Y chromosome is shorter than the X chromosome.	Yes/No
An ovum unites with two sperms at a time.	Yes/No

Heights of students of four different sections of Grade 8 are measured. The table shows the percentage of maximum height up to which the students in each section have grown

Section	Girls	Boys
A	80%	75%
B	100%	100%
C	92%	85%
D	100%	98%

SAS21S081004

4 In which class have both the boys and the girls reached the end of puberty?

A. Section A
B. Section B
C. Section C
D. Section D

SAS21S081005

5 What can be concluded from the table?

A. Girls are taller than boys in all four classes.
B. Girls attain their maximum height earlier than boys.
C. Girls grow faster than boys throughout their childhood.
D. Girls and boys attain their maximum height at the same age.

SAS21S081006

6 What is the legal age for marriage in India?

A. 16 years for a girl and 18 years for a boy
B. 18 years for a girl and 18 years for a boy
C. 18 years for a girl and 21 years for a boy
D. 21 years for a girl and 21 years for a boy

SAS21S081007

7 Why should syringes be disposed of carefully after use?

_____

_____

SAS21S081008

8 Under which condition does metamorphosis take place?

A. Females are twice the size of males.
B. Young ones look different from adults.
C. Young ones eat the same food as adults.
D. Females are bright-coloured while males are dull.

Diabetes is a condition in which the blood sugar level of a person rises above the normal level. The table below shows the average range of blood sugar levels at fasting.

	Low blood sugar level	Normal blood sugar level	High blood sugar level (diabetes)
Blood sugar level at fasting	below 70 mg/dL	70 – 120 mg/dL	above 120 mg/dL

Doctors prescribe **insulin** injection for patients with high blood sugar levels. However, **glucagon** is injected in an emergency if the blood sugar level of a person drops too low.

SAS21S081009

9 Which of these is true about the gland secreting insulin in the human body?

A. It has no ducts.
B. It is located on the skin.
C. It controls the function of all other glands.
D. It releases hormones that help in growth.

SAS21S081010

10 Under what conditions of blood sugar level is glucagon likely to be injected?

A. below 60 mg/dL
B. 80–100 mg/dL
C. 100–120 mg/dL
D. above 120 mg/dL

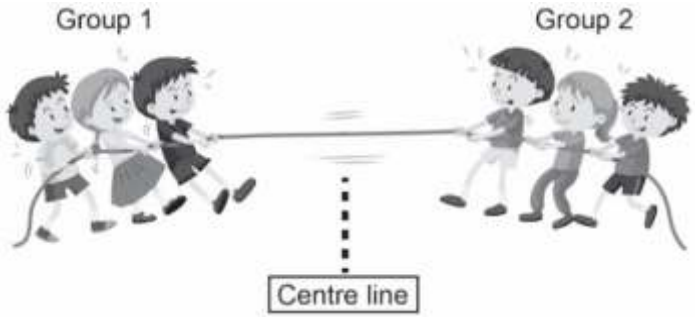
Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 11
Force and Pressure

SAS21S081101

1 What type of force is involved in each of the given conditions?
Put a tick mark (✔) for the response in terms of **push** or **pull**.

Condition	Push	Pull
Hitting a ball with a bat.		
Sucking milk shake with a plastic straw.		
Lifting a school bag from a desk.		

Two groups of students are playing tug-of-war.



SAS21S081102

2 Choose the correct direction of force applied by Group 1 and Group 2.

A. 

B. 

C. 

D. 

SAS21S081103

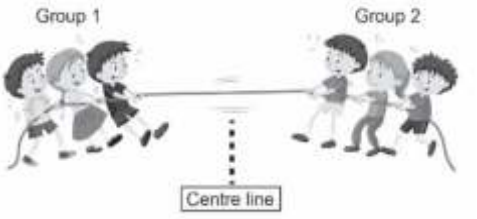
3 Group 1 is pulling with 250 N force and Group 2 is pulling with 300 N force.
What would be the likely position of the two groups after a minute of pulling?

A.

B.

C.

D.



Four students wanted to find out who could kick a football the strongest.
Each student kicked the football.

The table shows the distance the football travelled in air before hitting the ground.

	Student 1	Student 2	Student 3	Student 4
Distance the ball travelled in air before hitting the ground	10 m	12 m	8 m	14 m

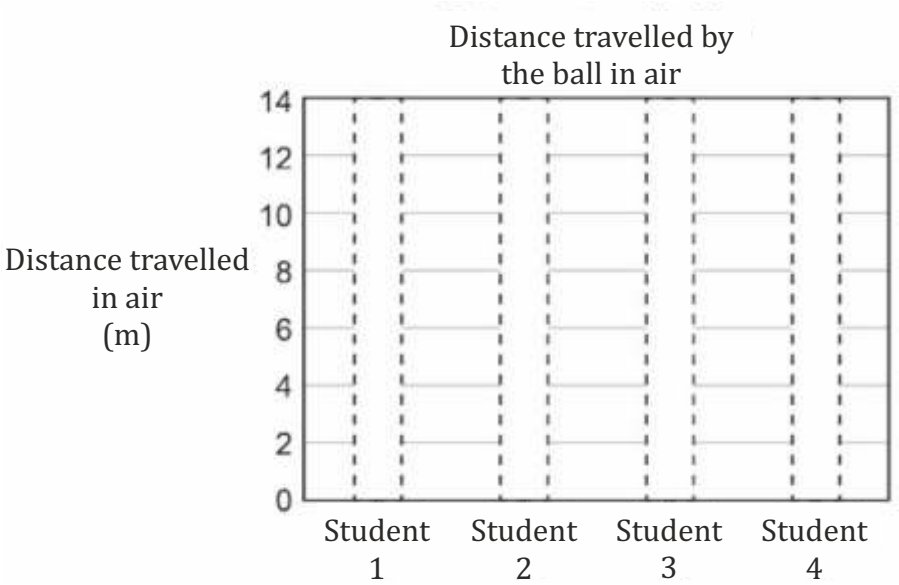
SAS21S081104

4 Which student kicked the ball with the greatest force?

A. Student 1
B. Student 2
C. Student 3
D. Student 4

SAS21S081105

5 Shade the columns in the graph to correctly show the data in the table.



SAS21S081106

6 Which of these factors must remain the same when each student kicks the football?
Circle 'Yes' or 'No' for the correct response.

Factor that must remain the same	Yes or No
Type of ground surface	Yes/No
Direction and speed of the wind	Yes/No
Size of the shoe worn by the student	Yes/No

Mark fills a bottle completely with water.
The bottle has three same sized plugged holes on its wall.
Mark pulls out the plugs and checks the position of the stream of water coming out.

SAS21S081107

7 What does Mark's activity show?

A. Liquids exert pressure.
B. Liquids contract on cooling.
C. Liquids cannot be compressed.
D. Liquids have no definite shape.

SAS21S081108

8 Which of these is an example of a contact force?

A. A guava falling from the tree.
B. A magnet attracting a hanging iron nail.
C. A plastic comb attracting small pieces of hair.
D. A boat moving on water by the action of wind on its sail.

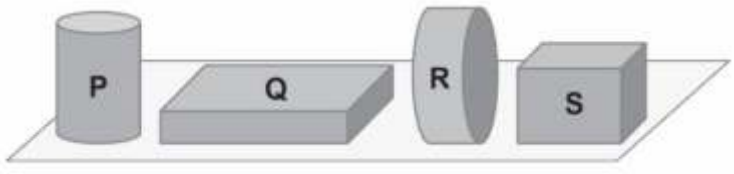
SAS21S081109

9 Which of these is true for force?
Circle 'Yes' or 'No' for the correct response.

Is this Correct?	Yes or No
A force can change the state of motion of an object.	Yes/No
A force can change the shape of an object.	Yes/No
A force can act between two solid objects only.	Yes/No

SAS21S081110

10



P, Q, R and S are four solid objects having the same mass.
Which object is exerting the least pressure on the table?

A. P
B. Q
C. R
D. S

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 12
Friction

Raju wanted to find out which one of four surfaces produces the greatest friction.
He pushed the same toy car on the four surfaces, separately.

Raju noted the distance travelled by car on each surface before stopping.

	Surface 1	Surface 2	Surface 3	Surface 4
Distance travelled by the toy car before stopping	120 cm	150 cm	100 cm	180 cm

SAS21S081201

1 Choose the correct direction of force applied by Group 1 and Group 2.

A. 

B. 

C. 

D. 

SAS21S081202

2 On which surface did the car experience the greatest friction?

A. Surface 1
B. Surface 2
C. Surface 3
D. Surface 4

SAS21S081203

3 What must be kept the same in the activity to compare the distances travelled by the car?

_____

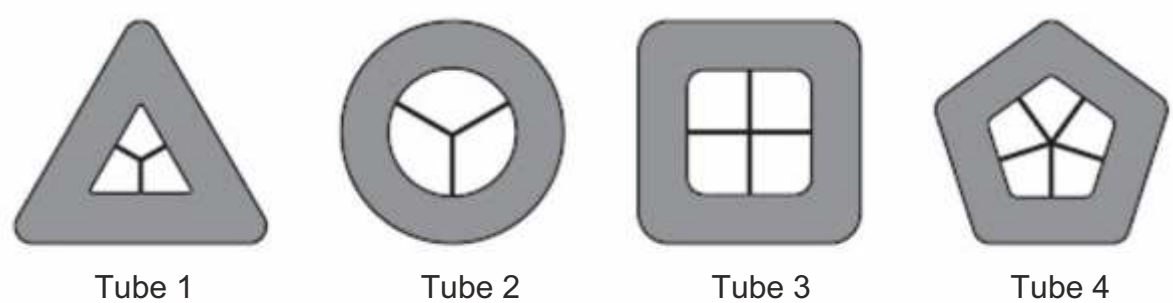
_____

SAS21S081204

4 What will happen to the car if it continues to move on the surface for 1 hour?

A. The wheels will get hard.
B. The wheels will become hot.
C. The wheels will shrink in size.
D. The wheels will change shape.

The picture shows four different rubber tubes.



SAS21S081205

5 Which tube will experience the least friction while rolling on a surface?
Explain your answer.

_____

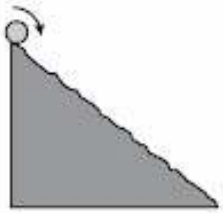
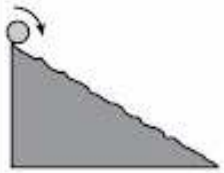
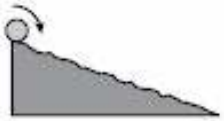
_____

SAS21S081206

6 Which of these would affect the amount of friction generated on a moving object?
Circle 'Yes' or 'No' for the correct response.

Does this Affect the Amount of Friction Generated?	Yes or No
Mass of the object	Yes/No
Surface area of the object	Yes/No
Roughness of the object	Yes/No

Anshu lets a marble roll freely on four rough wooden planks.
The table shows the time taken by the marble to reach the bottom of each plank.

	Plank 1	Plank 2	Plank 3	Plank 4
				
Time taken by the marble to reach bottom	2 seconds	3 seconds	X seconds	4 seconds

SAS21S081207

7 What could be the value of X in the table?

A. 2 seconds
B. 3 seconds
C. 4 seconds
D. 5 seconds

SAS21S081208

8 Anshu polished all four planks to smoothen the surfaces. She repeated her activity on the polished planks.
Will there be any change in the results? Explain your answer.

_____

_____

The picture shows four types of shoe soles.

SAS21S081209

9 Which shoe sole provides the best grip and friction while walking?

A. Sole1
B. Sole 2
C. Sole 3
D. Sole 4

SAS21S081210

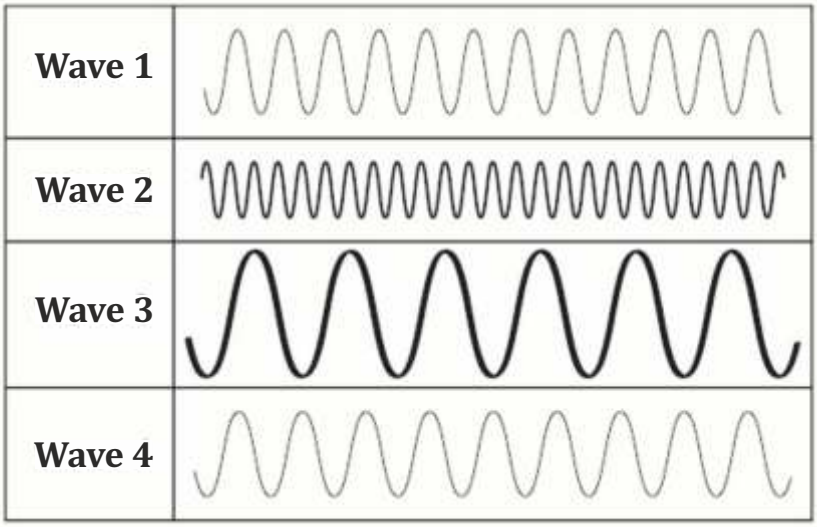
10 Why do weightlifters apply chalk powder on their palms while lifting weights?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 13
Sound

The picture shows four sound waves.



SAS21S081301

1 Which sound wave has the highest pitch?

_____

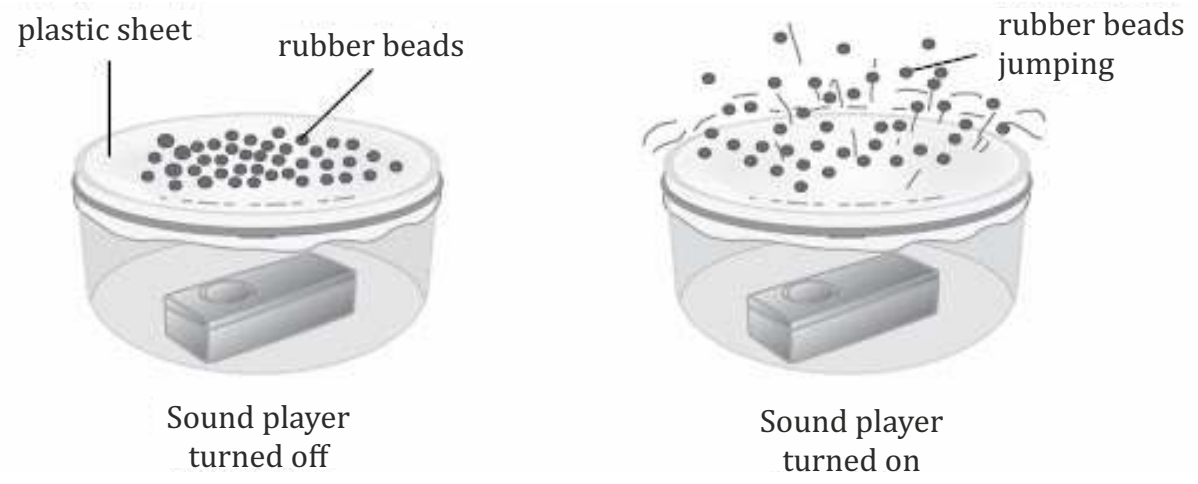
_____

SAS21S081302

2 Which of these is true about the four sound waves?
Circle 'Yes' or 'No' to mark your responses.

Is the statement true?	Yes or No
Wave 3 is the loudest.	Yes/No
Wave 1 and wave 4 have nearly the same loudness.	Yes/No
Wave 2 and wave 3 have the same loudness.	Yes/No

Raghav kept a mini sound player in each of two similar containers.
He then tightly covered both the containers with stretched plastic sheets.
He placed some tiny rubber beads on the surface of the sheets.
The picture shows what Raghav noticed when he turned on the sound player.



SAS21S081303

3 Which of these questions can be answered using the result of Raghav's activity?

A. Does sound travel as waves?
B. Does sound produce vibration?
C. Does sound travel through vacuum?
D. Does sound travel faster in solids than in gases?

SAS21S081304

4 Would the result of Raghav's activity change if fewer beads had been used? Explain your answer.

_____

_____

Which of these is true about the four sound waves?
Circle 'Yes' or 'No' to mark your responses.

Animal	Frequency range of sound waves
Elephant	15–12000 Hz
Human	20–22000 Hz
Dog	65–45000 Hz
Chicken	125–2000 Hz

SAS21S081305

5 A cat made a purring sound that had a frequency of 35 Hz.
Which of the animals mentioned in the table can hear the purring?

A. Only human
B. Only elephant
C. Dog and chicken
D. Elephant and human

SAS21S081306

6 Which of the following sounds can be classified as noise for humans?

A. Sounds that are softer than 20 dB
B. Sounds that are in between 20 dB and 40 dB
C. Sounds that are between 40 dB and 80 dB
D. Sounds that are louder than 80 dB

SAS21S081307

7 Which of these will reduce noise pollution?
Circle 'Yes' or 'No' to mark your responses.

Will this reduce noise pollution?	Yes or No
Regulating the use of loudspeakers	Yes/No
Setting up more thermal power plants	Yes/No
Using more electric vehicles	Yes/No

Aditi hangs four steel dishes of the same size but different thickness.
She hits each of them with an iron rod.

	Dish 1	Dish 2	Dish 3	Dish 4
Thickness of dish	1 mm	1.5 mm	0.5 mm	2 mm

SAS21S081308

8 The thicker the dish, the lower will be the vibration.
Which dish will produce the loudest sound when hit?

A. Dish 1
B. Dish 2
C. Dish 3
D. Dish 4

SAS21S081309

9 Which of these statements proves that sound can travel through solids?

A. We can hear the sound of wind.
B. We can hear the sound of lightning.
C. We can hear a bell ringing from a distance.
D. We can hear heartbeats by using a stethoscope.

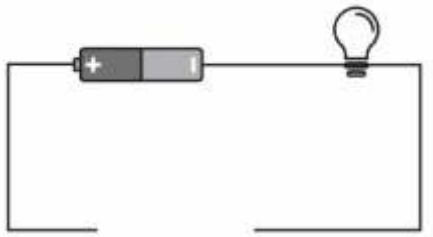
SAS21S081310

10 Which part of the human ear vibrates on receiving sound waves?

A. Ear lobe
B. Eardrum
C. Inner ear
D. Ear canal

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 14
Chemical Effects of Electric Current

Tia used four different objects to fill the gap in an electric circuit, separately.
The table shows what she found.



Object in the gap	The bulb
Plastic	Does not glow
Copper wire	Glows brightly
Wooden block	Does not glow
Graphite stone	Glows dimly

SAS21S081401

1 Which of these **best** conducts electricity?

A. Wood
B. Plastic
C. Copper
D. Graphite

SAS21S081402

2 Which of these is a chemical effect of electric current?

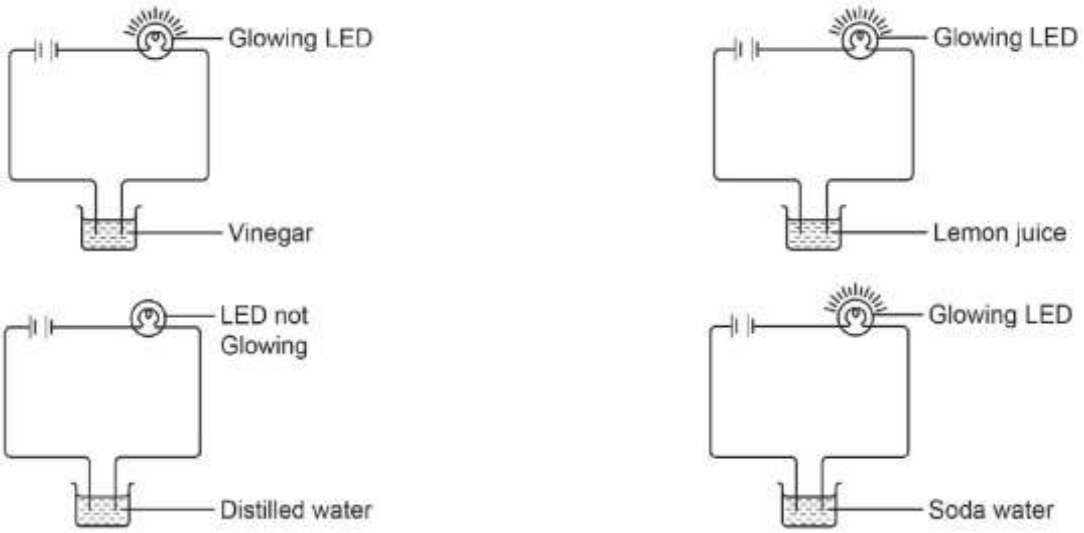
A. Glowing of bulb
B. Heating of water
C. Ringing of mobile phone
D. Chromium plating on iron

SAS21S081403

3 Which of these is a correct pair of an insulator and a conductor?

	Insulator	Conductor
A.	Aluminium	Cotton
B.	Thermocol	Rubber
C.	Copper	Iron
D.	Wax	Aluminium

Rashmi made separate electric circuits with four different solutions.
The pictures show what she found.



SAS21S081404

4 What can be concluded from her activity?

A. LED glows only in solutions
B. All four solutions are insulators of electricity
C. All four solutions are good conductors of electricity
D. Acids and bases are good conductors of electricity

SAS21S081405

5 Which safety precaution must Rashmi follow while doing this activity?

A. Wear boots
B. Wear goggles
C. Wear headphones
D. Wear rubber gloves

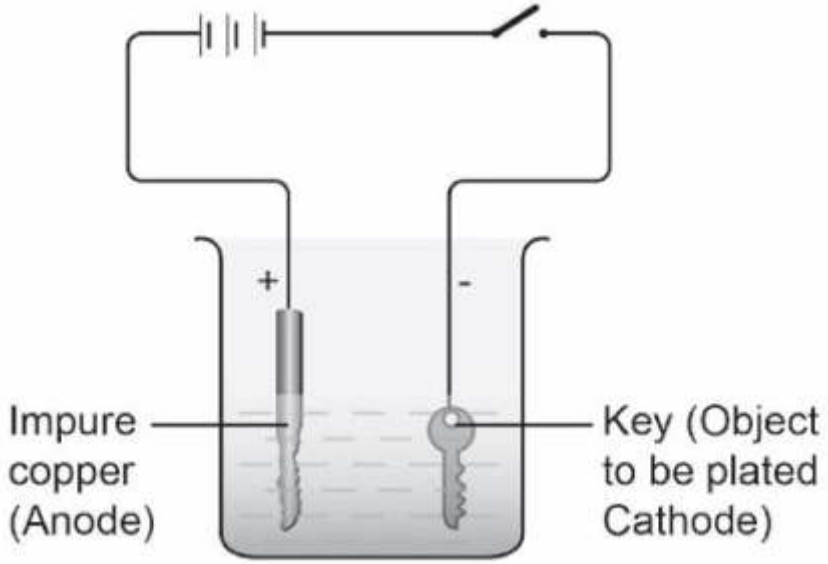
SAS21S081406

6 Will an electric device work if we place the positive terminal of a battery towards the negative point of the device? Explain your answer.

_____

_____

Electroplating is the process of adding a surface layer of metal on another metal.



SAS21S081407

7 Which of these is true about electroplating?
Circle 'Yes' or 'No' for the correct response.

Is the statement true?	Yes or No
The solution used contains ions of two metals.	Yes/No
Metal gets deposited on the electrode connected to the negative terminal.	Yes/No
A non-metal is used as the electrode connected to the positive terminal.	Yes/No

SAS21S081408

8 Which of these is an example of electroplating?

A. Colouring of jeans
B. Painting of a wall
C. Lamination of a photograph
D. Gold plating of imitation jewelleries

SAS21S081409

9 Sumit replaced all the bulbs in his home with LEDs.
After a month, he noticed that the electricity bill had decreased.
What was the most likely reason for the decrease in electricity bill?

_____

_____

SAS21S081410

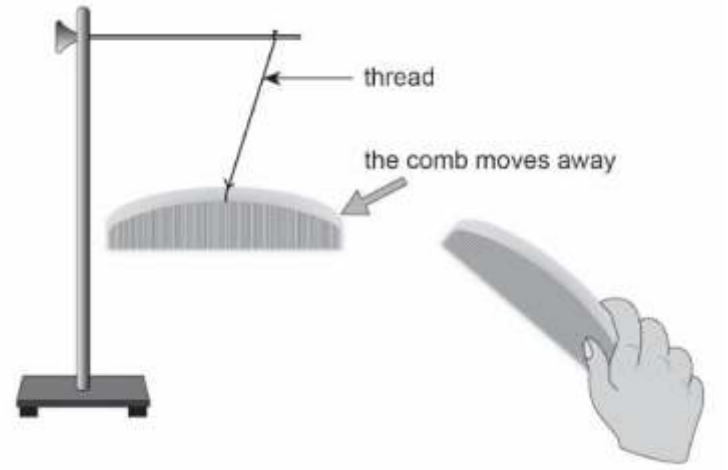
10 Distilled water is a bad conductor of electricity.
Why does rainwater conduct electricity?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 15
Some Natural Phenomena

Ryan ran two combs through his hair.
He hung one comb from a stand using a thread.
Ryan brought the other comb close to the first comb.
The picture below shows the result.



SAS21S081501

1 Why did the comb move away from the other?

_____

_____

SAS21S081502

2 Ryan repeats the activity using a pair of glass rods in place of the combs.
What would be the result?

A. The hanging rod will move away
B. The hanging rod will come closer
C. The hanging rod will show no change
D. The hanging rod will start spinning

Amit was travelling in a car when he saw lightning at some distance.
He heard a loud thunder after a few seconds.

SAS21S081503

3 What should Amit do immediately to remain safe?

A. Increase the speed of the car
B. Stop the car and remain seated inside
C. Stop the car and take shelter inside a building
D. Turn the car and travel in the opposite direction

SAS21S081504

4 Which of these conditions results in lightning?

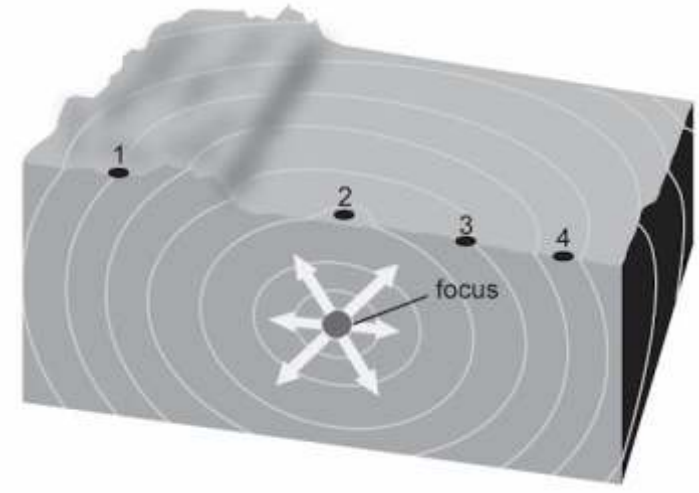
A. Negative and positive charges meeting
B. The number of negative charges increasing
C. The number of positive charges increasing
D. Negative and positive charges moving away from each other

SAS21S081505

5 A lightning conductor protects a building from lightning.
What is a lightning conductor made of?

A. Glass
B. Metal
C. Wood
D. Plastic

The diagram shows the focus of an earthquake.
Focus is the point inside the Earth's crust where the earthquake originates.
1, 2, 3 and 4 are four locations on the Earth's surface.



SAS21S081506

6 In which location will the effect of the earthquake be maximum?

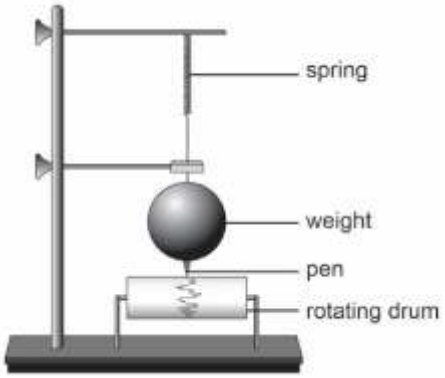
A. Location 1
B. Location 2
C. Location 3
D. Location 4

SAS21S081507

7 Raju was in his garden when an earthquake hit the place.
What should Raju do to remain safe?

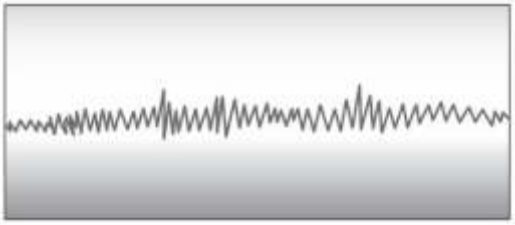
A. Move to an open space
B. Run away from the place
C. Take shelter under a staircase
D. Take shelter under a large tree

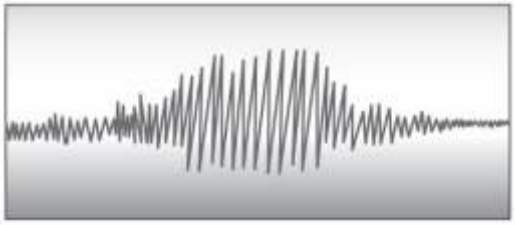
Earthquakes produce seismic waves that reach the Earth's surface.
A seismograph is an instrument that records the seismic waves.
The strength of the earthquake is calculated from the graph recorded.

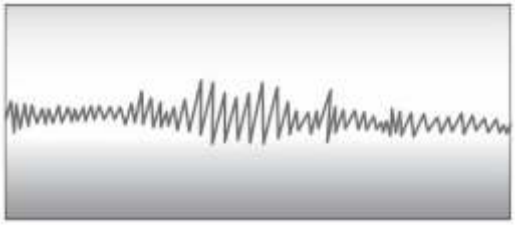


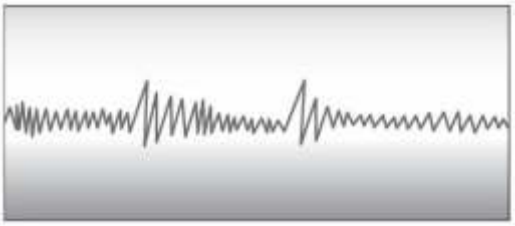
SAS21S081508

8 Which of these graphs shows the strongest earthquake?

A. 

B. 

C. 

D. 

Richter scale measures the strength of earthquakes.

Richter scale measurement of the earthquake	Example of damages due to the earthquake
3.0 – 3.9	No damages but some vibrations felt
4.0 – 4.9	Cracks in windows, some unstable objects fall
5.0 – 5.9	Building walls may collapse, movement of furniture
6.0 – 6.9	Building roofs may collapse, loss of few lives
7.0 – 7.9	Cracks on ground, underground pipes broken, loss of many lives

SAS21S081509

9 The damages from an earthquake are listed below.

- 2 people died
- 5 building roofs collapsed
- 12 building walls collapsed

What could be the likely reading on the Richter scale for the earthquake?

A. 4.8
B. 5.4
C. 6.5
D. 7.3

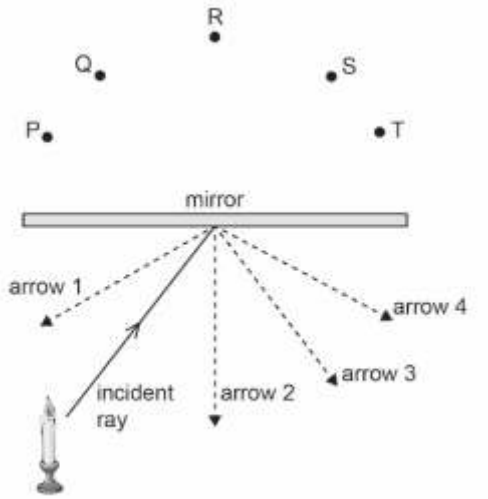
SAS21S081510

10 Which of these statements is **true** about earthquakes?

A. Earthquakes can cause soil erosion
B. Most of the earthquakes occur in mountain regions
C. The location and duration of earthquakes can be predicted
D. Earthquakes are caused by the movement of underground plates

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 16
Light

The picture shows a light ray from a candle falling on a mirror.
P, Q, R, S and T are five points behind the mirror.



SAS21S081601

1 Which arrow represents the light ray reflected by the mirror?

A. Arrow 1
B. Arrow 2
C. Arrow 3
D. Arrow 4

SAS21S080602

2 At which point will the image of the candle form?
Will the image be erect or inverted?

_____

_____

SAS21S081603

3 Which of these statements is true for reflection of light rays?
Circle 'Yes' or 'No' for the correct response.

Is the statement true?	Yes or No
Light rays are reflected by plane surfaces only.	Yes/No
Angle of incidence is equal to the angle of reflection.	Yes/No
Incident ray and reflected ray meet at the same point.	Yes/No

The picture shows a candle in front of two plane mirrors joined at their sides.

condition 1

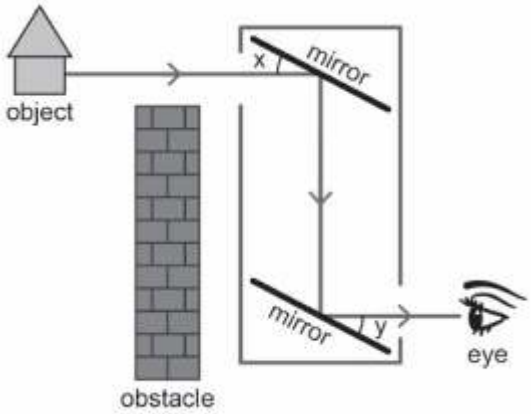
condition 2

SAS21S081604

4 What will increase the number of images formed on the mirrors?

A. Decrease in the size of the object
B. Increase in the size of the mirrors
C. Decrease in the angle between the two mirrors
D. Increase in the distance between the object and the mirrors

The diagram shows how an object is seen through a periscope.
x and y are two angles on the path of the light ray.



SAS21S081605

5 Which condition is required for the periscope to work properly?
Circle 'Yes' or 'No' for the correct response.

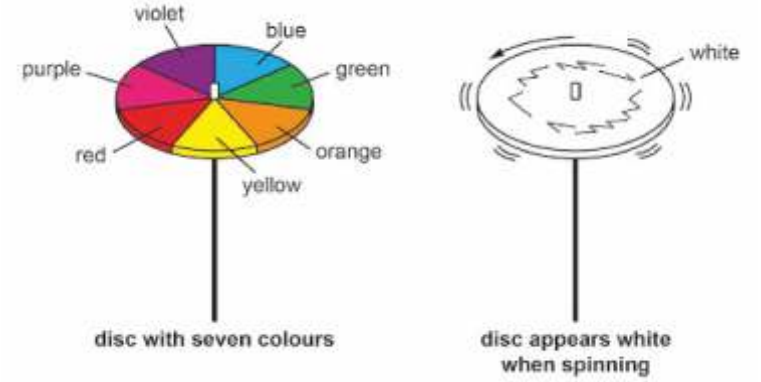
Is the statement true?	Yes or No
Angle x should be equal to angle y.	Yes/No
Object to be viewed should be within 5 m of the periscope.	Yes/No
Top of the periscope should be higher than the top of the obstacle.	Yes/No

SAS21S081606

6 How many times is a light ray is reflected in the periscope?

A. Once
B. Twice
C. Thrice
D. Four times

Reema has a multi-coloured disc.
She finds that the disc appears white when she spins it rapidly.



SAS21S081607

7 What can be concluded from the picture?

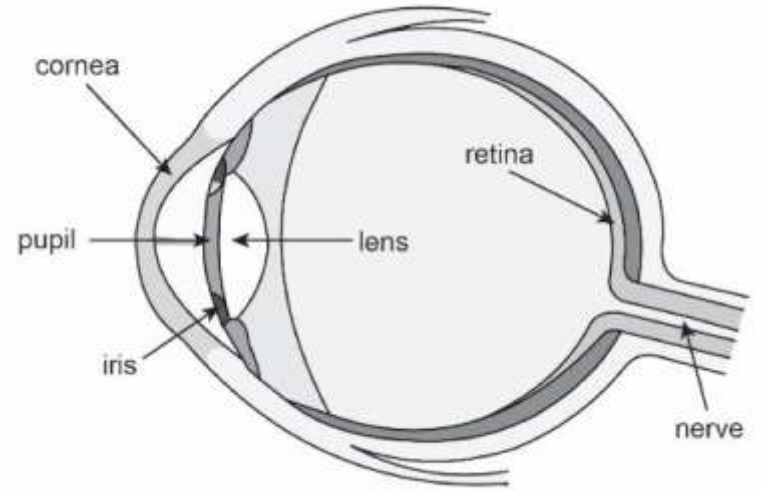
A. All discs are multi-coloured
B. All spinning objects appear white
C. Objects lose its colour on spinning
D. White is a mixture of seven different colours

SAS21S081608

8 Which of these objects reflects light?

A. The Sun
B. The Moon
C. A glowing bulb
D. Burning wood

The diagram shows the basic parts of the human eye.

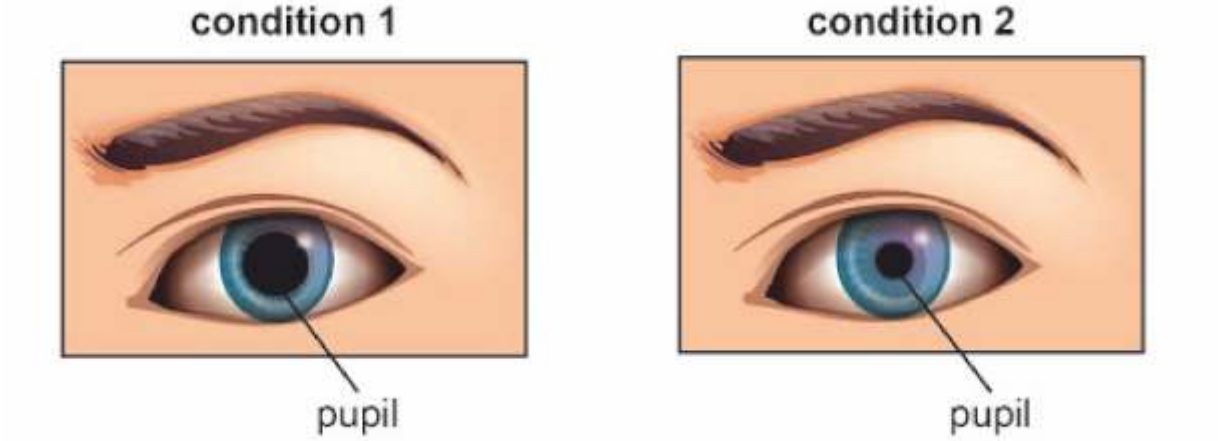


SAS21S081609

9 Which part protects the human eye from injury?

A. Iris
B. Lens
C. Retina
D. Cornea

The picture shows the size of the pupil under two different conditions.



SAS21S081610

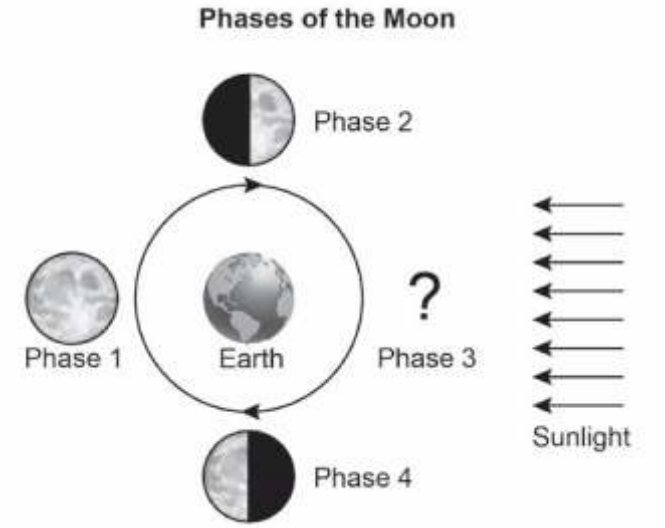
10 What makes the pupil change size between conditions 1 and 2?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 17
Stars and the Solar System

The diagram shows how the Moon appears to the Earth at four different phases.



SAS21S081701

1 Which of these pictures represents **Phase 3**?

A. 

C. 

B. 

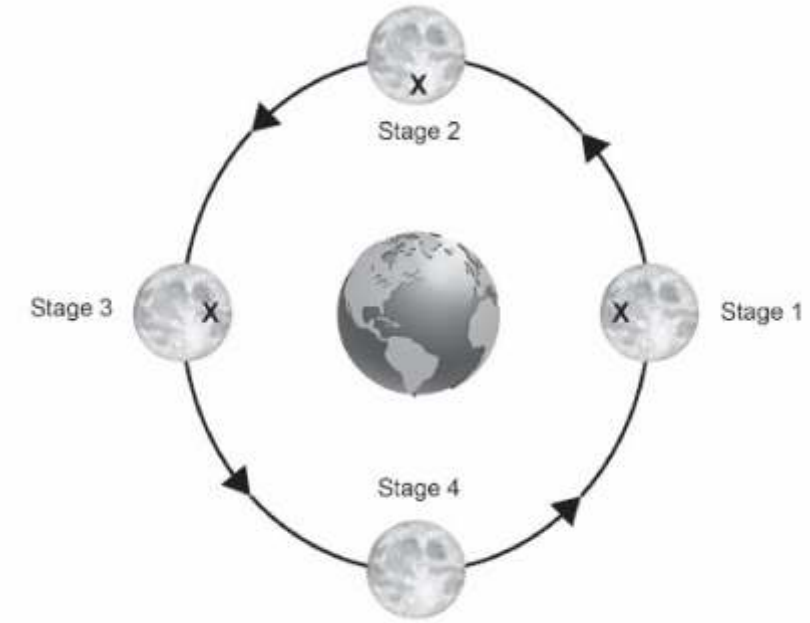
D. 

SAS21S081702

2 What is the rough number of days in between Phase 2 and Phase 4 of the Moon?

A. Half a day
B. One day
C. Fifteen days
D. Thirty days

The picture shows how a part of the Moon (X) is seen as it rotates around the Earth.



SAS21S081703

3 What will be the position of X at Stage 4?

A. 

C. 

B. 

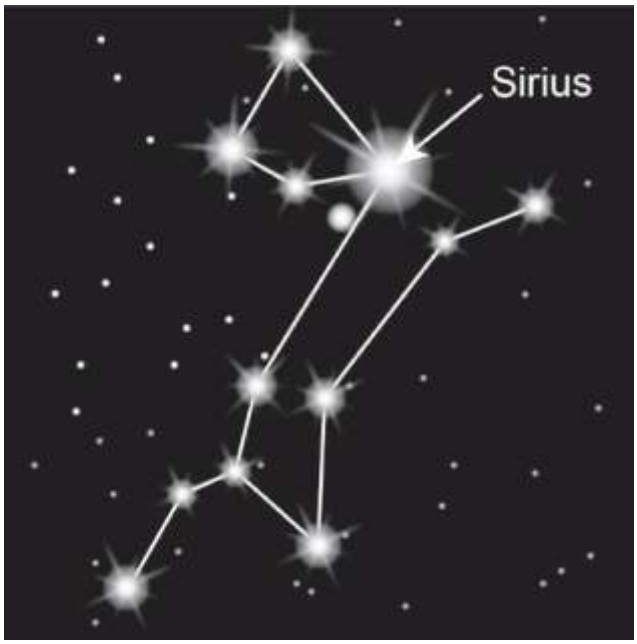
D. 

SAS21S081704

4 Why can't living things survive on the Moon?
Circle 'Yes' or 'No' for the correct response.

Is the statement true?	Yes or No
There is no water on the Moon.	Yes/No
There is no oxygen on the Moon.	Yes/No
There are many high mountains on the Moon.	Yes/No

The picture shows how a part of the Moon (X) is seen as it rotates around the Earth.



SAS21S081705

5 What is the word used for this type of imaginary figures?

A. Galaxy
B. Supernova
C. Constellation
D. Solar System

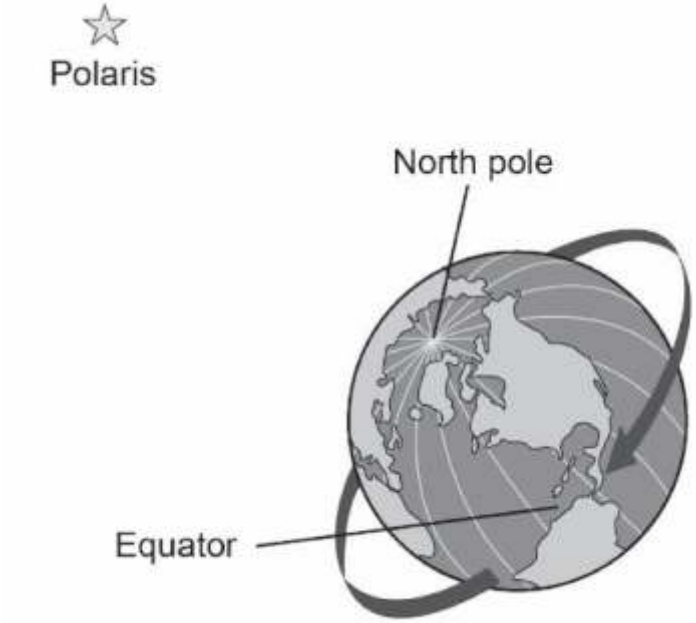
SAS21S081706

6 Sirius is twice as large as the Sun.
Why does it appear so small from the Earth?

_____

_____

Polaris is a star that always appear at the same point in the night sky.



SAS21S081707

7 Why does Polaris appear at the same location over time?

A. It is a part of our solar system
B. It is too far away from the Earth
C. It is situated along the Earth's axis
D. It is held in its position by the Earth's gravity

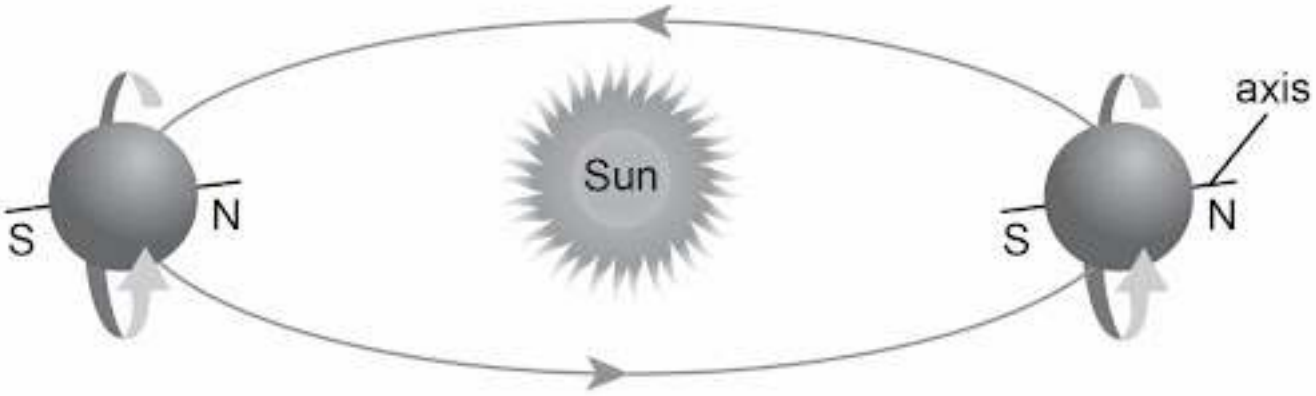
SAS21S081708

8 What is Polaris commonly known as?

_____

_____

The diagram shows how a planet rotates on its axis as it revolves around the Sun.



SAS21S081709

9 What can be concluded about the planet from the diagram?

Can this be concluded from the diagram?	Yes or No
The planet rotates from east to west.	Yes/No
The planet does not experience change of seasons.	Yes/No
The planet rolls on its orbit as it revolves around the Sun.	Yes/No

SAS21S081710

10 What is the word used for a celestial object that has a bright head and a long tail?

A. Comet
B. Meteor
C. Asteroid
D. Meteorite

Curriculum Aligned Competency Based Test Items
Science
Class 8 – Chapter 18
Pollution of Air and Water

Seema fills four similar fish tanks with freshwater from different sources.
She puts six freshwater fish in each tank.
The table shows her findings after two days.

Tank	Findings
Tank 1	All fish are dead.
Tank 2	1 fish is dead, and 5 fish are alive
Tank 3	All fish are alive.
Tank 4	2 fish are dead, and 4 fish are alive

SAS21S081801

1 Which tank is likely to have been filled with the most polluted water?

A. Tank 1
B. Tank 2
C. Tank 3
D. Tank 4

SAS21S081802

2 Seema repeats the activity by putting only one fish in each tank.
Can she rely on the results this time? Explain your answer.

_____

_____

SAS21S081803

3 Which of these activities causes water pollution?

A. Rowing on a river
B. Swimming on a river
C. Fishing in a river with nets
D. Dumping of sewage in river

Rakesh pours some polluted water on a filter paper.
He collects the filtered water in a conical flask.

SAS21S081804

4 Is the filtered water suitable for drinking? Explain your answer.

_____

_____

SAS21S081805

5 Which of these is true about greenhouse gases?
Circle 'Yes' or 'No' for the correct response.

Is this true about greenhouse gases?	Yes or No
Deforestation leads to an increase in greenhouse gases in the air.	Yes / No
Nitrogen dioxide (NO_2) is a greenhouse gas.	Yes / No
Excess of greenhouse gases in the air causes global warming.	Yes / No

The table shows the properties of four water samples.

Water Sample	Smell	Colour
Sample 1	No smell	Slightly muddy
Sample 2	Strong bad smell	Muddy and greenish
Sample 3	Very light smell	Colourless
Sample 4	No smell	Colourless

SAS21S081806

6 Which water sample is likely to be least polluted?

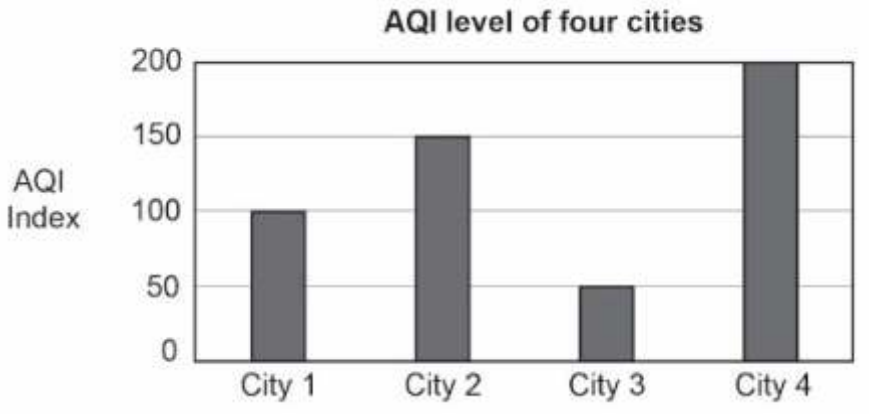
A. Sample 1
B. Sample 2
C. Sample 3
D. Sample 4

SAS21S081807

7 In which water source will the survival of aquatic animals be the most difficult?

A. Source of Sample 1
B. Source of Sample 2
C. Source of Sample 3
D. Source of Sample 4

The graph shows the Air Quality Index (AQI) of four different cities.



SAS21S081808

8 Which city's air is the most polluted? Explain your answer.

_____

_____

SAS21S081809

9 The air of only City 1 and City 3 are safe for breathing.
What is the AQI limit for safe breathing?

A. Less than 50
B. In between 50 and 100
C. In between 100 and 150
D. In between 150 and 200

SAS21S081810

10 Which of these steps can help reduce air pollution?
Circle 'Yes' or 'No' for the correct response.

Can this reduce air pollution?	Yes or No
Planting a large number of trees	Yes/No
Using biofuel as an energy source	Yes/No
Burning of agricultural wastes	Yes/No

Item Number	Question 1
Question Code	SAS21S080101
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Protection from Weeds
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Field 3 was used as a control to compare wheat production from fields with and without weedicides. For example: • Field 3 was used to compare with fields sprayed with weedicide. Or • Without field 3, the farmer would not be able to tell if the weedicide was effective.
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080102
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Protection from Weeds
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Wheat production was better in fields sprayed with weedicide.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080103
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Protection from Weeds
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Expresses disagreement with the farmer's friend stating that changing a variable might change the results of the experiment. For example: • Cannot compare production of wheat with production of mustard as results may vary. Or • To compare the effect of two different weedicides, the crop should remain the same.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080104
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Protection from Weeds
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. The flowers produce more seeds and the seeds germinate to form more weeds.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080105
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Types of Crops
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that paddy and crop grow best in any sequence. • Crop 1: Paddy • Crop 2: Cotton
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080106
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Preparation of Soil
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions any one benefit of turning or loosening the soil For example: • Helps the plant roots move deep into the soil. • Help the microorganisms in the soil grow making the soil fertile. • Turning brings soil nutrients to the top layer of soil.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080107
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Basic Agricultural Practices of Crop Production
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions the word 'harvesting' in the box. • Harvesting
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080108
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Type of Soil and Water Holding Capacity
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Clay
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080109
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Type of Soil and Water Holding Capacity
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the amount of each soil type on the filter paper must remain the same for the experimental set up. For example: • The amount of soil on the filter paper
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080110
Grade & Unit Name	Grade 8 | Crop Production and Management
Concept | Sub-concept	Life Sciences | Manure
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Does manure help plants grow better?
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080201
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Microorganisms and Us (Cleaning the Environment)
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Identifies the two materials that can be decomposed by microbes. • Chicken bones • Tissue paper
Partial Credit (Half Score)	Identifies only one material that can be decomposed by microbes. • Chicken bones Or • Tissue paper
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080202
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Harmful Microorganisms
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. He should wash his hands with soap after using the bathroom.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080203
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Food Preservations
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Carrots take more time to lose colour under cold conditions.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080204
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Food Preservations
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Answers both parts of the question correctly. • Shades the two bars on the graph correctly and • Labels the Y-axis correctly, for example, time taken to lose colour (in days)/days taken to lose colour.
Partial Credit (Half Score)	Either draws the graph correctly or labels the Y-axis correctly.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080205
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Commercial Use of Microorganisms
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Does temperature affect the growth of yeast?
No Credit (No Score)	Any other response or missing response

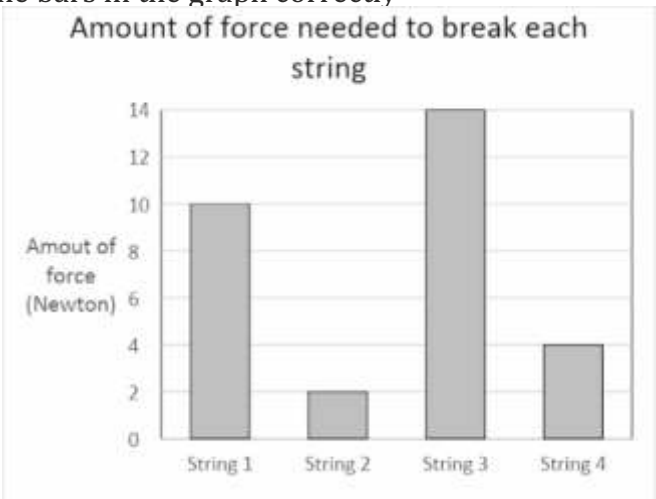
Item Number	Question 6
Question Code	SAS21S080206
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Commercial Use of Microorganisms
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. She should keep an extra set of test tubes with sugar solution but without the yeast.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080207
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Commercial Use of Microorganisms
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
Partial Credit (Half Score)	Either draws the graph correctly or labels the Y-axis correctly.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080208
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Commercial Use of Microorganisms
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Fungi
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080209
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Nitrogen Cycle
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. From nitrogenous compounds in the soil
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080210
Grade & Unit Name	Grade 8 | Microorganisms: Friend and Foe
Concept | Sub-concept	Life Sciences | Nitrogen Cycle
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that nitrogen in the environment will not get depleted because it is recycled and reused in the environment. For example: • Nitrogen is reused. Or • Nitrogen is recycled. Or • Nitrogen is used by living things. They die and decompose releasing nitrogen in the environment.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080301
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Characteristics of Synthetic Fibre
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Draws the bars in the graph correctly 
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080302
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Characteristics of Synthetic Fibre
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. String 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080303
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Characteristics of Synthetic Fibre
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Thickness of the strings
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080304
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | What are Synthetic Fibres?
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080305
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Characteristics of Synthetic Fibre
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Which fabric is natural and which fabric is synthetic?
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080306
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Characteristics of Synthetic Fibre
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Cooking on a gas oven
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080307
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Plastics
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Type 1 is cross-linked arrangement and Type 2 is linear arrangement
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080308
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Plastics
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080309
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Plastics and the Environment
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions Waste 2 and Waste 4 as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080310
Grade & Unit Name	Grade 8 | Synthetic Fibres and Plastics
Concept | Sub-concept	Physical Sciences | Plastics and the Environment
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions refuse as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080401
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Spoon 4 is made of metal and Spoon 1 is made of non-metal
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080402
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the results of the activity will not change as there will be no stoppage in the flow of electricity in the circuit. For example: • No, because that would not affect the flow of electricity in the circuit.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080403
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Interpreting Data & Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080404
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Ball 2 and Ball 3 are made of ceramic and wood. For example: • Ball 2 and Ball 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080405
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Displacement reaction
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Copper is less reactive than both zinc and iron.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080406
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Displacement reaction
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that zinc displaced copper from copper sulphate and formed zinc sulphate. For example: • Zinc displaces copper from copper sulphate and forms zinc sulphate.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080407
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Chemical properties of Metals and Non Metals
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. An acid is produced by the reaction.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080408
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Chemical properties of Metals and Non Metals
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that there will be no change in the colour of the litmus paper that has turned red because the reaction is already complete. For example: • There will be no change in the colour of the litmus paper as the reaction is already complete. Or • There will be no change in the colour of the litmus paper as no new product is formed.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080409
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Coin 4 and Coin 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080410
Grade & Unit Name	Grade 8 | Materials: Metals and Non-metals
Concept | Sub-concept	Physical Sciences | Physical Properties of Metals and Non Metals
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Glass
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080501
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Types of Natural Resources
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Will not exhaust even if used continuously/will exhaust if used continuously
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080502
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Exhaustible Natural Resources
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions natural gas as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080503
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Coal Formation
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080504
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Coal Formation
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Under land surfaces
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080505
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Combustion of Coal
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions carbon dioxide as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080506
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Coal
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Coal gas
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080507
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Petroleum and Natural Gas Deposits
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080508
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Petroleum and Natural Gas Deposits
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. High temperature
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080509
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Various Constituents of Petroleum
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Diesel
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080510
Grade & Unit Name	Grade 8 | Coal and Petroleum
Concept | Sub-concept	Earth Sciences | Natural Gas
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. It causes less air pollution.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080601
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | Structure of a Flame
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Zone 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080602
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | Structure of a Flame
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that wax is the fuel for the combustion.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080603
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | Types of Combustion
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080604
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | How Do We Control Fire?
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. P and R
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080605
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | How Do We Control Fire?
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Q
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080606
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | How Do We Control Fire?
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that sand cuts off the oxygen supply to the flame.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080607
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | What is a Fuel?
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Wood
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080608
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | Fuel Efficiency
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Type 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080609
Grade & Unit Name	Grade 8 | Combustion and Flame
Concept | Sub-concept	Physical Sciences | Burning of Fuels Leads to Harmful Products
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Both Type 1 and Type 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080610
Grade & Unit Name	Physical Sciences | Fuel Efficiency
Concept | Sub-concept	Physical Sciences | How Do We Control Fire?
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Type 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080701
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Protected Areas for Conservation
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Radha visited a Wildlife Sanctuary as it has no restriction on collection of plant samples or does not require entry permission. For example: • Wildlife Sanctuary • Radha did not require any permission to enter/ Radha could collect plant samples.
Partial Credit (Partial Score)	Mentions that Radha visited a Wildlife Sanctuary but gives no explanation for the response. Wildlife Sanctuary
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080702
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Protected Areas for Conservation
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. National Parks are larger than Wildlife Sanctuaries.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080703
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Endangered Animals
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Tiger is an endangered species.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080704
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Consequences of Deforestation
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
Partial Credit (Partial Score)	Mentions that Radha visited a Wildlife Sanctuary but gives no explanation for the response. Wildlife Sanctuary
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080705
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Red Data Book
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Red Data Book
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080706
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Water Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the threat is a type of water pollution as pesticides are harmful chemicals that pollute water bodies. For example: Water pollution as pesticides are harmful chemicals that pollute water bodies.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080707
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Conservation of Wildlife
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No No Yes
Partial Credit (Partial Score)	Mentions that Radha visited a Wildlife Sanctuary but gives no explanation for the response. Wildlife Sanctuary
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080708
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Reforestation
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that reforestation can occur if a deforested area is left undisturbed for a long time.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080709
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Endemic Species
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Endemic
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080710
Grade & Unit Name	Grade 8 | Conservation of Plants and Animals
Concept | Sub-concept	Life Sciences | Recycling of Paper
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Production of paper requires lot of wood pulp
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080801
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Organisms Show Variety in Cell Number, Shape and Size
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080802
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Organisms Show Variety in Cell Number, Shape and Size
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Human egg
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080803
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Shape of Cells
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions cell 1 as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080804
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Cell Structure and Function
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. cell→tissue→organ
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080805
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Discovery of the Cell
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Robert Hooke
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080806
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Parts of the Cell
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080807
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Parts of the Cell
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Vacuoles in animal cells are smaller than that in plant cells.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080808
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Nucleus
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions nucleus as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080809
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Types of Cell
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Absence of nucleus
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080810
Grade & Unit Name	Grade 8 | Cell - Structure and Function
Concept | Sub-concept	Life Sciences | Cytoplasm
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Nucleus, cytoplasm and cell membrane
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S080901
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Female Reproductive Organs in Humans
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S080902
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Female Reproductive Organs in Humans
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. One
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S080903
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Female Reproductive Organs in Humans
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S080904
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Development of Embryo
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No No
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S080905
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Fertilisation
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Petri dish
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S080906
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Fertilisation
Competency	Interpreting Data And Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Both parents are necessary /both parents are necessary
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S080907
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Structure of Sperm
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions part Z as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S080904
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Fertilisation
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Frog
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S080909
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Metamorphosis
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S080910
Grade & Unit Name	Grade 8 | Reproduction in Animals
Concept | Sub-concept	Life Sciences | Asexual Reproduction
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Types 1, 2 and 3 methods of reproduction involve single parent only.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081001
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | How is the Sex of Child Determined?
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. X chromosome, X chromosome
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081002
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | How is the Sex of Child Determined?
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions uterus as the answer.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081003
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | How is the Sex of Child Determined?
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081004
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Changes at Puberty
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Class X
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081005
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Changes at Puberty
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Girls attain their maximum height earlier than boys.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081006
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Reproductive Health
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. 21 years for a girl and 21 years for a boy.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081007
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Reproductive Health
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that used syringes may contain traces of blood infected with virus or bacteria.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081008
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Roles of hormones in completing the life history of Insects and Frogs
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Young ones look different from adults
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081009
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Hormones Other Than Sex Hormones
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. It has no ducts
No Credit (No Score)	Any other response or missing response

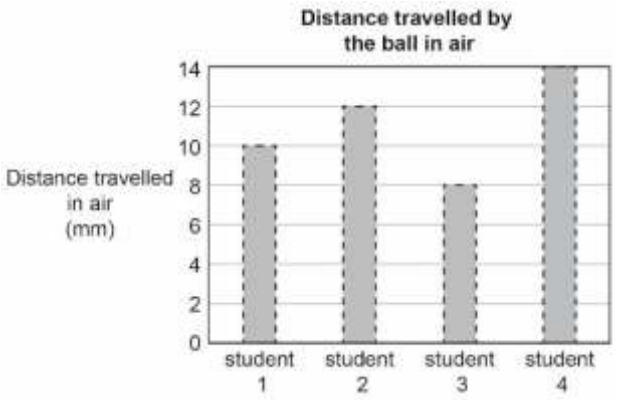
Item Number	Question 10
Question Code	SAS21S081010
Grade & Unit Name	Grade 8 | Reaching the Age of Adolescence
Concept | Sub-concept	Life Sciences | Hormones Other Than Sex Hormones
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Below 60 mg/dL
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081101
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Force - A Push or a Pull
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Push Pull Pull
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081102
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Exploring Forces
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081103
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Exploring Forces
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081104
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Exploring Forces
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Student 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081105
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Exploring forces
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Shades the columns as shown below. 
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081106
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Contact Forces
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081107
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Pressure Exerted by Liquids
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Liquids exert pressure
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081108
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Contact Forces
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. A boat moving on water by the action of wind on its sail.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081109
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Force Acting on Objects
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081110
Grade & Unit Name	Grade 8 | Force and Pressure
Concept | Sub-concept	Physical Sciences | Pressure
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Q
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081201
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Force of Friction
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081202
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Factors Affecting Friction
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Surface 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081203
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Factors Affecting Friction
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the amount of push force on the toy car should be the same for the four surfaces. For example: • The amount of push force on the toy car for each surface.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081204
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Friction a Necessary Evil
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. The wheels will become hot
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081205
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Increasing or Reducing Friction
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Tube 2 will experience the least amount of rolling friction as it has the smallest amount of surface area touching the surface at any point of time. For example: • Tube 2, as it has the smallest amount of surface area touching the surface at any given time.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081206
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Factors Affecting Friction
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081207
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Factors Affecting Friction
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. 5 seconds
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081208
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Increasing or Reducing Friction
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the marble will take less time to reach the bottom of each plank as the friction is decreased. For example: • The marble will reach the bottom of each plank in less time. The amount of friction on each plank is decreased.
Partial Credit (Partial score)	Mentions that the marble will take less time to reach the bottom of each plank as the friction is decreased. For example: • The marble will reach the bottom of each plank in less time. OR • The amount of friction on each plank is decreased.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081209
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Increasing or Reducing Friction
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Sole 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081210
Grade & Unit Name	Grade 8 | Friction
Concept | Sub-concept	Physical Sciences | Increasing or Reducing Friction
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that chalk powder increases the friction between the palms and the weights or chalk powder provides better grip. For example: • Chalk powder increases the friction between the palms and the weights. OR • Chalk powder provides better grip.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081301
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Loudness and Pitch
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions wave 2 as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081302
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Loudness and Pitch
Competency	Interpreting Data & Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081303
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Sound is Produced by Vibrating Body
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Does sound produce vibration?
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081304
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Sound is Produced by Vibrating Body
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the result would remain the same as the vibration would still make the beads jump
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081305
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Audible and Inaudible Sounds
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Elephant and human
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081306
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Noise and Music
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Sounds that are louder than 80 dB
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081307
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Measures to Limit Noise Pollution
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081308
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Sound is Produced by Vibrating Body
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Dish 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081309
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Sound Needs a Medium for Propagation
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. We can hear heartbeats by using a stethoscope.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081310
Grade & Unit Name	Grade 8 | Sound
Concept | Sub-concept	Physical Sciences | Human Ears
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Eardrum
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081401
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Conductors and Insulators
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Copper
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081402
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Chemical Effects of Electric Current
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Chromium plating on iron
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081403
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Conductors and Insulators
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Wax/Aluminium
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081404
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Do Liquids Conduct Electricity?
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Acids and bases are good conductors of electricity
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081405
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Properties of Acids and Bases
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Wear rubber gloves
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081406
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Electric Circuits
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the electric device will not work as there will be insufficient current flow from the battery to the device. For example: • The electric device will not work as there will be insufficient current flow from the battery to the device.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081407
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Electroplating
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081408
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Electroplating
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Gold plating of imitation jewelleries
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081409
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | LED
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that LEDs consume less electricity than bulbs.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081410
Grade & Unit Name	Grade 8 | Chemical Effects of Electric Current
Concept | Sub-concept	Physical Sciences | Good/Poor Conducting Liquids
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that rainwater contains dissolved salts that conduct electricity.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081501
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Charging by Rubbing
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the combs are likely charged.
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081502
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Charging by Rubbing
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. The hanging rod will move away
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081503
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Lightning
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Stop the car and take shelter inside a building
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081504
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Lightning
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Negative and positive charges meeting
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081505
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Lightning Safety
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Metal
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081506
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Earthquakes
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Location 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081507
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Protection Against Earthquakes
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Move to an open space
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081508
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Earthquakes
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081509
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Earthquakes
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 6.5
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081510
Grade & Unit Name	Grade 8 | Some Natural Phenomena
Concept | Sub-concept	Physical Sciences | Earthquakes
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Earthquakes are caused by the movement of underground plates
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081601
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Law of Reflection
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Arrow 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081602
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Law of Reflection
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the image of the candle will be formed at Q and the image will be erect. For example, • At point Q. The image will be erect.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081603
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Law of Reflection
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	No Yes Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081604
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Multiple Images
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Decrease in the angle between the two mirrors
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081605
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Reflected Light can be Reflected Again
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081606
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Reflected Light can be Reflected Again
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Twice
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081607
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Sunlight - White or Coloured Light
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. White is a mixture of seven different colours
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081608
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | We See Objects Due to Reflection of Light
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. The Moon
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081609
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Human Eye
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	D. Cornea
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081610
Grade & Unit Name	Grade 8 | Light
Concept | Sub-concept	Physical Sciences | Human Eye
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions intensity of light or brightness of light.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081701
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Moon
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081702
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Moon
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Fifteen days
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081703
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Moon
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Image
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081703
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Moon
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081705
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | Constellations
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Constellation
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081706
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Stars
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Sirius is much far away from the Earth as compared to the Sun. For example: • Sirius is very far away from the Earth.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081707
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Stars
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. It is situated along the Earth's axis
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081708
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Stars
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions North Star or Pole Star as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081709
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | The Solar System
Competency	Interpreting Data and Evidence Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081710
Grade & Unit Name	Grade 8 | Stars and the Solar System
Concept | Sub-concept	Earth Sciences | Meteors and Meteorites
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Comet
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S081801
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Water Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Tank 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S081802
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Water Pollution
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the results will be unreliable as a single fish can die due to many unknown reasons. For example, • No. A single fish can die due to many unknown reasons.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S081803
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Water Pollution
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Dumping of sewage in river
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S081804
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | What is Potable Water and How is Water Purified?
Competency	Constructed Response
Item Type	Multiple Choice Question
Full Credit (Full Score)	Mentions that the filtered water is unsafe for drinking as it may contain harmful microorganisms. For example: • No. It may contain harmful microorganisms.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S081805
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Greenhouse Effect
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes No Yes
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S081806
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Water Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Sample 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S081807
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Water Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Source of Sample 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S081808
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Air Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions City 4 as the response because it has the highest AQI index.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S081809
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Air Pollution
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. In between 100 and 150
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S081810
Grade & Unit Name	Grade 8 | Pollution of Air and Water
Concept | Sub-concept	Earth Sciences | Air Pollution
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	Yes Yes No
No Credit (No Score)	Any other response or missing response