



Newbald Primary School Science Progress Assessment



Year 5/6 Science Assessment Cycle 2

Name:

Year Group:

Date:



Living things & their habitats:

Score: /20

Animals, including humans:

Score: /17

Evolution and inheritance:

Score: /11

Light:

Score: /14

Electricity:

Score: /20

Total:

Score: /80



Year 5/6 Science Assessment Cycle 2

Name:

Year Group:

Date:

Living things & their habitats

Score: /19

Smallpox

Smallpox and cowpox are diseases. People who catch smallpox can die.

Dr Jenner discovered how to stop people catching smallpox.



Dr Jenner (1749 – 1823)

I think that people who have had cowpox will not catch smallpox.

1. What sort of statement did Dr Jenner make?



explanation

prediction

comparison

observation

☐☐☐☐

1 mark

Dr Jenner did a test to find out if his statement was true. He infected a boy called James with cowpox. James got better.

2. Describe what Dr Jenner must have done next and also describe the evidence needed to show his statement was true.

2 marks

3. Dr Jenner tested other people. Why did Dr Jenner test other people?

1 mark

Not everyone had Dr Jenner's treatment. In 1844 many people died from smallpox. The table shows how many people died from smallpox at different ages in London.

Age (years)	Number of people who died from smallpox
10	226
20	240
30	98
40	43
50	13
60	19
70	10
80	10

4. How many people who were 30 years old died from smallpox?

1 mark

Holly looks at the information in the table.

The younger the person the more likely they were to die of smallpox.

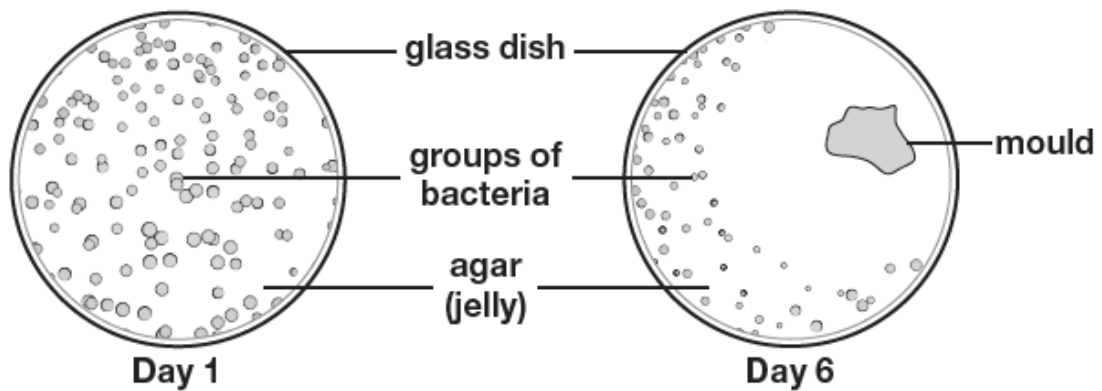


Holly

5. Explain why Holly cannot be sure of her conclusion.

1 mark

In 1928 a scientist called Alexander Fleming grew micro-organisms called bacteria. Growth shows that bacteria are living things. The bacteria grew on agar (jelly) in glass dishes. After a few days Fleming saw mould growing in one of the glass dishes.



6. Sort the five things in the box below into **living** and **non-living** things. One has been done for you.

bacteria	glass dish	mould	agar (jelly)	human
---------------------	------------	-------	--------------	-------

Living things	Non-living things
bacteria	

1 mark

7. Growing is a life process. Name **ONE** other life process.

_____ 1 mark

Bacteria can cause disease. Fleming thought he could use the mould to help cure disease caused by bacteria. Look at the pictures above for **Day 1** and **Day 6**.

8. Use the evidence in the pictures opposite to explain why Fleming thought the mould could be used to cure disease.

1 mark

Fleming used the mould to make a medicine called penicillin. It took over 10 years for penicillin to be first used by doctors.

9. Write **true** or **false** next to each statement to show why it took a long time for penicillin to be used as a medicine.



True or false?

The medicine had to be tested to make sure it was safe. _____

Scientists had to find a way of making lots of penicillin at a time. _____

It took 10 years for the mould to start growing. _____

Fleming needed to check that his ideas were correct. _____

2 marks

10. Give two different ways that these animals could be sorted into two groups:



starling



jackdaw



painted lady butterfly



cabbage white butterfly



hedgehog



toad



frog



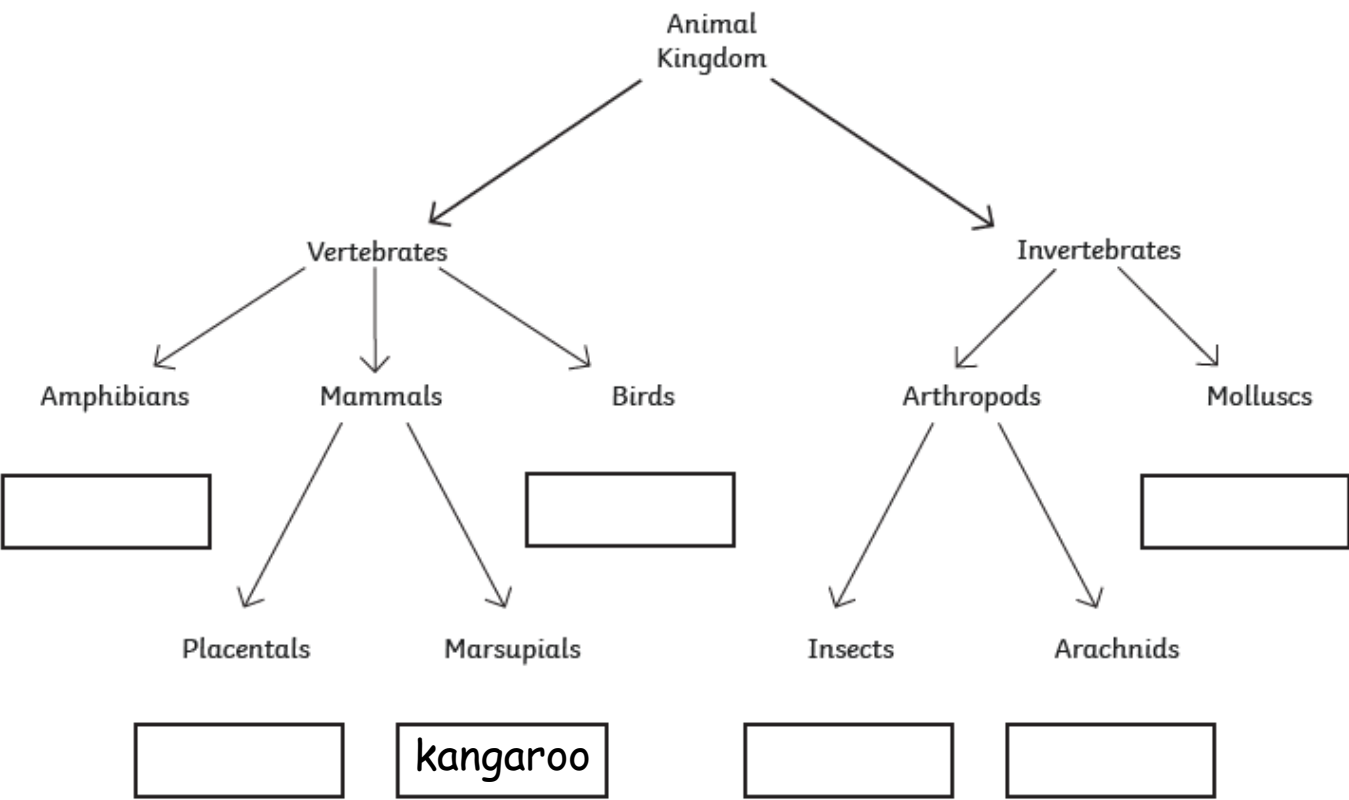
dragonfly

	Group A	Group B
Option 1		
Option 2		

2 marks

11. Use the key below to sort the following animals. Write the name of each animal in the correct box. One has been done for you.

kangaroo, spider, human, ant, snail, pigeon, frog



2 marks

12. If we added a fox to the diagram above, which creature would it share a box with?

1 mark

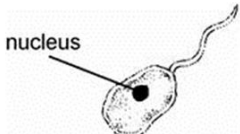
13. Look at the animal the fox would share a box with. Create and explain the question or category that would separate the animals.

1 mark

The diagrams A, B and C show how three different micro-organisms look under a microscope.



A

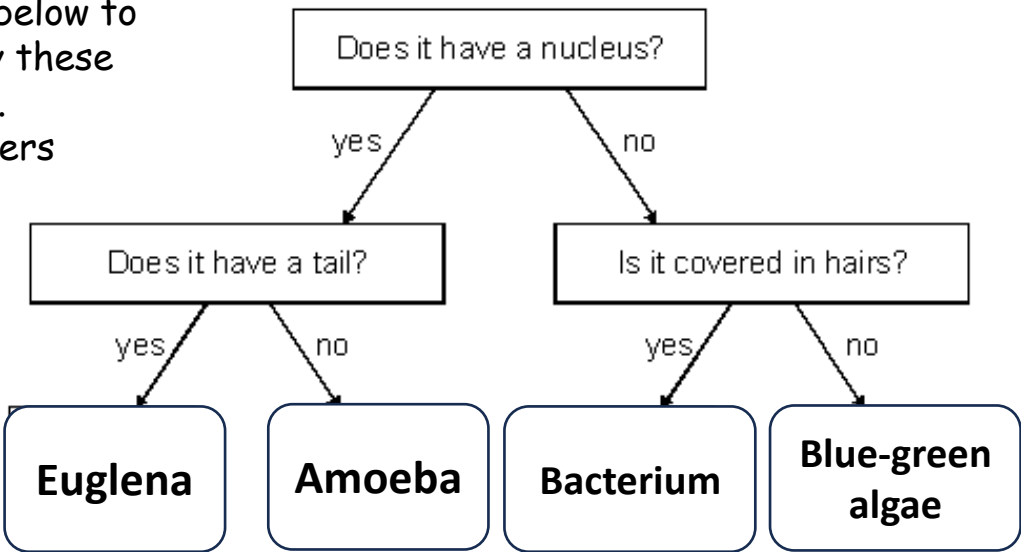


B



C

14. Use the key below to help you identify these micro-organisms. Write your answers under the key.



A is _____

B is _____

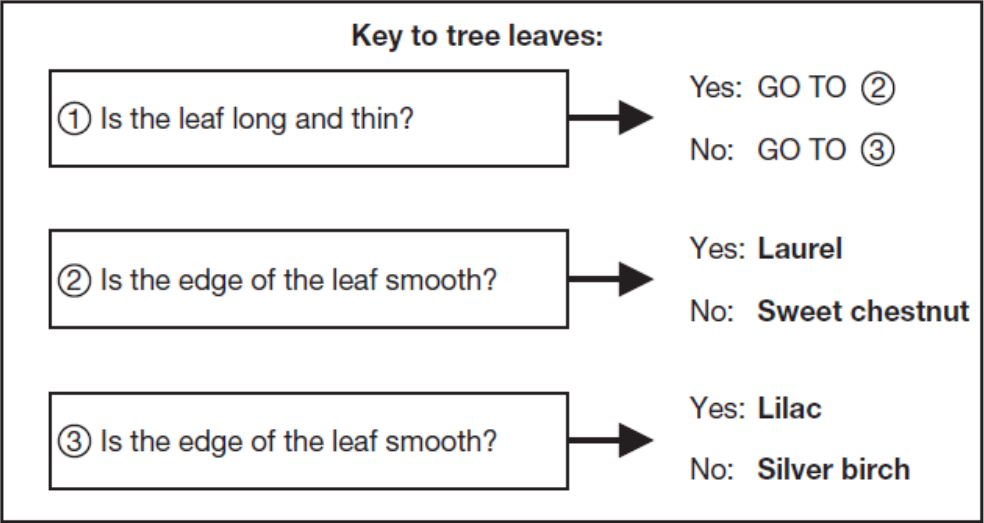
C is _____

1 mark

Ella is looking at some leaves. The key below identifies which tree each leaf comes from.



Look at this picture of a leaf from one of the trees.



15. Use the key above to identify the tree it comes from.

The leaf is from a _____ tree. 1 mark

16. Tick **ONE** box to show why it is useful to identify plants and put them into groups.

so we know where to find a plant ☐

because there is a large variety of plants ☐

in case the plants become extinct ☐

so we can observe the plants in their habitats ☐

1 mark

Animals Including Humans

Score:

/16

Class 6 are learning about the human body .

17. Complete the sentences below using the words in the box.

skull

vessels

lungs

heart

ribs

brain

The pumps blood around the body.

The carry blood around the body.

The protect the heart.

1 mark

Your pulse rate tells you how fast your heart is beating.

18. Tick **ONE** box to show what equipment you could use to workout your pulse rate.

ruler

☐

forcemeter

☐

stopwatch

☐

thermometer

☐

1 mark

Class 6 have some ideas about pulse rate.

19. Write **true** or **false** next to each statement about pulse rate.

True or false?

Different types of exercise can affect pulse rate by different amounts.

.....

Different people can have different resting pulse rates.

.....

A high pulse rate means the heart is beating fast.

.....

1 mark

Class 6 investigate the effect of exercise on pulse rate. They measure Emily's pulse rate three times:

- I. at rest.
- II. straight after running for 10 minutes.
- III. after resting for 20 minutes.



20. Tick **ONE** box to show the usual units of measurement for pulse rate.

beats

☐

beats per second

☐

beats per minute

☐

beats per hour

☐

1 mark

Look at the table of results below. Some of Emily's pulse rates are missing.

21. Complete the table of results by predicting Emily's pulse rates straight after running and after resting for 20 minutes.

	At rest before running	After running for 10 minutes	After resting for 20 minutes
Pulse rate (heart beats per minute)	90		

1 mark

Class 6 think of some questions about the heart and exercise.

22. Tick **THREE** boxes to show which questions the class could investigate by doing a fair test.

Where is the heart found in the body?

☐

How does age affect a person's heart rate?

☐

How does the heart work?

☐

What does the heart look like?

☐

Do tall people have faster pulse rates than short people?

☐

Do people who exercise regularly eat more food than people who do not exercise?

☐

1 mark

Dan has some ideas about exercise.

23. Write **true** or **false** under each statement about exercise.
One has been done for you.

Exercise helps to keep your heart healthy.
.....



Exercise helps to stop people getting overweight.
.....

People exercise when they walk.
true
.....

If people exercise they will not get ill.
.....

1 mark

Some children had these ideas about medicines. Some of their ideas are not true.

24. Write **true** or **false** under each idea about medicines.

Medicines are not drugs because all drugs are harmful.
.....





Medicines can have bad effects on humans.
.....

If you eat a balanced diet, you will never need to take medicine.
.....



1 mark

The children collect information from four adults. The table shows what they find out.

Adult	Exercises regularly	Eats a balanced diet	Smokes regularly	Cleans teeth regularly
A	x	x	✓	x
B	✓	✓	x	x
C	✓	✓	x	✓
D	✓	x	✓	✓

25. Which **TWO** adults are most likely to have healthy hearts?

Write **A, B, C,** or **D.**

_____ and _____

1 mark

26. Draw lines to match the word to its definition.

circulatory system ●

● The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.

heart ●

● A system which includes the heart, veins, arteries and blood transporting substances around the body.

blood vessels ●

● An organ which constantly pumps blood around the circulatory system.

1 mark

Dan is learning about blood. He creates an information table.

27. Fill in the gaps to complete the sentences below. Use the word bank to help you.

water

infections

attack

scab

oxygen

liquid

red

bleeding

Component	Job that it does
red blood cells	Red blood cells transport _____ and carbon dioxide around the body. They contain a special pigment that gives blood its _____ colour.
white blood cells	White blood cells _____ any harmful microorganisms that enter the body, like viruses or bacteria. Their job is to help fight _____ .
platelet	The platelets all join up together (clot) to stop _____. When the platelets have all stuck together, the clot dries out and a _____ is formed!
plasma	Plasma is a straw-coloured _____. It transports _____, protein and nutrients all around the body.

Josh is finding out about the digestive system.

28. Tick **ONE** box to show why we need a digestive system.

To control how
the body moves.

☐

To break down food for
the body to absorb.

☐

To give support
to the body.

☐

To transport blood
around the body.

☐

1 mark

Josh has some cards labelled with parts of the digestive system.

29. Write **1** to **5**
to show the
correct path
through the parts
of the digestive
system. The first
one has been done
for you.

mouth

1

large intestine

☐

oesophagus

☐

small intestine

☐

stomach

☐

1 mark

The girl below is wearing an apron to show parts of the digestive system.

30. Draw an **X** on the image to show the part
that is the stomach. 1 mark

31. Complete the sentences below by writing the
correct words on the answer lines.

Water and nutrients pass from the small intestine into
the _____.

They are then transported around the body by the
_____ system. 1 mark

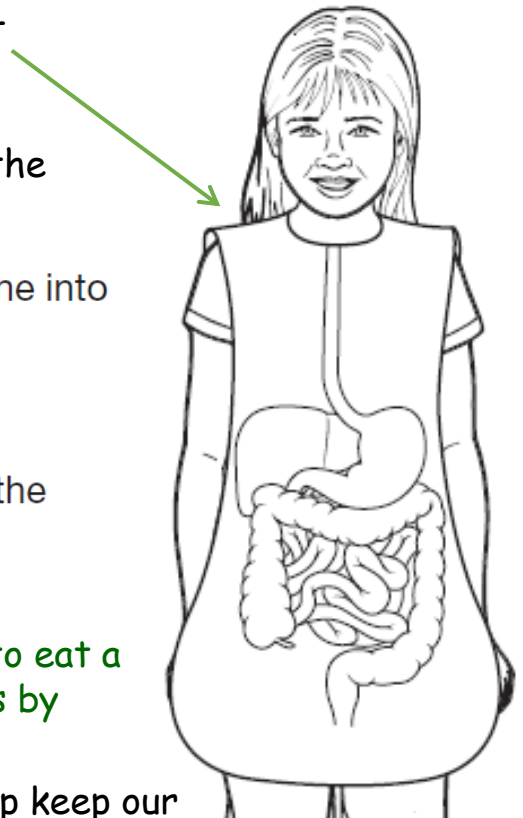
To keep our bodies functioning well we need to eat a
balanced diet. Another way to keep healthy is by
exercising.

32. Give **TWO** ways in which exercise can help keep our
bodies functioning well.

1. _____

2. _____

1 mark



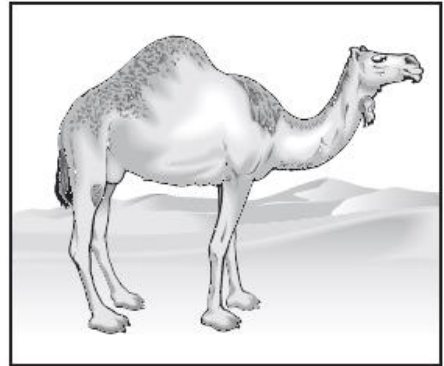
Evolution and Inheritance

Score:

/11

Camels can live in hot places. Some features of a camel's body help it to survive in a hot desert.

33. Match each feature below to show how it helps the camel survive in the desert. One has been done for you.



Camel's features

long legs

wide feet

thick fur

long eyelashes

thick, leathery lips

How feature helps

keep the camel's body further from the hot sand

protect camels when eating prickly plants

help camels stay on top of the sand

protect camels against sand blowing in the air

protects camels from getting sunburnt

Squirrels live in trees.

34. Give **ONE** feature of the **squirrel** from the picture. Describe how this feature helps the squirrel to live in a tree.



2 marks

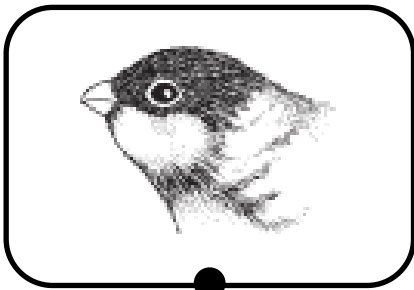
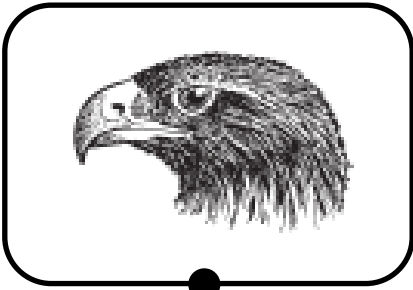
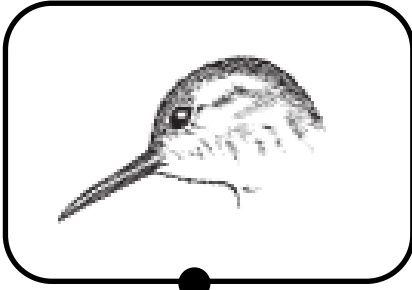
Feature of the squirrel that helps it live in a tree:

How the feature helps:

1 mark

Birds have different shaped beaks. The shape of the bird's beak is suited to the food the bird eats.

35. Draw **THREE** lines to match each beak to the food the bird eats.



animals buried
deep in mud

small seeds
and berries

meat torn
from prey

1 mark

Penelope is the daughter of Mary. Penelope has many things in common with her mother.

They both have the same eye colour and hair colour. They are both tall and can play the guitar.

36. Draw lines to identify if each characteristic is inherited or acquired.

eye colour

natural
blonde hair

Plays guitar

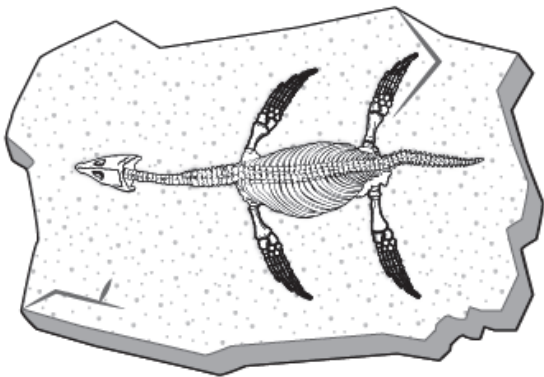
is tall

inherited

acquired

1 mark

The picture shows the fossil of a pliosaur. These animals lived in the sea a long time ago.



37. What material are fossils made of?

1 mark

38. 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

Very few animals become fossils after they die.

39. Explain why very few animals become fossils after they die.

1 mark

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

40. 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.

what the animal ate.

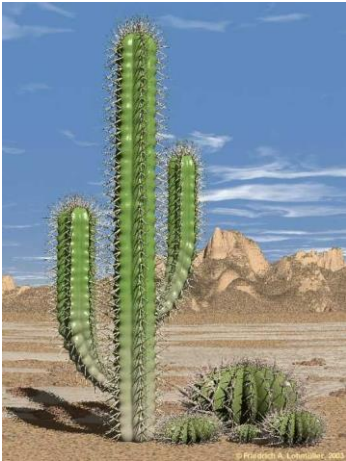
what the animal smelt like.

what colour the animal’s eyes were.

how large the animal was.

2 marks

41. Explain how the different features of the cactus plant help it to survive in its environment. Join the description to the correct part of the plant



stores water ●

Are long and grow close to the surface to absorb water after rainfall ●

Prevent animals from eating the plant ●

● stem

● spines

● roots

1 mark

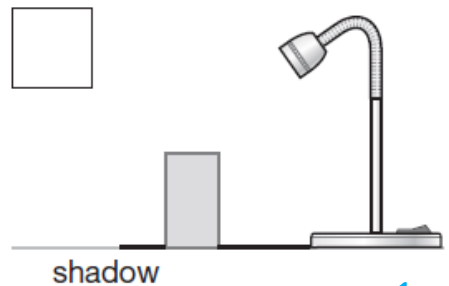
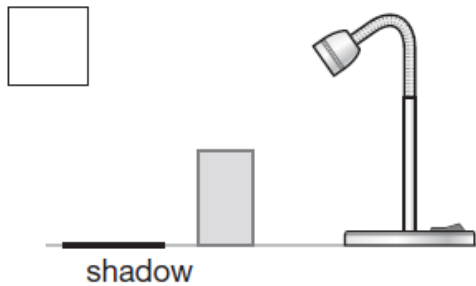
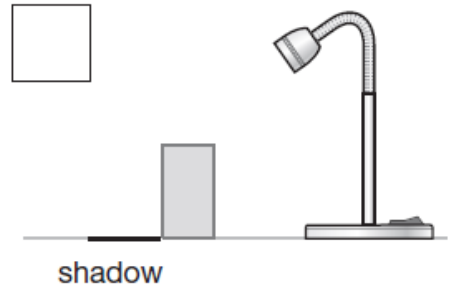
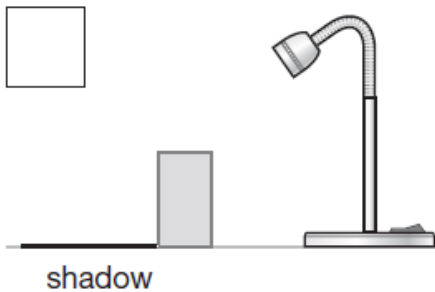
Light

Score:

/14

Josh is investigating shadows. He places a block on the floor. He holds a lamp and looks at the shadow the block makes. Look at the pictures below.

42. Which picture shows the correct length and direction of the shadow made by the block? Tick ONE.



1 mark

43. Why does a shadow form when Josh shines the light on the block? Tick ONE.

The block is grey and shiny.

☐

The block is smooth and rigid.

☐

The block is solid and opaque.

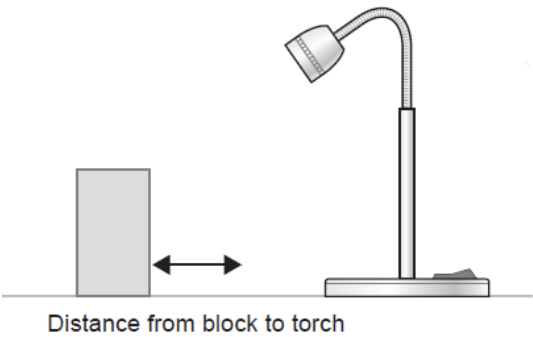
☐

The block is hard and transparent.

☐

1 mark

Josh investigates if the distance he puts the lamp from the block affects the length of the shadow on the floor. Josh records his results in the table below.



Distance of lamp from block (cm)	Length of block's shadow (cm)
5	7
10	9
15	12
20	14
25	17

44. Describe the relationship between the **distance of the lamp** from the block and the **length of the shadow**.

1 mark

Josh found out that the distance of the lamp from an object does affect how long the shadow is. He wants to find out more about how to change shadow size.

45. Suggest **another** investigation that Josh could carry out using the same lamp and block to find out more about how the size of a shadow changes.

1 mark

Julia has a bike with a light.

It is important for people riding bikes to be seen in the dark.

The pictures below show what two jackets look like when Julia shines a torch on each of them.



Jacket A



Jacket B

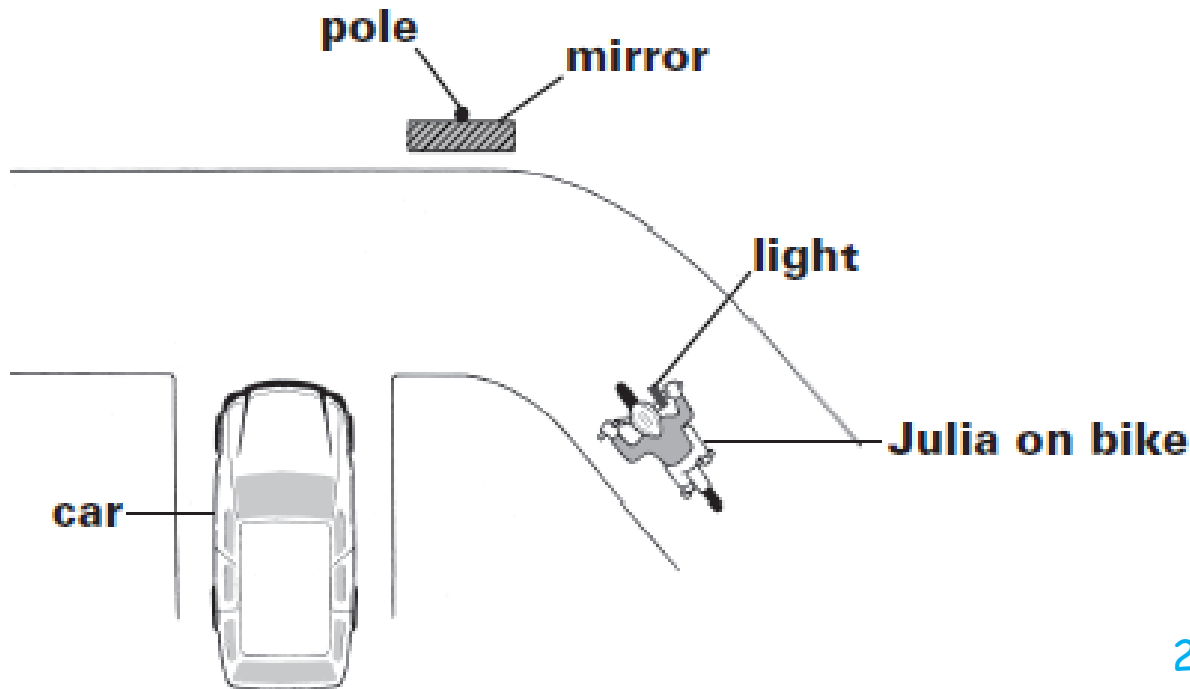
Julia can see jacket **B** better than jacket **A**.

46. Explain what happens to the light from the torch for Julia to see jacket **B** better than jacket **A**.

1 mark

Julia's house is near a bend in the road. There is a mirror on a pole so car drivers can see people coming round the bend.

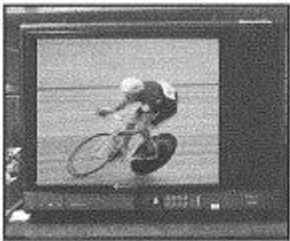
47. Draw **TWO** arrows on the diagram below to show the direction light travels for the car driver to see the light on Julia's bike.



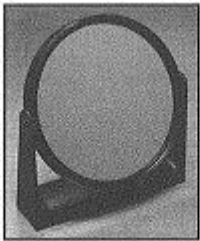
2 marks

Jenny sits by a lamp. A shadow forms.

She wants to see if any other objects will cause a shadow in a dark room. She turns the lamp off. She sits in front of these objects instead of the lamp:



television



mirror



plant



night safety jacket

48. Which **ONE** of these four objects will cause a shadow of Jenny in a **dark** room?

1 mark

49. Why does a shadow form when Jenny sits in front of this object? Tick **ONE** box. Because the object...

is translucent.

☐

reflects light.

☐

is a light source.

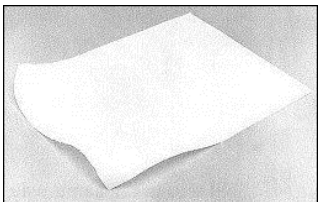
☐

is transparent.

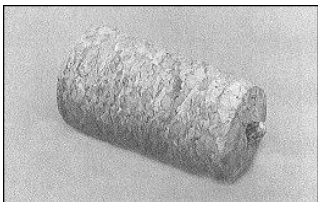
☐

1 mark

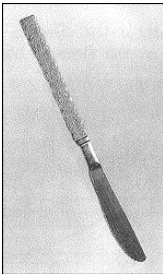
Ian shines a torch onto some objects to see what happens to the light.



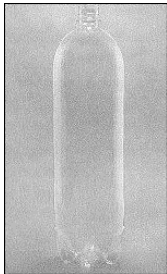
tracing paper



bottle cork



metal knife



clear plastic bottle

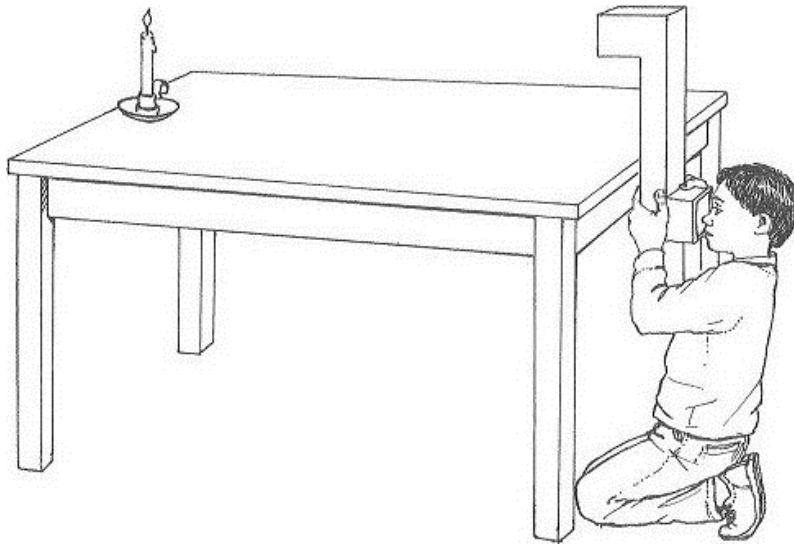
50. Write the name of **ONE** object to complete each of these sentences. Only use the name of an object once.

(i) The light went through the

(ii) The light made the look shiny.

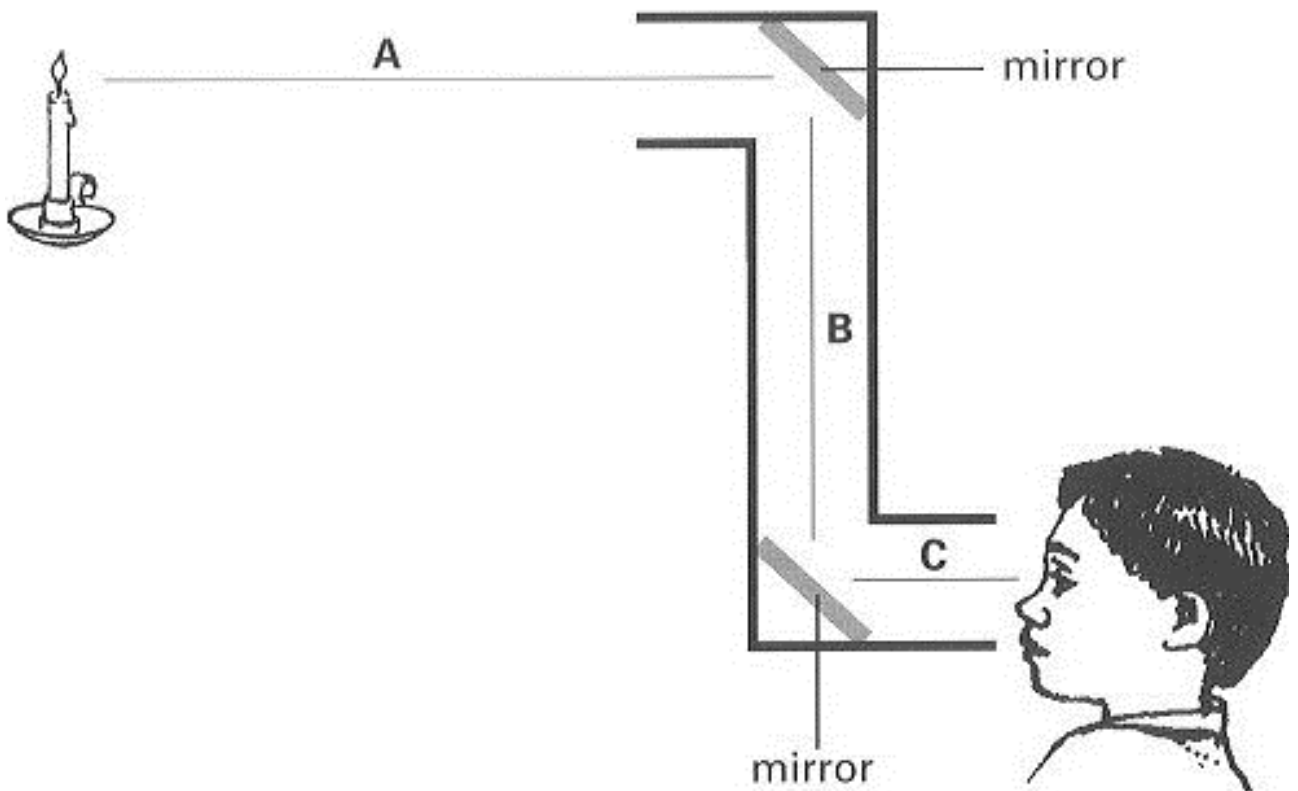
(iii) The light made the make a dark shadow. 1 mark

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



Periscopes let you see over the top of things.

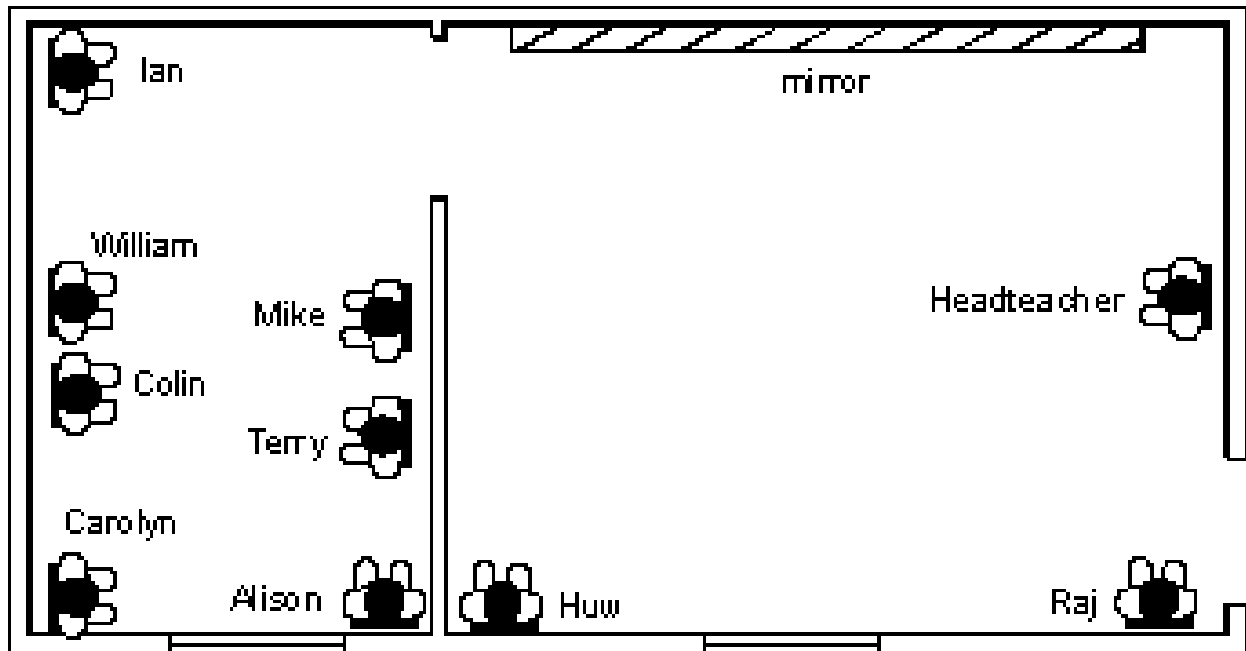
Ian can see the candle by looking through the periscope.



51. 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

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.

52. Draw an arrow on the picture to show how light travels from Raj to the Headteacher. 1 mark

53. Which **TWO** people can the Headteacher see **only** by reflection in the mirror.

(i)

(ii)

1 mark

54. Which **TWO** people can Colin see **only** reflected in the mirror?

(i)

(ii)

1 mark

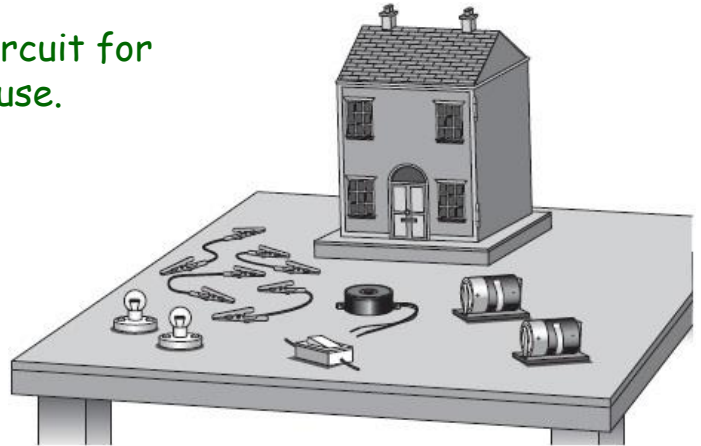
Electricity

Score: /20

A group of children are making a circuit for a door bell and lights in a model house.

The circuit symbols for the parts used in the circuit are shown below.

55. Write the name of each part next to its circuit symbol. One is done for you.



Circuit symbol

Name of part



.....



buzzer

.....



.....

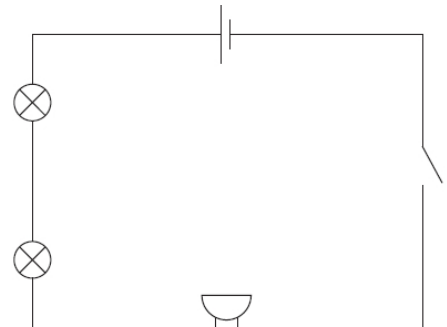


.....

2 marks

The children make this circuit.

56. What must the children do to their circuit to turn the light bulbs and the buzzer on?



1 mark

The buzzer only makes a quiet sound.

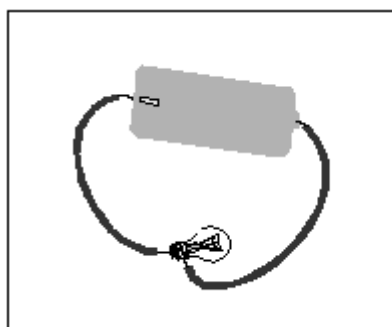
57. How could the children change the circuit to make the buzzer louder? Give **TWO** ways.

(i)

(ii)

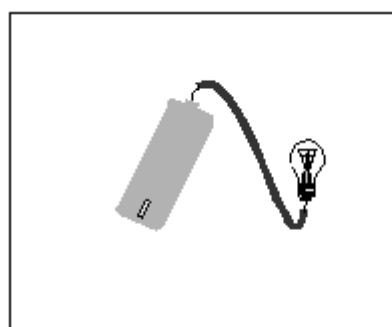
2 marks

58. Tick **ONE** box for each circuit to show whether the bulb **will** or **will not** light.



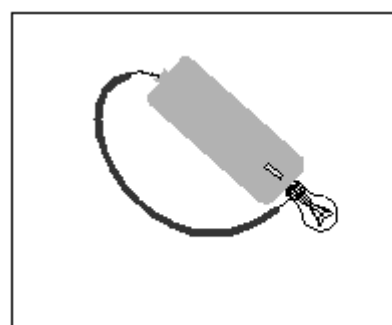
will light

will not light


☐
☐


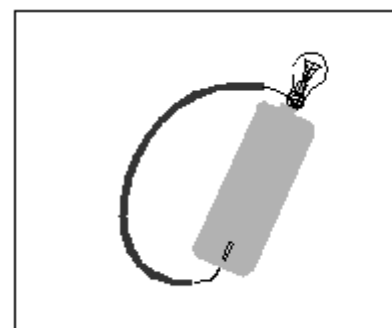
will light

will not light


☐
☐


will light

will not light


☐
☐


will light

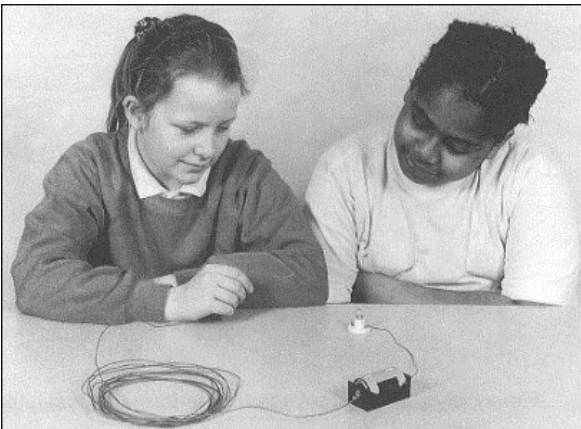
will not light


☐
☐

2 marks

Jill made circuits with different lengths of wire, the same battery and the same bulb. The wire is coated in plastic.

She recorded her results in a table.



lenght of wire (m)	brightness of light from bulb
40	no light
30	dim glow
20	faint light
10	bright light
1	very bright light

Look at the table.

59. Describe how changing the length of the wire in the circuit affects the brightness of the light.

2 marks



When the reel of wire was connected into the same circuit there was a **faint light** from the bulb.

60. Use the information from the table. How much wire was on the reel when there was a **faint light** from the bulb?

Tick **ONE** box

less than 5 m ☐

5 – 15 m ☐

15 – 25 m ☐

25 – 30 m ☐

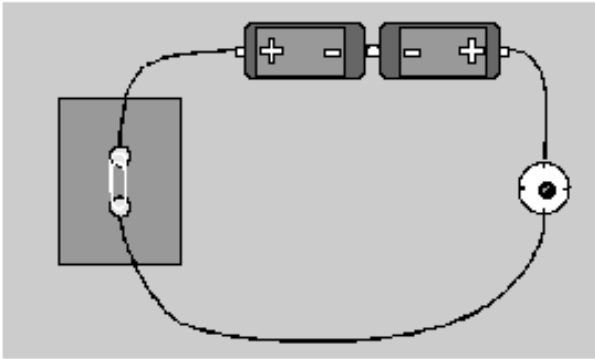
more than 40 m ☐

1 mark

Here are two photographs of circuits - (i) & (ii) - and five circuit diagrams.

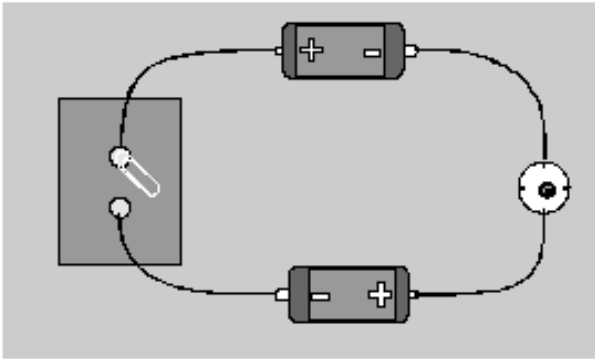
61. Write the letter of the matching circuit diagram under each photograph.

(i)



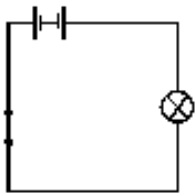
circuit

(ii)

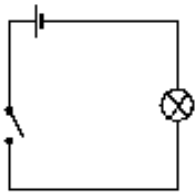


circuit

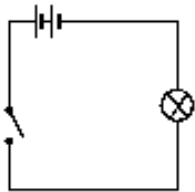
A



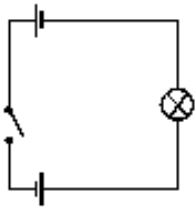
B



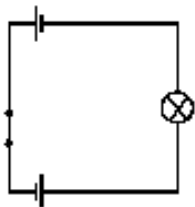
C



D



E



2 marks

The bulb does not light in either scenario above.

62. Explain what can be done to make the bulb light in each circuit.

(i) _____

(ii) _____

2 marks

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

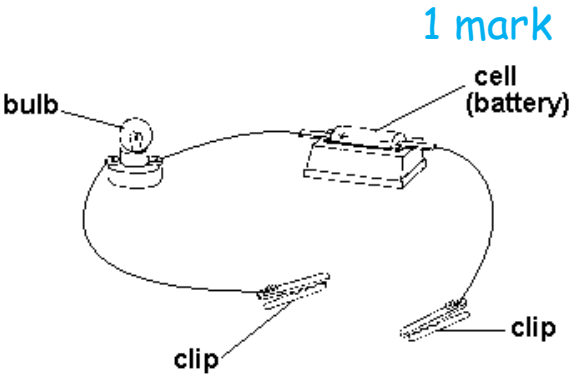


63. Explain why the **plastic** helps to make the plug safe.

1 mark

64. Why is it dangerous to put a plug in when the plug is wet?

Conducting electricity. Year 6 are testing objects to see if they conduct electricity. The children use the circuit pictured to test the objects. The children place the objects between the clips.



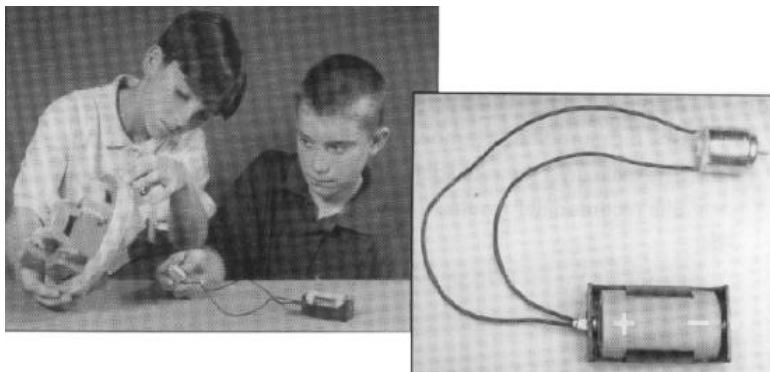
1 mark

65. Does each object conduct electricity? Write **yes** or **no** in each row of the table.

Object	Does the object conduct electricity?
wooden ruler	
steel scissors	
sheet of paper	
rubber	
brass pin	

2 marks

Two children made a model fairground ride.
They connected a battery to an electric motor to make the model
turn.



66. The motor is not working. What is wrong with this circuit?

1 mark

67 Use a ruler to **draw a circuit diagram** in which the switch can be
used to turn the motor on and off.

You **MUST** use circuit symbols in your diagram.

1 mark