

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:

<p>Correct response</p> 	<p>Incorrect responses</p> 
	<p>Line Very light pencil Pen Colored pencil</p>

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**

1 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

2 Which of these makes energy for a cell?

- A nucleus
- B ribosomes
- C mitochondria
- D cell membrane

3 Which of these organs is a part of the respiratory system?

- A heart
- B lungs
- C kidney
- D stomach

Algae, fish, seals, shrimps and polar bears all live in the Arctic.

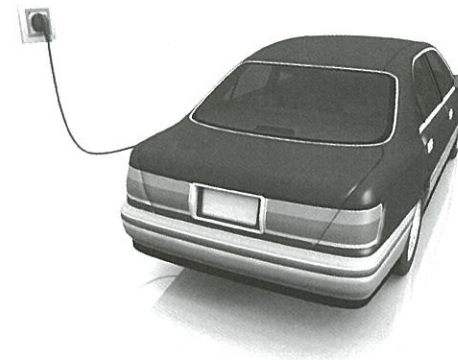
4 Which of these food chains is most likely in the Arctic?

- A shrimp → algae → seal → fish → polar bear
- B shrimp → algae → fish → polar bear → seal
- C algae → shrimp → fish → seal → polar bear
- D algae → shrimp → seal → fish → polar bear

5 Which of these Arctic organisms is a primary producer?

- A algae
- B shrimp
- C polar bear
- D fish

The table shows different energy sources used to make electricity for an electric car.



Energy source for electricity
wind power
tidal power
diesel power
solar power

39 Which is the non-renewable source of energy?

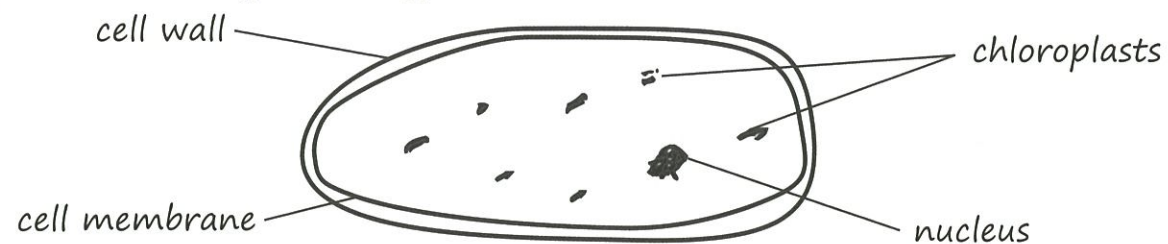
- A wind
- B tidal
- C diesel
- D solar

40 One type of electric car makes its electricity from solar panels on the car.

Why does this car also have a petrol powered engine?

- A Petrol will supply energy at night.
- B Petrol is a renewable source of energy.
- C Petrol is a cleaner source of energy than solar power.
- D Petrol is a cheaper source of energy than sunlight.

36 This is a drawing of which type of cell?



- A plant cell
- B fungal cell
- C animal cell
- D bacterial cell

The table shows features of four different fabrics.

Fabric	Wrinkle resistance	Insulation	Tear resistance	Water resistance
1	low	high	medium	low
2	high	low	medium	low
3	medium	high	low	high
4	high	low	high	high

37 Which fabric is best for cold wet weather?

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

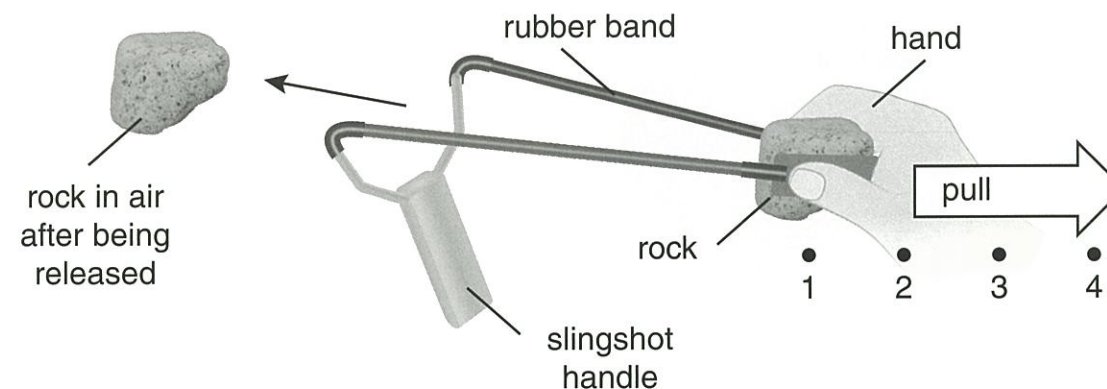
38 Fabric 4 is nylon.

Which statement describes nylon?

- A It is a natural fibre.
- B It has high durability.
- C It is not water-resistant.
- D It is not wrinkle resistant.

The diagram shows a rock being released from a slingshot.

Four release points for the slingshot are labelled as 1, 2, 3 and 4.



6 From which release point will the rock travel the furthest?

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

7 The slingshot converts potential energy into kinetic energy.

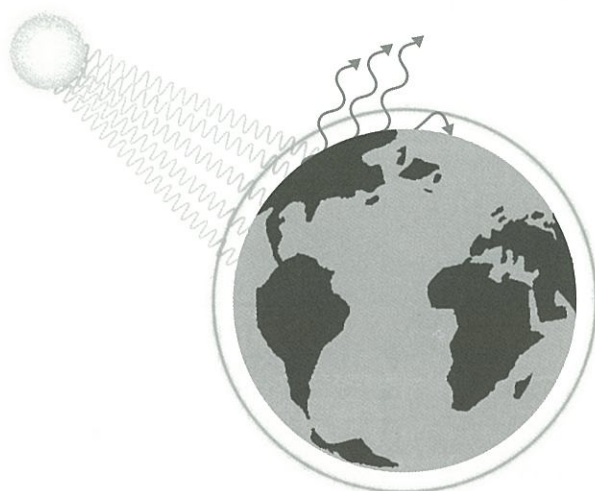
Where is the potential energy stored?

- A the rock
- B the rubber band
- C the hand
- D the slingshot handle

8 After being released from the slingshot, the rock travels through the air until it falls to the ground.

What makes the rock fall to the ground?

- A mass
- B gravity
- C air pressure
- D air resistance



Energy transfer in the Earth's atmosphere

The greenhouse effect warms the Earth's atmosphere.

9 What happens to greenhouse gases in the Earth's atmosphere?

- A They generate energy.
- B They absorb all of the Sun's energy.
- C They reflect all of the Sun's energy.
- D They absorb some of the Sun's energy.

10 Which row has only greenhouse gases ticked?

Choose the correct row.

	Nitrogen	Methane	Carbon dioxide	Water Vapour
A	✓	✓		✓
B	✓		✓	
C		✓	✓	✓
D	✓		✓	✓

11 Would these practices help slow the increase in greenhouse gases in the atmosphere?

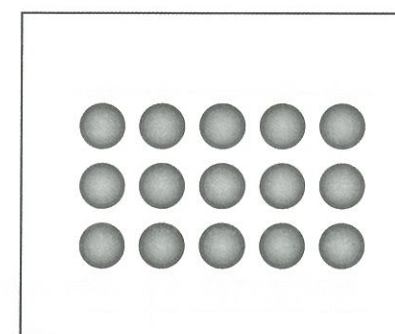
Choose the row that shows the correct response for each practice.

	Install solar panels on buildings	Build more coal power stations	Install insulation in buildings
A	no	no	yes
B	yes	no	yes
C	yes	yes	no
D	no	no	no

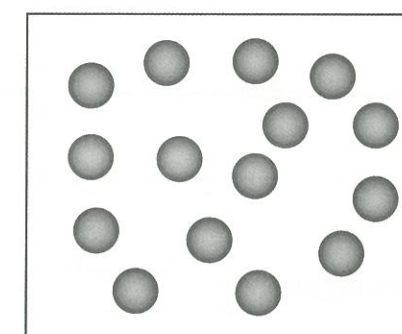
33 How does evaporation of water help plants?

- A It helps plants make food.
- B It helps plants in respiration.
- C It helps the water move up the stem.
- D It helps the plants store food in the stem.

The diagrams show the arrangement of water particles in ice and steam.

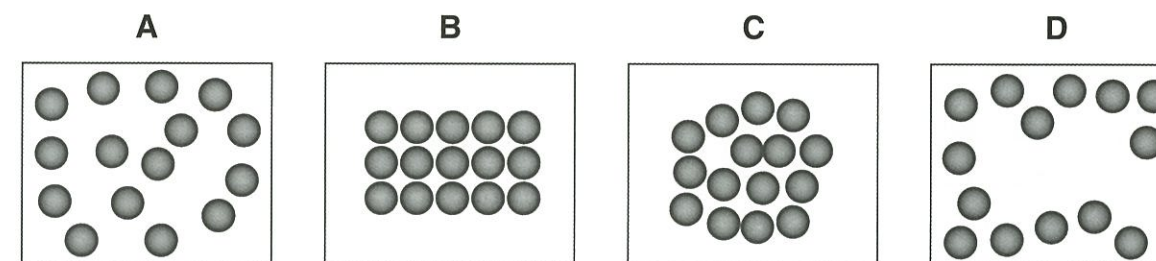


Ice at 0 °C



Steam at 100 °C

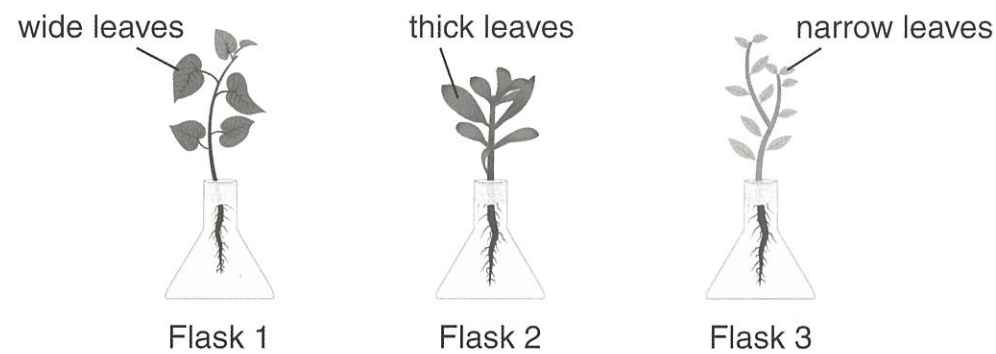
34 How are the water particles likely to be arranged at 10 °C?



35 At which temperature do the water particles have the most energy?

- A at 0 °C
- B at 10 °C
- C at 50 °C
- D at 100 °C

A student put three plants with different types of leaves in three flasks of water. He recorded the volume of water in each flask before and after the experiment.



	Volume of water in the flask (ml)	
	Before the experiment	After the experiment
Flask 1	200	175
Flask 2	200	180
Flask 3	200	195

31 What can be concluded from the experiment?

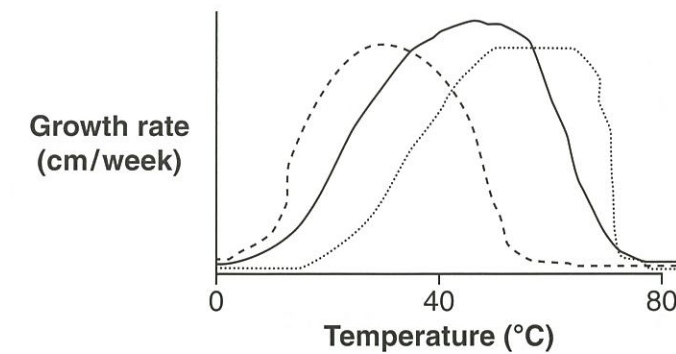
- A Plants lose water through their stems.
- B Plants with spines do not lose water.
- C Most of the water evaporated from the flask.
- D Leaves with more surface area lose more water.

32 Which of these factors can affect the amount of water lost from the flasks?

Choose the correct row.

	The number of leaves on the stem of each plant	The temperature of the air around the leaves	The thickness of the plant's stem
A	yes	no	no
B	yes	yes	no
C	no	yes	no
D	no	yes	yes

Growth rate of three species of plant at different temperatures



12 What is the best conclusion to draw from this graph?

- A Plants grow faster with increasing temperature.
- B Plant growth slows down when temperatures reach 40 °C.
- C The growth rate of plants above 80 °C depends on the species of plant.
- D The temperature at which highest growth occurs varies between species.

13 Photosynthesis occurs in the leaves of plants to create sugar.

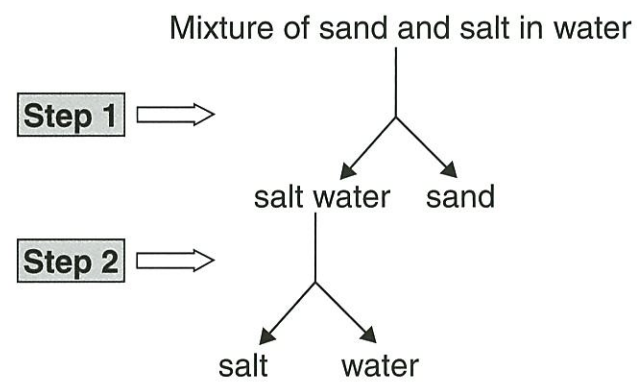
Where does photosynthesis occur within the plant cells of leaves?

- A in the nucleus
- B in the vacuoles
- C in the chloroplasts
- D in the cell membrane

14 Why do plants that grow in green light carry out less photosynthesis than plants that grow in sunlight?

- A The green light is reflected from the leaf rather than used in photosynthesis.
- B There is no green light in sunlight, so it cannot be used for photosynthesis.
- C Plant leaves are already green, so no green light is needed for photosynthesis.
- D The green light does not transfer any energy to the plant.

- 15** A mixture of sand, salt and water is separated in two steps. Which processes were involved in steps 1 and 2? Choose the correct row.



	Step 1	Step 2
A	evaporation	condensation
B	filtration	distillation
C	condensation	filtration
D	filtration	freezing

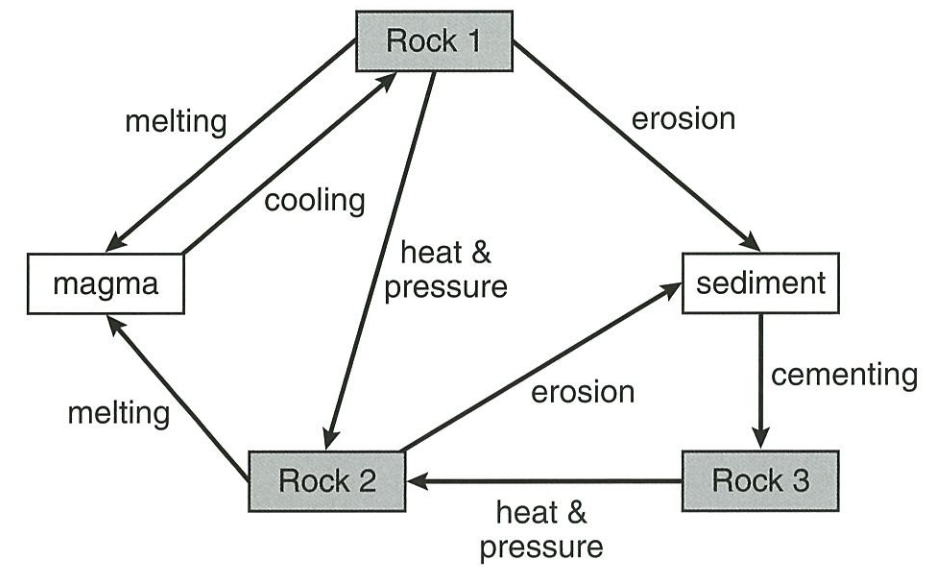
- 16** Which of these is a mixture?

- A** air
- B** gold
- C** water
- D** oxygen

- 17** Which chemicals are consumed in photosynthesis and released in respiration?

- A** oxygen and water
- B** glucose and oxygen
- C** carbon dioxide and water
- D** glucose and carbon dioxide

The diagram below shows how different types of rock are formed.



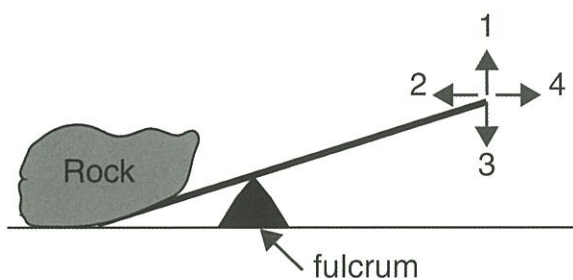
- 29** What are the rocks labelled 1, 2, and 3 in the diagram? Choose the correct row.

	Rock 1	Rock 2	Rock 3
A	igneous	metamorphic	sedimentary
B	metamorphic	igneous	sedimentary
C	sedimentary	metamorphic	igneous
D	igneous	sedimentary	metamorphic

- 30** What can be concluded from the diagram?

- A** All three rocks are formed underground.
- B** All three rocks need heat and pressure to form.
- C** Rock 2 is formed due to erosion of other types of rocks.
- D** Rock 3 cannot change into Rock 1 without first being melted.

A bar with a fixed fulcrum has a rock at one end.



26 Which arrow shows where a force must be applied to lift the rock?

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

27 The table shows the amount of force needed to lift the rock when the fulcrum is at different positions on the bar.

Distance of the fulcrum from the rock (cm)	Amount of force applied to lift the rock (N)
20	50
30	70
40	90

What can be concluded from the table?

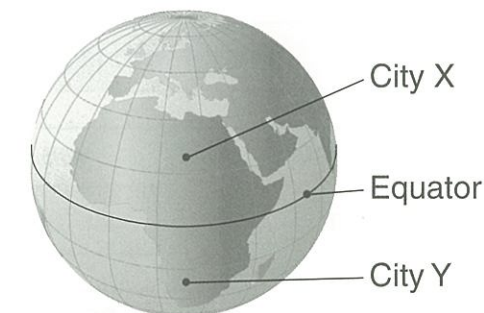
- A More force is needed to lift a heavier rock.
- B When the fulcrum is closer to the rock, the rock is easier to lift.
- C When the fulcrum is further from the rock, the rock is easier to lift.
- D The position of the fulcrum does not affect how easily the rock is lifted.

28 Which device transforms chemical energy into kinetic energy?

- A a solar panel
- B a loudspeaker
- C a diesel engine
- D an electric motor

Two cities, X and Y, are marked on the globe.

The table shows the sunrise and the sunset times on two days in the two cities.



Day	City X		City Y	
	Sunrise	Sunset	Sunrise	Sunset
1st November	6:10 am	5:07 pm	6:17 am	6:02 pm
2nd November	6:11 am	5:06 pm	6:16 am	6:03 pm

18 Which of these statements is true for these two days?

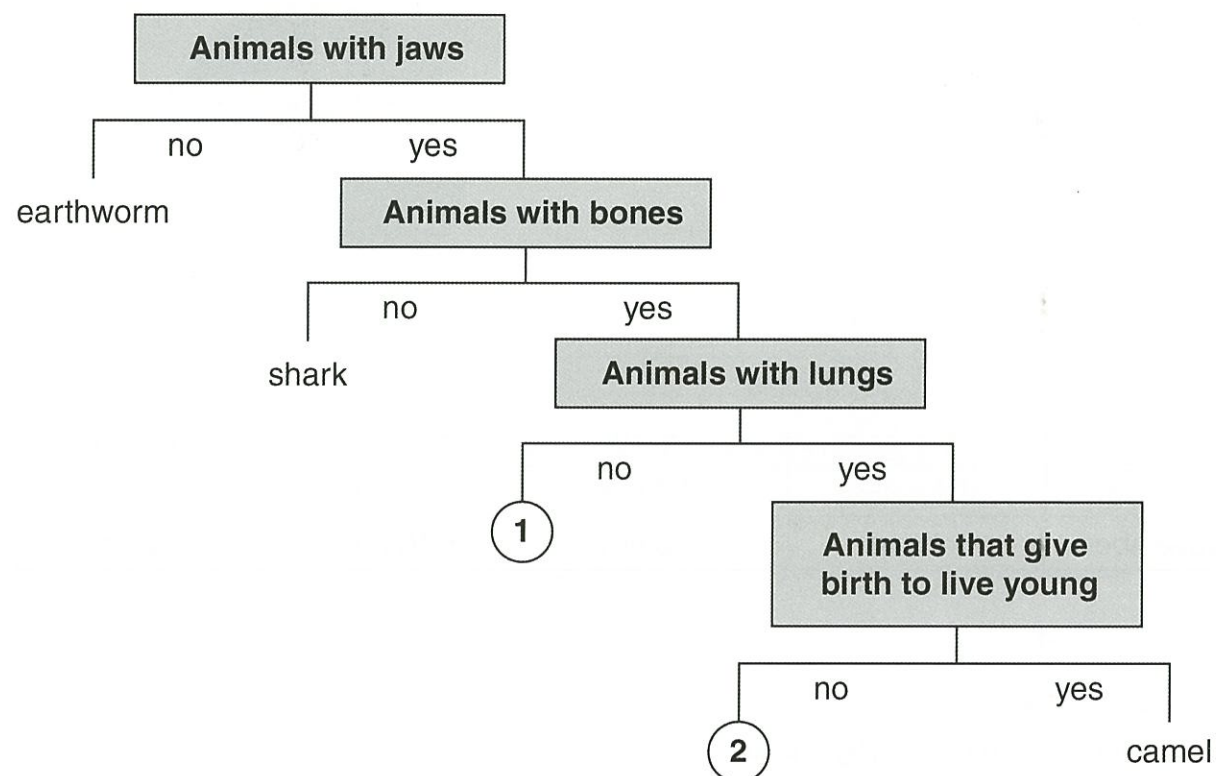
- A City X has more daylight than City Y.
- B City Y has more daylight than City X.
- C The sun rises earlier in City Y than in City X.
- D The sun sets earlier in City Y than in City X.

19 What causes the differences in the length of daylight between the two cities?

- A City Y is closer to the sea.
- B The Earth is tilted on its axis.
- C City X is closer to the equator.
- D The Earth rotates at different speeds.

20 What causes **most** of the rising and falling of tides in the Earth's oceans?

- A the Sun's gravity
- B the Moon's gravity
- C changes in speed of the Earth's orbit
- D changes in the distance between the Earth and the Moon



A classification of animals based on physical features

21 Which animals can replace the labels 1 and 2 in the diagram?

Choose the correct row.

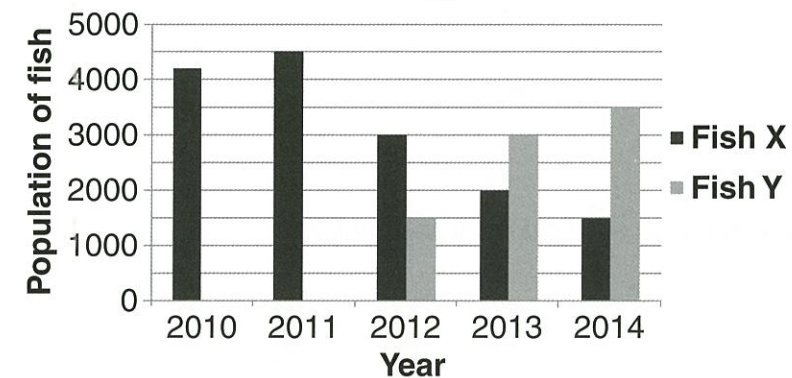
	Label 1	Label 2
A	buffalo	cat
B	fish	turtle
C	penguin	polar bear
D	crab	whale

22 What feature(s) do animals 1 and 2 both have?

- A lungs only
- B bones only
- C jaws and lungs
- D jaws and bones

The graph shows the population of two types of fish in a lake over five years. Fish X is native to the lake while Fish Y was introduced later. Both fish feed on the same food source.

Population of the two types of fish in a lake



23 During which year was Fish Y introduced into the lake?

- A 2010
- B 2011
- C 2012
- D 2013

24 What can be concluded from the graph?

- A Fish Y outcompetes Fish X for food.
- B Fish X and Fish Y benefit each other.
- C Fish Y's population suffered from disease in 2014.
- D Fish X started to eat Fish Y.

25 Which of these is most likely to react quickly with a metal?

- A water
- B liquid soap
- C vegetable oil
- D hydrochloric acid