

Science

Test B

2002
40 min
40 marks

1. In the garden

(a) David sees these living things in his garden.



thrush



sparrow



snail



cat

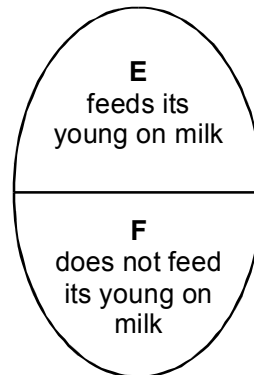
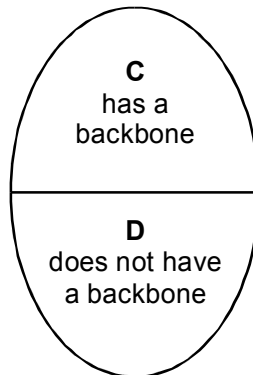
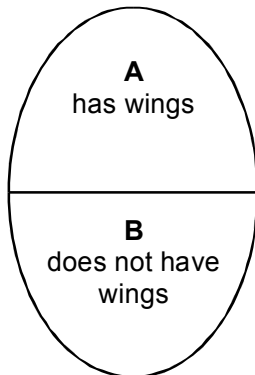


caterpillar




human

David sorts the animals in his garden into these groups.




Use only the living things in the pictures to answer these questions.

(i) Name **TWO** animals in group A.



1 mark

(ii) Name **TWO** animals in group D.



1 mark

(iii) Circle **THREE** letters below to show which groups an adult human would be in.

 **A** **B** **C** **D** **E** **F**

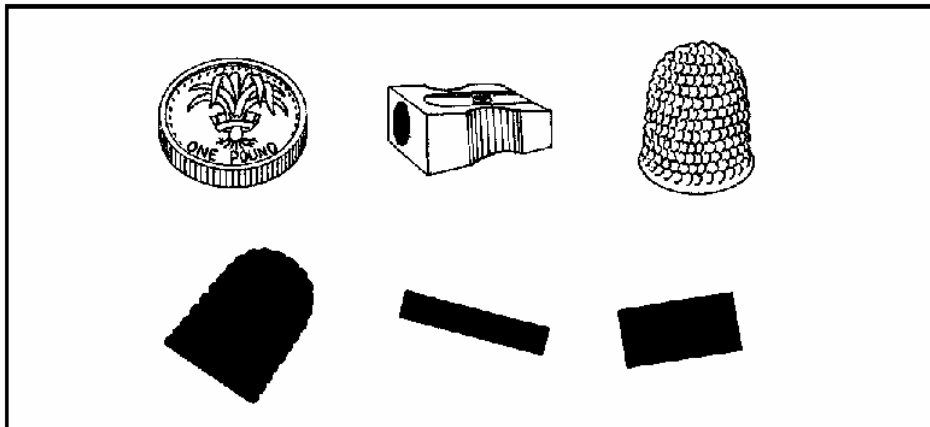
1 mark

2. Light

(a) The things below all make shadows in light.

Draw **ONE** line from each object to the shadow it could make.

Use each shadow **ONCE**.



1 mark

- (b) Jenny investigates which materials allow light to pass through. She holds different materials out in the sun.



Complete the table below to predict Jenny's results.

Tick **ONE** box in each row. One has been done for you.



Material	Some light passes through	No light passes through
tissue paper	✓	
glass		
mirror		
clear plastic		
cardboard		
foil		

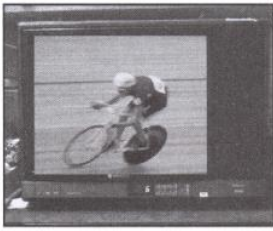
2 marks

- (c) 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

(i) Which **ONE** of these four objects will cause a shadow of Jenny in a **dark** room?



.....

1 mark

(ii) Why does a shadow form when Jenny sits in front of this object?



Tick **ONE** box.

Because the object...

is translucent.

reflects light.

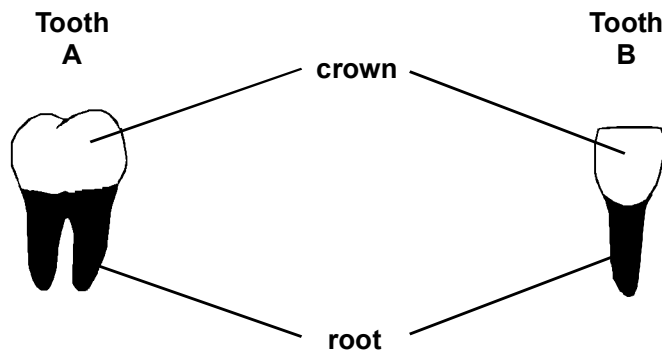
is a light source.

is transparent.

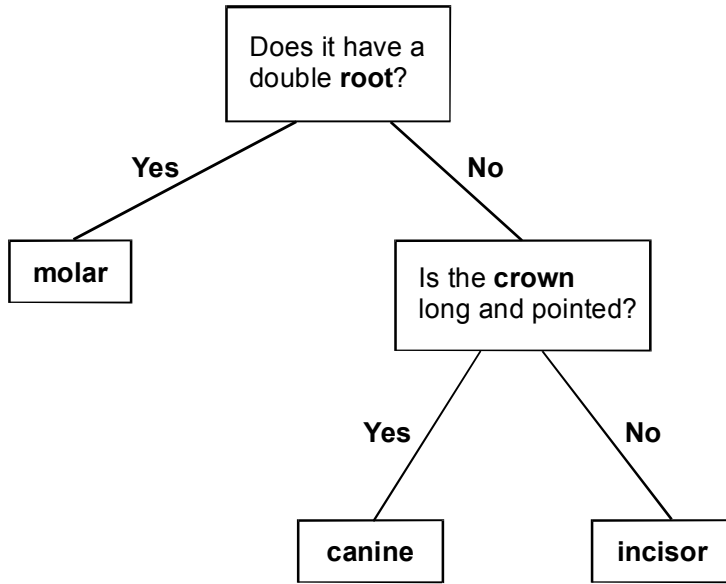
1 mark

3. Teeth

(a) Mohab looks at these pictures of teeth.



He uses this key to identify tooth A and tooth B.



Use the key above to identify tooth A and tooth B.

-  (i) tooth A
- (ii) tooth B

1 mark

(b) Canines, molars and incisors have different jobs.

Draw **THREE** lines below to match each type of tooth to its main job in humans.



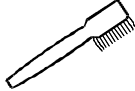
canine	bites and cuts food
molar	chews and grinds food
incisor	rips and tears food

1 mark


(c) Mohab makes a poster.

Complete the poster below. Write **TWO** other ways that people can look after their teeth.





LOOK AFTER YOUR TEETH!



Brush your teeth with toothpaste twice a day.

(1)

(2)

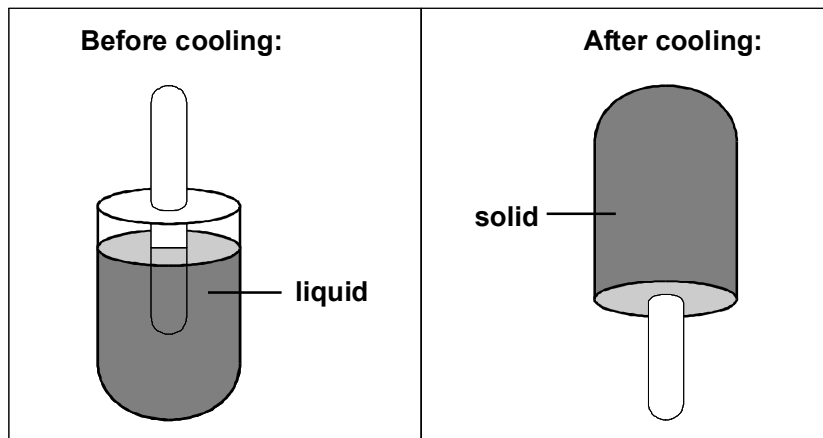
(3)

2 marks

4. Ice lollies

(a) Some children are making ice lollies.

The children cool the liquid. It changes into ice.



Name the process that takes place when a liquid changes to a solid.



.....

1 mark

(b) Which **TWO** statements below show that an ice lolly is a **solid**?

Tick **TWO** boxes.



It has a fixed shape.

It is slippery.

It is cold.

It is cloudy.

It cannot be poured.

1 mark

(c) The children make ice lollies of different sizes.

They time how long the lollies take to melt.

Here are their results.

Volume of lolly (cm³)	Time taken to melt (minutes)
30	200
40	230
50	255
60	275
70	295

Describe the link between the **volume** of the lolly and the **time** it takes to melt.



.....

.....

2 marks

5. Trees and other plants

(a) Different parts of a tree have different functions.

Draw **THREE** lines below to match each part of the tree to its function.



leaf	trunk	root
takes in water	carries water from one part to another	uses water when making food


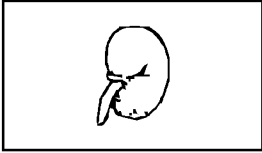
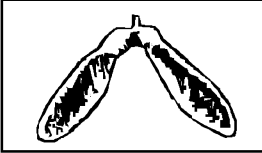
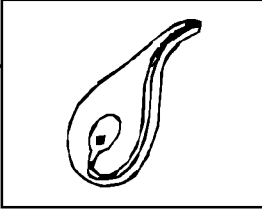
1 mark

(b) Germination, pollination, fertilisation and seed dispersal are all stages in the life cycle of plants.

Draw **THREE** lines below to join each stage in the life cycle to the correct picture.

One has been done for you.



Germination	
Pollination	
Fertilisation	
Seed dispersal	

Note: A line is drawn from the 'Fertilisation' box to the bottom-right seed illustration.

1 mark

6. Sound

(a) Carina makes a drum by stretching a balloon over the top of a jam jar.



She hits the stretched balloon with a beater.

It makes a sound.

What does the sound travel through to reach Carina' s ears?



.....

1 mark

(b) She pulls the balloon more tightly over the jar.

This changes the pitch of the sound.

(i) Describe what pitch means.



.....

1 mark

(ii) How does the pitch change when the balloon is tighter?



.....

1 mark

7. Human life cycle

(a) Some children are comparing a baby and a doll.



baby



doll

The baby can breathe, but the doll cannot.

This shows that the baby is living.

What are **TWO** other things a baby does that show it is living?

Tick **TWO** boxes.



grow

sit in a pushchair

lie in bed

be cuddled

have a bath

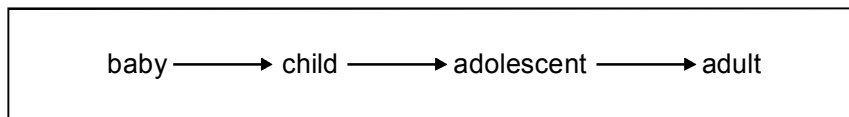
suck milk

wear clothes

get dirty

2 marks

(b) A baby is a part of the human life cycle. The flow chart below shows different stages of the human life cycle.



Which **ONE** life process can an **adult** do that a **young child** cannot?

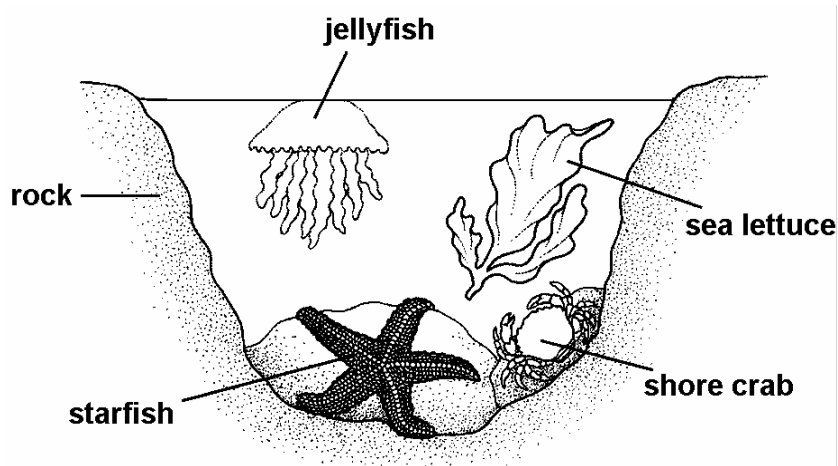


.....

1 mark

8. **Rock pool**

(a) Some children see four living things in a rock pool.



Which **ONE** of these living things is a **producer** in a food chain?



.....

1 mark

(b) Some sea water is trapped in the rock pool.

The water **cannot** drain away.

Which word best describes the rock that stops the water draining away?

Circle **ONE** word.

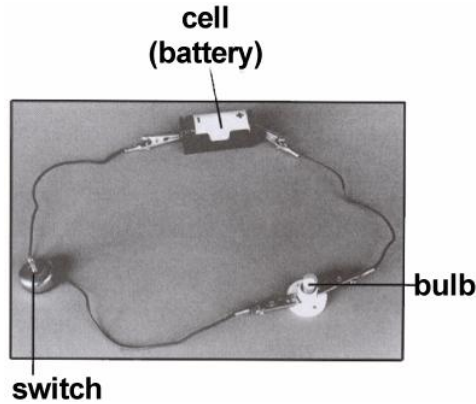


permeable	impermeable	rough
strong	absorbent	

1 mark

9. Circuits

- (a) Daisy and Rema make this circuit.
They close the switch but the electricity does not flow.
The bulb does not light.
The electrical wires are connected properly.



Give **TWO** possible reasons why their circuit does not work when they close the switch.



(i)

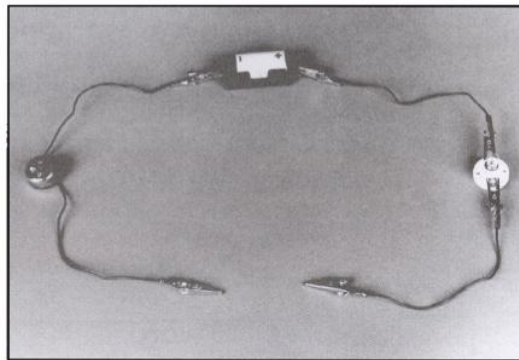
1 mark

(ii)

1 mark

- (b) They make another circuit. It works.
They put these objects into the gap in the circuit one at a time:

- steel scissors
- plastic comb
- cardboard strip
- aluminium spoon
- copper tube



The metal objects let the electricity flow through, and the bulb lights.
What is the scientific name for materials that let electricity flow through them?



.....

1 mark

- (c) Daisy says:



Let's see which metal makes the bulb light most brightly.

Rema says:



But we cannot compare the metals because we used different shaped objects. Let's use wires instead.

They make three similar circuits. First they make their circuit with steel wire, then with copper wire, then with aluminium wire.

To compare their results, what must they keep the same about the wire in all three circuits and what must be different?

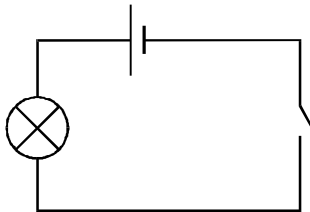
Tick **ONE** box in each row below.



Wire	Must be the same	Must be different
Type of metal		
Length		
Thickness		

1 mark

- (d) The children can change the wire in their circuit to make the bulb brighter.



Describe **ONE** other change that the children could make to their circuit to make this bulb brighter when they close the switch.



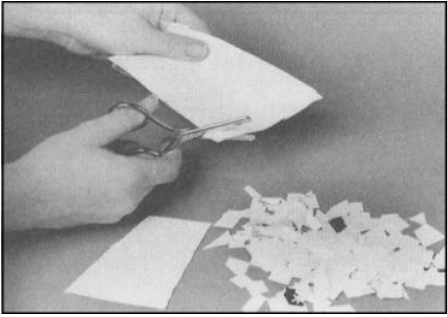
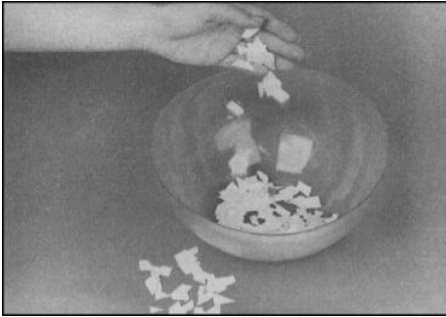

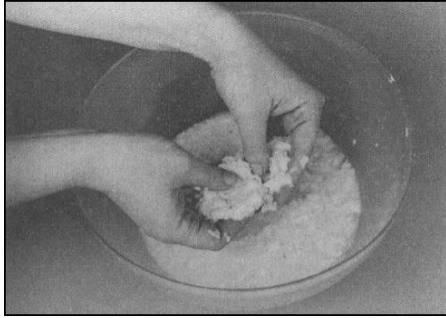
.....

1 mark

Paper making

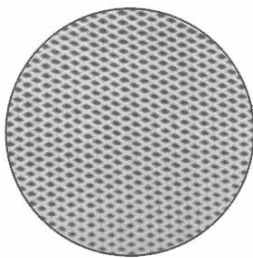
- (a) Some children want to recycle the scrap paper from their classroom.

This is what the children do:

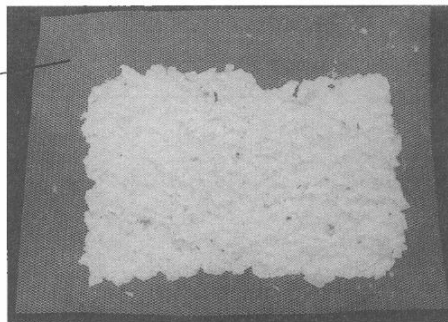
	
Step 1: Cut the scrap paper into pieces	Step 2: Put the pieces into a bowl.
	
Step 3: Add water and leave overnight	Step 4: Mash up the mixture. Now it is called pulp

The children spread the pulp on to some wire mesh to dry.

When the pulp is dry, it forms a sheet of recycled paper.



**close-up of
wire mesh**



pulp on wire mesh

The mesh has holes in it.

How do the holes in the mesh help the pulp to dry?



.....
.....

1 mark

(b) The children leave the pulp in their classroom.

After two days, the pulp is completely dry.

Name the **process** that causes the pulp to dry completely.



.....

1 mark

(c) What could the children do to make the pulp dry faster?



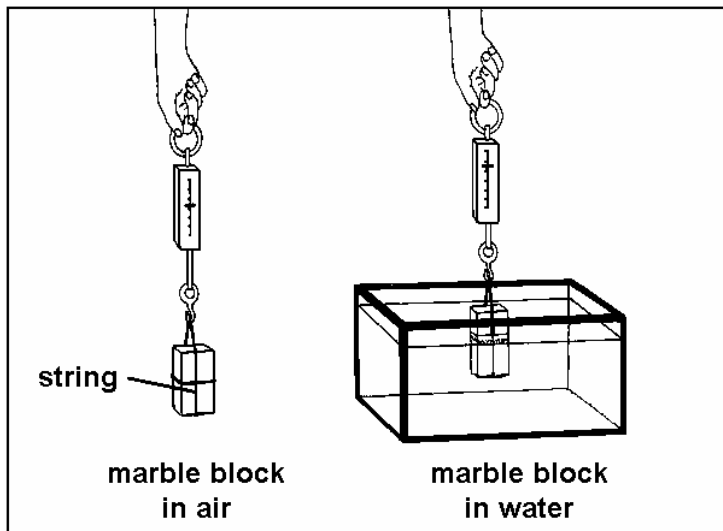
.....
.....

1 mark

11. Weighing in liquids

(a) Jerome weighs a marble block in air and in water.

Weight is a force.



Look at the picture.

- (i) Name the equipment that Jerome uses to measure the force of weight on the block.



.....

1 mark

- (ii) What units does this equipment use to measure the force of weight?

Tick **ONE** box.



grams (g)	<input type="checkbox"/>	kilometres (km)	<input type="checkbox"/>
degrees (°C)	<input type="checkbox"/>	newtons (N)	<input type="checkbox"/>

1 mark

- (b) The marble block weighs less in water than in air.

Weight of the marble block (units):	
in air	in water
1.3	0.8

Tick **ONE** box below to explain why the marble block weighs less in water.

The string shrinks in water.	<input type="checkbox"/>	Forces cannot act very well in water.	<input type="checkbox"/>
There is an upward force from the water.	<input type="checkbox"/>	There is an upward force from the air.	<input type="checkbox"/>

1 mark

- (c) Jerome weighs the block in other liquids to see what happens. Here are his results.

Weight of the marble block (units):		
in salty water	in oil	in washing-up liquid
0.7	0.9	0.5

Jerome says: 'I think the marble block will weigh less in **any** liquid I try than it does in air.'

(i) Do Jerome's results suggest that his prediction is sensible?



Yes

No

(ii) Use Jerome's results to explain your answer.



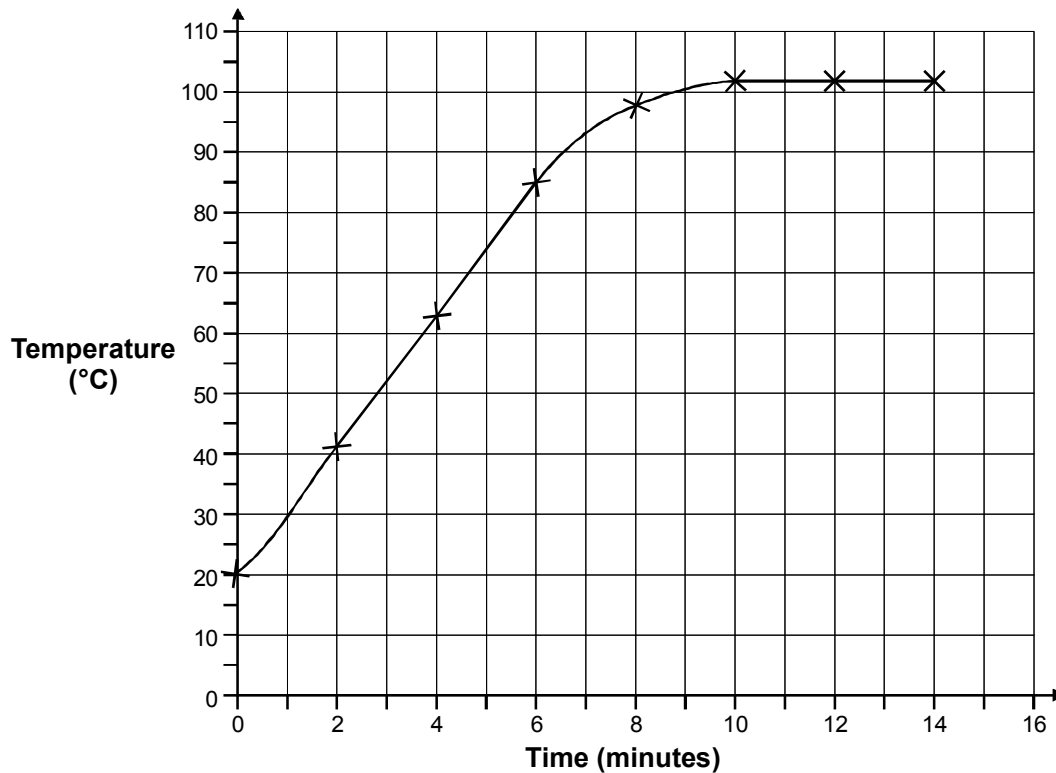
.....
.....

1 mark

12. Water and salt

(a) Some children watch salty water being heated. They measure the change in temperature over 14 minutes.

They make a graph of their results. The graph shows at what temperature their salty water boiled.



Use the graph. At what temperature did their **salty water** boil?



..... °C

1 mark

(b) After 14 minutes, they keep the pan on the heat.

Look at the graph. What will happen to the **temperature** of the salty water when they heat it for three more minutes?



.....

1 mark