

Science

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.

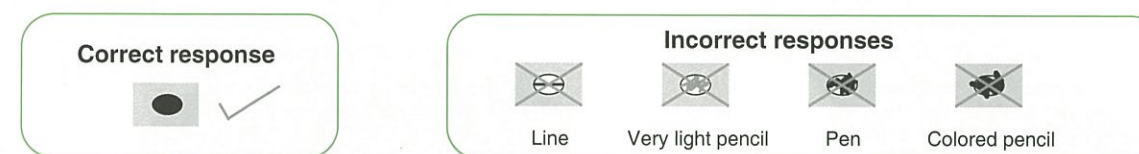
This test has **40 QUESTIONS**. Each question has four possible options.

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**

A student grows the same type of plant in four pots.

He gives them the same amount of water every day.

Plant	Type of soil in the pot	Type of water added daily	Plant condition after two weeks
1	sandy	saltwater	growing
2	clay	freshwater	dying
3	sandy	freshwater	dying
4	clay	saltwater	dying

1 In which area will the plant grow best?

- A desert B sea coast C mountain D inland forest

2 How can the student confirm his findings?

- A repeat the test
 B grow the plants in clay only
 C grow the plants using saltwater only
 D repeat the test but with two different types of plant

3 The monarch butterfly and viceroy butterfly look very similar. Predators do not like the taste of the monarch butterfly.



Monarch



Viceroy

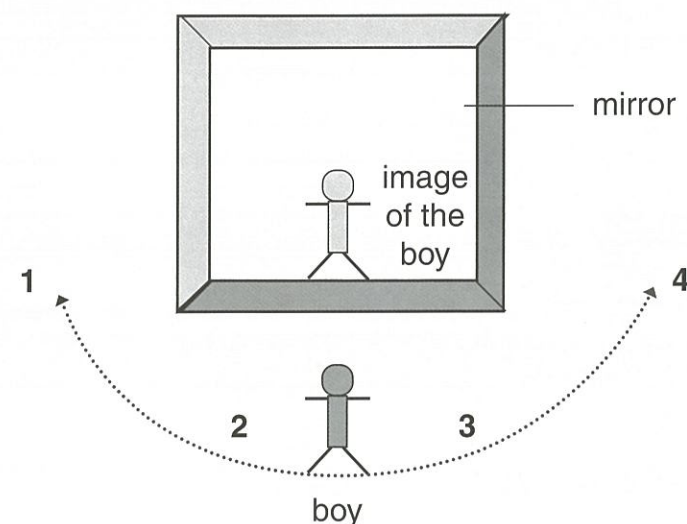
How does looking like a monarch butterfly help the viceroy butterfly?

- A It means viceroy butterflies can not be seen easily.
 B It means fewer viceroy butterflies are eaten by predators.
 C It helps viceroy butterflies find the best flowers for pollen.
 D It allows viceroy butterflies to eat the same food as monarch butterflies.

38 Which row shows materials that can dissolve in water?

	Sugar	Oil	Salt
A	yes	no	no
B	no	yes	yes
C	yes	no	yes
D	yes	yes	no

A boy stands in front of a mirror in four different places (1, 2, 3, 4).



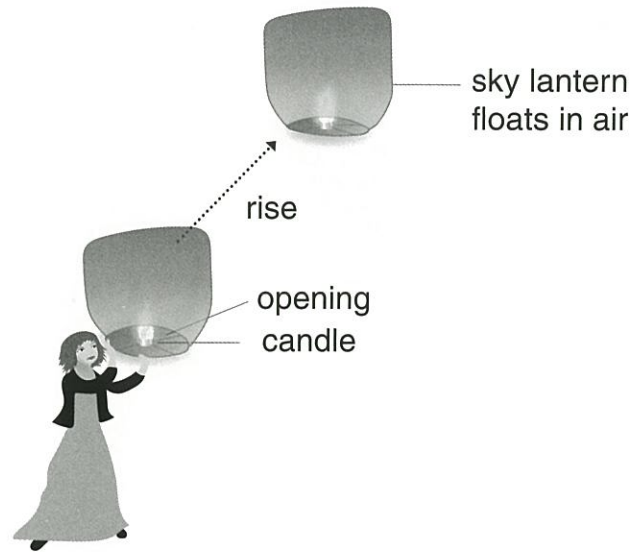
39 At which places can the boy see his image in the mirror?

- A place 1 only
 B place 4 only
 C places 2 and 3 only
 D all four places

40 How can the boy make his image in the mirror appear larger?

- A move towards the mirror
 B move away from the mirror
 C move to the left side of the mirror
 D move to the right side of the mirror

A sky lantern is made from a large paper bag with an opening at the bottom. A burning candle is put in the opening and the lantern rises up into the air.



35 What makes the sky lantern rise up into the air?

- A heat from the sun
- B wind from outside the paper bag
- C a push upwards from the person
- D warm air trapped inside the paper bag

36 After some time the lantern returns to the ground. What causes the lantern to return to the ground?

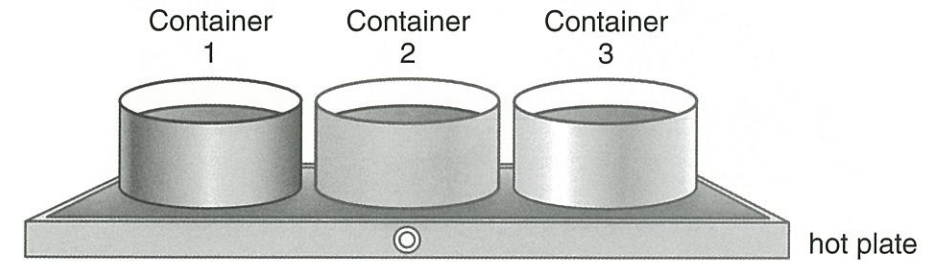
- A balanced forces
- B gravity
- C friction
- D air pressure

37 Which object converts kinetic energy into electrical energy?

- A car battery
- B electric fan
- C solar panel
- D wind turbine

Patrick boils water in three different containers.

The containers are the same size and shape but are made from different materials. He times how long the water takes to boil in each container.



Time needed for the water to boil (min)

Container 1	Container 2	Container 3
10	2	3

4 What material are the three containers most likely made of?

Choose the correct row.

	Container 1	Container 2	Container 3
A	copper	clay	steel
B	clay	steel	copper
C	steel	clay	copper
D	clay	copper	steel

5 How can Patrick make the water boil more quickly?

- A Paint the containers white.
- B Cover the containers with lids.
- C Use containers made from thicker materials.
- D Use containers with a smaller bottom surface area.

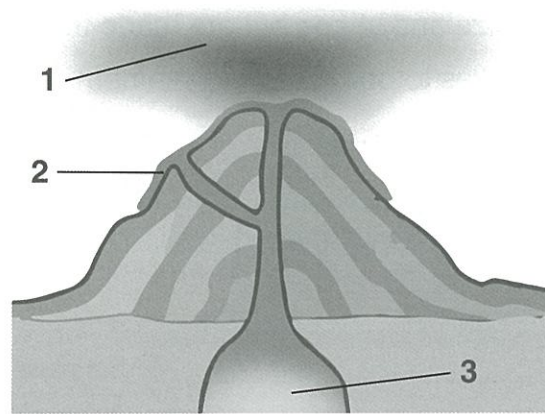


Diagram of a volcanic eruption

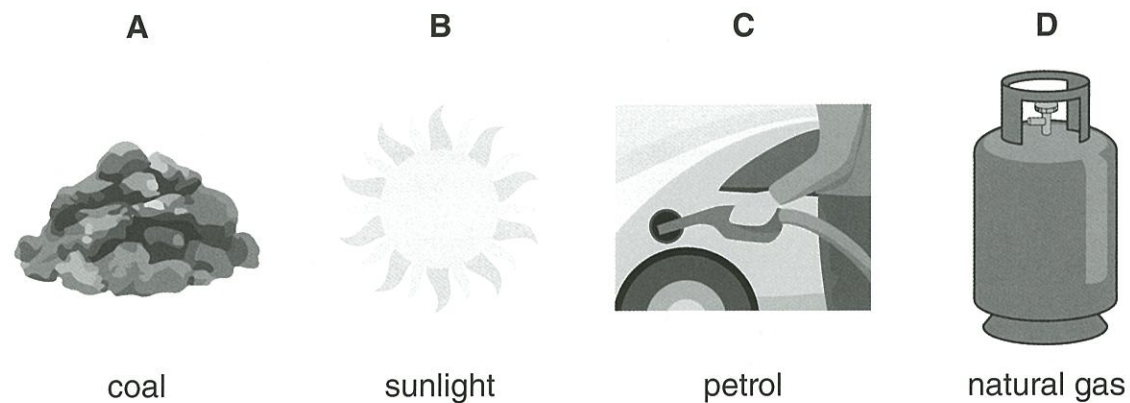
6 What do the labels 1, 2 and 3 show?
Choose the correct row.

	1	2	3
A	ash	magma	lava
B	magma	crater	ash
C	ash	lava	magma
D	crater	ash	lava

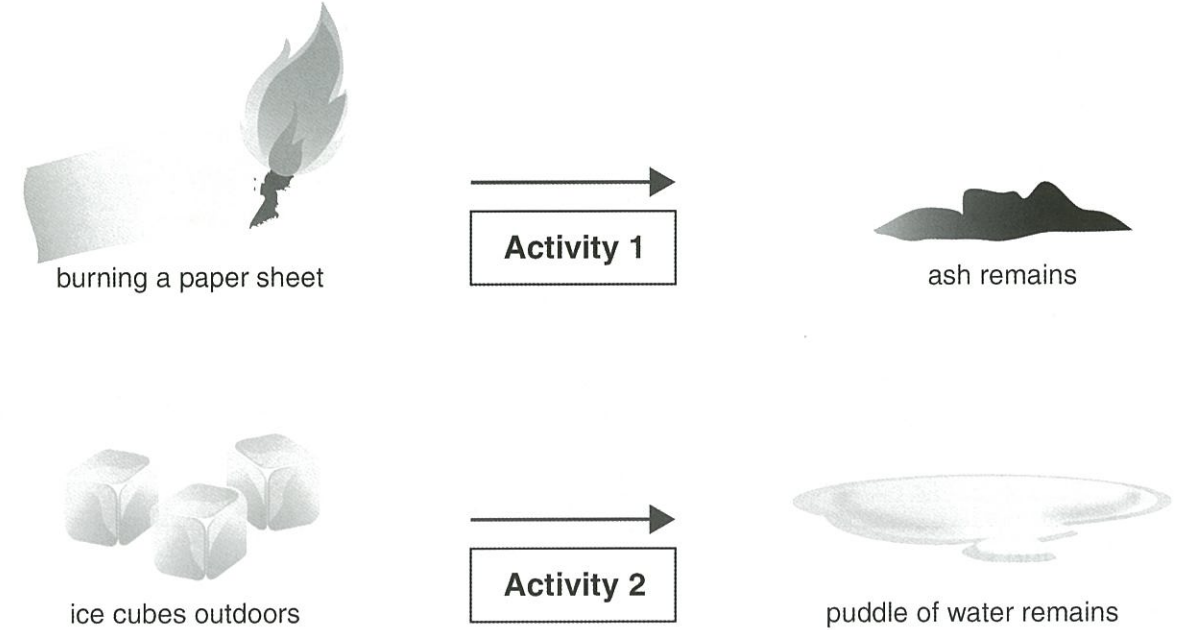
7 Where does a volcano's energy come from?

- A sunlight
- B the moon's gravity
- C heat inside the earth
- D the spinning of the earth

8 Which of these is a renewable energy source?



Two activities that cause change are shown below.



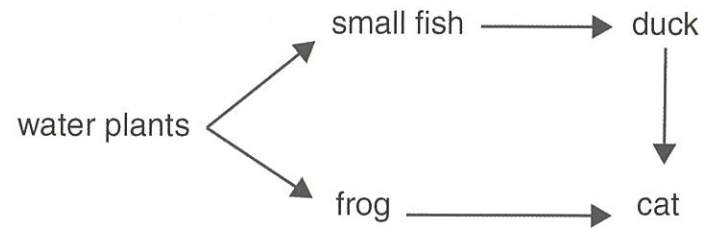
33 What is true for the activities?
Choose the correct row.

	Activity 1	Activity 2
A	heat is absorbed during the change	heat is released during the change
B	the change cannot be reversed	the change can be reversed
C	state of matter change takes place	state of matter change does not take place
D	air is not needed for the change to happen	air is needed for the change to happen

34 Which of these is the most sensible safety measure for the activities?

- A wear fireproof boots during Activity 1
- B use a spoon to hold the ice cubes during Activity 2
- C use tongs to hold the paper sheet during Activity 1
- D wear an apron while melting the ice cubes during Activity 2

The diagram shows a pond food web.



Key: frog → cat; means the cat eats the frog

The table shows the number of animals in the pond over two years.

Year	Number of fish	Number of ducks	Number of cats
2014	300	30	6
2015	350	5	4

30 What is the most likely cause for the decrease in the number of ducks in 2015?

- A lack of food
- B loss of water plants
- C a disease affecting the ducks
- D change in the number of cats

31 How many different food chains are shown in the food web?

- A one
- B two
- C three
- D four

32 Why do most plants have coloured flowers?

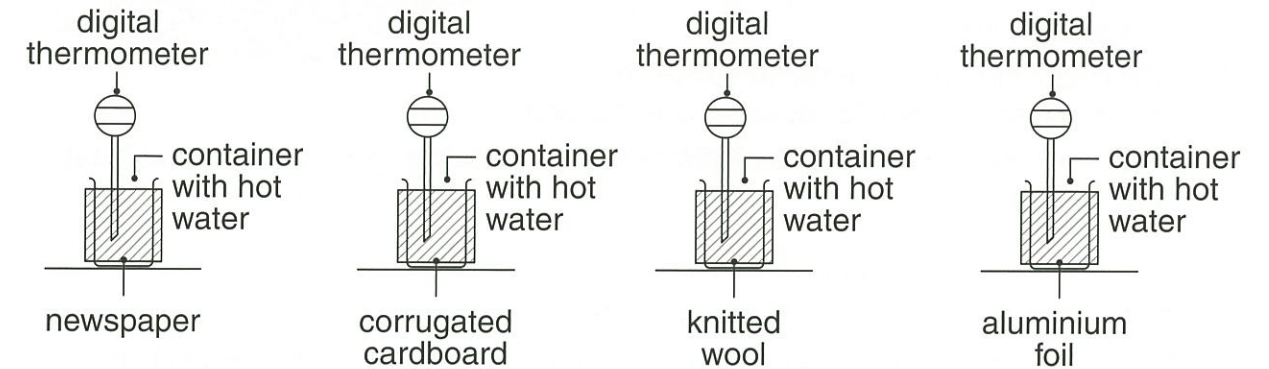
- A to make nectar
- B to produce fruit
- C to attract insects
- D to produce fragrance

Helen set up four containers.

Each container had hot water and a thermometer in it.

She wrapped each container with a different material.

She measured the temperature at the start and after 10 minutes.



9 What was Helen testing?

- A which material stayed the driest
- B which thermometer worked best
- C which material kept the water warmest
- D whether the water warmed the material

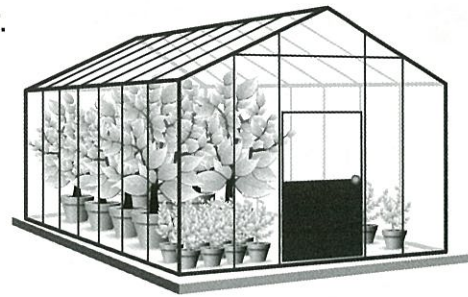
10 Which of the following would improve Helen's experiment?

- A use different thermometers
- B put a lid on each container
- C time how long she measured the temperature
- D use a different amount of water in each experiment

11 Which of these statements is true about the orbits of moons, stars and planets?

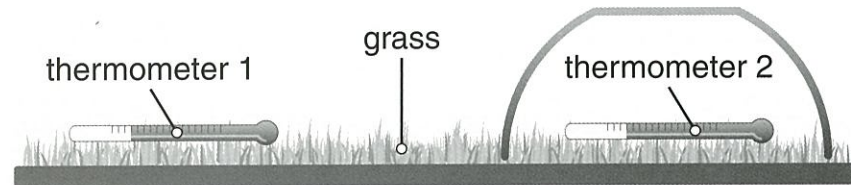
- A Stars orbit moons.
- B Stars orbit planets.
- C Planets orbit moons.
- D Planets orbit stars.

12 Mandy thinks a greenhouse helps plants grow faster. How can she test this idea?



- A Measure the growth of a plant over a whole year.
- B Compare the temperature inside and outside the greenhouse.
- C Compare the growth of plants inside the greenhouse with similar plants grown outside.
- D Measure the growth of several different plants inside a greenhouse for at least one month.

Mandy makes a model greenhouse with a glass bowl. She puts two thermometers on a grass lawn and covers one of them with a glass bowl.



She reads the temperature on each thermometer every 10 minutes for 30 minutes.

Time (minutes)	Thermometer 1 (°C)	Thermometer 2 (°C)
0	18	17
10	18	20
20	20	24
30	21	29

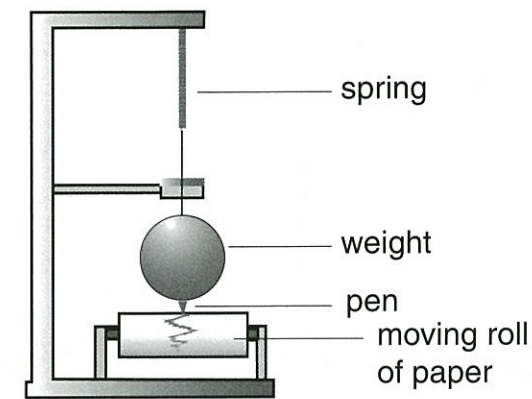
13 What does this experiment show?

- A Plants grow best at 29 °C.
- B Plants do not grow below 21 °C.
- C A greenhouse increases the temperature around plants.
- D The temperature is the same inside and outside a greenhouse.

14 What is one way a greenhouse helps plants to grow?

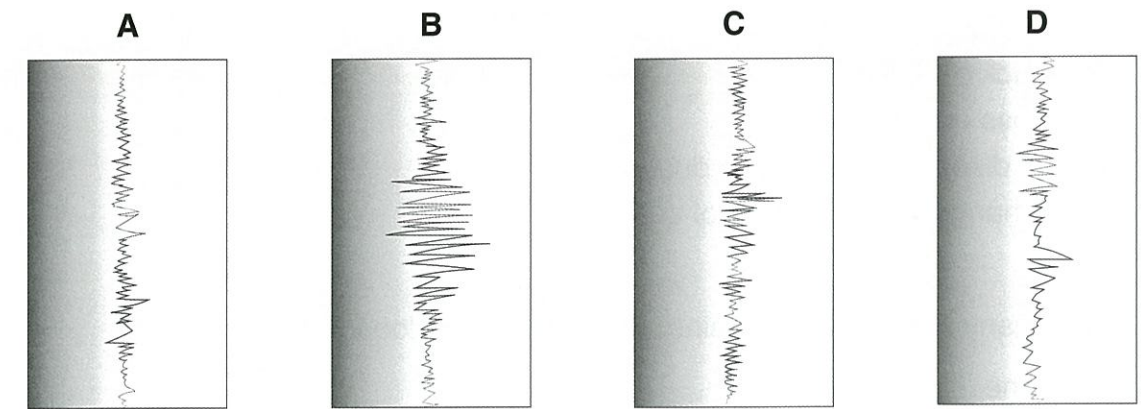
- A by stopping the rain
- B by keeping the soil dry
- C by keeping the plants dry
- D by keeping the air moist

The picture shows a seismometer used to measure the power of an earthquake. During an earthquake the pen moves from side to side on a moving roll of paper.



A seismometer

27 Which roll of paper recorded the strongest earthquake?



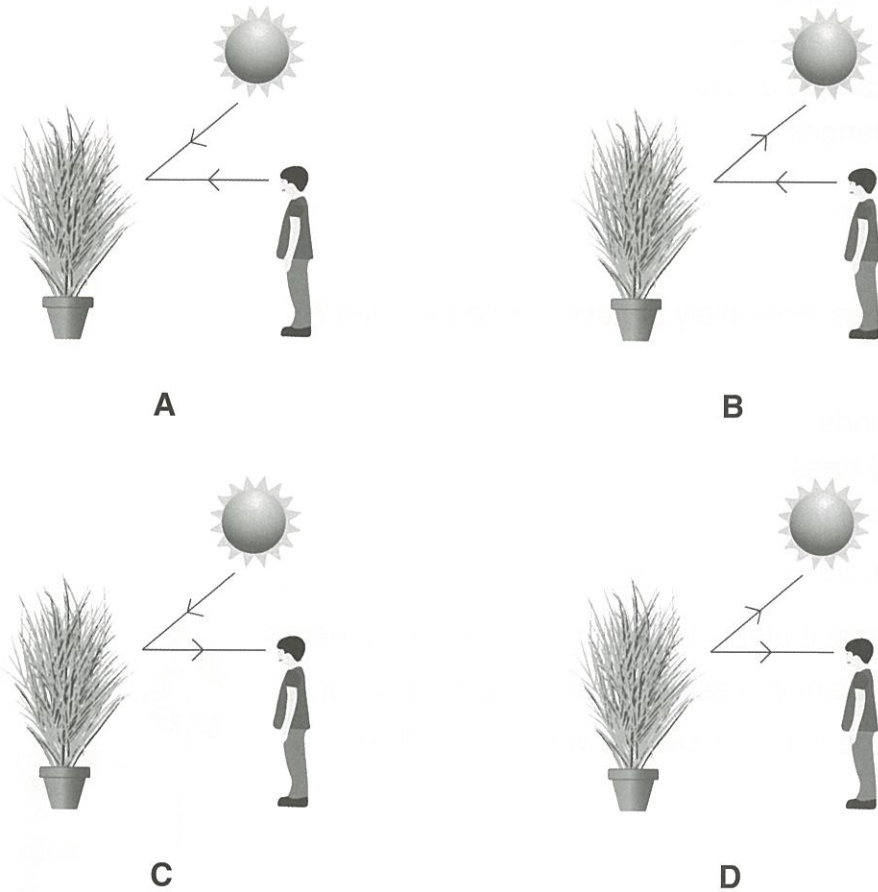
28 What other information about the earthquake can be found from the graph?

- A what the weather was like
- B how much damage occurred
- C how long the earthquake lasted
- D where the earthquake happened

29 Deserts are hot during the day and cool at night. How do most desert animals adapt to these conditions?

- A they have thick fur
- B they have a short tail
- C they have small thick ears
- D they are most active at night

25 Which picture shows how the boy sees the plant?



- 26 Why do leaves look green?
- A The leaves contain tiny green lights.
 - B The leaves produce green light.
 - C The leaves reflect green light.
 - D The leaves absorb green light.

15 Haru investigates the best conditions for growing plants. He has eight seedlings of one type of plant. Haru compares his seedlings by measuring their height.

Growing conditions of Haru's seedlings			
Seedling numbers	Sun	Water	Nutrients
1 and 2	yes	yes	yes
3 and 4	yes	no	no
5 and 6	no	yes	yes
7 and 8	no	no	yes

Which seedlings are likely to grow the best?

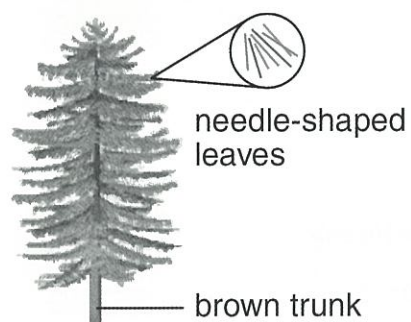
- A seedlings 1 and 2
- B seedlings 3 and 4
- C seedlings 5 and 6
- D seedlings 7 and 8

16 What should Haru do to make the test fair? Choose the correct row.

	Make sure the starting height of the seedlings is the same	Give the same amount of nutrients to each seedling	Make sure the final height of the seedlings is the same
A	yes	no	no
B	no	yes	yes
C	no	no	yes
D	yes	yes	no

17 Why did Haru use two seedlings for each growing condition?

- A so he could choose the seedling that grew the most
- B so he could compare different growing conditions
- C in case one seedling was unhealthy and did not grow properly
- D so the seedlings could use each other to grow stronger



18 How are the needle-shaped leaves likely to help the plant?

- A by producing more fruit
- B by collecting more sunlight
- C by letting snow slide off the branches
- D by preventing animals from eating the plant

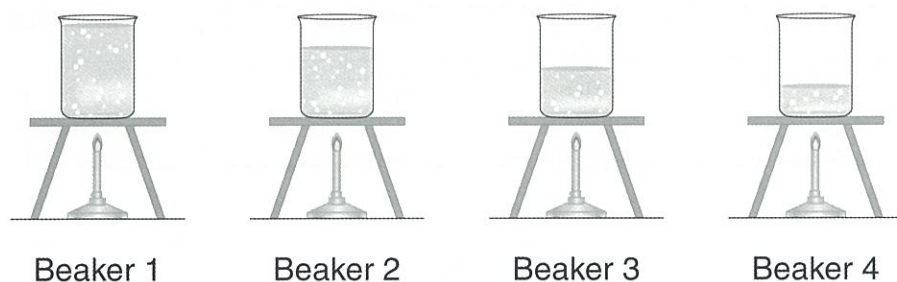
19 Butterflies often land on the trunk of the tree.

Which colour butterflies are best able to hide from predators?

- A yellow
- B brown
- C white
- D orange

Four beakers that contain water are heated.

Beaker 1 contains the most water and Beaker 4 the least water.



20 In which beaker will the water boil first?

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

21 What happens when water is heated?

- A Water gains energy.
- B Water loses energy.
- C Water changes colour.
- D Water changes into a solid.

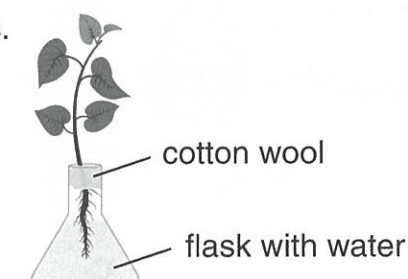
22 Which of these is most likely to have created a valley?

- A rainfall
- B strong winds
- C cutting of trees
- D fast flowing river

A student wants to see if plants lose water through their leaves.

She puts a growing plant in a sealed flask containing water.

She notes the change in the amount of water in the flask.



23 How can the student be sure that the plant loses water through its leaves?

- A repeat the same experiment
- B repeat the experiment with soil in the flask
- C repeat the experiment with a different plant
- D repeat the experiment using a plant without leaves

24 Why did the student seal the mouth of the flask?

- A to keep the stem dry
- B to hold the stem straight
- C to stop insects falling into the flask
- D to stop water evaporating from the flask