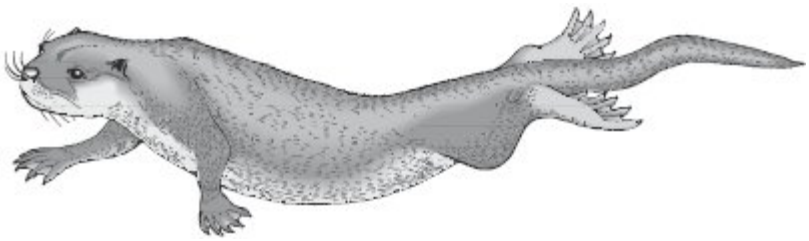
Science Quick Quizzes

Year 6 Answers

Year 6 Living things and their habitats Quick Quiz Answers

Q1. The picture below shows a mammal called an otter.



(a) Give **one** feature that **only** mammals have.

Hair/fur ✓

1 mark

(b) Otters live by rivers.

Give **one** way the otter is suited for swimming.
Use the picture above to help you.

Webbed feet/steamline ✓

1 mark

(c) Otter cubs are born in a burrow under the ground.

(i) How does this help the otter cubs survive?

They are hidden and protected from predators. ✓

.....

.....

1 mark

(ii) Why must the burrow be above the level of the water in the river?

So that it doesn't flood and the otter cubs don't drown. ✓

.....

.....

1 mark

(d) Otters catch fish and birds for food.

Which word below describes an otter?
Tick the correct box.

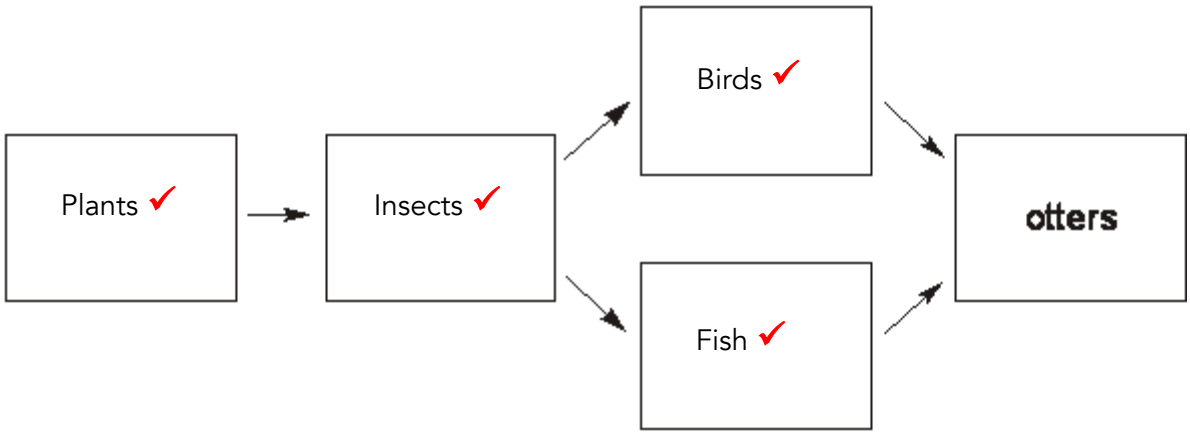
herbivore	☐	predator	☑ ✓
prey	☐	producer	☐

1 mark

(e) The information below describes what some animals eat.

- Insects eat plants.
- Birds and fish eat insects.
- Otters eat fish and birds.

Complete the food web using this information.
One box has been done for you.



2 marks

(f) In the 1960s, the number of otters in England decreased.
To increase otter numbers, scientists released otters in pairs (one male and one female).

Why were the otters released in pairs?

A male and a female otter are needed to reproduce and make otter cubs. ✓

1 mark
maximum 8 marks

Q2. Sharon is riding her horse. She is wearing a riding hat.

(a) Give the name of **one organ** the riding hat protects.

Brain ✓

1 mark

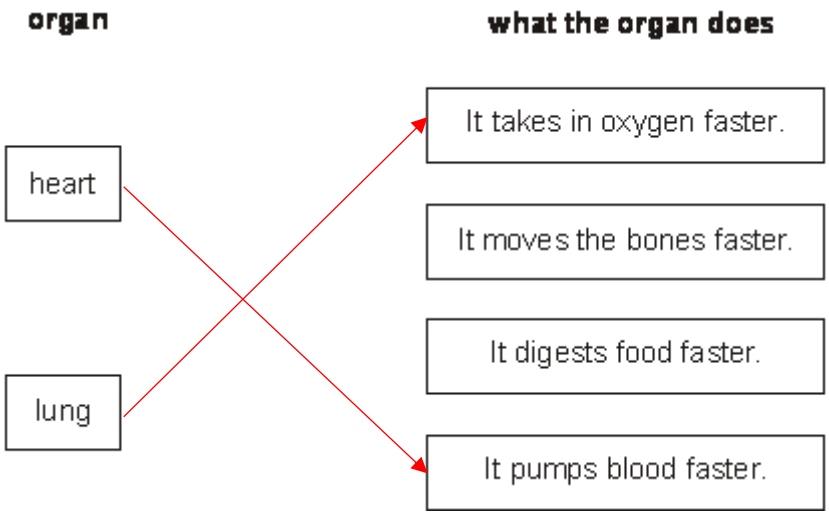
(b) The horse is a mammal.
Give **one** fact about horses that shows they are mammals.

The have fur/mother horses feed their young milk ✓

1 mark

(c) When the horse is running, some of its organs do more work.

Draw a line from each organ to show what it does.
Draw only **two** lines.



1 mark

(d) The drawing shows a horsefly.

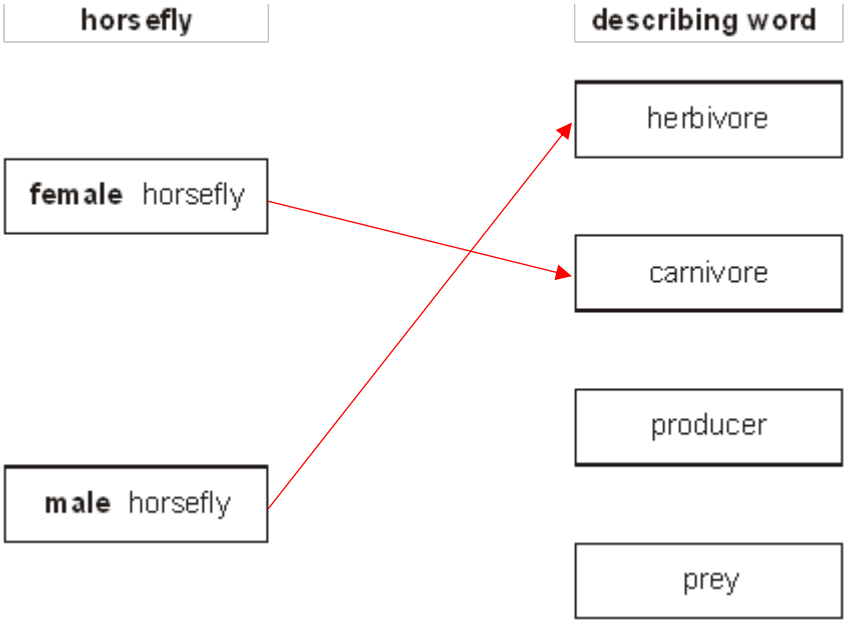
(i) The horsefly is an insect.
Which of the following features do insects have?
Tick the **three** correct boxes.

They have a backbone.	☐	They have a segmented body.	✓
They have six legs.	✓	They have hair.	☐
They have scales.	☐	They have two pairs of wings.	✓

2 marks

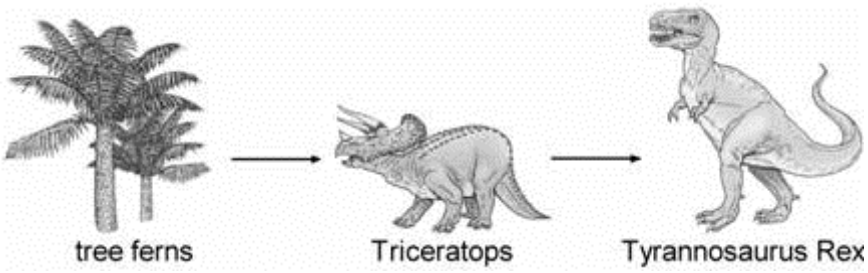
(ii) Female horseflies bite horses and feed on their blood.
Male horseflies feed on plants.

Draw a line from each horsefly below to the word that describes the way it feeds. Draw only **two** lines.



1 mark

Q3. The drawing shows a food chain including plants called tree ferns, and two dinosaurs. They lived on Earth millions of years ago.



(a) The list below shows words which describe living things in a food chain.

herbivore **predator** **prey** **producer**

(i) Which word in the list above describes the tree fern?

producer ✓

1 mark

(ii) From the list above, give **one** word that can describe Tyrannosaurus rex.

Predator ✓

1 mark

(iii) From the list above, give **one** word that can describe Triceratops.

herbivore ✓

.....

1 mark

(b) Some scientists think that a large rock from space hit the Earth about 65 million years ago. A thick layer of dust stayed in the air for a long time and blocked out the sunlight.

This would cause a decrease in the number of tree ferns.
Give **one** way the decrease in tree ferns would affect the Triceratops.

...The numbers of triceratops would decrease because there isn't.....
enough food – numbers of triceratops would die from starvation
.....
and there would be fewer numbers of triceratops born. ✓

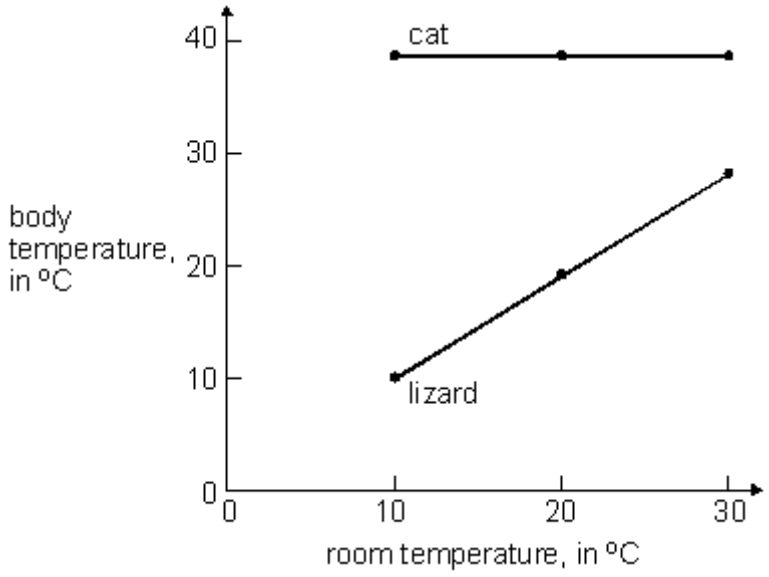
1 mark

(c) Tyrannosaurus rex had thick scales covering its body.
Which group did it belong to?
Tick the correct box.

amphibians	☐	fish	☐
reptiles	☑	mammals	☐

1 mark

Q4. A vet measured the body temperatures of a cat and a lizard at different room temperatures. She drew two graphs from her results.



(a) The temperature of the room rises. What happens to the body temperatures of the lizard and the cat?

(i) lizard

It's temperature increases. ✓

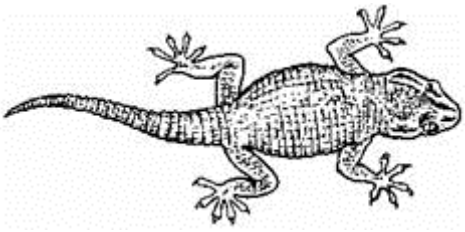
1 mark

(ii) cat

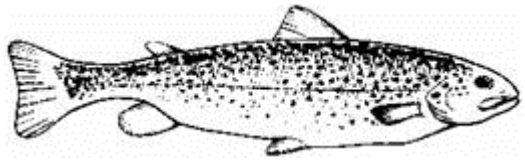
It's temperature stays the same. ✓

1 mark

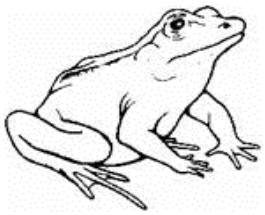
(b) Each of the drawings below shows an animal from a different group.



lizard
(reptile)



trout
(fish)



frog
(amphibian)

pigeon
(bird)

cat
(mammal)

(i) The cat's fur traps warm air next to its body. In the drawings above, which other animal can trap warm air next to its body?

The pigeon (bird) ✓

1 mark

(ii) The cat is a mammal. Its body is covered with fur.

Give one other fact about cats which shows they are mammals.

Mother cats make milk to feed their young. ✓

.....

1 mark

(c) The five groups of vertebrates are:

fish **amphibians** **reptiles** **birds** **mammals**

(i) Which **two** groups have bodies covered with scales?

1. Fish ✓

2. Reptiles ✓

2 marks

(ii) Which **two** groups lay eggs in water?

1. Fish ✓

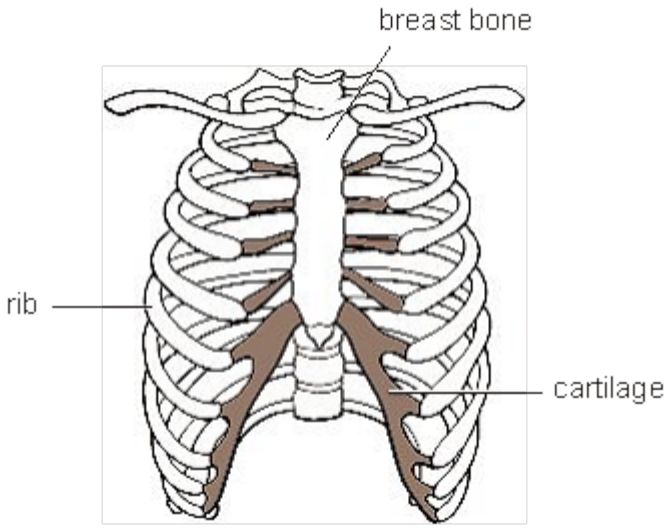
2. Amphibians ✓

2 marks

Total: /27

Year 6 Animals including humans Quick Quiz Answers

Q1. The drawing below shows the human rib cage.



(a) The rib cage protects organs in the chest.

Give the names of **two** organs in the chest.

1. Lungs ✓ .....

2. Heart ✓ .....

2 marks

(b) The ribs are attached to the breast bone by cartilage which bends easily. This lets the space in the chest get bigger.

Why is it important that the space can get bigger?

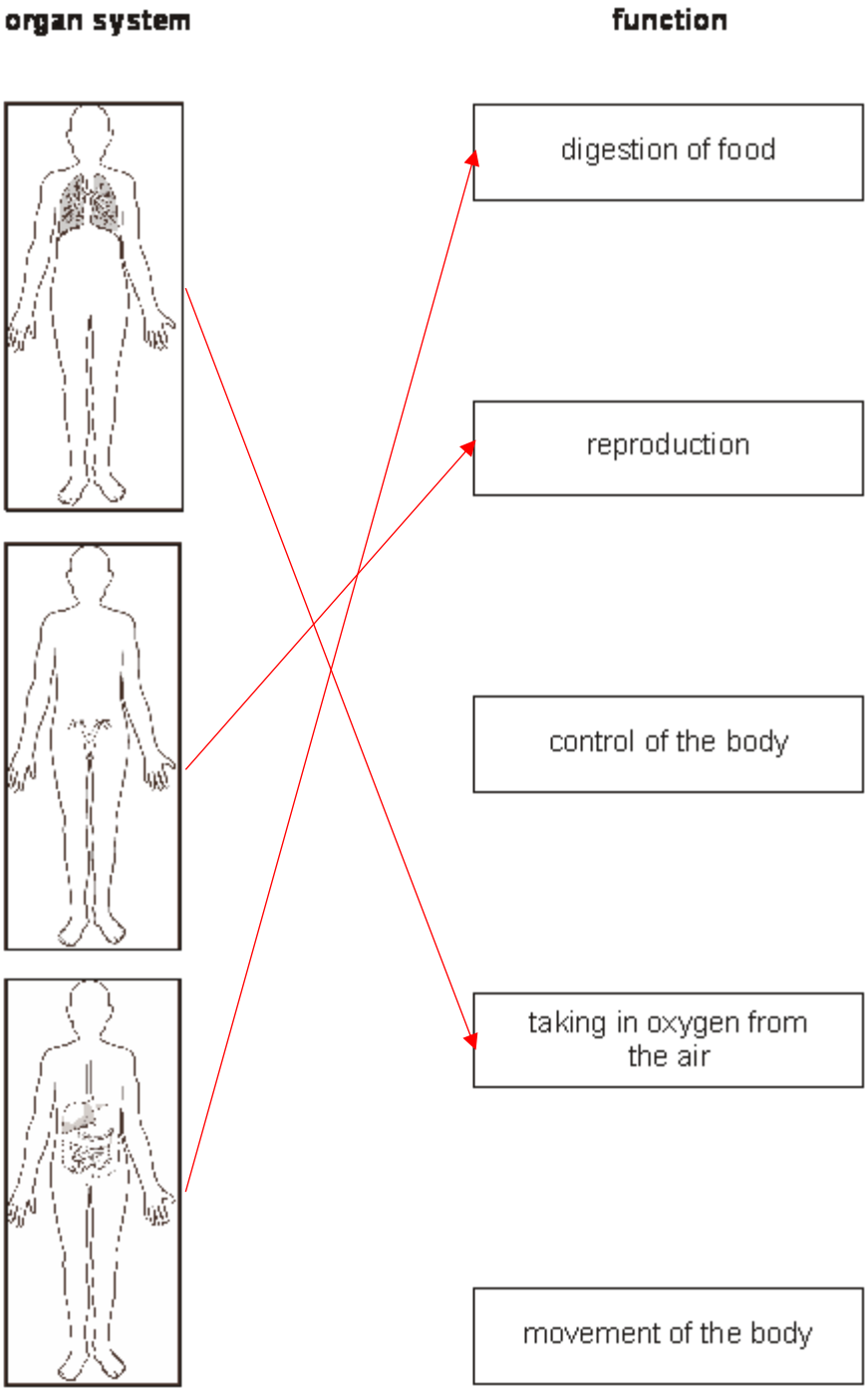
The lungs get bigger as we breath in and they fill with air. ✓ .....

.....

1 mark

(c) The drawings below show parts of three different organ systems.

Draw a line from each organ system to its function.
Draw only **three** lines.



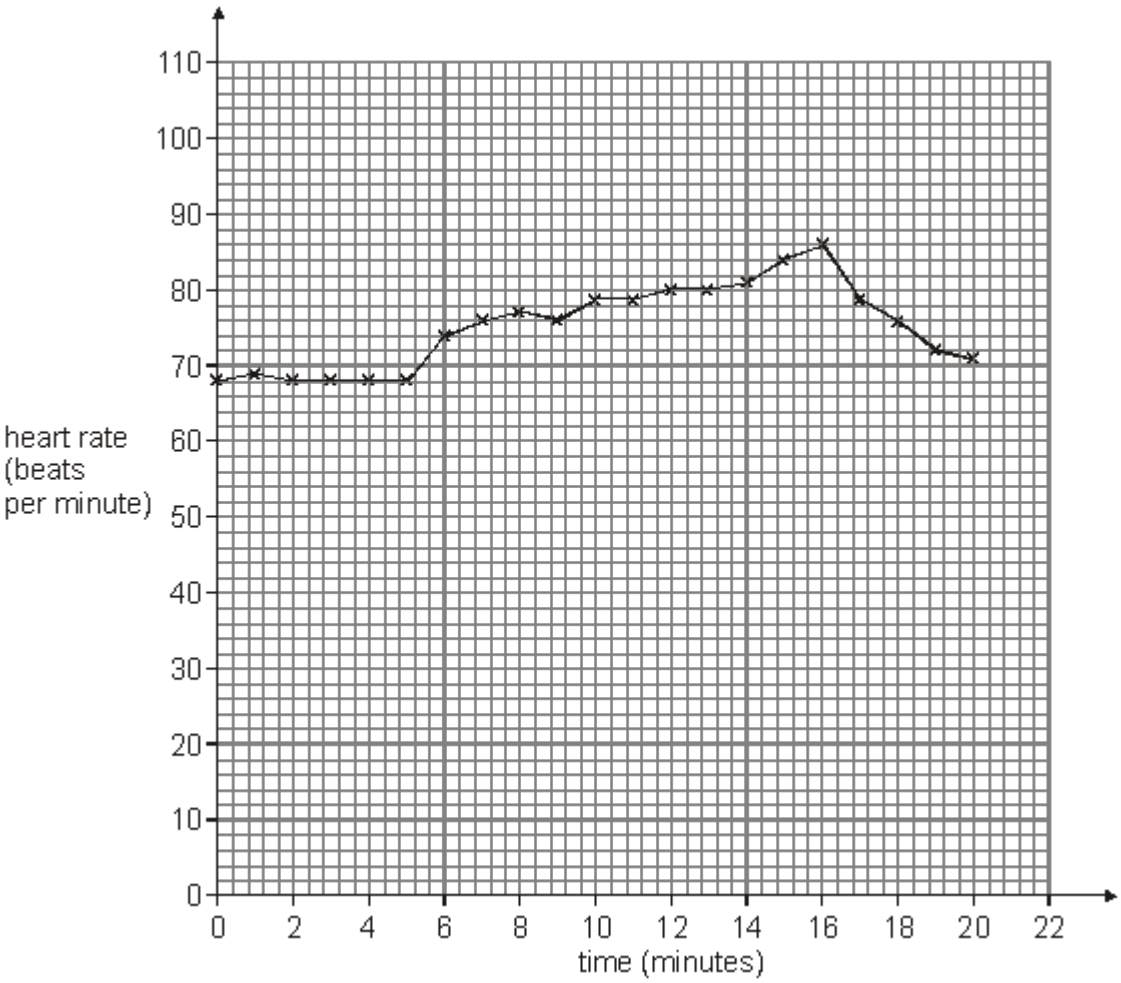
3 marks

Q2. Harry investigated the effects of fizzy cola drink on his heart rate.

First he measured his heart rate every minute for 5 minutes when sitting down.
Then he drank some cola.

He continued to measure his heart rate at regular intervals.

This is a graph of his results.



(a) Why did Harry measure his heart rate every minute for 5 minutes before drinking his cola?

To be certain what his resting heart rate was before he drank the cola. ✓

1 mark

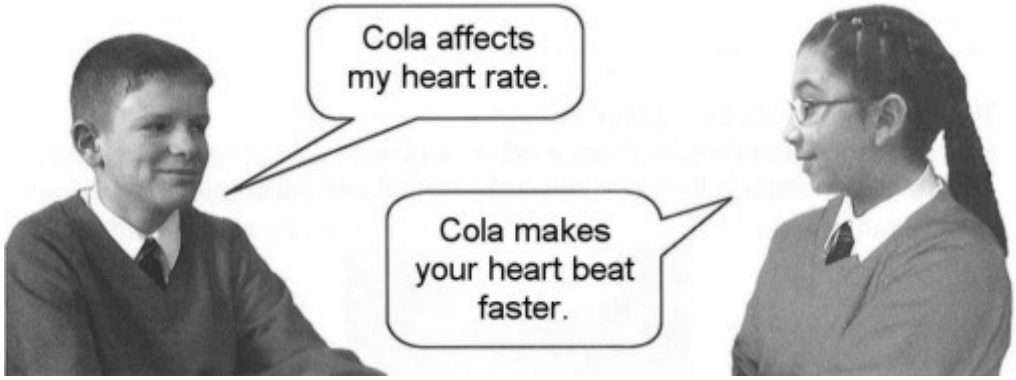
(b) Harry says cola affects his heart rate.

What evidence is there in the graph to support his idea that cola affects his heart rate?

The graph shows that after drinking the cola, Harry's heart rate increased steadily for 10 mins – it went up from 69bpm to 86bpm. ✓

1 mark

(c) Harry and Yasmin came to the following conclusions.



Harry Yasmin

Explain why Yasmin's conclusion is better than Harry's conclusion.

Yasmin's conclusion explains how the cola affects Harry's heart rate. ✓

1 mark

(d) Yasmin said, "We should also measure Harry's heart rate after he drinks fizzy water".

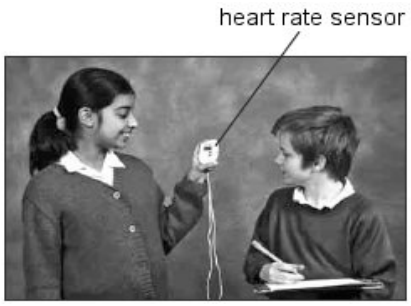
How would measuring Harry's heart rate after he drinks fizzy water improve the investigation?

It would tell them if it was the fizzy gas bubbles that affected Harry's heart rate or something in the ingredients of the cola recipe. ✓

1 mark

Q3. Heart rate

(a) James and Alice investigated a report that said when people chew gum, their heart rate increases.



They measured the heart rate of five children at rest. Next they measured the heart rate of each child as they chewed gum.

Why did James and Alice measure the children's heart rate when they were resting?

So that he could find out if it changed when they chewed gum. ✓

1 mark

(b) The table below shows the heart rates of the five children.

Child	At rest (beats per minute)	After chewing gum for 1 minute (beats per minute)
Robert	84	94
Emma	84	86
Carol	96	104
Samantha	96	101
Eshe	83	100

Look at the table. Which part of their investigation was presented in the table? Tick **ONE** box.

questions	☐	results	✓
plans	☐	ideas	☐

1 mark

(c) What variable did the children measure?

Heart rate in beats per minute (bpm). ✓

1 mark

(d) Alice's evidence agrees with the report.
She said, 'When they chew gum, the children's heart rate increases.'

Use the data **in the table** to describe how the evidence supports
Alice's conclusion: 'When they chew gum, the children's heart rate increases.'

Every child's heart rate increased after 1 minute of chewing gum. ✓

1 mark

(e) James wondered if it was the **gum** or the **chewing** that caused the increase in heart rate.

How could James check whether it was the **gum** or the **chewing** that caused the increase in heart rate?

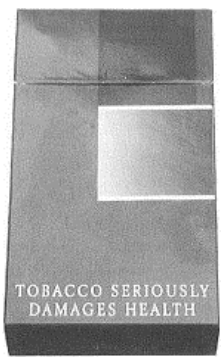
He could repeat the test where the children pretend to chew for 1 minute without gum in their mouth. ✓

1 mark

Q4. Smoking and Health

(a) Gary and Jessica are learning about the harmful effects of smoking.

They read the warning on a packet of cigarettes.



How can smoking affect your **lungs?**

It hurts your lungs and can damages them permanently. It can cause lung disease and even lung cancer. ✓

1 mark

(b) Gary and Jessica ask four adults their lifestyles.

The table shows what they find out.

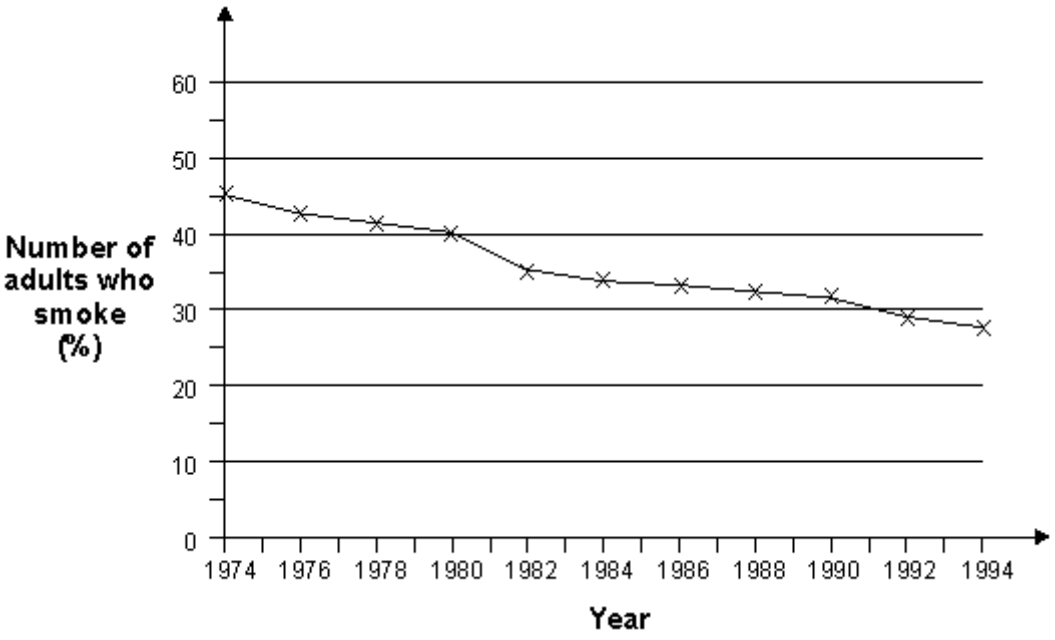
Name	Smokes	Has healthy diet	Takes regular exercise
Sanjay	No	Yes	Yes
Carl	Yes	Yes	Yes
Fatima	No	Yes	No
Helen	Yes	No	No

Which adult listed in the table is **most likely** to develop heart disease?

Helen ✓

1 mark

(c) This graph shows how the number of adults smoking changed between 1974 and 1994.



(i) Use the graph to describe the **change** in the number of adults who smoked between 1974 and 1994.

The number of adults that smoked fell from 45% in 1974 to 28% in 1994. ✓

1 mark

(ii) Give **ONE** possible reason for this change.

Scientists discovered the link between smoking and lung disease ... and this was shared with the public through health campaigns in newspapers, on television and on cigarette packets. ✓

1 mark

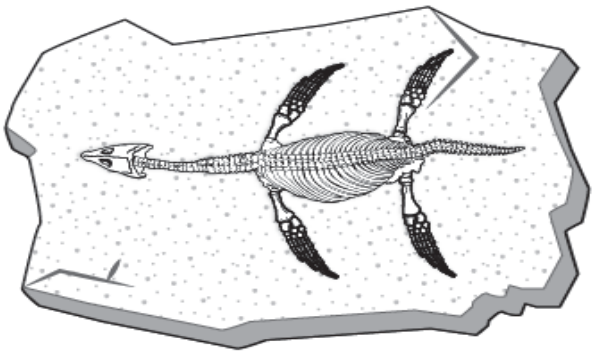
Total: /19

Year 6 Evolution and inheritance Quick Quiz Answers

Q1. Sea creature

(a) The picture shows the fossil of a pliosaur.

These animals lived in the sea a long time ago.



What material are fossils made of?

Rock ✓

1 mark

(b) How did the fossil of the pliosaur form? Match each stage to order what happens.

Stage	What happens
1st	Soft parts decayed away.
2nd	Hard parts were turned into fossils over many years.
3rd	Hard parts were buried by many layers of sand.
4th	The pliosaur died and sank to the sea bed.

1 mark

(c) Very few animals become fossils after they die.

Explain why very few animals become fossils after they die.

1. Usually dead animals decompose quickly in contact with air. ✓

2. Or Usually dead animals are eaten by other animals. ✓

1 mark

(d) Fossils can give a lot of information about animals that lived in the past.

Write **true** or **false** for each statement about the pliosaur fossil.

The pliosaur's fossil could give us information about...

	True or **false**?
how long ago the animal lived.	True ✓
what the animal ate.	False ✓
what the animal smelt like.	False ✓
what colour the animal's eyes were.	False ✓
how large the animal was.	True ✓

2 marks

Q2. (a) The photograph below shows a team of dogs called huskies pulling a sledge across the ice.

Huskies need to survive in a cold climate. They must be able to pull a heavy sledge for a long time each day.

Which **two** features would a dog breeder look for when choosing huskies to breed from? Choose from the list of features below and give the reason for each choice.

blue eyes **fierce nature** **long tail**

thick fur **short legs** **strong muscles**

1. feature Thick fur

reason Thick fur will insulate the dog so that it stays warm in the cold climate. ✓

1 mark

1 mark

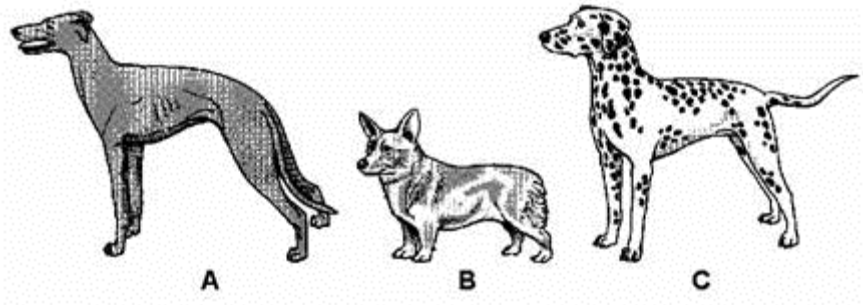
2. feature Strong muscles ✓

reason Strong muscles will enable the dog to pull a heavy sledge for long hours each day. ✓

1 mark

1 mark

(b) The drawings below show three dogs. They all look different.



(i) Which word describes the differences between these dogs?
Tick the correct box.

adaptation	☐	reproduction	☐
vaccination	☐	variation	✓

1 mark

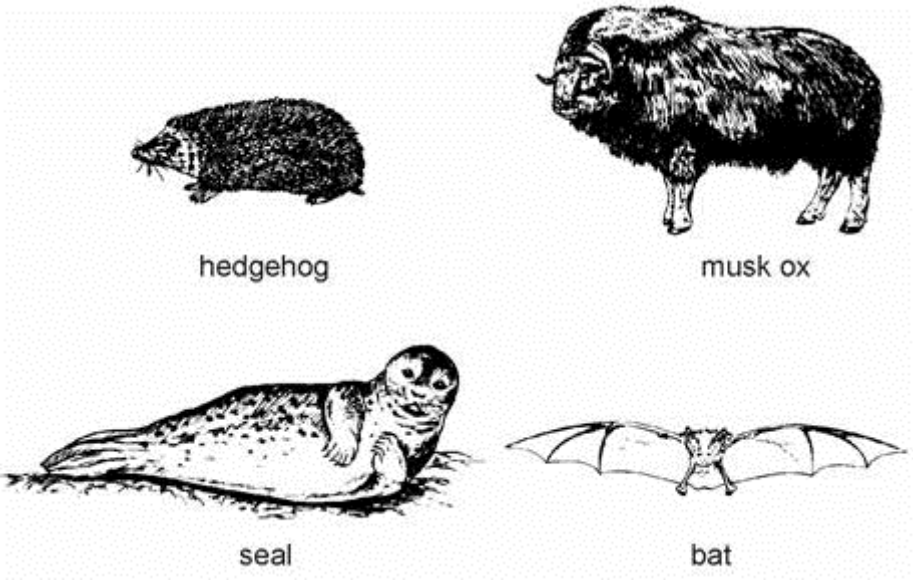
(ii) The drawing below shows a puppy. Dog C is the puppy's mother.

Why does the puppy look like his mother?
Tick the correct box.

Information passed from the mother in an egg.	✓
Information passed from the mother in a sperm.	☐
Information passed from the mother in milk.	☐
Information passed from the mother in blood.	☐

1 mark

Q3. The drawings show **four** different mammals.



(a) Look at the mammals shown in the drawings.

(i) Write the name of **one** of these mammals which is adapted for swimming.

Seal ✓

.....

1 mark

(ii) Write the name of **one** of these mammals which is adapted for living in very cold places.

Musk ox ✓

.....

1 mark

(iii) Write the name of **one** of these mammals whose hair is adapted to protect it from predators.

Hedgehog ✓

.....

1 mark

(b) There are many different kinds of mammals.

Tick the boxes by **three** sentences which best describe mammals.

Female mammals produce milk to feed their young	✓	Mammals sleep at night	
Mammals eat meat		Mammals walk on two legs	
Young mammals develop inside the mother's body	✓	Mammals have hair on their bodies	✓

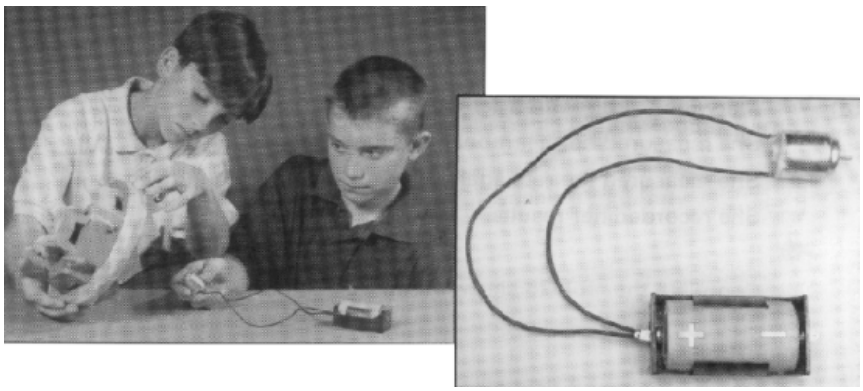
3 marks
Total: /17

Year 6 Electricity Quick Quiz Answers

Q1. Circuits

(a) Two children made a model fairground ride.

They connected a battery to an electric motor to make the model turn.



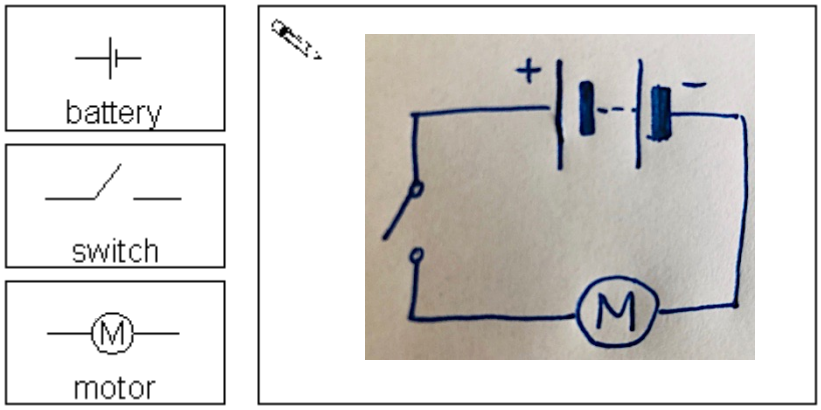
The motor is not working.

What is wrong with this circuit?

The two wires are both connected to the positive end of the battery. For a complete circuit there needs to be a complete loop from the positive to the negative end of the battery. ✓

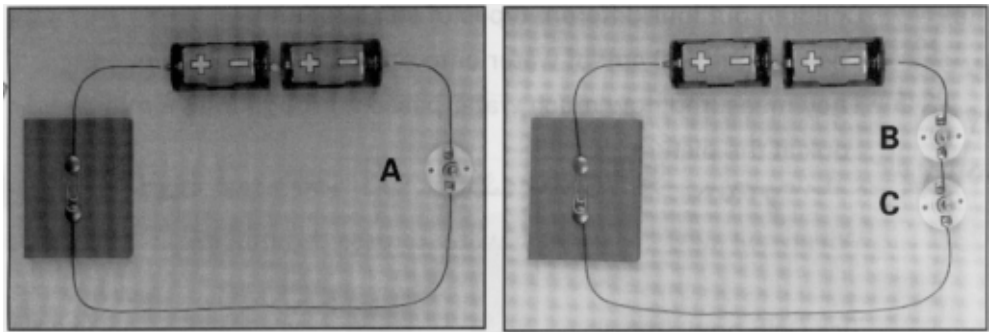
1 mark

(b) Draw a circuit diagram in which the switch can be used to turn the motor on and off. You **MUST** use these three symbols in your diagram.



1 mark

(c) Here are two different circuits which use the same kind of battery and bulb.



Which bulb will be the brightest ?

Tick **ONE** box.

✓		
bulb A	bulb B	bulb C

1 mark

(d) The outside of this plug is made of plastic so that you do not get a shock when you plug it in.

Explain why the **plastic** helps to make the plug safe.

Plastic is an insulator; electricity cannot travel through it. ✓

1 mark

(e) Why is it dangerous to put a plug in when the plug is wet?

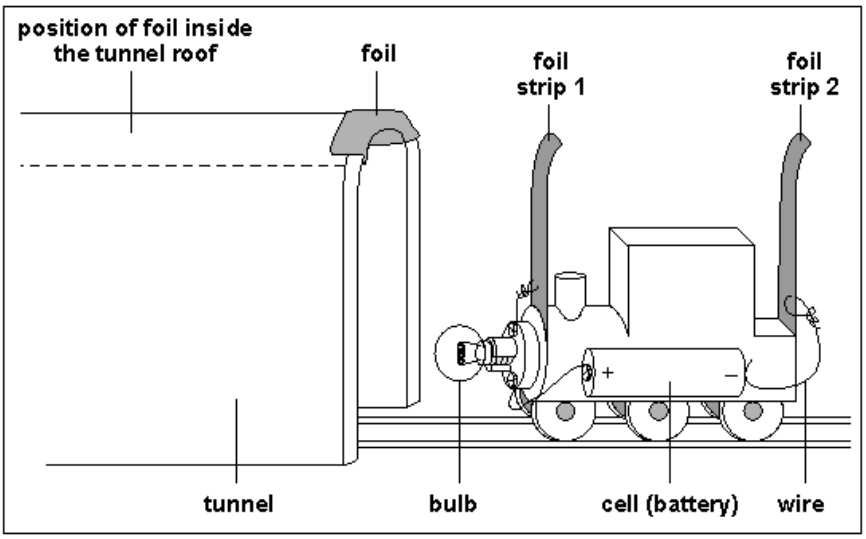
Water is a conductor; electricity can pass through it to your hand and give you an electric shock. ✓

1 mark

Q2. Train in the tunnel

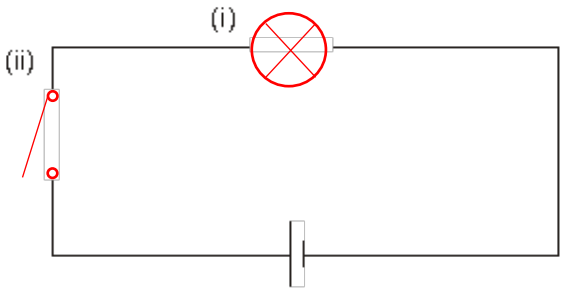
(a) Andrea wants a light bulb to light up when her toy train is pushed through a tunnel. She makes an electric circuit for her toy train. Andrea makes a tunnel and puts a strip of foil inside the tunnel roof.

The picture shows Andrea's tunnel and the wiring on her train.



The foil strips on the train act like a **switch**. When both foil strips on the train touch the foil inside the tunnel roof, the bulb lights up.

Complete the circuit diagram below by drawing the **switch** and the **bulb** to show the circuit on Andrea's train.



2 marks

(b) Give **ONE** property of metal foil which makes it a good material for Andrea to use as a switch.

It is a conductor; electricity can travel through it. ✓

1 mark

(c) When only one foil strip on the train is touching the foil in the tunnel, the bulb **does not** light up. Complete the sentence to explain why the bulb **does not** light up.

The circuit is not complete. ✓

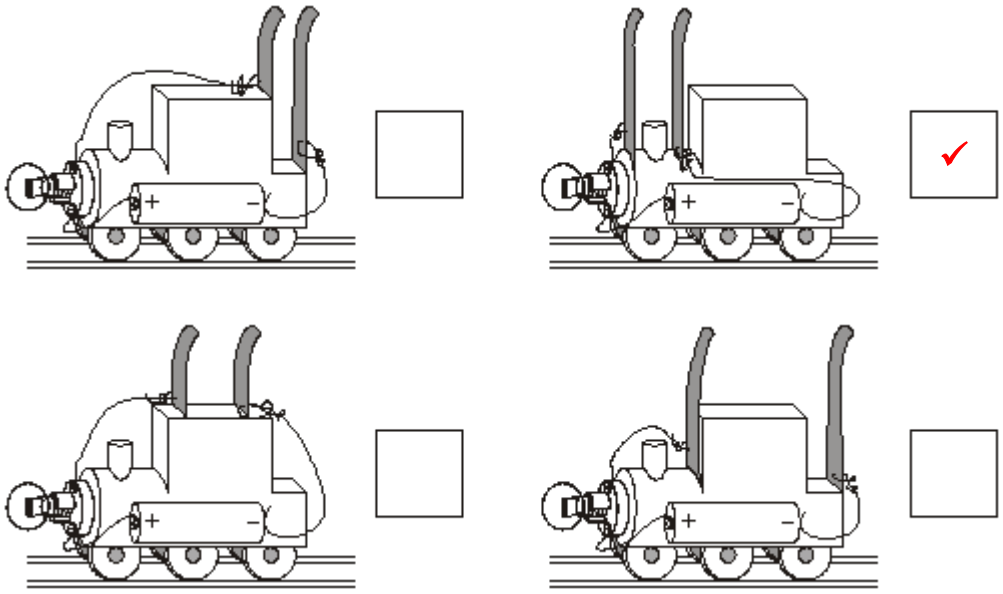
1 mark

(d) The bulb on the train only lights up when **all** of the train is inside the tunnel.

Andrea wants to improve her circuit so the bulb lights up when the train has only just entered the tunnel.

Which train has foil strips that would allow the bulb to light when the train has only just entered the tunnel?

Tick **ONE** box.

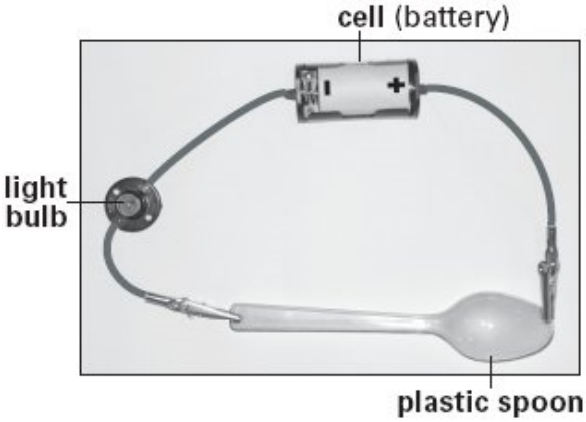


✓

1 mark

Q3. Electricity

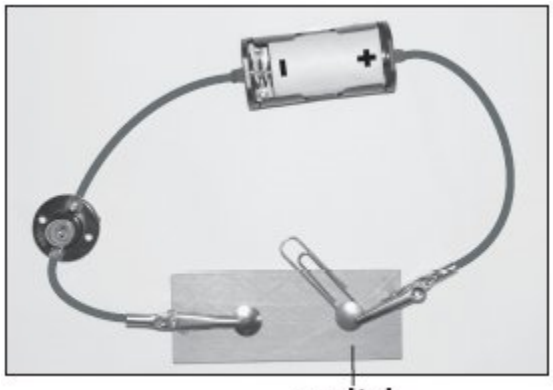
(a) Shana builds the three circuits below. All the equipment works.
The bulbs in the circuits are **not** lit up. Complete each sentence to explain why the bulb has not lit in each circuit.



The bulb has **not** lit because the plastic spoon .....

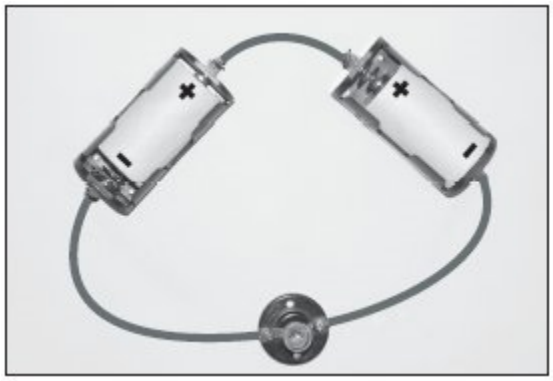
Plastic is an insulator. ✓

1 mark



The bulb has **not** lit because ...The switch is open – there is a gap in the circuit. ✓

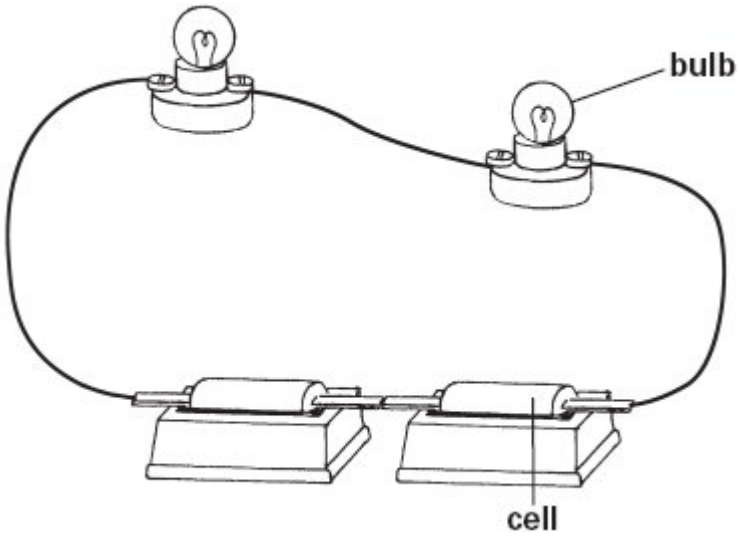
1 mark



The bulb has **not** lit because ...The batteries are not connected positive end to negative end. ✓

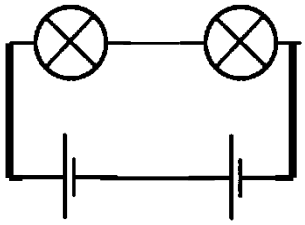
1 mark

(b) Andy builds the circuit below. The bulbs **do** light up.



Draw a circuit diagram for Andy's circuit in the space below.

Use these symbols in your circuit diagram:



1 mark

(c) Andy wants to change his circuit so that the **two** bulbs are brighter.
He can use any other equipment.

Suggest **TWO** ways Andy can make his **two** bulbs brighter.

1. Add more batteries (cells) to the circuit – increase the voltage. ✓

1 mark

2. Connect the two bulbs in parallel. ✓

1 mark

Q4. Circuits and sensors

(a) Class 6D makes different circuits using the same type of bulbs, motors with fans and cells (batteries).

(i) Tick **ONE** box to show the circuit in which the bulb or bulbs are brightest.

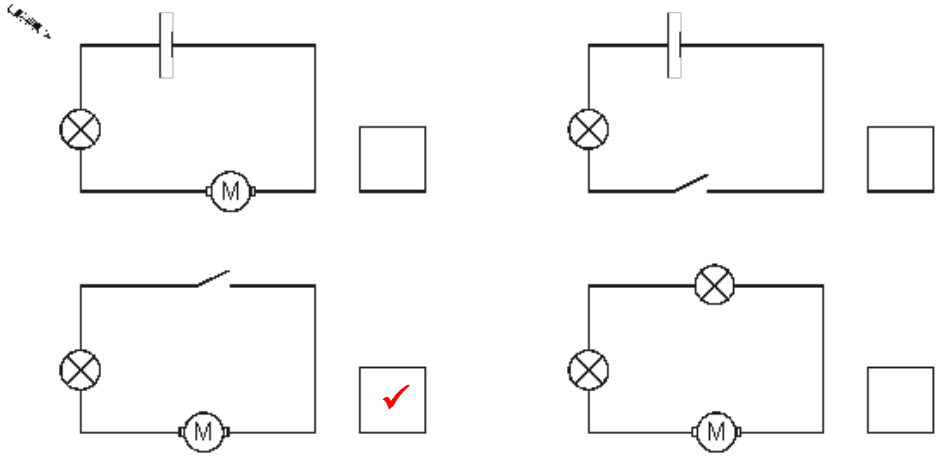
1 mark

(ii) Explain why the circuit you chose has the brightest bulb or bulbs.

Circuit 2 is the only circuit with one component, so this bulb has all of the voltage from the battery across it – all of the others have two or more components, so the voltage is shared between them. ✓

1 mark

(b) Tick **ONE** box to show which circuit diagram below is correct for circuit 3.



1 mark

(c) Each of the circuits made by class 6D has one cell.

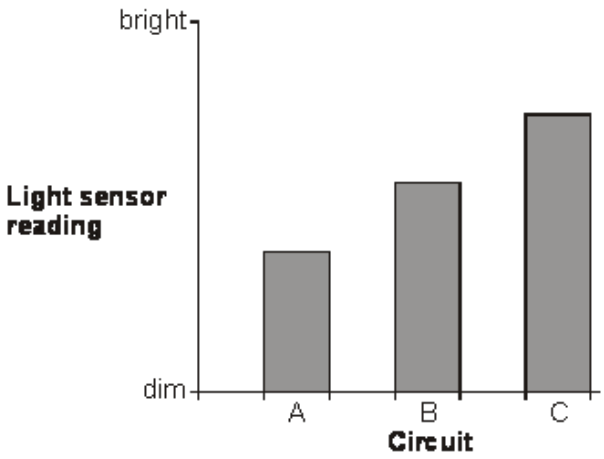
Complete the sentence below to explain the effect on the bulbs of adding a second cell to circuit 1.

The bulbs will Adding a second cell will make the bulbs brighter. ✓

1 mark

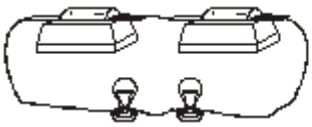
(d) Class 6D made three new circuits. They used a light sensor to measure the brightness of one of the bulbs in each circuit.

The sensor gave the results on the graph below.

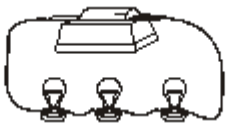


1 mark

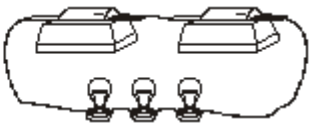
Write A, B or C next to each circuit below to show which circuit gave each light sensor reading on the graph.



circuit C ✓



circuit A ✓



circuit B ✓

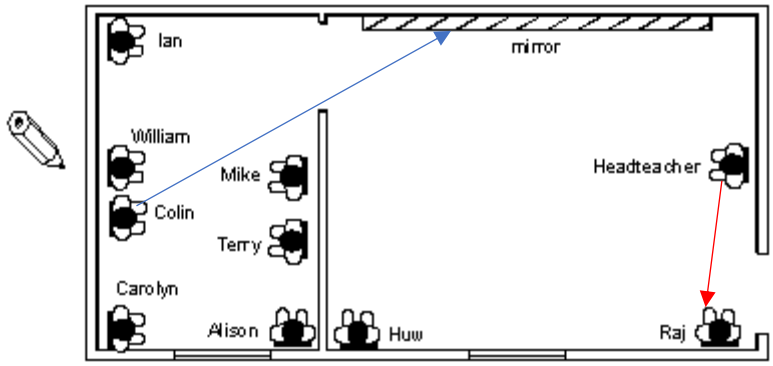
1 mark

Total: /22

Year 6 Light Quick Quiz Answers

Q1. Sun and Light

This is a plan of a room.



There is a mirror on the wall.
The Headteacher can see only Huw, Raj and Ian, without looking in the mirror.

(a) Draw an arrow on the picture to show how light travels from Raj to the Headteacher.

1 mark

(b) Which **TWO** people can the Headteacher see **only** by reflection in the mirror.

(i) William✓ .....

1 mark

(ii) Colin✓ .....

1 mark

(c) Which **TWO** people can Colin see **only** reflected in the mirror?

(i) Headteacher✓ .....

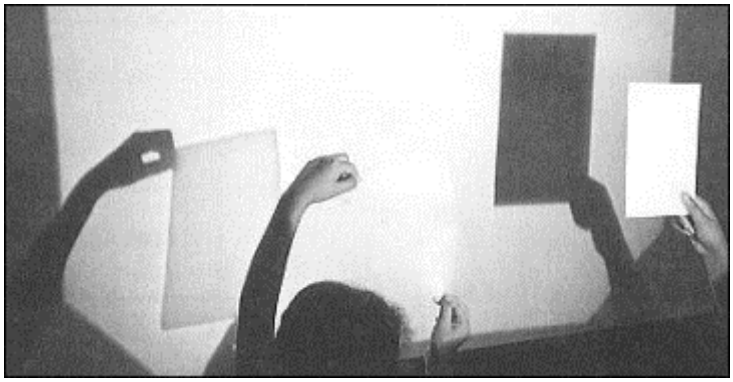
1 mark

(ii) Raj✓ .....

1 mark

Q2. Shadows

(a) Two children hold some objects between a lamp and the wall.



They see that cardboard makes a **dark** shadow and a plastic sheet makes a **faint** shadow.

Explain why the shadows are different.

The cardboard is opaque so no light can travel through it- it blocks the light and creates a dark shadow. The plastic is transparent so light travels through it, creating a much fainter shadow. ✓

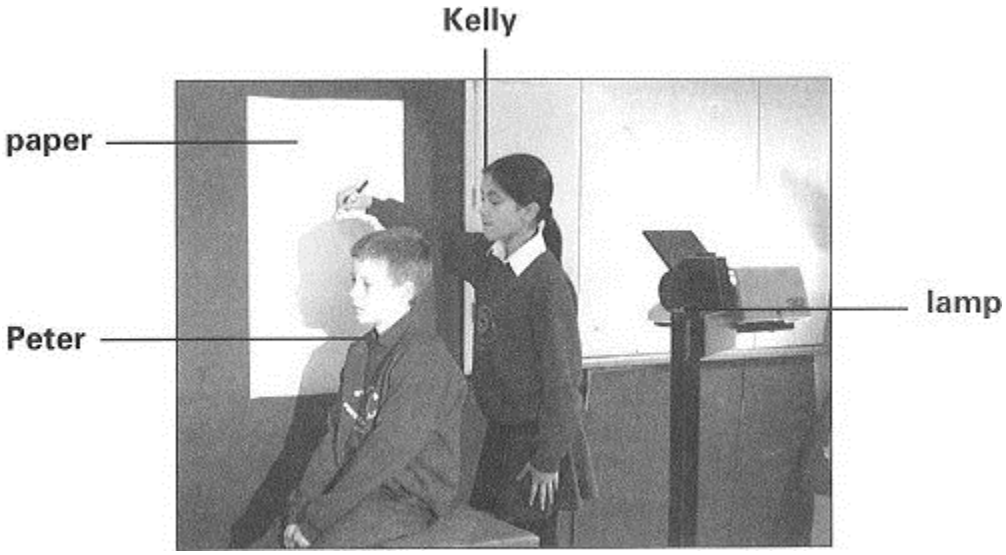
1 mark

(b) Tick **TWO** objects which make a faint shadow.

a wooden toy	☐
a piece of tracing paper	✓
a book	☐
a mirror	☐
a clear plastic cup	✓

1 mark

(c) Kelly is drawing around Peter's shadow.



How could Peter make the shadow of his head bigger?

Tick **TWO** boxes.

move closer to the paper	☐	move closer to the lamp	☑
use a bigger lamp	☐	use a brighter lamp	☐
move the lamp closer	☑	move the lamp further away	☐

1 mark

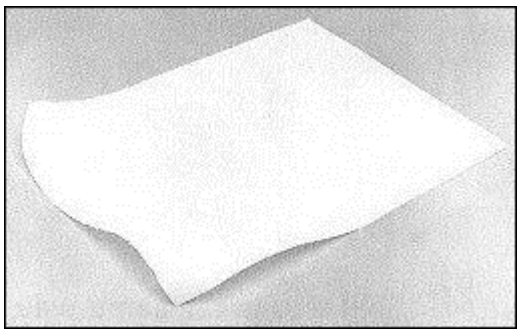
(d) Explain how Peter's shadow is formed on the paper.

Peter's head is opaque, and light cannot travel through it. Light only travels in straight line so Peter's head blocks the light and creates a shadow. ✓

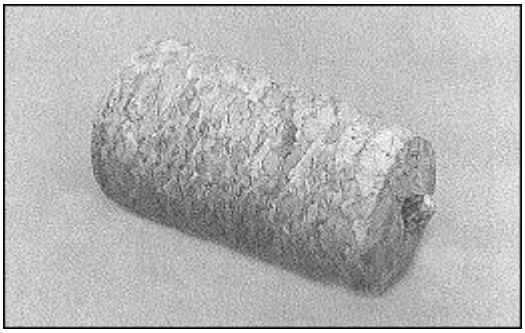
1 mark

Q3. Light

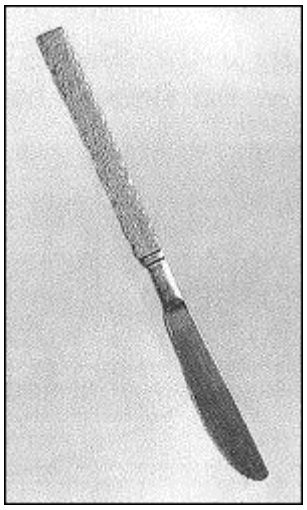
(a) Ian shines a torch onto some objects to see what happens to the light.



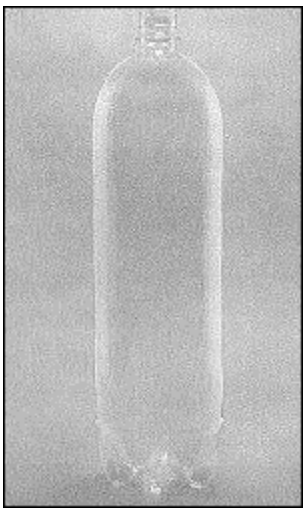
tracing paper



bottle cork



metal knife



clear plastic bottle

Write the name of **ONE** object to complete each of these sentences.

Only use the name of an object once.

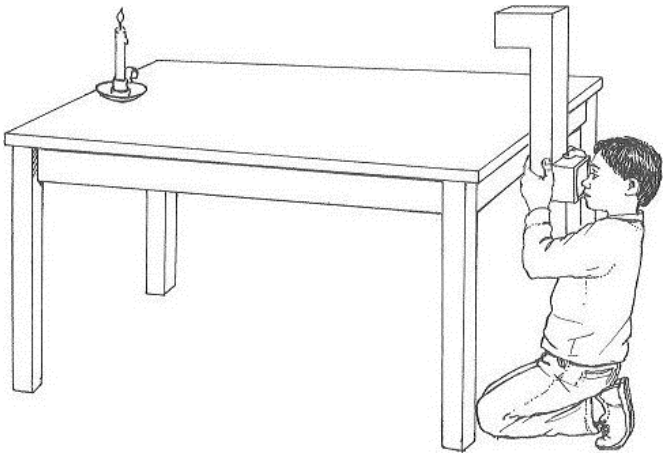
(i) The light went through the Clear plastic bottle✓ .

(ii) The light made the Knife ✓ look shiny.

(iii) The light made the Cork ✓ make a dark shadow.

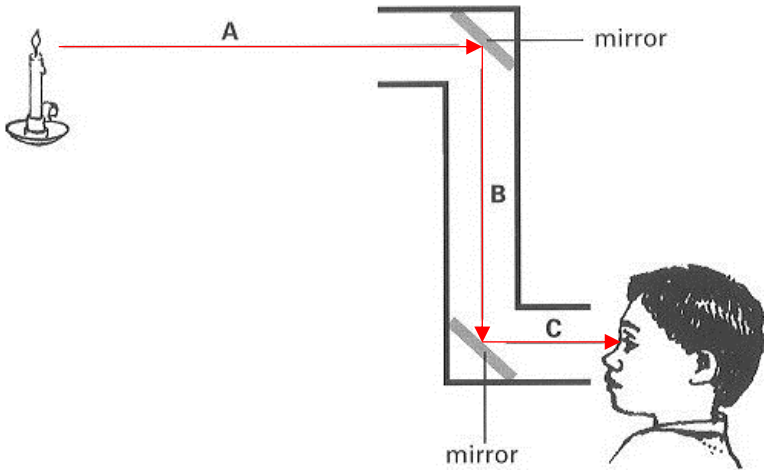
1 mark

(b) Ian has made a periscope with two mirrors and some card.



Periscopes let you see over the top of things.

Ian can see the candle by looking through the periscope.

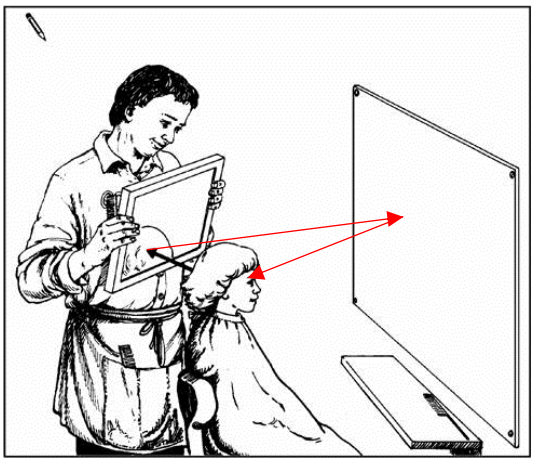


Show the directions light travels to allow him to see the candle.

Draw **ONE** arrowhead on **EACH** of the lines **A, B** and **C**.

1 mark

Q4. Light



(a) The girl is looking at the large mirror in front of her. She can see the reflection of the back of her head. The hairdresser is holding a small mirror.

An arrow has been drawn to show the direction of some light.

Draw **TWO** more **arrows** to show how the girl can see the reflection of the back of her head.

2 marks

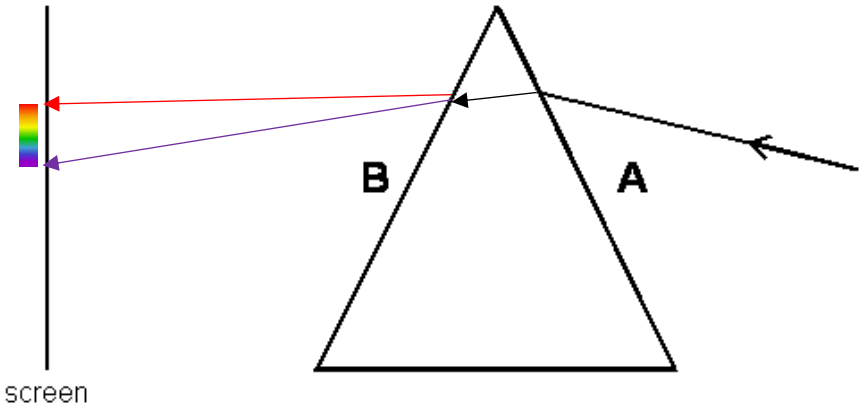
(b) The scissors look shiny.

Why do scissors look shiny? Tick **ONE** box.

Light passes through them.	☐
They are sharp.	☐
They reflect light.	✓
They give out light.	☐

1 mark

Q5. (a) The diagram shows a beam of white light shining onto a glass prism.



(i) Draw on the diagram what happens to the beam of light as it passes from surface A to surface B.

1 mark

(ii) Write a description of what happens.

The ray of light bends because it slows down when it travels in the glass prism. ✓

1 mark

(b) (i) Draw on the diagram what happens to the beam of light as it passes from the glass prism into the air and beyond B.

1 mark

(ii) Write a description of what can be seen on the screen when the beam of light passes through the prism.

The white light is split into the colours of the spectrum, (ROYGBIV) – violet light bends more than red light. ✓

1 mark

Q6. (a) The diagrams below show a kingfisher looking at a fish under the water.

Light changes direction as it travel from water into air.

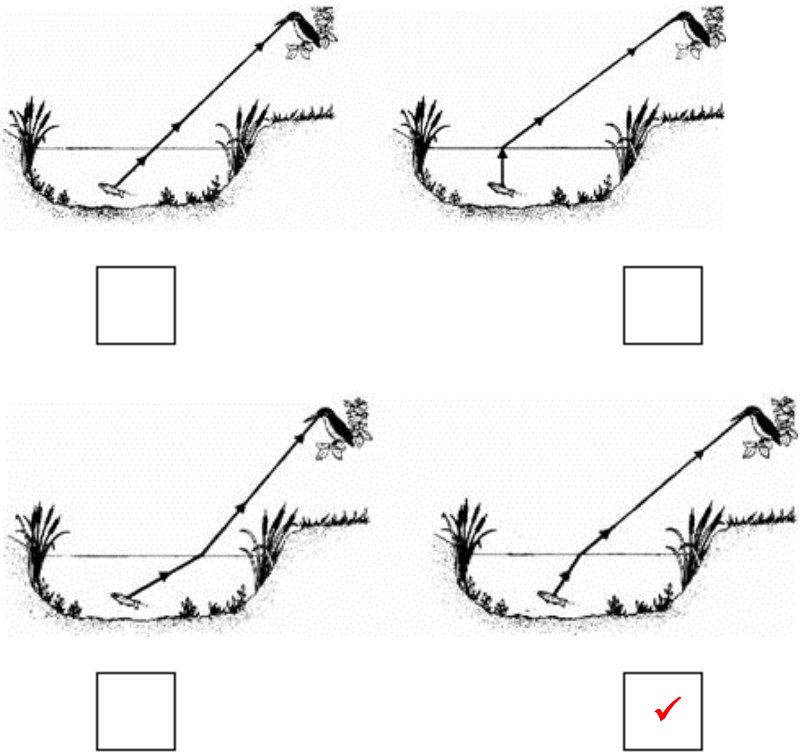
What is this effect called?

Dispersion. ✓

1 mark

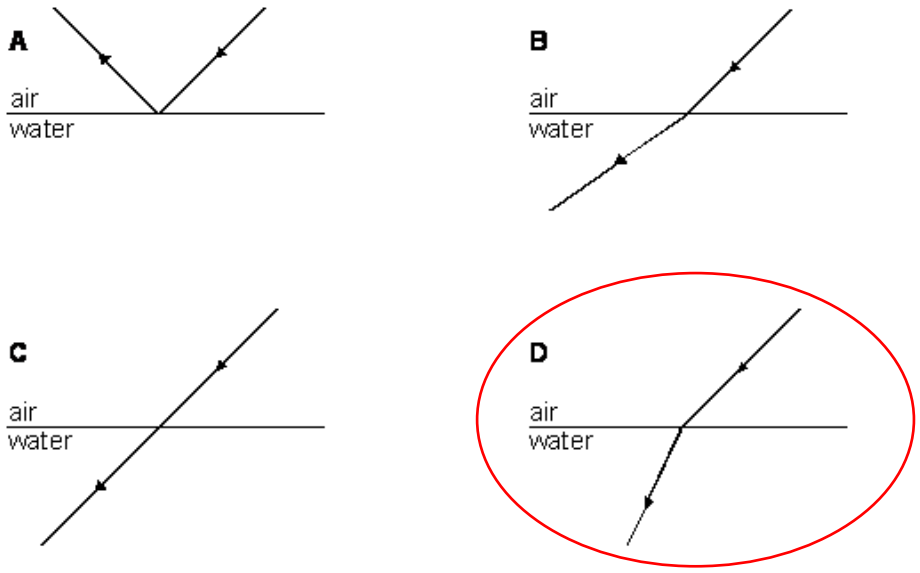
(b) Which diagram correctly shows how a ray of light from the fish reaches the kingfisher?

Tick **ONE** box



1 mark

(c) Draw a circle around the diagram which shows how a light ray travels from air into water.



1 mark

Total: /21