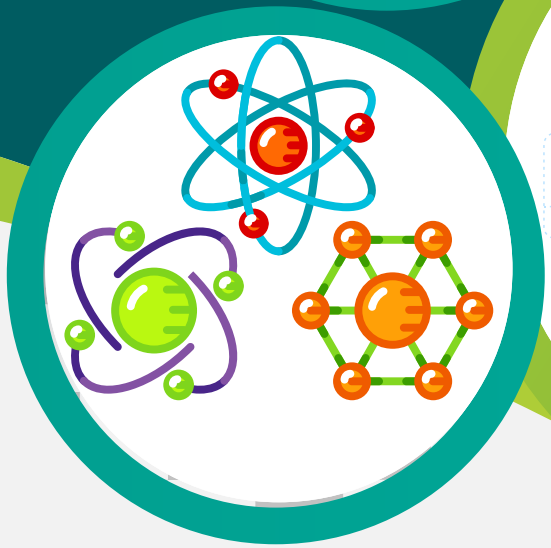

Curriculum Aligned Competency Based Test Items

Science

Class - 9

Central Board of Secondary Education

Sri Aurobindo Society
Creating the Next Future

ACER

Acknowledgements

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- Australian Council for Educational Research (ACER), New Delhi.

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Curriculum Aligned Competency Based Test Items
Class 9
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 9)*** 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

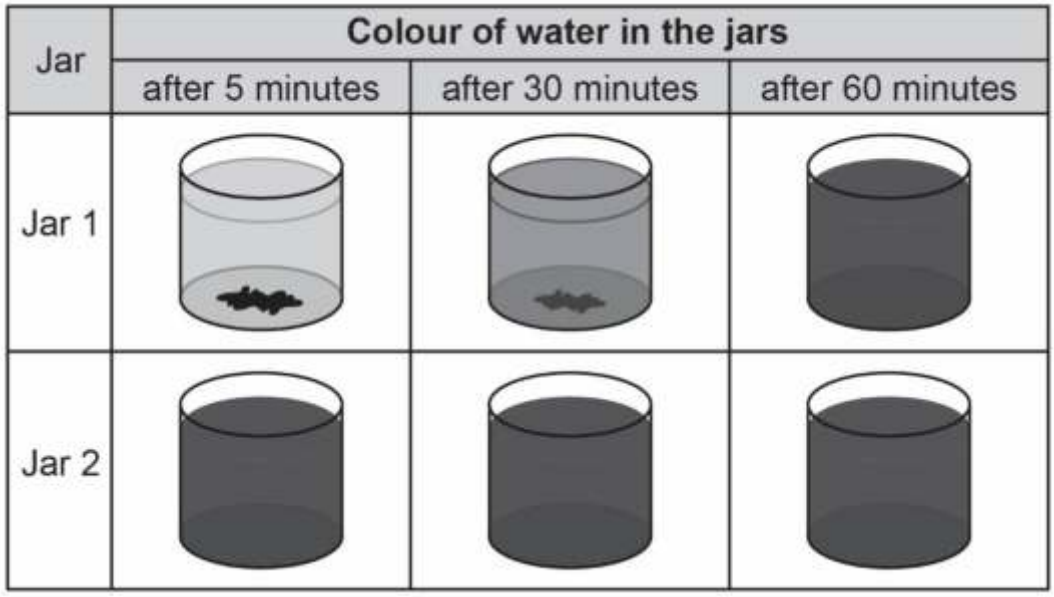
▶ Scoring Key

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 1
Matter in Our Surroundings

Masood wanted to find out which state of a substance dissolves faster in water.
He filled two similar glass jars with the same amount of water.
Masood added the following substances to the jars of water.

- 10 g of copper sulphate crystal to Jar 1.
- 10 mL of 75% copper sulphate solution to Jar 2.

The table below shows the colour of the water in each jar after specific time periods.



SAS21S090101

1 Which statement can be concluded from Masood's activity?

A. Crystals dissolve partially in water.
B. Liquids dissolve faster than solids in water.
C. Copper sulphate dissolves faster in water than in any other liquid.
D. Particles of a liquid have a stronger force of attraction than that of a solid.

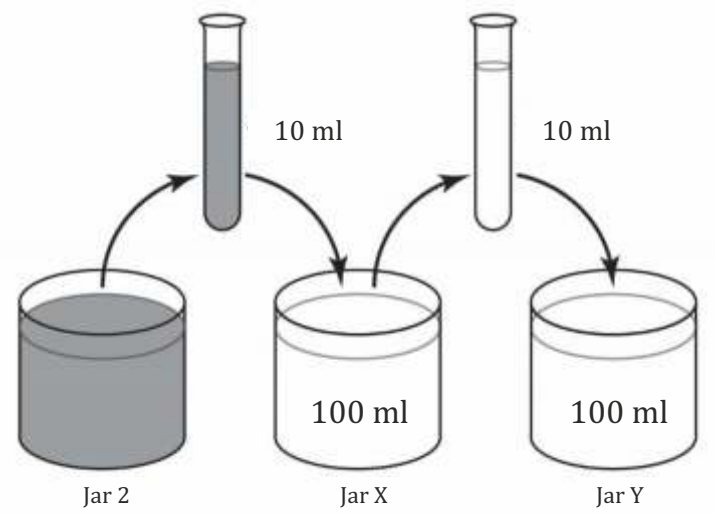
SAS21S090102

2 Why did Masood use the same amount of water in each jar?

_____

_____

Masood took 10 mL of the coloured water from Jar 2 and poured it into 100 mL of plain water in Jar X.
He then took 10 mL of the mixture from jar X and poured it into 100 mL of plain water in Jar Y.



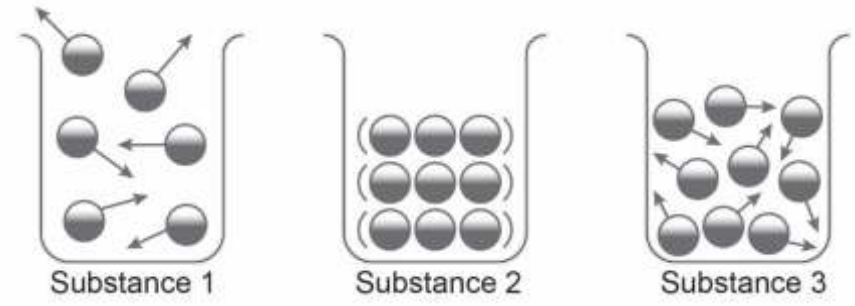
He mixed the liquids in jars X and Y.

SAS21S090103

3 What would be the likely colour of the liquids in Jar X and Jar Y respectively?

	colour of liquid in Jar X	colour of liquid in Jar Y
A.		
B.		
C.		
D.		

The picture shows the arrangement of particles in three different substances.



SAS21S090104

4 Which of the following is true about the state of the three substances?
Select the correct row.

	Substance 1	Substance 2	Substance 3
A.	Solid	Liquid	Gas
B.	Gas	Liquid	Solid
C.	Liquid	Gas	Solid
D.	Gas	Solid	Liquid

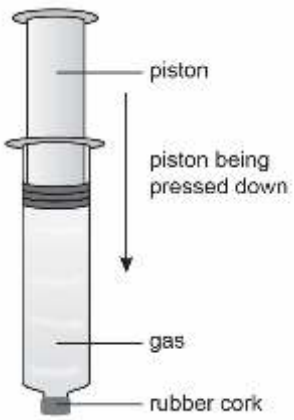
SAS21S090105

5 What can be done to make the particles of Substance 1 move slower?

_____

_____

Tina found a syringe in her science lab.
The mouth of the syringe was closed with a rubber cork.
Tina tried to press the piston of the syringe as much as possible.



SAS21S090106

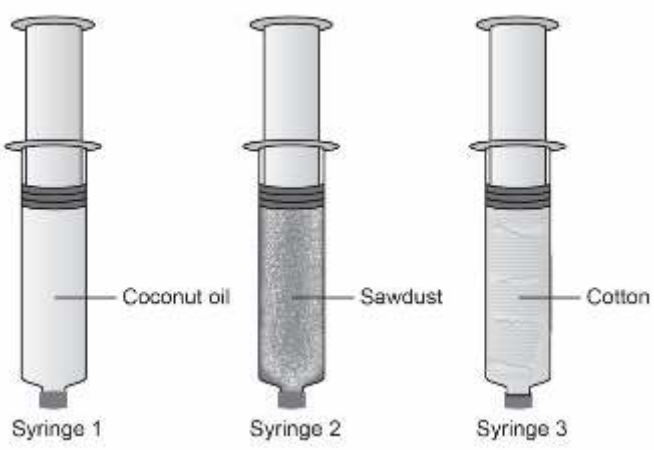
6 Tina found that it was difficult to press the piston as it moved deeper.
Explain the reason with reference to the change in space between the particles.

_____

_____

SAS21S090107

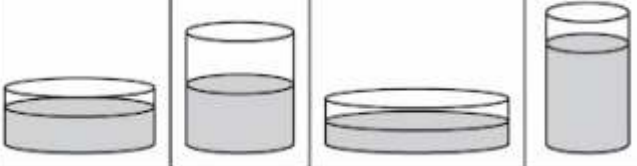
7 Tina found three more syringes of the same size closed with rubber cork.
She took the piston out of each syringe and filled them with coconut oil, saw dust and cotton.
Tina closed the end of each syringe with piston.
She then tried to press the piston of each syringe as much as possible.



Arrange the syringes in increasing order of difficulty of pressing the piston.
Key: less difficult → more difficult

A. Syringe 1 → Syringe 2 → Syringe 3
B. Syringe 3 → Syringe 2 → Syringe 1
C. Syringe 1 → Syringe 3 → Syringe 2
D. Syringe 2 → Syringe 3 → Syringe 1

Madhu poured 100 mL of water to each of four different glass vessels.
She kept all the four vessels under the Sun.
Madhu noted the time taken for the water in each vessel to evaporate completely.

	Vessel 1	Vessel 2	Vessel 3	Vessel 4
				
Time taken for the water to evaporate	4 hours	6 hours	2 hours	8 hours

SAS21S090108

8 Which of these questions can be answered based on the results of Madhu's activity?

A. Does the rate of evaporation of a liquid depend on its open surface area?
B. Does the rate of evaporation of a liquid depend on its surrounding temperature?
C. Does the rate of evaporation of a liquid depend on the material of its container?
D. Does the rate of evaporation of a liquid depend on the amount of moisture in air?

SAS21S090109

9 Why did Madhu pour equal amount of water in each vessel?
Explain your answer.

_____

_____

SAS21S090110

10 Cotton clothes are comfortable to wear in summers. Which feature of cotton explains why cotton is comfortable to wear in summers?
Circle 'Yes' or 'No' for each row.

Why cotton is comfortable to wear in summers?	Yes or No
Cotton has strong fibres.	Yes/No
Cotton is a natural fabric.	Yes/No
Cotton absorbs water and has pores.	Yes/No

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 2
Is Matter Around Us pure?

The table shows the processes required to separate different mixtures in four separate jars.

	Jar 1	Jar 2	Jar 3	Jar 4
Process	distillation	filtration	evaporation	sublimation

SAS21S090201

1 Which jar contains a mixture of two solids?

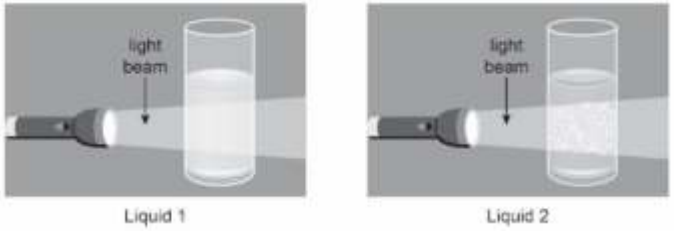
A. Jar 1
B. Jar 2
C. Jar 3
D. Jar 4

SAS21S090202

2 What process **does not** involve heating?

A. Distillation
B. Filtration
C. Evaporation
D. Sublimation

Tina passes light beams through two liquid mixtures in separate glasses.
The picture shows Tina's observations.



SAS21S090203

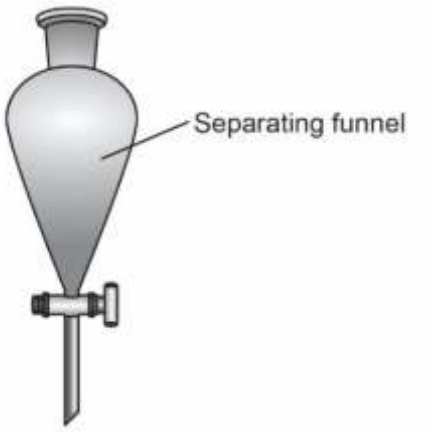
3 Based on the behaviour of the light beam what are liquids 1 and 2?

	Liquid 1	Liquid 2
A.	solution	colloid
B.	colloid	suspension
C.	solution	suspension
D.	suspension	colloid

SAS21S090204

4 Which of these is true about the particles in the two liquids?

A. Particles in both liquids scatter light rays.
B. Particles in both liquids absorb light rays.
C. Particles in liquid 1 scatter light rays and particles in liquid 2 absorb light rays.
D. Particles in liquid 1 absorb light rays and particles in liquid 2 scatter light rays.



SAS21S090205

5 What are the components of a mixture that can be separated using a separating funnel?

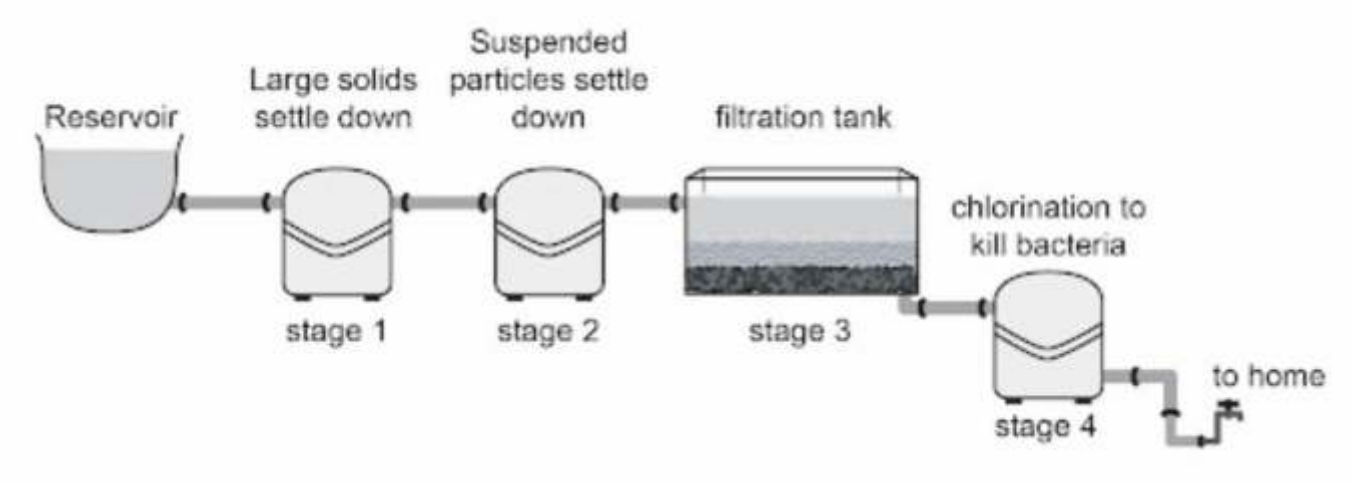
A. Two miscible liquids
B. Two immiscible liquids
C. A gas dissolved in a liquid
D. A solid dissolved in a liquid

SAS21S090206

6 Which of these is an **alloy**?

A. Silver
B. Copper
C. Bronze
D. Aluminium

The flow chart shows a typical water treatment system.



Water treatment system

SAS21S090207

7 What can be concluded from the flow chart about the water treatment system?

A. There are two stages of filtering water.
B. Microorganisms in water are removed in the last stage.
C. Large impurities in water are removed in the last stage.
D. There are three stages for removal of suspended impurities.

SAS21S090208

8 Which of these is common for all chemical changes?

A. Change in shape
B. Absorption of heat
C. Increase in volume
D. Formation of a new substance

The table lists the properties of four substances.

	Is it shiny?	How does it conduct electricity?
Substance 1	yes	very good
Substance 2	no	very poor
Substance 3	yes	medium
Substance 4	no	poor

SAS21S090209

9 Which substance is most likely to be a metalloid?

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

A gas cylinder has the following symbol on its surface.

SAS21S090210

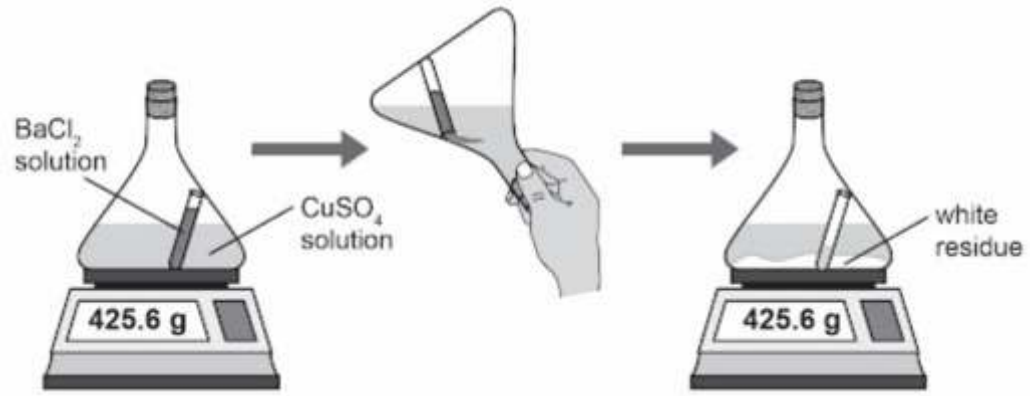
10 Which property of the gas is represented by the symbol?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 3
Atoms and Molecules

Alia mixed BaCl2 solution and CuSO4 solution in a closed conical flask.



SAS21S090301

1 What can concluded from the result of the experiment?

A. Total mass of the chemicals remain the same.
B. Total volume of the chemicals remain the same.
C. State of matter of the chemicals remain the same.
D. Composition of the chemicals remain the same.

SAS21S090302

2 What is the chemical name of the white residue?

_____

_____

The table lists the symbols for some common elements.

	Sodium	Uranium	Nitrogen	Zinc	Chlorine
Symbol of the elementnce 1	Na	U	N	Zn	CI

SAS21S090303

3 Which of these is true for the symbols of different elements?
Circle 'Yes' or 'No' for the correct response.

Is the statement true?	Yes or No
It always contains the first letter of the element's name.	Yes/No
If it contains two letters, then the first letter is capital and the second letter is small.	Yes/No
It contains a single letter for non-metals and two letters for metals.	Yes/No

The atomic mass of two elements are given below.
Oxygen = 16 u
Sulphur = 32 u

SAS21S090304

4 What is the ratio by atomic mass of Sulphur and Oxygen in So2?

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

SAS21S090305

5 Which of the following molecules is **triatomic**?

A. H2
B. C
C. CO
D. H2O

The formula and charge on ions of three different compounds are shown below.

Formula	PbO2	MgCl2	Al2O3
Charge on ions	Pb4+ and O2-	Mg2+ and Cl-	Al3+ and O2-

SAS21S090306

6 Two ions, Zn2+ and S2-, combine to form a compound. What should be the formula of the compound formed?

A. ZnS
B. Zn2S
C. ZnS2
D. Zn2S2

SAS21S090307

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

Is the statement true?	Yes or No
An ion is always a single charged atom.	Yes/No
An ion of a metal is always positively charged.	Yes/No
An ion of a non-metal is either positively or negatively charged	Yes/No

The atomic mass of four elements are given below.

	Carbon	Helium	Calcium	Nitrogen
Atomic mass (u)	12	4	40	14

SAS21S090308

8 Molar mass is the mass of 1 mole of an element or a compound.
Which element has the highest molar mass?

A. Carbon
B. Helium
C. Calcium
D. Nitrogen

SAS21S090309

9 What is the unit for molar mass?

A. u
B. g
C. mg
D. kg

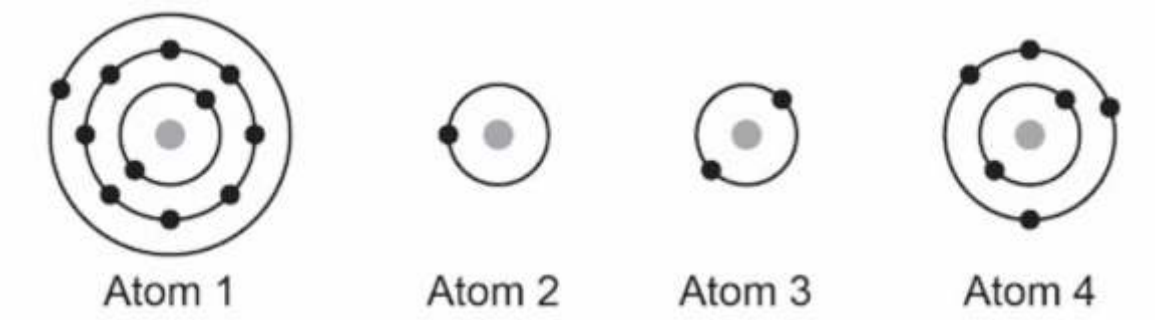
SAS21S090310

10 In which of these elements is the mass of 1 mole atom equal to the mass of 1 mole molecule?

A. H_2
B. O_2
C. He
D. O_3

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 4
Structure of the Atom

The pictures show the arrangement of electrons in the shells of different atoms.



SAS21S090401

1 Which two atoms have the same valency?

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

SAS21S090402

2 Which atom has the highest atomic number?

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

SAS21S090403

3 What is the maximum number of electrons that can be present in the **first** shell of an atom?

A. 1
B. 2
C. 4
D. 8

The picture shows the symbol for sodium.

SAS21S090404

4 What does the number 23 represent for sodium?

_____

_____

SAS21S090405

5 What can be concluded about sodium from the symbol?

A. It contains 11 neutrons.
B. It contains 12 protons.
C. It contains 12 neutrons.
D. It contains 34 electrons.

SAS21S090406

6 Which of these statements about the **isotopes** of an element is correct?
Circle 'Yes' or 'No' for the correct response.

Is the statement correct?	Yes or No
The isotopes have the same chemical properties.	Yes / No
The isotopes have the same number of neutrons.	Yes / No
The isotopes have the same number of electrons.	Yes / No

SAS21S090407

7 Which of the following atoms are **isobars**?

A. $^{12}_{6}C$ and $^{14}_{6}C$

C. $^{14}_{6}C$ and $^{40}_{18}Ar$

B. $^{40}_{18}Ar$ and $^{40}_{20}Ca$

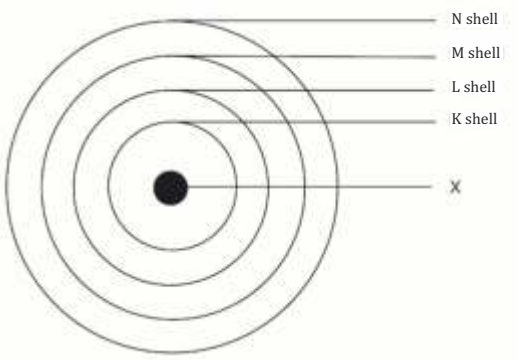
D. $^{6}_{3}Li$ and $^{12}_{6}C$

SAS21S090408

8 What would be the valency of an element that is **chemically inactive**?

A. 0
B. 1
C. 2
D. 5

The outer boundary of Zone 1 is made of solid structures in the shape of isosceles triangles of the same size and barbed wires.



SAS21S090409

9 What does **X** represent in the atomic model?

_____

_____

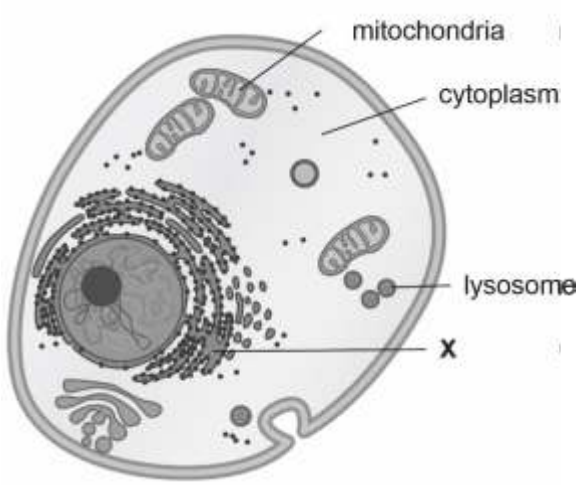
SAS21S090410

10 Which scientist proposed this atomic model?

A. Neils Bohr
B. J. Chadwick
C. J.J. Thomson
D. Ernest Rutherford

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 5
Fundamental Unit of Life

The diagram shows an animal cell with some of its organelles. X is also a cell organelle.



SAS21S090501

1 What does X represent in the diagram?

A. Nucleus
B. Chromosomes
C. Golgi apparatus
D. Endoplasmic reticulum

SAS21S090502

2 The inner membrane of the mitochondria is folded into many finger-like projections. Explain what would happen if the inner membrane was not folded?

_____

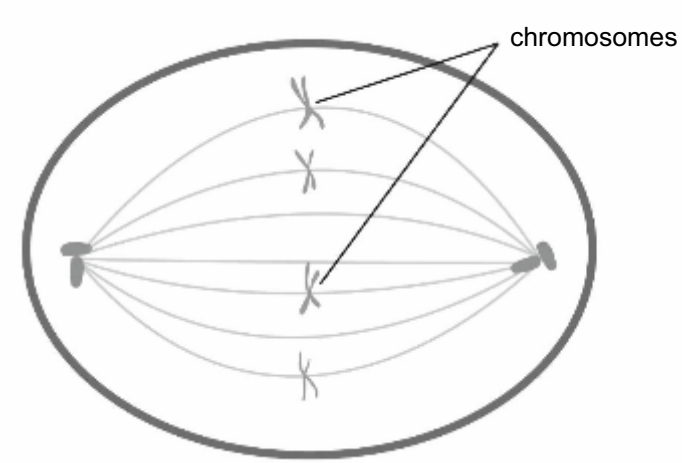
_____

SAS21S090503

3 Which cell organelles found only in a plant cell are **not** shown in the diagram?
Circle 'Yes' or 'No' for each row.

Features found only in a plant cell	Yes or No
Cell wall	Yes/No
Ribosomes	Yes/No
Chloroplast	Yes/No

Cells grow by dividing. The picture shows one such growing cell ready to divide.



SAS21S090504

4 How many cells will be formed after the cell divides completely?

_____

_____

SAS21S090505

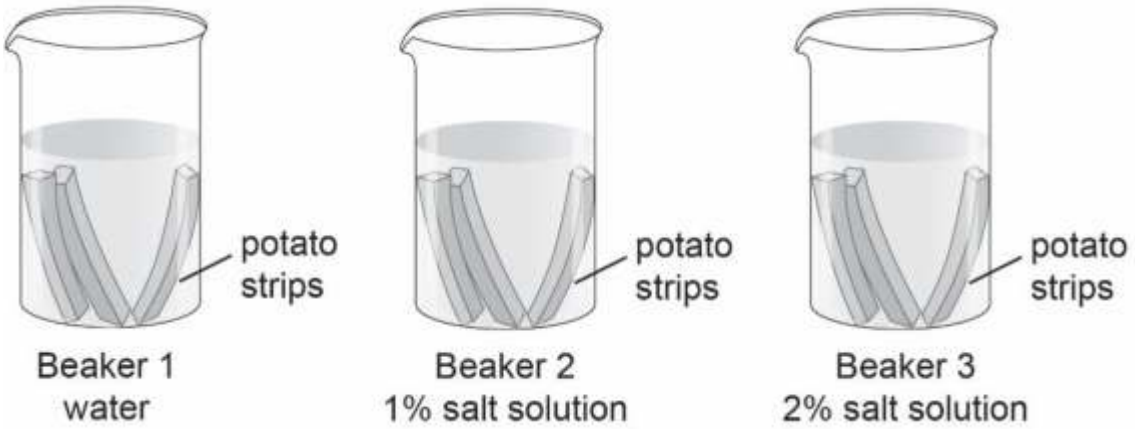
5 How many chromosomes will each daughter cell receive?

A. 2
B. 4
C. 8
D. 12

Sania conducts an experiment to know how plant cells lose or gain water through osmosis.
She cuts out 5 cm long potato strips. She puts three potato strips in each of the following beakers:

- Beaker 1 containing only water
- Beaker 2 containing 1% salt solution
- Beaker 3 containing 2% salt solution

Sania leaves the potato strips in the beaker for 5 hours.



She records the length of the potato strips in each beaker after 5 hours.

	Length of the potato strip before placing in the beaker (cm)	Length of the potato strip after 5 hours in the beaker (cm)
Beaker 1 water	5.0	5.3
	5.0	5.2
	5.0	5.2
Beaker 2 1% salt solution	5.0	5.0
	5.0	5.0
	5.0	4.9
Beaker 3 2% salt solution	5.0	4.8
	5.0	4.9
	5.0	4.7

SAS21S090506

6 What can Sania conclude from her experiment?

A. Salt molecules from the cell move out when kept in water.
B. Cells gain water through osmosis when kept in salt solution.
C. Cells in salt solution first gain water and then gradually lose water.
D. Water molecules move out of the cell based on the amount of salt in the solution.

SAS21S090507

7 In which beaker was the concentration of water molecules inside and outside the potato cells likely to be the same? Explain your answer.

_____

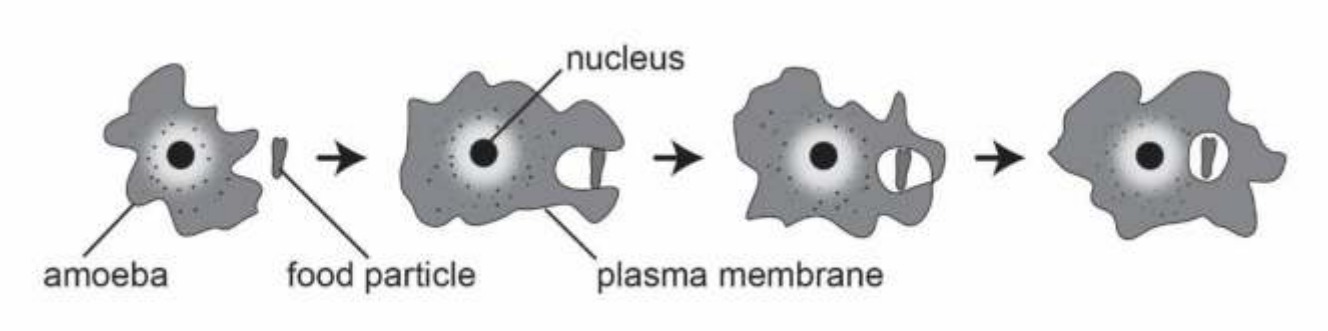
_____

SAS21S090508

8 Why did Sania place three potato strips in each beaker?

_____

_____



SAS21S090509

9 Which of these properties qualifies amoeba as eukaryotes?

A. It is unicellular.
B. It needs food for energy.
C. It has a membrane bound nucleus.
D. It is surrounded by a plasma membrane.

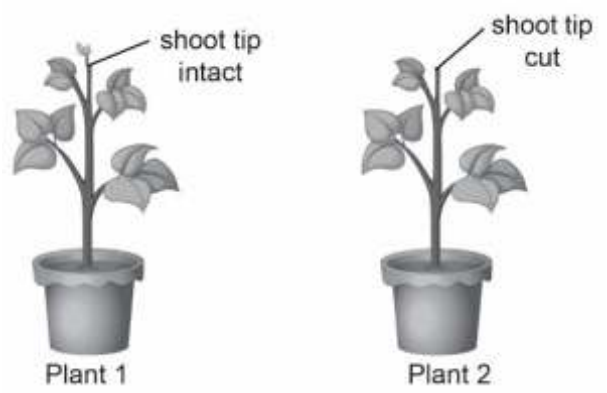
SAS21S090510

10 What property of the plasma membrane helps amoeba acquire food?

A. It is flexible.
B. It is selectively permeable.
C. It is made up of proteins and lipids.
D. It allows diffusion of some substances across it.

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 6
Tissues

Apical meristem is a type of tissue that helps plants grow in length.
Tina took two identical potted plants and cut the shoot tip of one of them.
She observed if the two plants grew in height after a week.



SAS21S090601

1 What was Tina trying to find out about shoot tips through her experiment?

_____

_____

SAS21S090602

2 Which of these conditions would have made Tina's experiment invalid?
Circle 'Yes' or 'No' to mark your responses.

Would this have made the experiment invalid?	Yes or No
Keeping one plant in sunlight and the other in a dark room	Yes/No
Watering both the plants equally	Yes/No
Adding manure to the soil of plant 1 only	Yes/No

SAS21S090603

3 Why do cells of apical meristem lack vacuoles?

A. They store food materials.
B. They have thin cell walls.
C. They contain dense cytoplasm.
D. They are actively dividing cells.

Stomata are minute openings found in the epidermis of plant leaves.
Each stoma allows carbon dioxide, oxygen and water vapour to diffuse in and out of a plant's internal tissues.

Figure 1

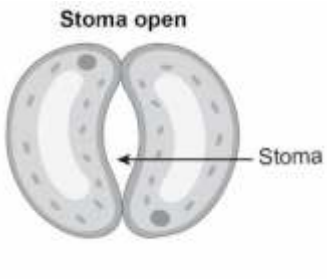


Figure 2

SAS21S090604

4 Each stoma is surrounded by a pair of elongated cells.
What is this pair of cells known as?

_____

_____

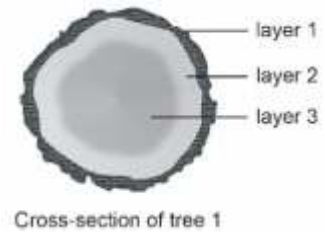
SAS21S090605

5 Why do desert plants have smaller and fewer stomata as compared to rainforest plants?
Explain your answer.

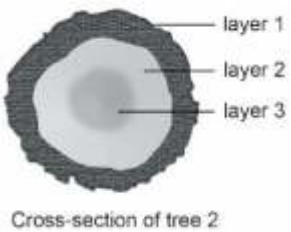
_____

_____

The pictures show the cross-sections of two chopped tree trunks.



Cross-section of tree 1



Cross-section of tree 2

SAS21S090606

6 Which layer in the cross-sections of both the trees is made of dead cells?

_____

_____

SAS21S090607

7 Which question can be answered from the picture?

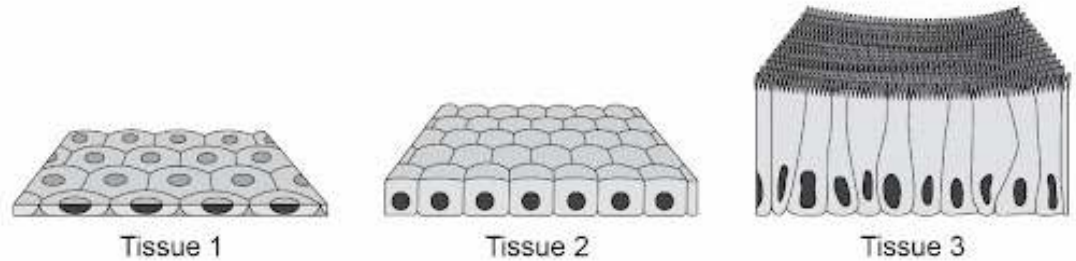
A. Was tree 1 taller than tree 2?
B. Was tree 1 younger than tree 2?
C. Did tree 1 bear more fruits than tree 2?
D. Did tree 1 have more branches than tree 2?

SAS21S090608

8 Which of these is correct about connective tissues?
Circle 'Yes' or 'No' to mark your responses.

Is the statement correct?	Yes/No
All connective tissues are highly flexible.	Yes/No
All connective tissues contain cells that are either placed in a fluid or in a solid matrix.	Yes/No
All connective tissues form frameworks that provide support to organs.	Yes/No

The picture shows three types of tissues found in the human body.



SAS21S090609

9 The inner lining of alveoli (air sacs in lungs) is very thin and delicate.
Which type of tissue forms the inner lining of alveoli?

_____

_____

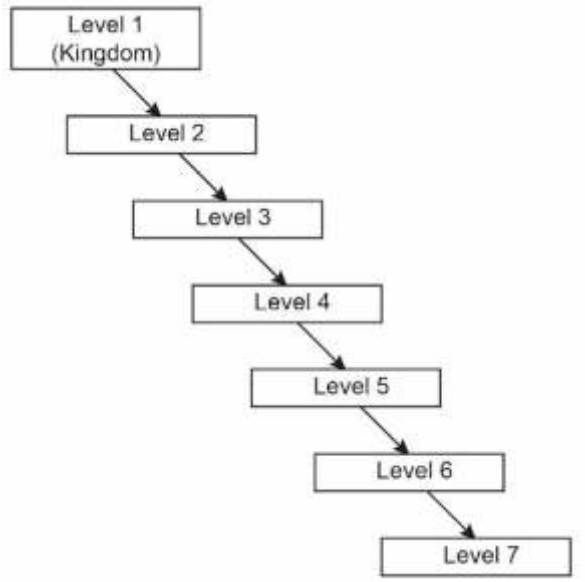
SAS21S090610

10 Which of these cells is the longest?

A. Bone cell
B. Nerve cell
C. Stomach cell
D. Heart muscle cell

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 7
Diversity in Living Organisms

The diagram shows the various levels of classification of organisms.
Level 1 is the largest unit while level 7 is the smallest unit of classification.



SAS21S090701

1 Organisms in which level share the maximum number of common characteristics?

_____

_____

SAS21S090702

2 If Level 1 is Kingdom then what is Level 7?

_____

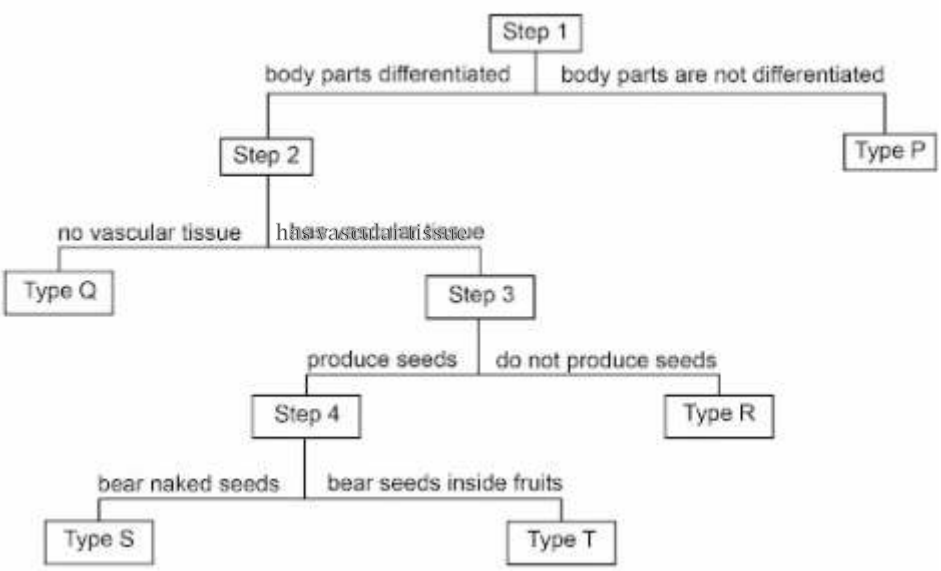
_____

SAS21S090703

3 At which level are plants separated from animals?

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

The table shows different levels of classification of plants.



SAS21S090704

4 Which of these features is true for a plant that bears naked seeds?

A. It has vascular tissues.
B. It has no vascular tissue.
C. It has no differentiated body parts.
D. It also produces seeds inside fruits.

SAS21S090705

5 Complete the table using the information given in the flow chart.
The first step is done for you.

Step	Feature of the plants in the group	Type of Plan
1	Body parts are not differentiated	Type P
	Body parts differentiated	Step 2
2		
3		

SAS21S090706

6 Which of these is the correct way of writing the scientific name of a tiger?

A. Panthera Tigris

B. Panthera tigris

C. panthera tigris

D. Panthera tigris

SAS21S090707

7 Which one of these is the lowest unit of classification?

A. Order
B. Class
C. Family
D. Phylum

Porifera is a group of animals that have the following features.

- They are non-motile and are attached to a solid support.
- They have pores all over the body.
- They are made of only a few types of tissues.

SAS21S090708

8 Which of these animals belongs to the Porifera group?

A. 
Millipede

B. 
Octopus

C. 
Sponge

D. 
Sea Anemone

SAS21S090709

9 Which of these should be considered while classifying animals into a common group?

Should this be considered?	Yes or No
Similarity in habitat	Yes/No
Similarity in food sources	Yes/No
Similarity in cells, tissues and organs	Yes/No

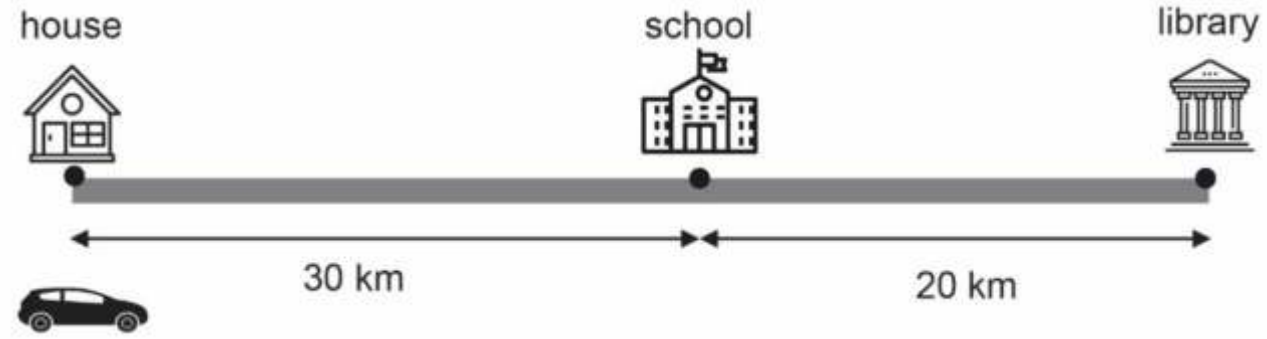
SAS21S090710

10 Which of these features are found in animals that belong to the Aves class?

A. They are cold-blooded.
B. They breathe through lungs.
C. They have three chambered hearts.
D. Their skins have hair and sweat glands.

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 8
Motion

The figure below shows the motion of a car along a straight path.
The car moves from house to school and school to library.
It then moves back to the school and stops.



SAS21S090801

1 What is the net displacement of the car?

A. 20 km
B. 30 km
C. 50 km
D. 70 km

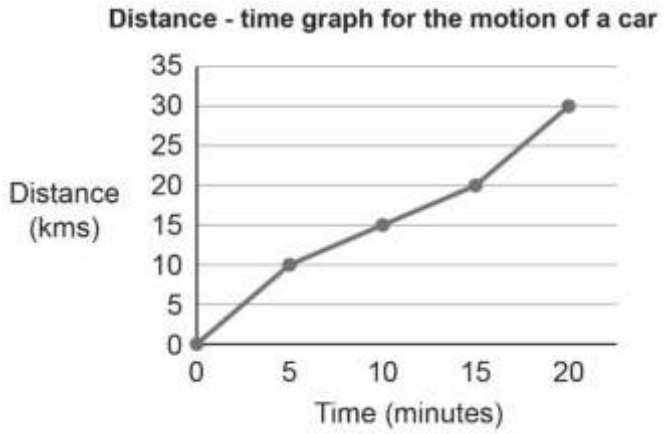
SAS21S090802

2 What is the total distance travelled by the car?

_____

_____

The graph below shows how the car travelled from house to school.



SAS21S090803

3 Did the car move with uniform motion from house to school? Explain your answer.

_____

_____

The table below shows the speed of a bus in three hours of its travel.

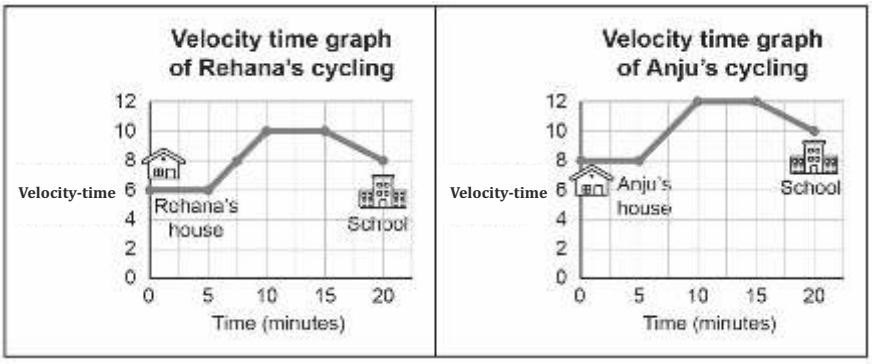
	First hour	Second hour	Third hour
Speed of the bus	35 km/hr	60 km/hr	40 km/hr

SAS21S090804

4 What was the average speed of the bus?

A. 35 km/ hr
B. 40 km/ hr
C. 45 km/ hr
D. 60 km/ hr

Rehana and Anju stay at different places but study in the same school.
The velocity-time graph shows how Rehana and Anju bicycled from house to school.



SAS21S090805

5 Which statement can be concluded from Rehana's cycling graph?

A. Rehana was at rest during the first 5 minutes.
B. Rehana cycled the fastest between 5 minutes and 10 minutes.
C. Rehana cycled with uniform acceleration between 15 minutes and 20 minutes.
D. Rehana was cycling with a uniform velocity between 10 minutes and 15 minutes.

SAS21S090806

6 What was Rehana's maximum cycling velocity?

_____

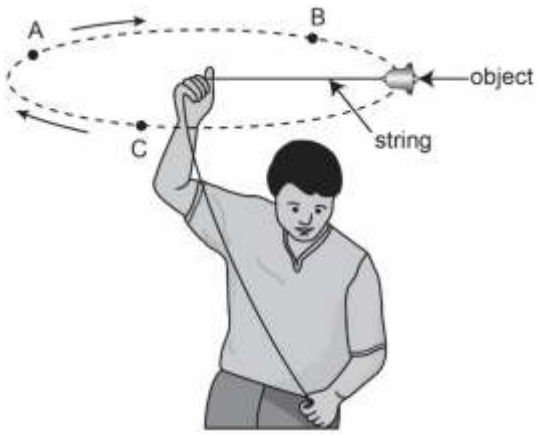
_____

SAS21S090807

7 What can be concluded by comparing the velocity-time graphs of Rehana and Anju?

A. Anju took lesser time to reach school than Rehana.
B. Anju cycled faster than Rehana at the start of the journey.
C. Anju and Rehana had the same maximum cycling velocity.
D. Anju's cycling velocity in the first 5 minutes was lesser than that of Rehana.

The picture below shows a man swinging an object in a uniform circular motion.
A, B and C are three different points on the path of motion of the object.



SAS21S090808

8 What is the net displacement of the object after one complete swing?

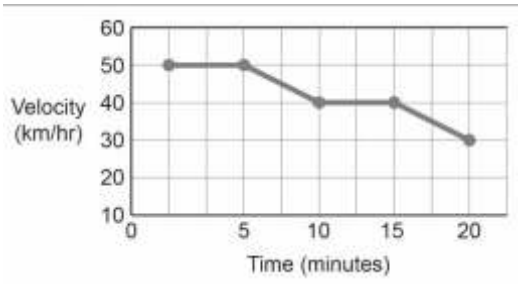
_____

_____

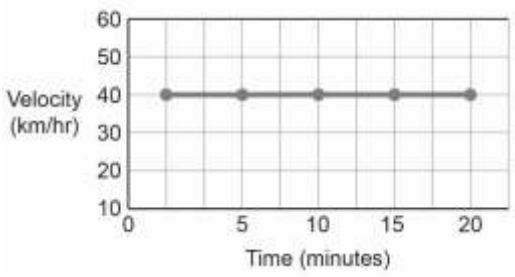
SAS21S090809

9 Which velocity-time graph shows a period of acceleration in the motion?

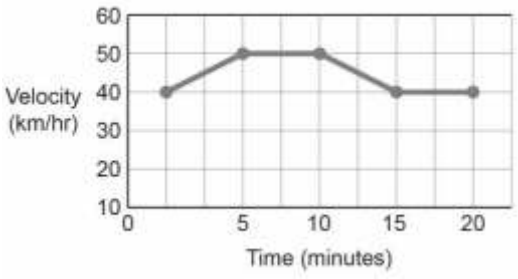
A.



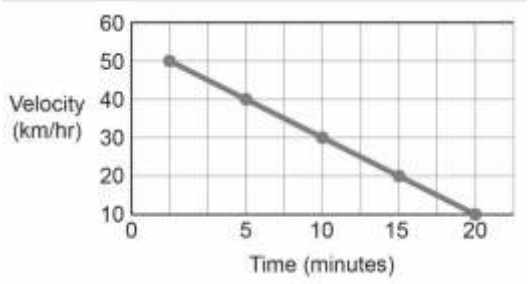
B.



C.



D.



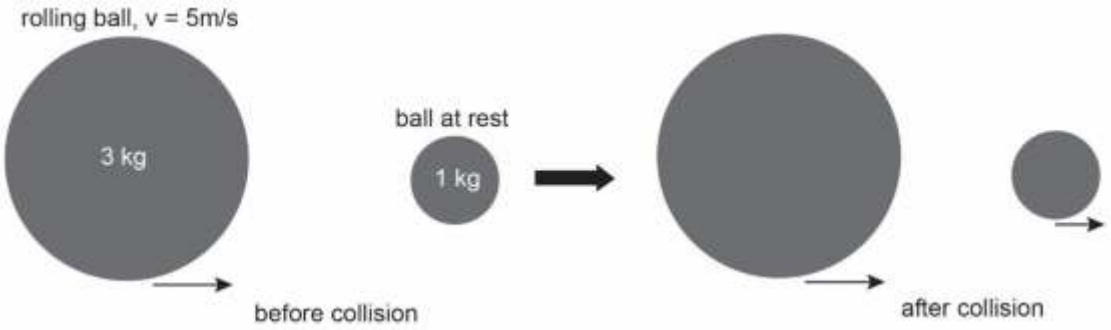
SAS21S090810

10 What is the correct unit for measuring the acceleration of a moving object?

A. m
B. s
C. $m\,s^{-1}$
D. m s

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 9
Force and Laws of Motion

A rolling ball of mass 3 kg strikes a smaller ball of mass 1 kg at rest.
After collision, both the balls roll in the direction shown in the picture.



SAS21S090901

1 The bigger ball strikes the smaller ball with a momentum.
What would the momentum of the ball depend on?
Circle 'Yes' or 'No' to mark your response.

Would the momentum depend on this?	Yes or No
mass of the ball	Yes/No
shape of the ball	Yes/No
velocity of the ball	Yes/No

SAS21S090902

2 After their collision, both the balls continue to roll for some time and then come to a rest.
Which external force causes the balls to stop rolling?

_____

_____

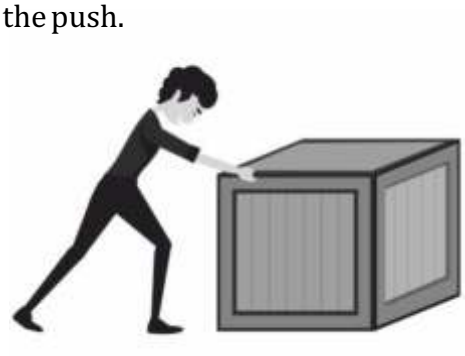
SAS21S090903

3 What would happen if the smaller ball were rolling with a velocity of 5 m/s and struck the bigger ball at rest?

A. The two balls would continue to roll in the direction of the strike.
B. The smaller ball would rebound and the bigger ball would roll forward.
C. The two balls would roll in the direction opposite to the strike.
D. The smaller ball would stop rolling and the bigger ball would start rolling.

A man pushes four boxes of different mass.
The table shows the acceleration produced for each box during the push.

Mass of the box (kg)	Acceleration produced (m/s^2)
10	200
20	100
40	50
80	25



SAS21S090904

4 What amount of force does the man exert on each box? Show the calculation.

_____

_____

SAS21S090905

5 Is the force acting on each box unbalanced? Explain your answer.

_____

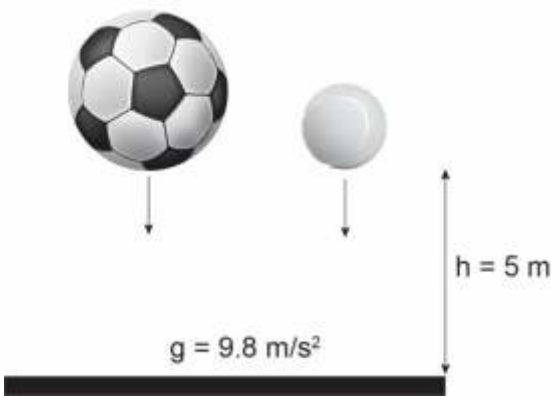
_____

SAS21S090906

6 Which of these represent a balanced force?

A. A boy sitting on a chair
B. An object sinking in water
C. An apple falling from a tree
D. A magnet attracting an iron nail

A football and a tennis ball fall freely on a marble floor from a height of 5 m.



SAS21S090907

7 Will the football and the tennis ball hit the floor with the same momentum? Explain your answer.

_____

_____

SAS21S090908

8 Both balls bounced back after hitting the floor.
What caused the balls to bounce back?

_____

_____

SAS21S090909

9 Will the balls reach a height of 5 m or less than 5 m after bouncing back? Explain your answer.

_____

_____

SAS21S090910

10 Which of these will produce the maximum acceleration?

A. A force of 1000 N acting on a mass of 10 kg
B. A force of 1000 N acting on a mass of 5 kg
C. A force of 3000 N acting on a mass of 30 kg
D. A force of 3000 N acting on a mass of 10 kg

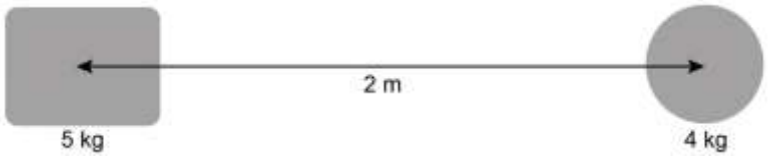
Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 10
Gravitation

The force of gravity acting between two objects is:
- directly proportional to the product of their masses.
- inversely proportional to the square of the distance between them.

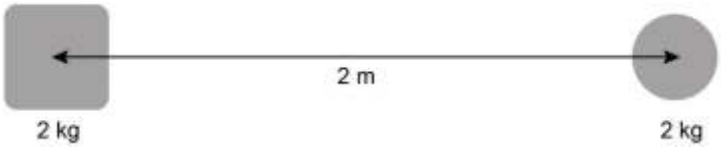
SAS21S091001

1 Which pair of objects will have the strongest force of gravity between them?

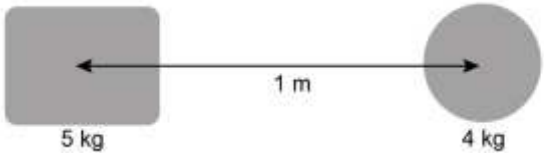
A.



B.



C.



D.

SAS21S091002

2 The formula for calculating the force of gravity between two objects is as follows:

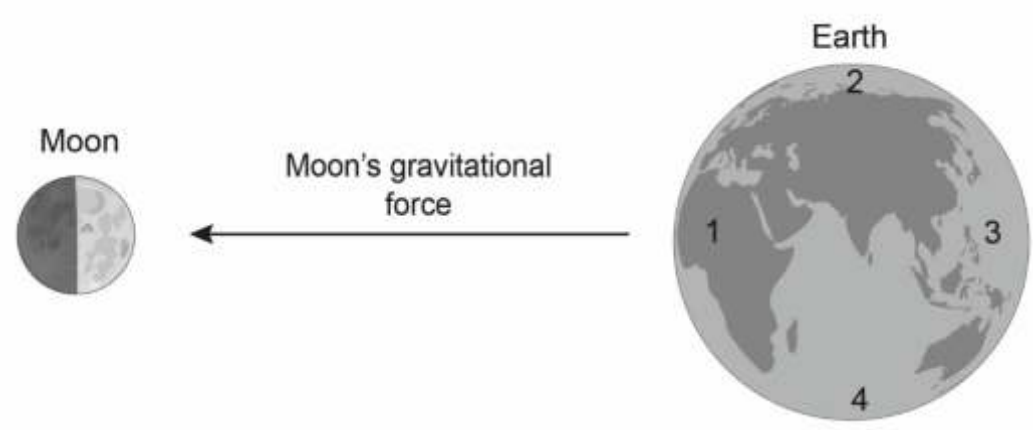
$$F = G \frac{M \times m}{d^2}$$

What does G stand for in the formula?

_____

_____

The picture shows the moon's gravitational force acting on the earth's surface.
The arrow represents the direction of the force.
1, 2, 3 and 4 are four different locations on the earth's surface.



SAS21S091003

3 Which locations will experience low tide as shown in the picture?

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

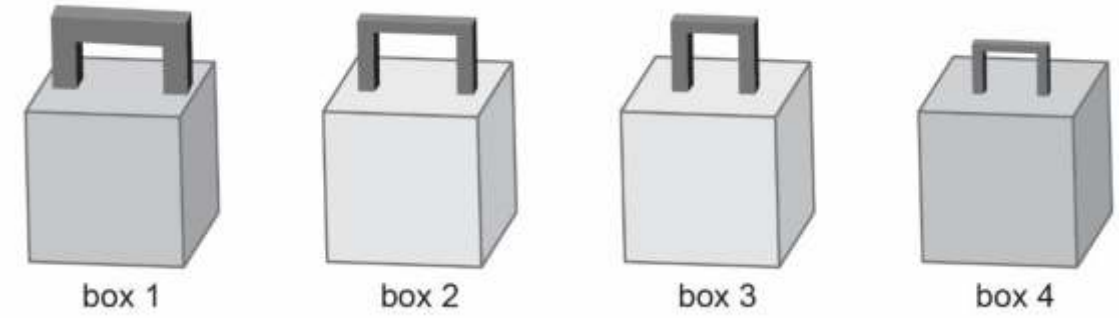
SAS21S091004

4 The moon moves around the earth in a fixed orbit.
What makes the moon move in the fixed orbit?

_____

_____

Ayesha has four solid boxes.
The handles of the boxes are of different thickness and size.
All the boxes along with their handles have the same mass.



SAS21S091005

5 Ayesha tries to lift the four boxes one by one.
Which box will be the most difficult to lift?

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

SAS21S091006

6 Which box has the most weight?
Explain your answer.

_____

_____

SAS21S091007

7 Which box has the most weight?
Explain your answer.

$$\textit{Relative density of an object} = \frac{\textit{Density of the object}}{\textit{Density of water}}$$

An object floats on water.
What should be the relative density of the object?

_____

_____

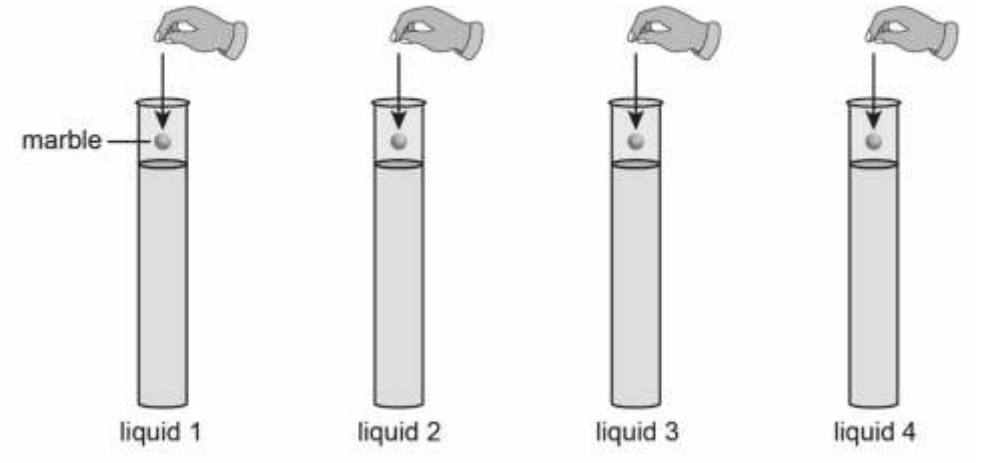
SAS21S091008

8 Why is it essential for deep-sea diving vessels to be built of thick sheets of steel?

_____

_____

Peter pours the same amount of four different liquids in separate cylinders.
The cylinders are of the same size.
He then drops a glass marble in each of the four cylinders.



Peter notes the time the marble takes to reach the bottom of each cylinder.
The table shows the results.

Liquid	Time taken by the marble to reach the bottom of the cylinder (in seconds)
Liquid 1	1.8 sec
Liquid 2	1.5 sec
Liquid 3	0.8 sec
Liquid 4	1.0 sec

SAS21S091009

9 Which liquid exerted the most upward force on the marble?

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

SAS21S091010

10 Four different objects are placed in a tumbler of water.
Which object will displace more water than its own weight?

A. 

Steel spoon

B. 

Steel bowl

C. 

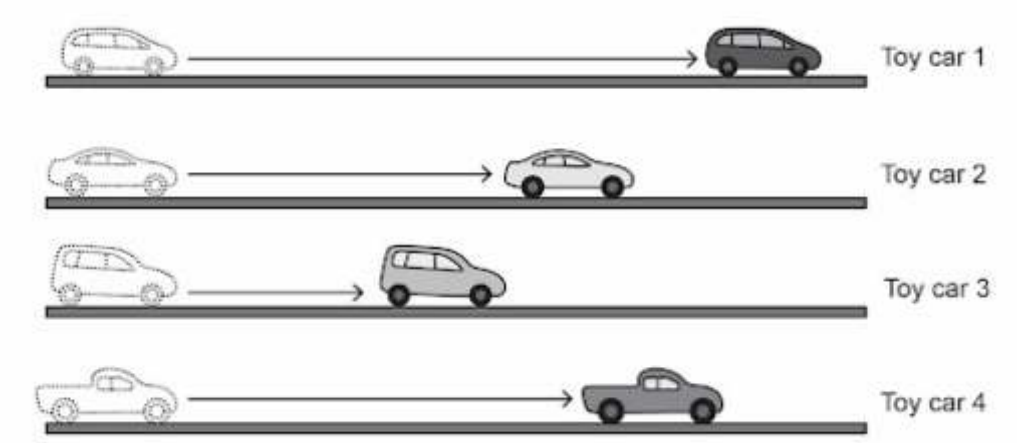
Steel coin

D. 

Steel ball

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 11
Work and Energy

Rahul pushed four toy cars on a surface.
The picture shows the distance each toy car travelled before coming to a stop.



SAS21S091101

1 In pushing which car was the work done by Rahul the greatest?

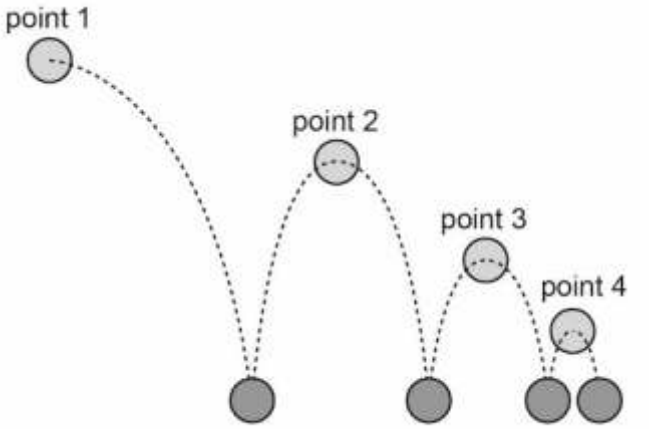
A. Toy car 1
B. Toy car 2
C. Toy car 3
D. Toy car 4

SAS21S091102

2 In which of these conditions is the work done negative?
Circle 'Yes' or 'No' to mark your responses.

Is the work done negative?	Yes or No
Wind force making a boat move forward on water	Yes/No
Brake force resisting the motion of a moving wheel	Yes/No
Buoyant force slowing the sinking of an iron nail in water	Yes/No

The picture shows a ball bouncing several times before coming to a stop.



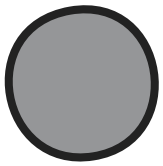
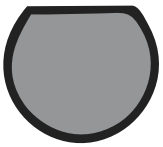
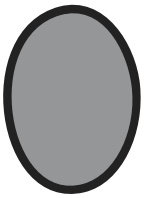
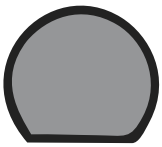
SAS21S091103

3 At which point was the potential energy of the ball maximum?

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

SAS21S091104

4 What would be the shape of the ball at the moment it hit the surface?

A. 
B. 
C. 
D. 

SAS21S091105

5 Which of these factors caused the ball to stop bouncing?

A. Only gravity
B. Only air resistance
C. Hardness of the surface and gravity
D. Conversion of energy and air resistance

Four persons separately pulled a 100 kg cart for a distance of 500 m.
The table shows the time each person took to cover the distance with the cart.

	Person 1	Person 2	Person 3	Person 4
Time taken to cover the distance	12 mins	15 mins	10 mins	18 mins

SAS21S091106

6 At which point was the potential energy of the ball maximum?

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

SAS21S091107

7 What must be kept the same in the activity to make a valid conclusion?
Circle 'Yes' or 'No' to mark your responses.

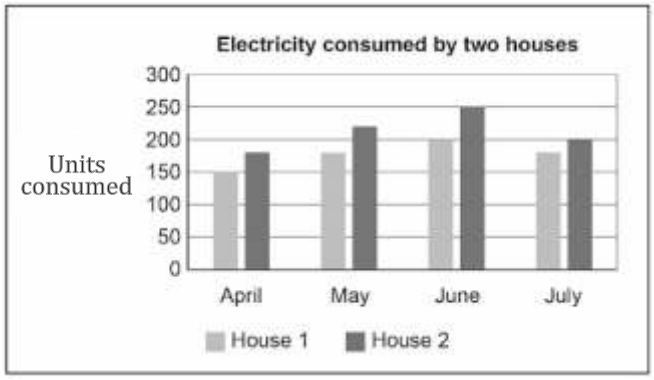
Should this be kept the same?	Yes or No
Mass of each person	Yes/No
Height of each person	Yes/No
Surface on which the cart was pulled	Yes/No

SAS21S091108

8 Which of these involves the conversion of kinetic energy to potential energy?

A. A person diving into a pool of water from a board
B. A person gliding in air with the help of a parachute
C. A person sliding down from the top of a water slide
D. A person riding a motorbike to the top of an overbridge

The graph shows the number of units of electricity consumed by two houses in four months.



SAS21S091109

9 What can be concluded from the graph?

A. Both the houses consumed maximum electricity in May.
B. House 1 consumed more electricity than House 2 in July.
C. House 1 consumed less electricity than House 2 inall the four months.
D. The amount of electricity consumed by both the houses increased over the four months.

SAS21S091110

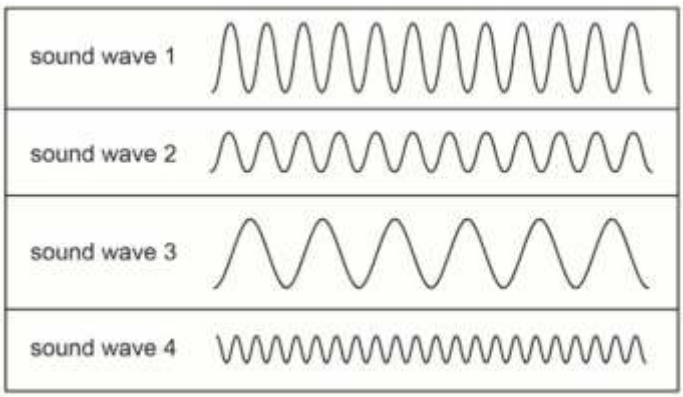
10 What is meant by one unit of electricity?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 12
Sound

The picture shows four sound waves.



SAS21S091201

1 Which sound wave has the **highest** frequency?

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

SAS21S091202

2 Which two sound waves have almost the **same** loudness?

A. Sound wave 1 and sound wave 2
B. Sound wave 2 and sound wave 4
C. Sound wave 1 and sound wave 3
D. Sound wave 3 and sound wave 4

SAS21S091203

3 Which of these is the frequency of an infrasound?

A. 10 Hz
B. 75 Hz
C. 15000 Hz
D. 35000 Hz

Sound intensity is the total amount of energy in a sound wave.
Decibel (dB) is the unit of intensity.
The chart shows the permissible time for listening to different sounds.

Library	**Front row of rock concert**	**Restaurant table**	**Exhaust of sports bike**
30 dB	140 dB	70 dB	100 dB

SAS21S091204

4 Which of these actions **does not** follow the permissible exposure time of hearing?

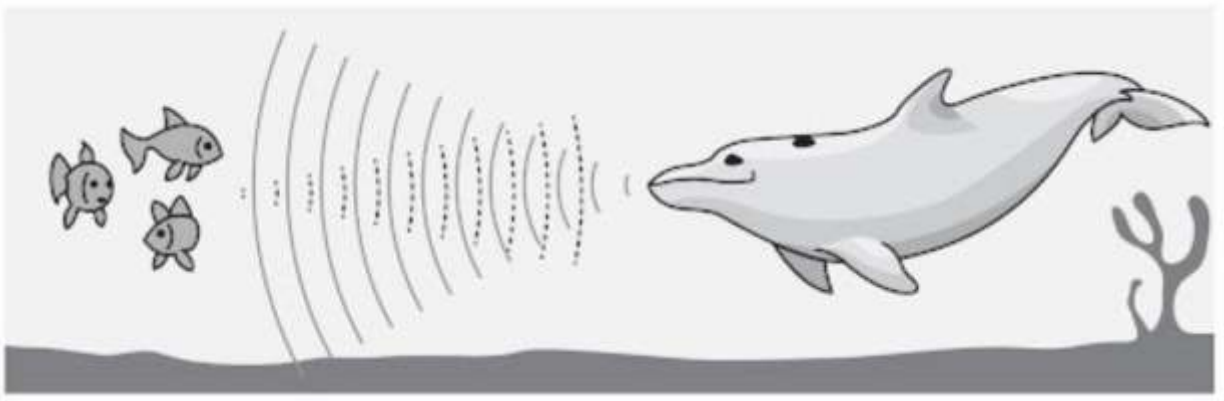
A. Reading in a library for 5 hours
B. Riding a sports bike for 10 minutes
C. Dining at a restaurant table for an hour
D. Sitting in the front row of a rock concert for 30 minutes

SAS21S091205

5 Which of these depends on the intensity of a sound?
Circle 'Yes' or 'No' for the correct response.

Does this depend on the intensity of the sound?	**Yes or No**
speed of the sound	Yes / No
loudness of the sound	Yes / No
frequency of the sound	Yes / No

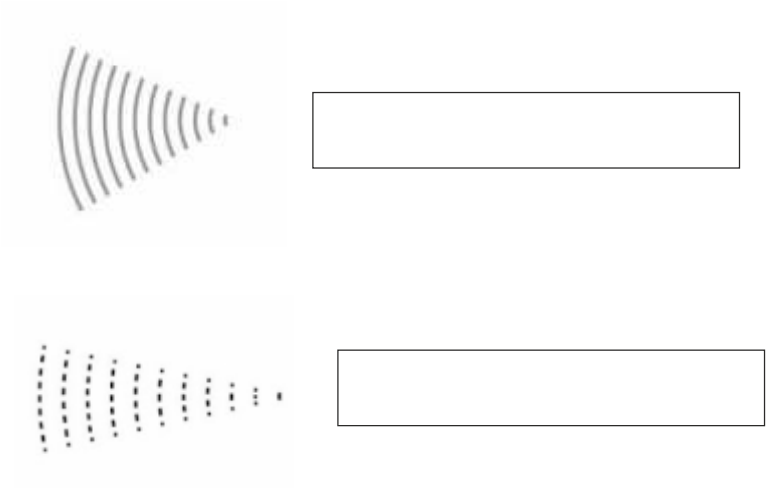
Dolphins can locate their prey underwater by using sound waves.
They release sound waves that travel, hit the prey and reflect to them.



SAS21S091206

6 What do the two types of waves represent?
Use the labels below to fill in the boxes.

- emitted sound waves
- reflected sound waves

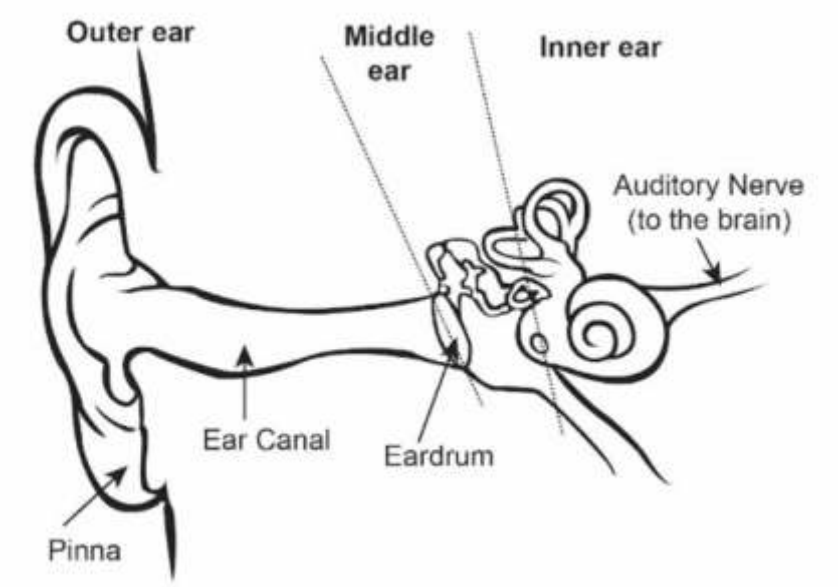


SAS21S091207

7 Which of these can the dolphin also find out by using the sound waves?
Circle 'Yes' or 'No' for the correct response.

Can the dolphin find this by using the sound waves?	Yes or No
Is there any predator nearby?	Yes/No
Is there any obstacle in the path of its travel?	Yes/No
At what depth from the water surface is it travelling?	Yes/No

The diagram shows the structure of the human ear.
The three basic divisions are outer ear, middle ear and inner ear.



SAS21S091208

8 Which division of the human ear contains bones?

_____

_____

SAS21S091209

9 What is likely to cause loss of hearing when a pointed object is inserted into the ear?

A. Cut in the ear canal
B. Puncture in the pinna
C. Rupture of the ear drum
D. Rupture of the auditory nerve

SAS21S091210

10 In which of these conditions will an echo be heard?

A. A man playing drums on a beach.
B. A man reciting poems in a small room.
C. A man shouting from the middle of an open farm.
D. A man shouting from a place that is surrounded by hills.

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 13
Why Do We Fall Ill?

SAS21S091301

1 Which of these habits can cause illness?

A. Bathing regularly
B. Washing food before eating
C. Washing hands after entering home
D. Wearing unwashed clothes for a week

SAS21S091302

2 Which of these is a correct pair of a chronic disease and an acute disease?

	Chronic disease	Acute disease
A.	Arthritis	Malaria
B.	Typhoid	Cancer
C.	Malaria	Typhoid
D.	Cancer	Arthritis

SAS21S091303

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

Is this true about infectious diseases?	Yes or No
They are caused by microorganisms.	Yes/No
They are caused by excessive physical activity.	Yes/No
Common cold is an infectious disease.	Yes/No

SAS21S091304

4 Riya was bitten by a dog.
Which vaccine should be injected in her to prevent infection?

A. Polio
B. Rabies
C. COVID
D. Tetanus

SAS21S091305

5 Which of these diseases can be spread by sexual contact?

A. AIDS
B. Malaria
C. Typhoid
D. Diarrhoea

SAS21S091306

6 Which of these can help to control chronic diseases?
Circle 'Yes' or 'No' for the correct response.

Can this help to control chronic diseases?	Yes or No
No smoking	Yes/No
No alcohol consumption	Yes/No
No physical activity	Yes/No

Rahul conducted a survey of four villages.
The table shows the findings of the survey.

Village	Presence of toilets	Drinking water source
Village 1	no toilet	pond
Village 2	toilet in each house	tap
Village 3	toilet in each house	pond
Village 4	few public toilets	tap

SAS21S091307

7 In which village is the spread of waterborne diseases likely to be the **slowest**?

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

SAS21S091308

8 Why is untreated river water **not** safe for drinking?

_____

_____

The table shows the location of the four villages.

Village 1	Village 2	Village 3	Village 4
near a forest	near a sea beach	near a cement factory	near a farmland

SAS21S091309

9 People of which village has the highest chance of developing lung diseases?

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

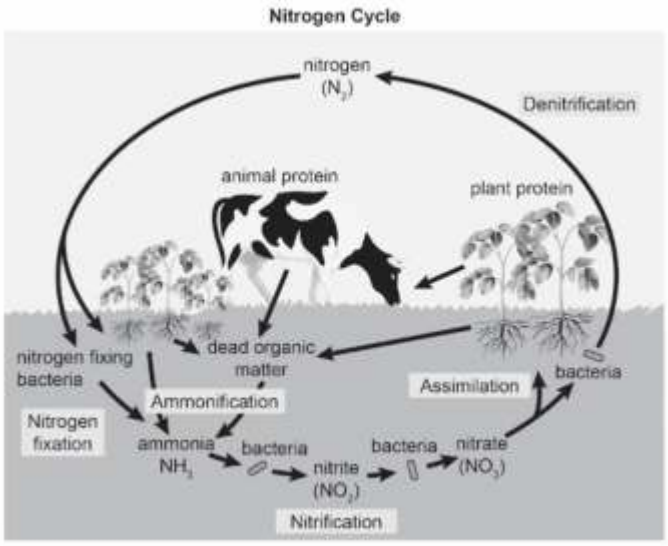
SAS21S091310

10 Saba often falls ill with common cold.
What could be a likely reason for this?

A. She is underweight.
B. She swims regularly.
C. She has weak immunity.
D. She washes clothes regularly.

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 14
Natural Resources

The diagram shows the nitrogen cycle.



SAS21S091401

1 In which form is nitrogen assimilated by plants?

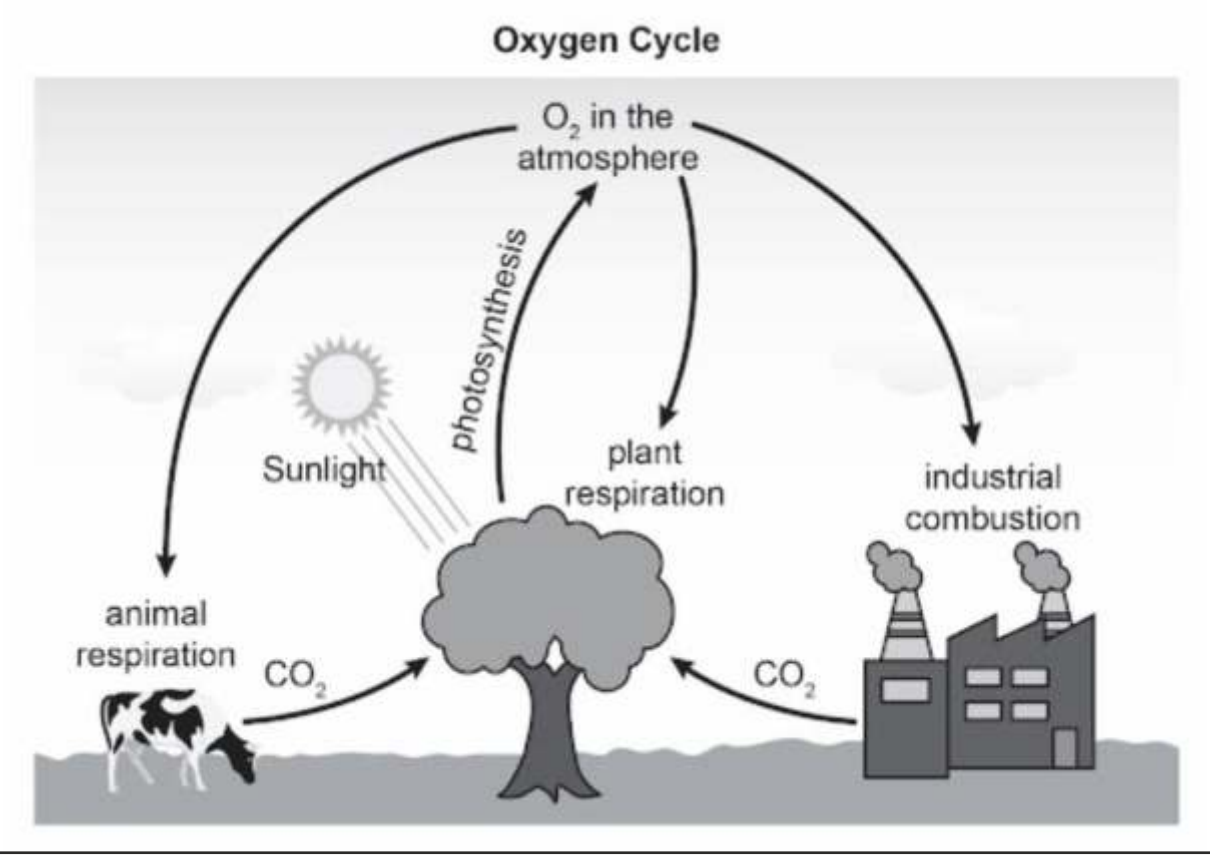
A. Ammonia
B. Nitrite
C. Nitrate
D. Nitrogen

SAS21S091402

2 In which of these processes is dead organic matter broken down?

A. Nitrogen fixation
B. Ammonification
C. Nitrification
D. Denitrification

The diagram shows the basic stages in the oxygen cycle.



SAS21S091403

3 Which of these can be concluded from the diagram?
Circle 'Yes' or 'No' for the correct response.

Can this be concluded from the diagram?	Yes or No
Deforestation will seriously affect the oxygen cycle.	Yes/No
Animals release oxygen into the atmosphere.	Yes/No
Oxygen level in the atmosphere is higher at night.	Yes/No

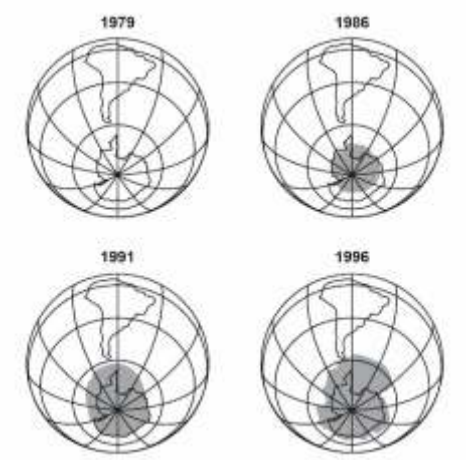
SAS21S091404

4 Will the oxygen cycle discontinue if all industries of a town are shut down?
Explain your answer.

_____

_____

The pictures show the ozone layer above Antarctica in different years.
The **dark shade** represents a hole in the ozone layer.



SAS21S091405

5 What can be concluded about the **hole in the ozone layer** from the pictures?

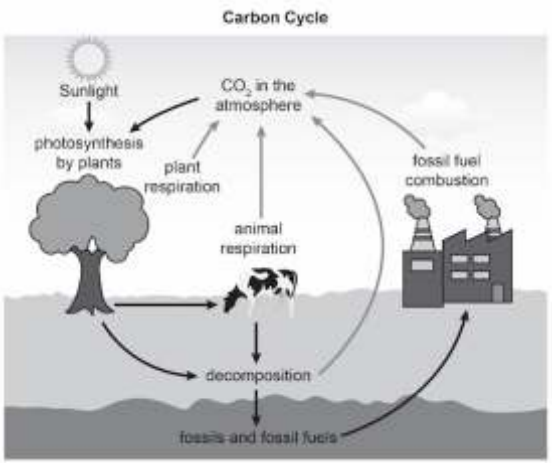
A. It was the largest in 1991.
B. It has decreased after 1986.
C. It started developing in 1979.
D. It has increased from 1986 to 1996.

SAS21S091406

6 Which of these will occur with the reduction of ozone layer in the upper atmosphere?

A. Surface temperature of the Earth will increase.
B. Amount of annual rainfall will decrease globally.
C. Percentage of oxygen in the atmosphere will decrease.
D. Harmful radiations from the Sun will reach the Earth's surface.

The diagram shows the stages in the carbon cycle.



SAS21S091407

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

Is this true about the carbon cycle?	Yes or No
Plants absorb carbon dioxide from the atmosphere.	Yes/No
Carbon dioxide enters the living world through respiration.	Yes/No
Carbon dioxide level in the atmosphere remains the same during day and night.	Yes/No

SAS21S091408

8 How are fossil fuels formed?

_____

_____

SAS21S091409

9 Which of these is a greenhouse gas?

A. Oxygen
B. Nitrogen
C. Hydrogen
D. Carbon dioxide

SAS21S091410

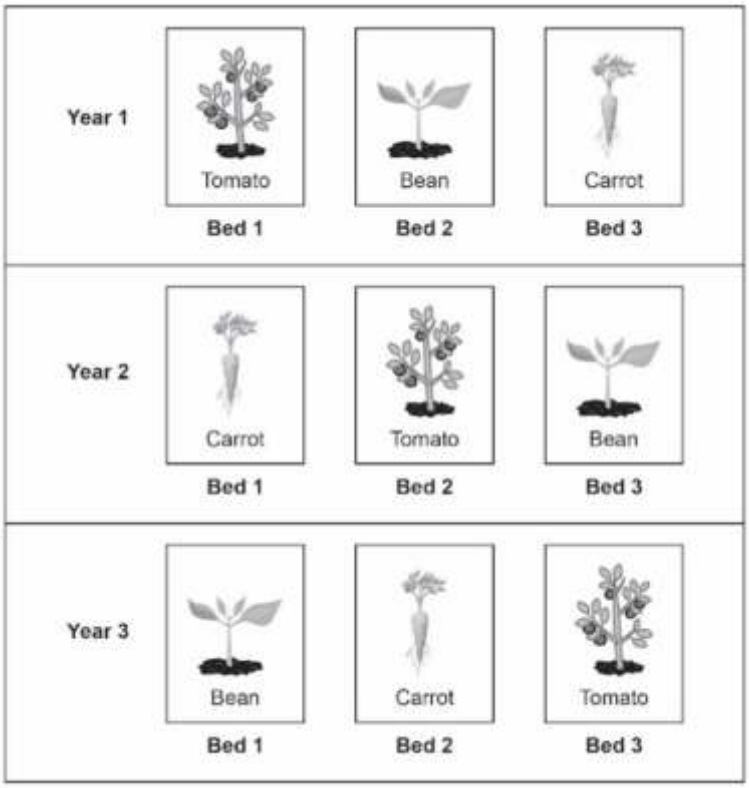
10 How does planting of trees on riverbanks prevent soil erosion?

_____

_____

Curriculum Aligned Competency Based Test Items
Science
Class 9 – Chapter 15
Improvement In Food Resources

The diagram shows the crop harvesting pattern followed by a farmer.
Bed 1, Bed 2 and Bed 3 are different parts of the farm.



SAS21S091501

1 What is the common term used for this pattern of crop harvesting?

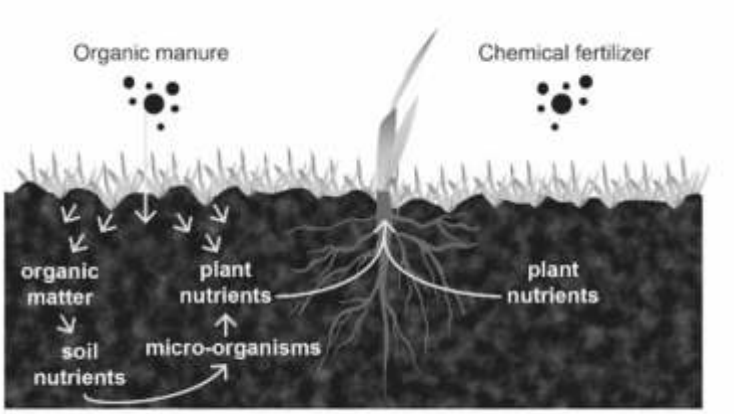
A. Crop rotation
B. Intercropping
C. Mixed cropping
D. Organic farming

SAS21S091502

2 What is the advantage of the crop harvesting pattern shown in the diagram?

A. The crops are resistant to diseases.
B. The harvesting time of the crops are reduced.
C. Less amount of water is required to irrigate the farm.
D. Different nutrients present in the farm soil are evenly used over time.

The picture shows how organic manure and chemical fertilizer are used by plants.



SAS21S091503

3 Which of these can be concluded from the picture?
Circle 'Yes' or 'No' for the correct response

Can this be concluded from the picture?	Yes or No
Organic manure provides food for the soil microorganisms.	Yes/No
Chemical fertilizer provides nutrients that can be directly absorbed by the plants.	Yes/No
Chemical fertilizer improves long term fertility of the soil better than organic manure.	Yes/No

SAS21S091504

4 Which of these nutrients is required by plants in large quantities?

A. Iron
B. Zinc
C. Potassium
D. Manganese

SAS21S091505

5 Which food source has the following?

- Rich in protein
- Low fat
- Has vitamin B2

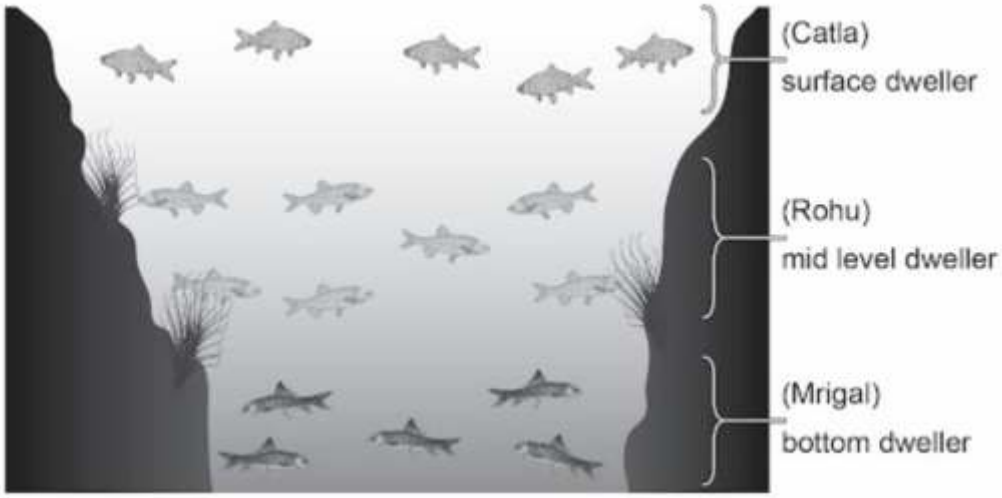
A. Source 1
B. Source 2
C. Source 3
D. Source 4

SAS21S091506

6 The quality of honey differs from sample to sample.
Which of these decides the quality of a honey sample?

A. Time of the day when the bees collect nectar
B. Time taken by the bees to build the beehive
C. Type of flower from which the bees collect nectar
D. Size of the beehive from which the honey is collected

Composite fish culture is a process of growing different types of fish in the same pond.
The diagram shows a composite fish culture pond.



SAS21S091507

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

Is this true about composite fish culture?	Yes or No
Organic manure provides food for the soil microorganisms.	Yes/No
Some of the fish are scavengers and feed on dead organisms.	Yes/No
The different types of fish can live in similar water temperatures.	Yes/No

SAS21S091508

8 Which of these is a likely advantage of composite fish culture?

A. Fish grow better when different species live together.
B. All areas of the pond are utilized for better fish production.
C. Fish eat less food when grown in composite culture ponds.
D. Dissolved oxygen level is higher in composite culture ponds.

SAS21S091509

9 Oysters are cultivated in inland water bodies for food.
What else can be obtained from the cultivation of oysters?

A. Pearl
B. Sponge
C. Platinum
D. Platinum

SAS21S091510

10 Why does poultry farming involve crossbreeding between two pure breeds of chicken?

_____

_____

Item Number	Question 1
Question Code	SAS21S090101
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Physical change
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Liquids dissolve faster than solids in water.
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090102
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Physical change
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Masood used the same amount of water in each jar to make a fair comparison. • To make the results of the activity reliable Or • To make a fair comparison between the two jars
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090103
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Physical change
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 4
Question Code	SAS21S090104
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | States of matter
Competency	Explaining Phenomena Scientifically
Item Type	Complex Multiple Choice Question
Full Credit (Full Score)	D. Gas/Solid/Liquid
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S060205
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Effect of Change of Temperature
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that cooling a substance makes its particles move slower. For example: • Cooling the substance would make the particles move slower.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090106
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Particles of Matter Have Spaces
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that particles of a substance get closer and become compact and hence movement is restricted. Compression of a substance gets difficult when there is less space between the particles. • The particles move closer to each other.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090107
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Particles of Matter Have Spaces
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Syringe 1→ Syringe→ 3 Syringe 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090108
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Evaporation
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Does the rate of evaporation of a liquid depend on its open surface area?
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090109
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Evaporation
Competency	Evaluating and Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that an equal amount of water is taken in each vessel to reliably compare the evaporation time for the vessels. For example: • To reliably compare the evaporation time for the vessels Or • Any other valid response
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090110
Grade & Chapter Name	Grade 9 | Matter in our Surroundings
Concept | Sub-concept	Physical Science | Evaporation
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 1
Question Code	SAS21S090201
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Separating the Components of a Mixture
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Jar 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090202
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Separating the Components of a Mixture
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Filtration
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090203
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Properties of Mixture
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Colloid/Suspension
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S090204
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Properties of Mixture
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Particles of both liquids scatter light rays.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090205
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Separation of Immiscible Liquids
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Two immiscible liquids
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090206
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Mixtures
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Bronze
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090207
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Purification of Water
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Microorganisms in water are removed in the last stage.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090208
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Physical and Chemical Changes
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Formation of a new substance
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090209
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Types of Pure Substance
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Substance 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090210
Grade & Chapter Name	Grade 9 | Is Matter Around us Pure
Concept | Sub-concept	Physical Science | Properties of Gas
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the gas is flammable/ combustible.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090301
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Law of Conservation of Mass
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Total mass of the chemicals remain the same.
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090301
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Law of Conservation of Mass
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the white residue is barium sulphate (BaSO4).
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090303
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Symbols of Atoms
Competency	Explaining Phenomena 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 4
Question Code	SAS21S090304
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Law of Constant Proportion
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 1:1
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090305
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Molecules of Elements (Atomicity)
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. H_2O
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090306
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Writing Chemical Formula
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	A. ZnS
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090307
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | What is an Ion?
Competency	Explaining Phenomena 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	SAS21S090308
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Molecular Mass and Mole Concept
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Calcium
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090309
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Molecular Mass and Mole Concept
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. G
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090310
Grade & Chapter Name	Grade 9 | Atoms and Molecules
Concept | Sub-concept	Physical Science | Molecular Mass and Mole Concept
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. He
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090401
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Valency
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Atom 1 and Atom 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090402
Grade & Chapter Name	Grade 9 | Structure of The Atom
Concept | Sub-concept	Physical Science | Atomic number and Mass number
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Atom 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090403
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Electron Distribution in Different Orbits
Competency	Interpreting Data and Evidence 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	SAS21S090404
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Atomic Number and Mass Number
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions mass number as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090405
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Atomic Number and Mass Number
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. It contains 12 neutrons.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090406
Grade & Chapter Name	Grade 9 | Structure of The Atom
Concept | Sub-concept	Physical Science | Isotopes
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 7
Question Code	SAS21S090407
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Isobars
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 8
Question Code	SAS21S090408
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | Valency
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 0
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090409
Grade & Chapter Name	Grade 9 | Structure of the atom
Concept | Sub-concept	Physical Science | The structure of an Atom
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 10
Question Code	SAS21S090410
Grade & Chapter Name	Grade 9 | Structure of The Atom
Concept | Sub-concept	Physical Science | The Structure of an Atom
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Neils Bohr
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090501
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Living Organisms-Cell Organelles
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Endoplasmic Reticulum
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090502
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Living Organisms-Cell Organelles
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that there will be less surface area so less ATP will be produced. For example: • Surface area will decrease so less energy will be produced.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090503
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Living Organisms-Cell Organelles
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 4
Question Code	SAS21S090504
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Cell Division
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that two daughter cells will be formed. For example: • Two daughter cells
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090505
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Cell Division
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090506
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Plasma Membrane
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Water molecules move out of the cell based on the amount of salt in the solution.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090507
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Plasma Membrane
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions Beaker 2 (1% salt solution) with reference to the equal lengths of the potato strips before and after the experiment. For example: • The lengths of the potato strips are almost the same in Beaker 2. • There is hardly any change in the length of the strips in Beaker 2.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090508
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Plasma Membrane
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the results need to be verified by multiple trials. For example: • To reduce errors in measurement • To confirm the results of the experiment • To be sure about the readings
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090509
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Plasma Membrane
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. It has a membrane-bound nucleus.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090510
Grade & Chapter Name	Grade 9 | Fundamental Unit of Life
Concept | Sub-concept	Life Science | Plasma Membrane
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. It is flexible.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090601
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Meristematic Tissue
Competency	Evaluating & Designing Scientific Enquiry
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Tina was trying to find out whether shoot tips contain apical meristem. For example: • Whether shoot tips contain apical meristem?
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090602
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Meristematic Tissue
Competency	Evaluating & Designing Scientific Enquiry
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 3
Question Code	SAS21S090603
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Meristematic Tissue
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. They are actively dividing cells.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S090604
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Permanent Tissue
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions guard cells as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090605
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Permanent Tissue
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that water is scarce in deserts AND smaller and fewer stomata help a plant in controlling the loss of water. For example: • Water is scarce in deserts. Smaller and fewer stomata help desert plants to minimize the loss of water.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090606
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Permanent Tissue
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions layer 1 as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090607
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Permanent Tissue
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Was tree 1 younger than tree 2?
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090608
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Animal Tissue
Competency	Explaining Phenomena 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 9
Question Code	SAS21S090609
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Animal Tissue
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions Tissue 1 as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090610
Grade & Chapter Name	Grade 9 | Tissues
Concept | Sub-concept	Life Science | Location and Function of Animal Tissue
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Nerve cell
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090701
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | The Hierarchy of Classification- Groups
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions level 7 as the response
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090702
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | The Hierarchy of Classification- Groups
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that level 7 is species
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090703
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | The hierarchy of classification- Groups
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Level 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S090704
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | Classification of Plants
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. It has vascular tissues.
No Credit (No Score)	Any other response or missing response

<table>
<tr><td>Item Number</td><td>Question 5</td></tr>
<tr><td>Question Code</td><td>SAS21S090705</td></tr>
<tr><td>Grade & Chapter Name</td><td>Grade 9 | Diversity in Living Organisms</td></tr>
<tr><td>Concept | Sub-concept</td><td>Life Science | Classification of Plants</td></tr>
<tr><td>Competency</td><td>Interpreting Data & Evidence Scientifically</td></tr>
<tr><td>Item Type</td><td>Constructed Response</td></tr>
<tr><td>Full Credit (Full Score)</td><td>Completes till step 2 of the table as shown in full creditthe table as
<table>
<tr><th>Step</th><th>Feature of the plants in the group</th><th>Type of Plant</th></tr>
<tr><td rowspan="2">1</td><td>Body parts not differentiated</td><td>Type P</td></tr>
<tr><td>Body parts differentiated</td><td>Step 2</td></tr>
<tr><td rowspan="2">2</td><td>No vascular tissue</td><td>Type Q</td></tr>
<tr><td>Have vascular tissues</td><td>Step 3</td></tr>
<tr><td rowspan="2">3</td><td>Do not produce seeds</td><td>Type R</td></tr>
<tr><td>Produce seeds</td><td>Step 4</td></tr>
</table></td></tr>
<tr><td>Partial Credit (Partial Score)</td><td>Completes till step 2 of the table as shown in full credit
<table>
<tr><th>Step</th><th>Feature of the plants in the group</th><th>Type of Plant</th></tr>
<tr><td rowspan="2">1</td><td>Body parts not differentiated</td><td>Type P</td></tr>
<tr><td>Body parts differentiated</td><td>Step 2</td></tr>
<tr><td rowspan="2">2</td><td>No vascular tissue</td><td>Type Q</td></tr>
<tr><td>Have vascular tissues</td><td>Step 3</td></tr>
<tr><td rowspan="2">3</td><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table></td></tr>
<tr><td>No Credit (No Score)</td><td>Any other response or missing response</td></tr>
</table>

Item Number	Question 6
Question Code	SAS21S090706
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | Nomenclature
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 7
Question Code	SAS21S090707
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | The Hierarchy of Classification- Groups
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Family
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090708
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | Porifera
Competency	Explaining Phenomena 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 9
Question Code	SAS21S090709
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | Classification of Animals
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 10
Question Code	SAS21S090710
Grade & Chapter Name	Grade 9 | Diversity in Living Organisms
Concept | Sub-concept	Life Science | Aves
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. They breathe through lungs.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090801
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Motion Along a Straight Line
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 30 km
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S090802
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Motion Along a Straight Line
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the total distance travelled is 70 km. • 70 km
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090803
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Motion Along a Straight Line
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the car did not travel in a uniform motion as it moved with a different speed in between 10 km and 20 km of its path. For example: • The car travelled in a non-uniform motion as it travelled with different speeds at different time intervals.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S090804
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Measuring The Rate of Motion
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 45 km/hr
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090805
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Velocity Time Graph
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Rehana was cycling with a uniform velocity between 10 minutes and 15 minutes.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090806
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Velocity Time Graph
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that Rehana's maximum cycling velocity was 10 km/hr. • 10 km/hr
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090807
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Velocity Time Graph
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Anju cycled faster than Rehana at the start of the journey.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090808
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Uniform Circular Motion
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the net displacement of the swinging object will be zero after a complete swing. • There will be zero displacement.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090809
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Velocity Time Graph
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Graph
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090810
Grade & Chapter Name	Grade 9 | Motion
Concept | Sub-concept	Physical Science | Rate of Change of Velocity
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. ms^{-2}
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S090901
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Conservation of Momentum
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 2
Question Code	SAS21S090902
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Conservation of Momentum
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions friction as the external force
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S090903
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Conservation of Momentum
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. The smaller ball would rebound and the bigger ball would roll forward.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S090904
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Balance and Unbalanced Force
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Calculates a force of 2000 N and shows the correct calculation stepwise
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S090901
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Balance and Unbalanced Force
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that force acting on each box is unbalanced because acceleration is produced for each box indicating that the force caused each box to move For example: • The force acting on each box is unbalanced because acceleration is produced. OR • The force acting on each box was unbalanced as the boxes moved forward.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S090906
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science| Balance and Unbalanced Force
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. A boy sitting on a chair
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S090907
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Third Law of Motion
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the balls will not hit the floor with the same momentum as their masses are different.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S090908
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Third Law of Motion
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that an equal and opposite force exerted by the floor on the balls caused them to bounce back. For example: • An equal and opposite force was exerted on the balls by the floor. This force caused them to bounce back.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S090909
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science| Third Law of Motion
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the balls will reach a height of less than 5 m as some energy/velocity/momentum will be lost after the balls hit the floor.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S090910
Grade & Chapter Name	Grade 9 | Force and Laws of Motion
Concept | Sub-concept	Physical Science | Inertia and Mass
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. A force of 3000 N acting on a mass of 10 kg
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S091001
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Universal Law of Gravitation
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 2
Question Code	SAS21S091002
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Universal Law of Gravitation
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that G stands for universal gravitation constant
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S091003
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Motion of Objects Under The Influence Gravitational Force the Earth
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Location 2 and Location 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S091004
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Motion of Objects Under The Influence Gravitational Force the Earth
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the gravitational pull of the earth keeps the moon in its orbit For example: • Gravitational force/pull of the earth makes the moon move in a fixed orbit.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S091005
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Thrust and Pressure
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Box 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S091006
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Thrust and Pressure
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that all four boxes have the same weight as their mass is the same For example: • All four boxes have the same weight as their mass is the same.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S091007
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Relative Density
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the relative density of the object should be less than 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S091008
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Pressure in Fluids
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that deep sea has very high water pressure. Thick sheet of steel can resist high water pressures For example: • Deep sea has very high water pressure. • Thick sheet of steel can resist high water pressures.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S091009
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Buoyancy
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Liquid 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091010
Grade & Chapter Name	Grade 9 | Gravitation
Concept | Sub-concept	Physical Science | Archimedes' Principle
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Steel bowl
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S091101
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Work Done by Constant Force
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Toy car 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S091102
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Work Done by Constant Force
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 3
Question Code	SAS21S091103
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Potential Energy
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Point 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S091104
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Potential Energy
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 5
Question Code	SAS21S091105
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Are Various Energy Forms interconvertible?
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Conversion of energy and air resistance
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S091106
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Rate of Doing Work
Competency	Interpreting Data & Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that power is equal to work done per unit time. Person 3 pulled the cart in the shortest time so he expended the most power. For example: • Person 3. Power is equal to work done per unit time. Person 3 took the least time to pull the cart.
Partial Credit (Partial Score)	Mentions only person 3 as the response but provides no explanation
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S091107
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Rate of Doing Work
Competency	Evaluating & Designing Scientific Enquiry
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 8
Question Code	SAS21S091108
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Are Various Energy Forms interconvertible?
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. A person riding a motorbike to the top of an overbridge
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S091109
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Commercial Unit of Energy
Competency	Interpreting Data & Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. House 1 consumed less electricity than House 2 in all the four months.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091110
Grade & Chapter Name	Grade 9 | Work and Energy
Concept | Sub-concept	Physical Science | Commercial Unit of Energy
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions one kilowatt hour as the response
No Credit (No Score)	Any other response or missing response

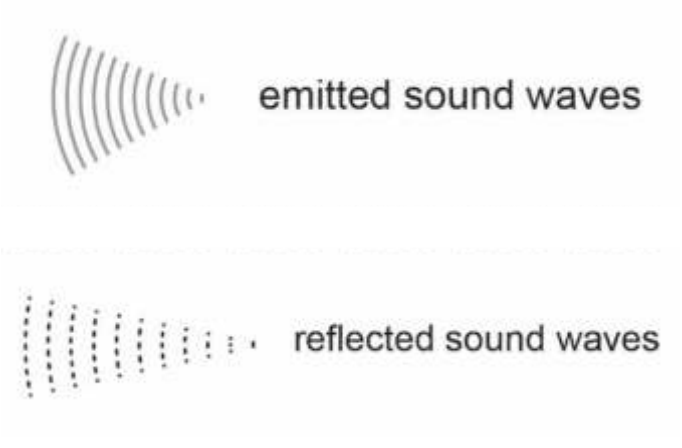
Item Number	Question 1
Question Code	SAS21S101201
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Characteristics of a Sound Wave
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Sound wave 4
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S091202
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Characteristics of a Sound Wave
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Sound wave 1 and sound wave 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S091203
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Sciences | Characteristics of a Sound Wave
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 10 Hz
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21S091204
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Sciences | Range of Hearing
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Sitting in the front row of a rock concert for 30 minutes
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S101205
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Characteristics of a Sound Wave
Competency	Explaining Phenomena 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 6
Question Code	SAS21S091206
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Reflection of Sound
Competency	Interpreting Data and Evidence Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	A. 10 Hz 
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S101207
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Applications of Ultrasound
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 8
Question Code	SAS21S091208
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Structure of Human Ear
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions middle ear as the response.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S091209
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Structure of Human Ear
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Rupture of the ear drum
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091210
Grade & Chapter Name	Grade 9 | Sound
Concept | Sub-concept	Physical Science | Reflection of Sound
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. A man shouting from a place that is surrounded by hills.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S101301
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Disease and Its Causes
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. wearing unwashed clothes for a week
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S091302
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Acute and Chronic Diseases
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Arthritis / Malaria
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S091303
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Infectious Diseases
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 4
Question Code	SAS21S091304
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Principles of Prevention
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Rabies
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S101305
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Means of Spread
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. AIDS
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S091306
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Chronic Diseases and Poor Health
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 7
Question Code	SAS21S091307
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Principles of Prevention
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Village 2
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21S091308
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Principles of Prevention
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that river water contains suspended solid particles and microorganisms.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S101309
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Disease and Its Causes
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Village 3
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091310
Grade & Chapter Name	Grade 9 | Why do we fall ill?
Concept | Sub-concept	Life Science | Disease and Its Causes
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. She has weak immunity.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S101401
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Nitrogen cycle)
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Nitrate
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S091402
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Nitrogen cycle)
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Ammonification
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S091403
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Oxygen cycle)
Competency	Interpreting Data and Evidence 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 4
Question Code	SAS21S091404
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Oxygen cycle)
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that the oxygen cycle will continue as the transfer of oxygen will happen through plants and animals. For example • No. The oxygen cycle will continue as oxygen will get transferred through plants and animals.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S091405
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Ozone Layer
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. It has increased from 1986 to 1996.
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S091406
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Ozone Layer
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Harmful radiations from the Sun will reach the Earth's surface.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S091407
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Carbon Cycle)
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	SAS21S091408
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Biogeochemical Cycles (Carbon Cycle)
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that fossil fuels form by the decomposition of dead plants and animals.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S091409
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | The Greenhouse Effect
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Carbon dioxide
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091410
Grade & Chapter Name	Grade 9 | Natural Resources
Concept | Sub-concept	Earth Science | Mineral Riches in The Soil
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that plant roots hold the soil tightly.
No Credit (No Score)	Any other response or missing response

Item Number	Question 1
Question Code	SAS21S091501
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Cropping Patterns
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Cop rotation
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21S091502
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Cropping Patterns
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Different nutrients present in the farm soil are evenly used over time.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21S091503
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Nutrient Management
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 4
Question Code	SAS21S091504
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Nutrient Management
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Potassium
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21S091505
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Nutrient Management
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Source 1
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21S091506
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Animal Husbandry (Bee-keeping)
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. Type of flower from which the bees collect nectar
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21S091507
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Animal Husbandry (Bee-keeping)
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 8
Question Code	SAS21S091508
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Animal Husbandry (Bee-keeping)
Competency	Interpreting Data and Evidence Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. All areas of the pond are utilized for better fish production.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21S091505
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Animal Husbandry (Fish Production)
Competency	Explaining Phenomena Scientifically
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. Pearl
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21S091510
Grade & Chapter Name	Grade 9 | Improvement in Food Resources
Concept | Sub-concept	Life Science | Animal Husbandry (Poultry Farming)
Competency	Explaining Phenomena Scientifically
Item Type	Constructed Response
Full Credit (Full Score)	Mentions that crossbreeding is done to get desirable characteristics in the hybrid chicken.
No Credit (No Score)	Any other response or missing response

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