

Science

STUDENT NAME _____

NAME OF SCHOOL _____

TEST INSTRUCTIONS

FILL IN YOUR DETAILS

Turn to your ANSWER SHEET and fill in your name, school, grade, section, today's date, your date of birth and gender.

ANSWERING QUESTIONS

Go to the SCIENCE ANSWER SHEET.

This test has **40 QUESTIONS**. Each question has four possible options.

Choose the BEST answer from the four options, **A, B, C** or **D**.

FILL in ONE circle on your answer sheet with a pencil.

If you make a mistake, erase the pencil mark and fill in a different circle.

You must colour the entire circle as shown below:



Marks are NOT deducted for incorrect answers.

ALL ANSWERS SHOULD BE MARKED ON YOUR ANSWER SHEET ONLY.

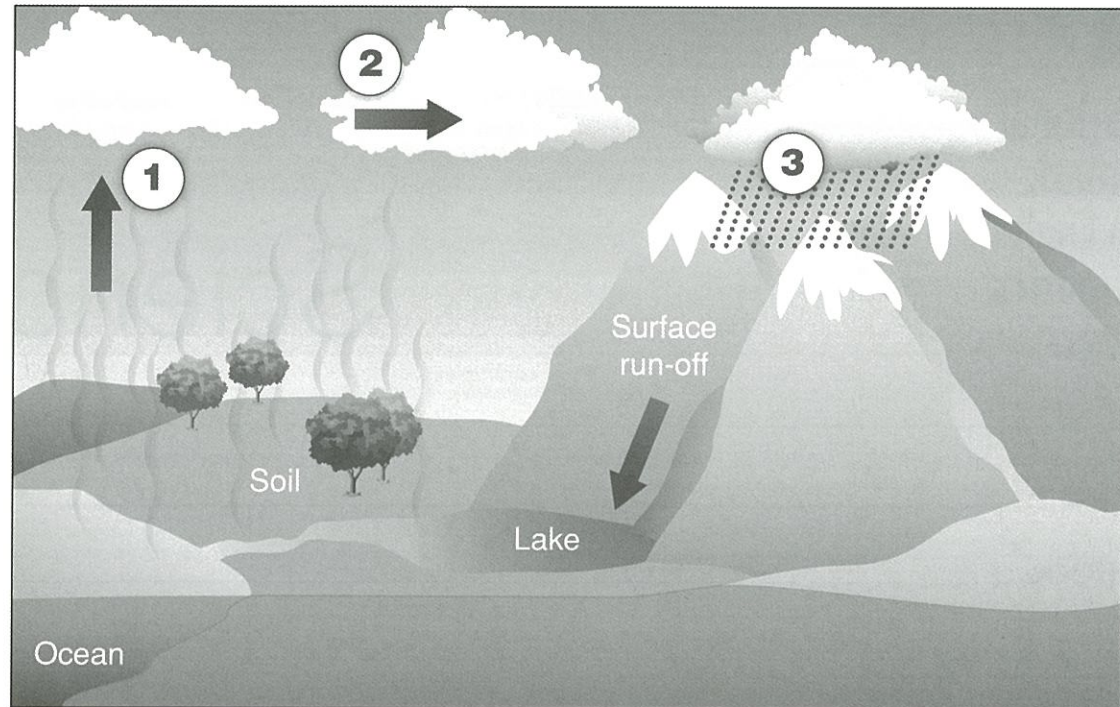
EQUIPMENT ALLOWED IN THIS TEST

You may use a 2B or B pencil for this test. You may NOT use a dictionary for this test.

TIME ALLOWED FOR TEST

The time allowed to complete this test is **60 minutes**.

The diagram shows the water cycle. The steps of the cycle are labelled 1, 2 and 3.



1 What processes occur at steps 1, 2 and 3?

Select the correct row.

	1	2	3
A	precipitation	condensation	evaporation
B	evaporation	condensation	precipitation
C	condensation	evaporation	precipitation
D	evaporation	precipitation	condensation

2 What is the source of energy for the water cycle?

- A the Sun B the wind C the Earth's rotation D the force of gravity

3 Which of the following is most likely to affect all stages of the water cycle?

- A tsunami B earthquake C global warming D ozone layer depletion

37 Which organ system does asthma affect?

- A muscular B digestive C respiratory D reproductive

Gaurav will study the effect of exercise on the heart rate of men and women.

He makes a table to record his data.

Type of exercise or activity	Average heart rate in 20 men	Average heart rate in 20 women
resting		
swimming		
skipping		
running		
walking		

38 Why did Gaurav include the heart rate for 'resting'?

- A to test his method of measuring the heart rate
 B to make sure that the person being tested is healthy
 C to compare the normal heart rate between men and women
 D to compare it with the heart rates during physical activity

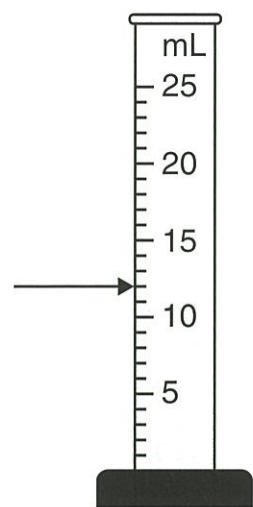
39 What should Gaurav keep the same for all the people in the study?

- A weight
 B duration of exercise
 C height
 D time since last meal

40 Why does exercise normally increase heart rate?

- A The body needs to warm up.
 B The heart needs to get rid of carbon dioxide.
 C The heart needs to supply more oxygen to the lungs.
 D The muscles need more oxygen to release energy.

This measuring cylinder was filled with water to the level of the arrow.



This is a cube of clay.
All of its sides are 2 cm long.

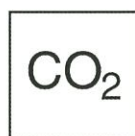
33 What would the reading be if the cube was dropped into the water in the cylinder?

- A** 8 mL **B** 12 mL **C** 14 mL **D** 20 mL

34 If the cube of clay was rolled into a ball and then dropped into the water in the cylinder, what would the cylinder reading be?

- A** 8 mL **B** 12 mL **C** 14 mL **D** 20 mL

35 The chemical formula of carbon dioxide is:
What term best describes CO₂?



- A** a compound **B** a solution **C** an element **D** a mixture

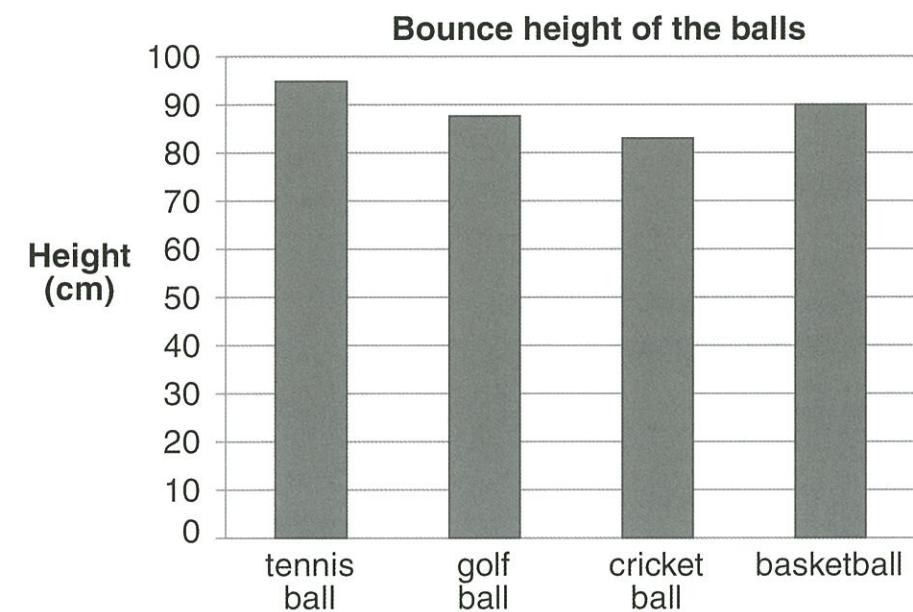
36 Which of the following is a molecule?

- A** N **B** Cl₂ **C** Co **D** O

Four balls with different masses were dropped onto a hard floor from a height of 100 cm. The mass of each ball is shown below.

Ball	tennis ball	golf ball	cricket ball	basketball
Mass (g)	60	45	160	600

The graph shows the bounce height of each ball.



4 What can be concluded from the data?

- A** All four balls have the same level of elasticity.
B The ball with the greatest mass bounced the highest.
C The bounce height does not depend on the mass of the ball.
D Doubling the mass of the ball doubles the height of the bounce.

5 What is likely to happen if the balls are dropped from a height of 200 cm?

- A** The cricket ball will bounce higher than the golf ball.
B The tennis ball will bounce higher than 200 cm.
C All of the balls will bounce to the same height.
D All of the balls will bounce lower than 200 cm.

6 The Arctic region is mostly covered with snow.
What feature is most likely to be found on Arctic animals?

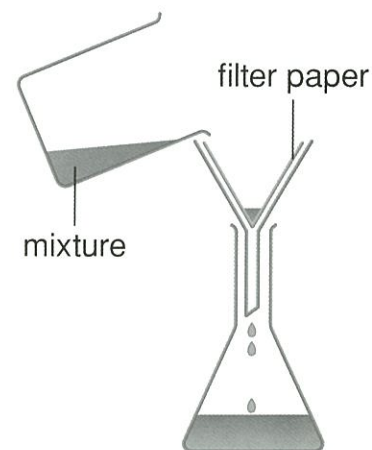
- A** hooves **B** long legs **C** white fur **D** floppy ears

7 Why do most Arctic animals hibernate during the winter?

- A** to give birth
B to save energy
C to recover from illness
D to escape from predators

Four different substances are mixed in a beaker of water.
The table shows one property of the substances.

Substance	Soluble in water
1	no
2	yes
3	no
4	yes



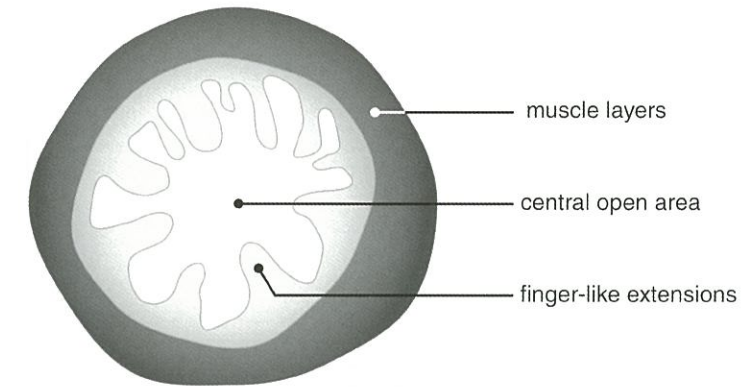
8 The mixture is then poured into a filter paper.
Which substances will pass through the filter paper?

- A** 1 and 2 **B** 2 and 4 **C** 1 and 3 **D** 1, 2, 3 and 4

9 A mixture contains water and substance 4.
Which process will remove the water and leave substance 4 as a solid?

- A** filtration **B** freezing **C** evaporation **D** chromatography

Cross sections of the small intestine of almost all mammals show similar features.



Cross section of a typical small intestine

30 How do the finger-like extensions of the small intestine help it to function?

- A** They provide blood for the muscle layers.
B They increase the area that can absorb digested food.
C They prevent food from moving through the small intestine.
D They prevent undigested food from leaving the small intestine.

31 The small intestine of herbivores (plant-eating animals) tends to be longer than the small intestine of carnivores (meat-eating animals).

Why is a herbivore's small intestine longer than a carnivore's small intestine?

- A** Herbivores are larger than carnivores.
B Plants are more difficult to digest than meat.
C Herbivores eat food more often than carnivores.
D Meat does not need to be digested before it can be used in the body.

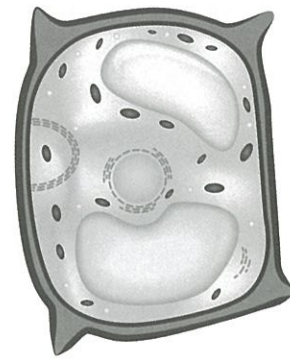
32 The picture shows a type of rock.
How was this rock formed?



- A** by deposition of minerals under water
B by chemical changes to another type of rock
C by solidification of lava on the Earth's surface
D by freezing of magma beneath the Earth's surface

The picture shows a cell as seen under a microscope.

Four students were asked what type of cell it is and to explain their answer.



Student	Answer
Samantha	Plant cell – it has mitochondria.
Mathew	Animal cell – it has a nucleus.
Poonam	Plant cell – it has a cell wall.
Hrithik	Animal cell – it has no chloroplasts.

27 Who answered correctly?

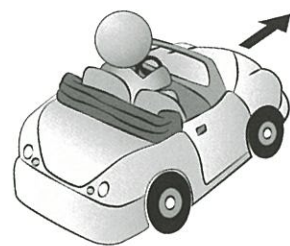
- A Samantha B Mathew C Poonam D Hrithik

28 Tanisha cut her skin when she fell from her bicycle.

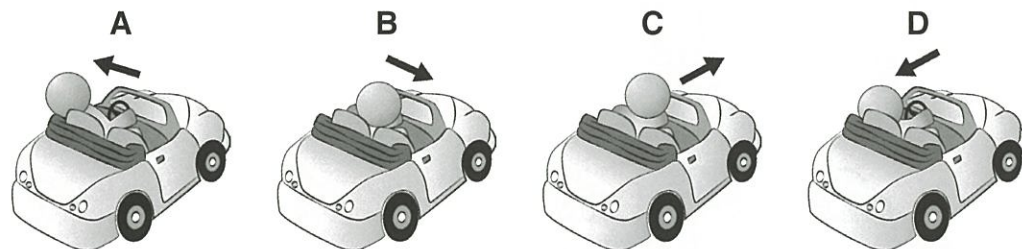
Which process makes new skin cells to help heal the wound?

- A mitosis B meiosis C excretion D respiration

29 The picture shows a person driving a car in the direction of the arrow.



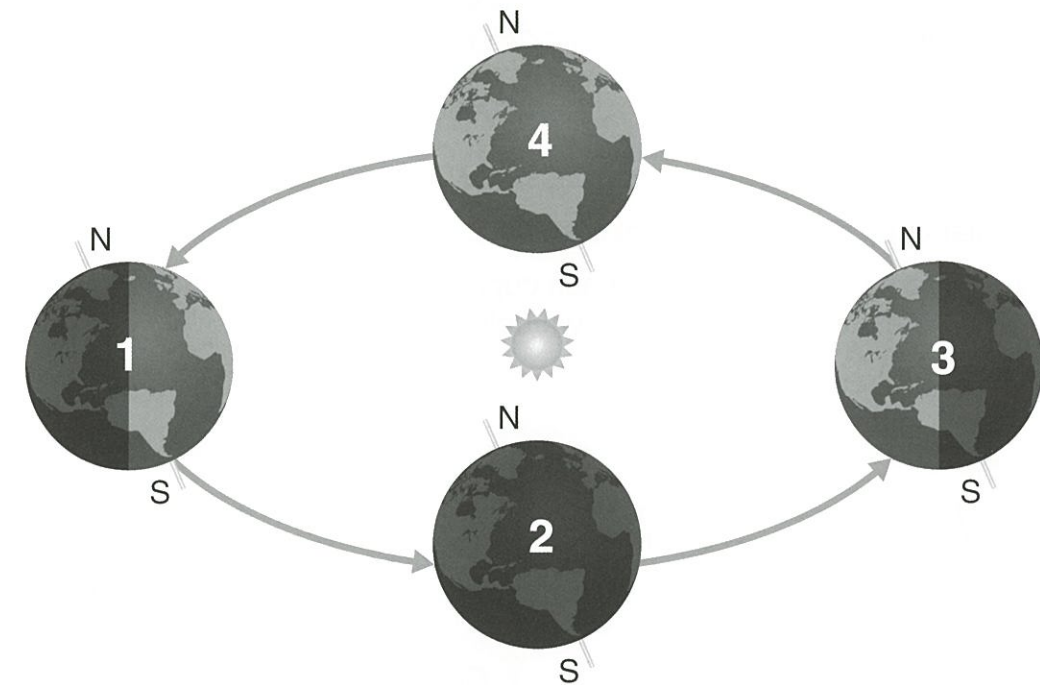
Which picture shows the movement of the driver's head if the car brakes suddenly?



10 Which row correctly identifies renewable energy sources?

	Energy source		
	Falling water	Natural gas	Wood
A	no	no	yes
B	no	yes	yes
C	yes	no	yes
D	yes	no	no

11 The picture shows the Earth at four different positions (1,2,3,4) around the Sun.



Which position shows summer in the northern hemisphere?

- A position 1 B position 2 C position 3 D position 4

12 Which of these is most likely to cause water pollution?

- A banning water sports in a river
 B planting trees along a river bank
 C making wire fences along a river bank
 D setting up a chemical industry close to a river

13 The body of a starfish has a radial symmetry.



Which of these also has a radial symmetry?

A



A butterfly's wing

B



A leaf

C



A sunflower

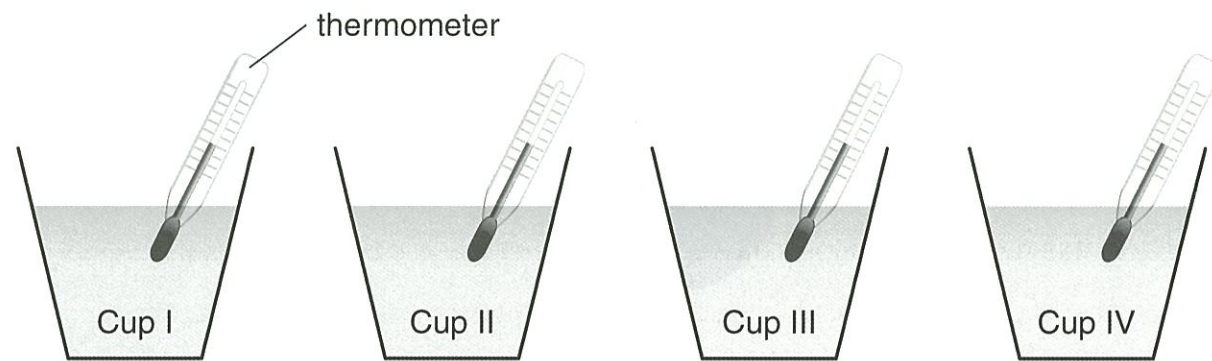
D



A snail's shell

Alia had four similar cups made of different materials.

She put an equal amount of hot water into each cup. She measured the temperature in each cup after 5 minutes. The results are shown below.



Cup	Water temperature (°C)
I	25
II	43
III	28
IV	34

14 Which cup is made of the best insulating material?

A

Cup I

B

Cup II

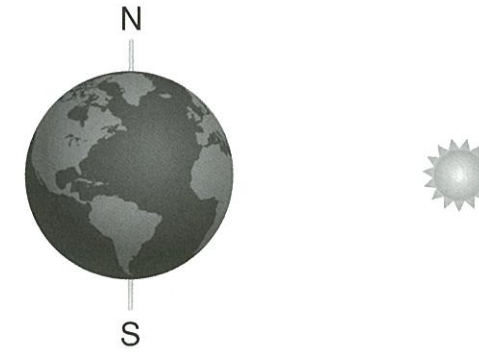
C

Cup III

D

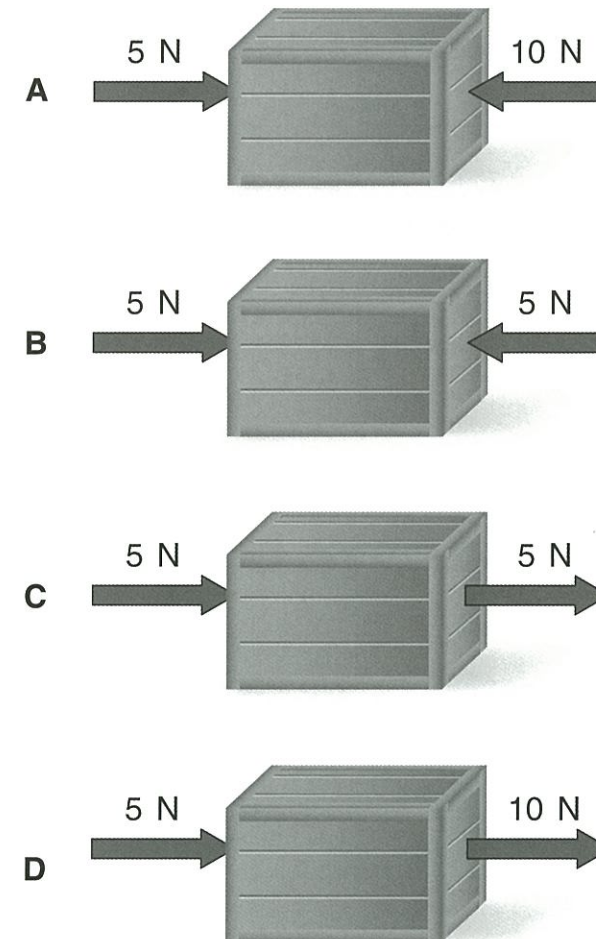
Cup IV

25 What would happen if the Earth's axis was vertical and not tilted?

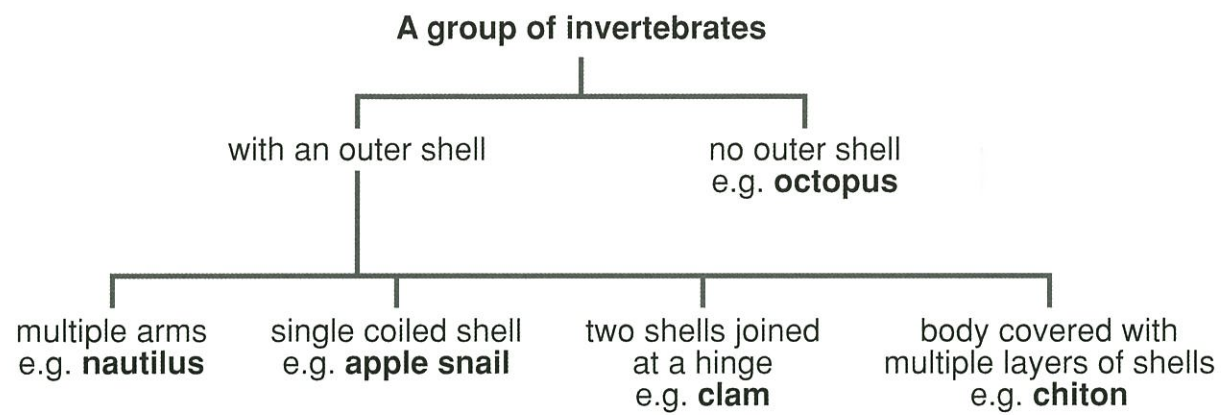


- A There would be no seasons.
- B There would be no day and night.
- C There would be less gravity on the Earth.
- D The Earth would not be able to move around the Sun.

26 Which diagram shows two balanced forces acting on the wooden box?



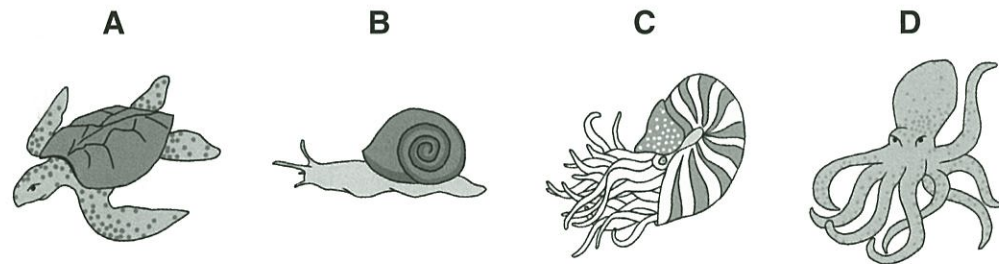
This chart classifies a group of invertebrates.



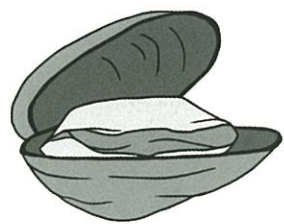
22 What is an invertebrate?

- A An animal that has a backbone.
- B An animal that has an outer shell.
- C An animal that breathes using gills.
- D An animal that does not have a backbone.

23 Which of these animals is a nautilus?



24 What is this animal most like?

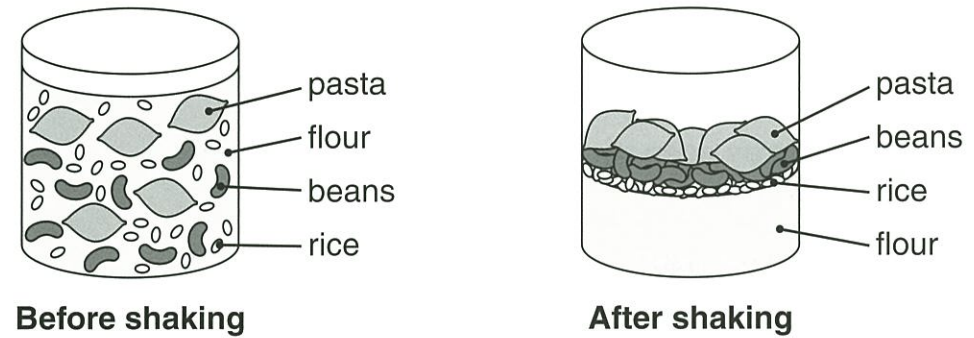


- A clam
- B chiton
- C octopus
- D apple snail

15 Which of these steps would make Alia's experiment more reliable?

- A Repeat using cold water.
- B Repeat using larger cups.
- C Repeat for each cup three times.
- D Repeat with more cups made of new materials.

A girl mixed uncooked rice, beans, pasta and flour in a large jar as shown. She then gently shook the jar from side to side.

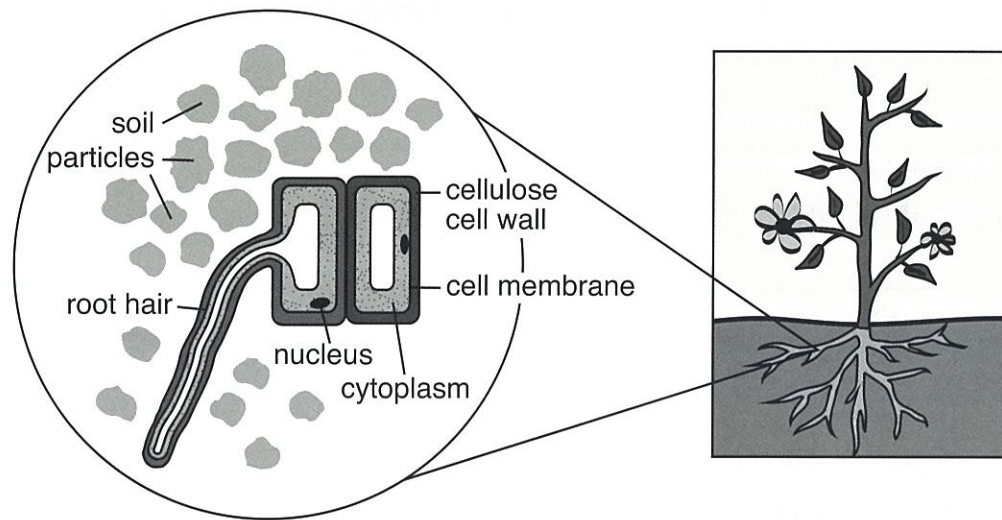


16 Why did the flour settle at the bottom of the jar after shaking?

- A Flour is softer than pasta, beans and rice.
- B Flour contains more particles than pasta, beans and rice.
- C There are more pieces of flour than pasta, beans and rice.
- D Flour fits through the spaces between the pasta, beans and rice.

17 Why is this model useful for studying how sedimentary rocks are formed?

- A The model helps show how sedimentary layers could form in a rock.
- B The model shows the process of forming sedimentary rocks in great detail.
- C The model shows how sediments move because they are too small to be seen in nature.
- D Sedimentary rocks are made in volcanoes, so it is not possible to watch them being formed.



Plant root cells as seen through a microscope

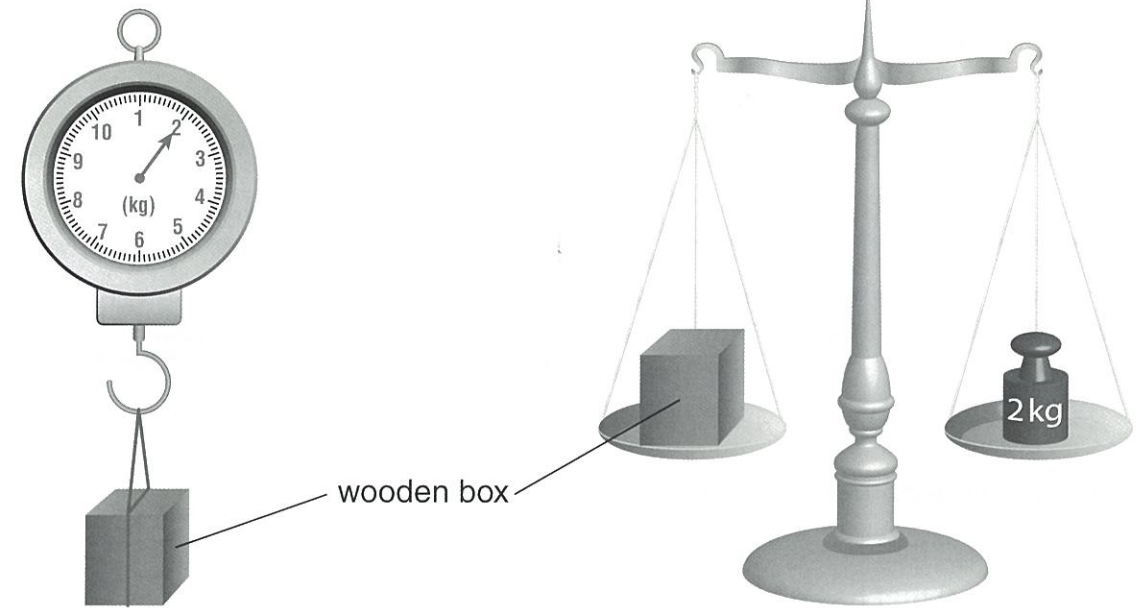
18 Which feature is only found in plant cells?

- A nucleus
- B cytoplasm
- C cell membrane
- D cellulose cell wall

19 How do root hairs help the plant absorb water?

- A They allow the plant roots to have a greater surface area.
- B They hold the plant firmly in the ground, protecting the root.
- C They act as an insulating layer around the surface of the root.
- D They allow the plant to push soil particles away from the main root.

20 A wooden box was weighed with a spring balance and a simple balance at sea level. The readings were 2 kilograms (kg) on both the scales.



Spring balance

Simple balance

If the same test is performed on the moon, what would be the correct readings? Select the correct row.

	Reading on spring balance	Reading on simple balance
A	less than 2 kg	2 kg
B	2 kg	more than 2 kg
C	more than 2 kg	less than 2 kg
D	less than 2 kg	more than 2 kg

21 Which of the following directly converts chemical energy to heat energy?

- A a gas oven
- B a computer
- C a car battery
- D a washing machine