

Sc

# Science test

KEY STAGE

2

LEVELS

3-5

## Test A

First name \_\_\_\_\_

Last name \_\_\_\_\_

School \_\_\_\_\_



For marker's use only

Page	Marks
5	
7	
9	
11	
13	
15	
17	
19	
21	
<b>TOTAL</b>	

2007



# INSTRUCTIONS

Read this carefully.

You have **45 minutes** for this test.

## Answers



This pencil shows where you will need to put your answer.

For some questions you may need to draw an answer instead of writing one.

Some questions may have a box like this for you to write down your thoughts and ideas.

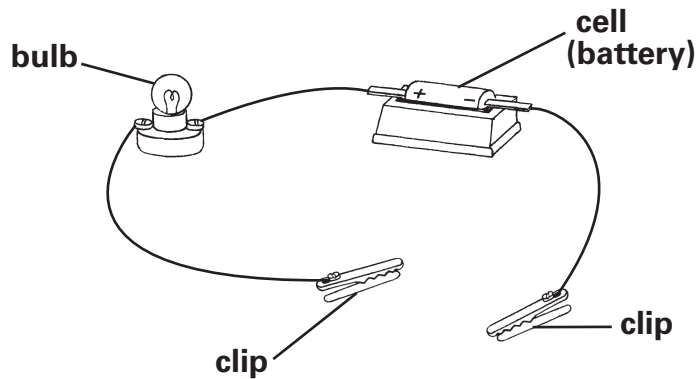
A large, empty rounded rectangular box intended for students to write their thoughts and ideas.



### Conducting electricity

- (a) Year 6 are testing objects to see if they conduct electricity.

The children use this circuit to test the objects.



The children place the objects between the clips.

How will the children know if each object conducts electricity?



.....

1a  
1 mark

- (b) 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	

1bi  
1 mark

1bii  
1 mark

- (a) Alisha and Peter have some small sweets.  
Peter puts one on his tongue.



Peter made a plan to test his idea that the sweet **dissolves**.

**Peter's plan**

Step 1	Step 2	Step 3
Put sweet in 50cm <sup>3</sup> of cold water.	Leave the sweet from 9:00am until 11:00am.	Observe the result.

How long did Peter plan to leave the sweet in water?

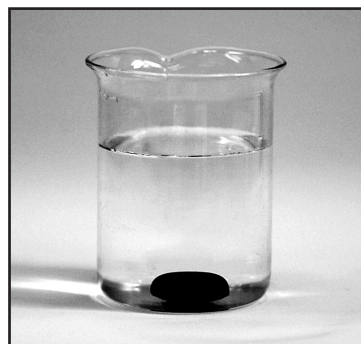
2a  
1 mark



..... hours

- (b) Peter took photographs of the sweet in the beaker at the beginning and end of his investigation.

9:00am Beginning of  
Peter's investigation



Photograph A

9:20am End of  
Peter's investigation



Photograph B

What part of his plan did Peter change when he carried out the investigation?



.....  
.....

2b  
1 mark

(c) Look at photographs A and B.

Use the evidence in photographs A and B to write a conclusion for Peter's investigation.



.....  
.....

2c  
1 mark

(d) Alisha made a plan to test her idea that the sweet **melts** rather than dissolves.

Where should Alisha put her sweet to test her idea that it **melts**?

Tick **ONE** box.



a cold place

a hot place

a dry place

a wet place

2d  
1 mark

- (a) Rosie is doing a survey about canine teeth. She counts the number of adult canine teeth each pupil in year 4 has. She also counts the number of adult canine teeth each pupil in year 6 has.

Number of adult canines	Number of pupils	
	Year 4	Year 6
0	###	
1	###	
2	### ###	
3		
4		### ### ### ###

How many pupils in year 4 have only **two** adult canine teeth?

3a  
1 mark



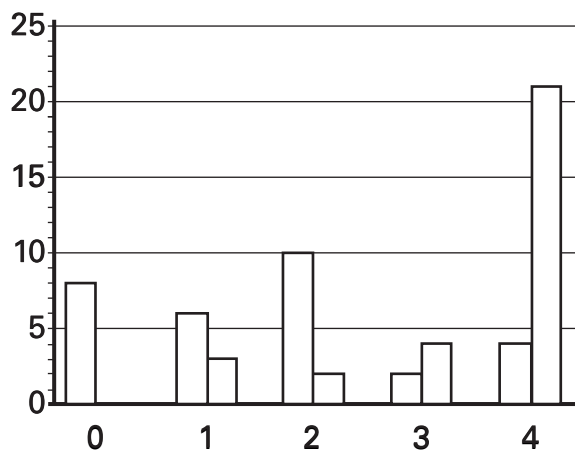
..... pupils

- (b) Rosie draws the bars for year 4 and year 6 on the graph below to show her results. She has not shaded in the bars for year 6.

Shade in the bars for year 6 on the graph below. Use the key and table to help you.



Number of pupils



**KEY**  
 year 4  
 year 6

3b  
1 mark

Number of adult canine teeth



- (c) Rosie knows that to keep her teeth healthy she should not eat too many sweets and other sugary foods.

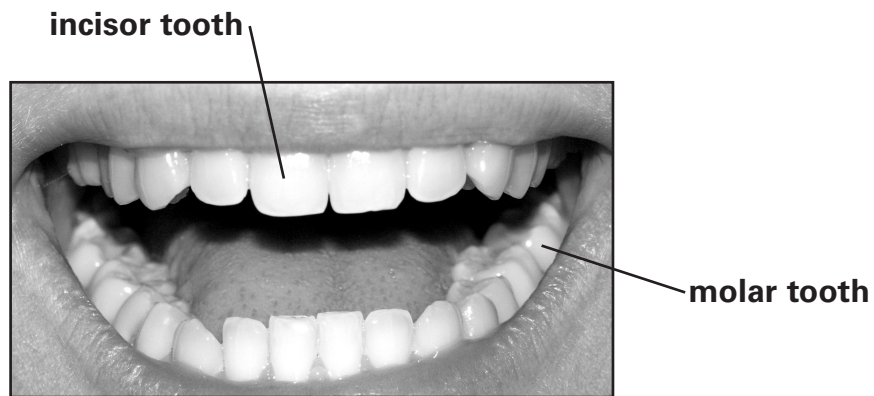
Name **ONE other** thing that Rosie can do to help keep her teeth healthy.



.....

3c  
1 mark

- (d) Different teeth have different functions when we eat food.



What function do the **incisor teeth** have that molar teeth do not?



.....

3d  
1 mark

- (e) Write **true** or **false** next to each of the statements below.

**True or false?**

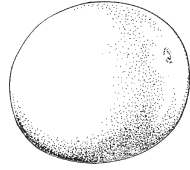


Children lose their first teeth and grow new teeth. ....

Human teeth can reproduce. ....

3e  
1 mark

- (a) Martin is making a model of the Earth, Sun and Moon. He collects some objects that can be used to model the Earth, Sun and Moon.



melon



pea



poppy seed

Write **Earth**, **Sun** and **Moon** in the table below to show what each object should model.



Object	melon	pea	poppy seed
What it models			

4a

1 mark

- (b) What shape are the Earth, Sun and Moon in space?

4b

1 mark



.....

- (c) Martin uses his model to show what causes day and night.

How can Martin show what causes **day and night** using his model?

Tick **ONE** box.



spin the Earth on its axis

move the Earth around the Sun

spin the Sun on its axis

move the Sun around the Earth



4c

1 mark

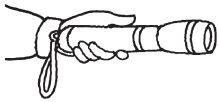
(d) Complete the sentence below about the Moon's orbit.



The Moon orbits the Earth once every.....

4d  
1 mark

(e) Martin shines a torch on a globe.  
It models the Sun shining on the Earth.



Estimate what time of day it would be on the Earth at place A.

Places B and C have been done for you.



Place	Time of day
A	
B	6pm
C	9pm

4e  
1 mark

- (a) Jamal is thinking about how to keep ice cubes from changing into water on a hot day.

Jamal says 'I think if you put the ice cubes inside lots of plastic bags they will stay frozen for longer.'

Tick **ONE** box to show what sort of statement Jamal has made.



an observation

a prediction

a conclusion

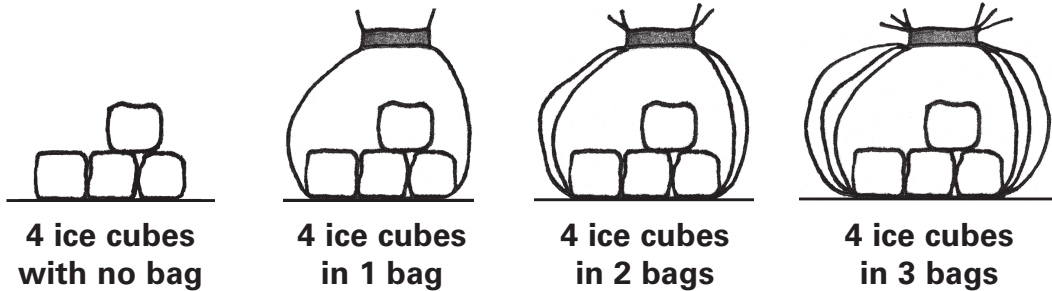
a measurement



5a

1 mark

- (b) Jamal puts four ice cubes in different numbers of plastic bags.



He records the time it takes the ice cubes to change to water.

Name the process that describes the change from ice to water.

5b

1 mark



.....

(c) Jamal records his results in a table.

Number of plastic bags	Time for ice to change to water (minutes)
0	140
1	160
2	205
3	225

Choose **ONE** word from the box below to complete the sentence about the plastic bags.

**dissolved   condensed   heated   insulated   evaporated**



The table shows that the ice is ..... by the plastic bags so that the ice changes to water more slowly.

5c  
1 mark

(d) Tick **ONE** box to show the temperature of water when it changes to ice.



-10°C

0°C

10°C

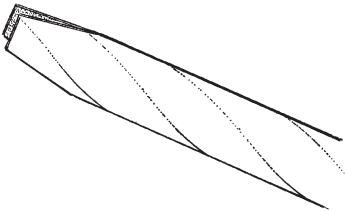
100°C

5d  
1 mark

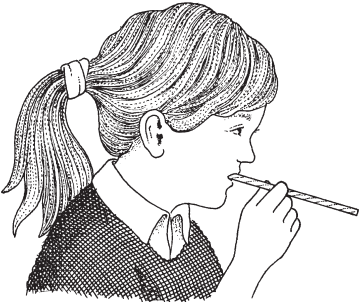
6

Straw sounds

(a) Polly has a straw.  
She cuts one end of the straw.




She blows into the cut end of the straw.  
It makes a sound.



The sound is caused by vibrations.

Name **TWO** things that vibrate to cause this sound.

6a  
1 mark

 ..... and .....

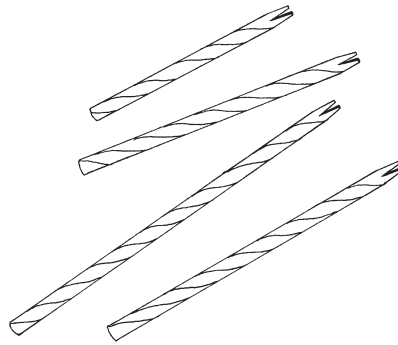
(b) Polly thinks that changing the length of the straw may change how high or low the note is.

What is the scientific name for how high or low a note is?

6b  
1 mark

 .....

- (c) Polly cuts four identical straws into different lengths.



Her friends blow gently into the straws. The note from each straw is different. Some notes are high and some are low.

Describe how the length of a straw affects how high or low the note is.



.....  
.....



6c

1 mark

- (d) (i) Tania says 'Polly's test is not a fair test because a different person is blowing into each straw.'

Why might Polly's test **not** be a fair test if different people blow into each straw?



.....  
.....



6di

1 mark

- (ii) Polly says 'It might not be a fair test even if one person blows into each straw.'

Explain why it might **not** be a fair test even if one person blows into each straw.



.....  
.....



6dii

1 mark



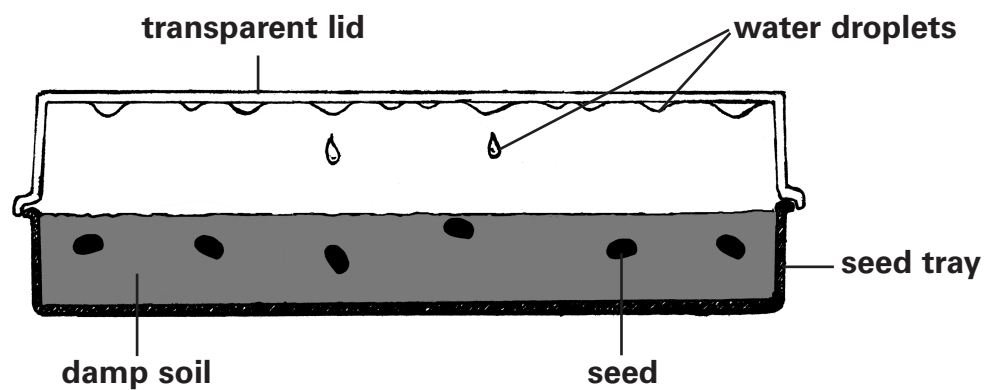
- (a) Nadif is growing some plants from seeds.



He takes a seed tray and fills it with damp soil. He plants some seeds. Then he puts a transparent lid over the top.

Nadif checks his seeds each day.

He notices that drops of water appear on the inside of the lid.



What is the scientific name for the process where water vapour changes into water?



7a

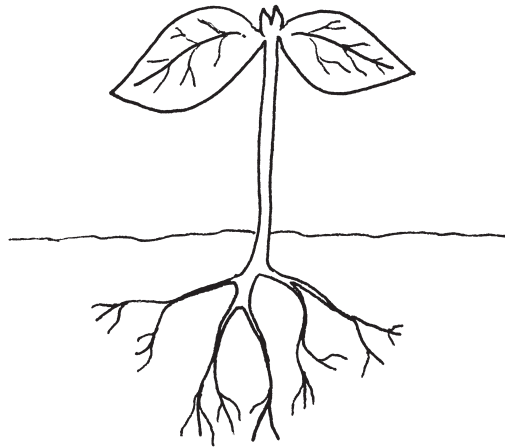
1 mark



.....



- (b) First, the small seedling uses food in the seed to help it grow.  
As it grows, the food in the seed is used up.  
Then the young plant makes new food for growth.



In what part of the plant is new food made for growth?



.....

7b

1 mark

- (c) Why is it important for the young plant that the lid of the seed tray is transparent?



.....

7c

1 mark

- (d) The root of the young plant anchors it into the soil.

Give **ONE** other way the root helps the young plant grow.



.....

.....

7d

1 mark

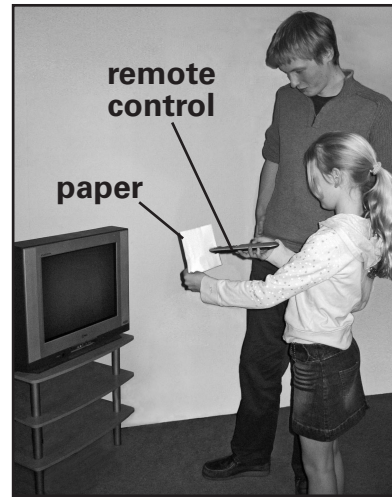
## Remote control

- (a) Ruth wants to find out how well the remote control turns on her TV when different materials are put in front of it.

Ruth holds writing paper in front of the remote control.  
The TV still turns on.  
Ruth steps back until the remote does not turn the TV on.

Ruth repeats the test with different materials.

The table below shows her results.

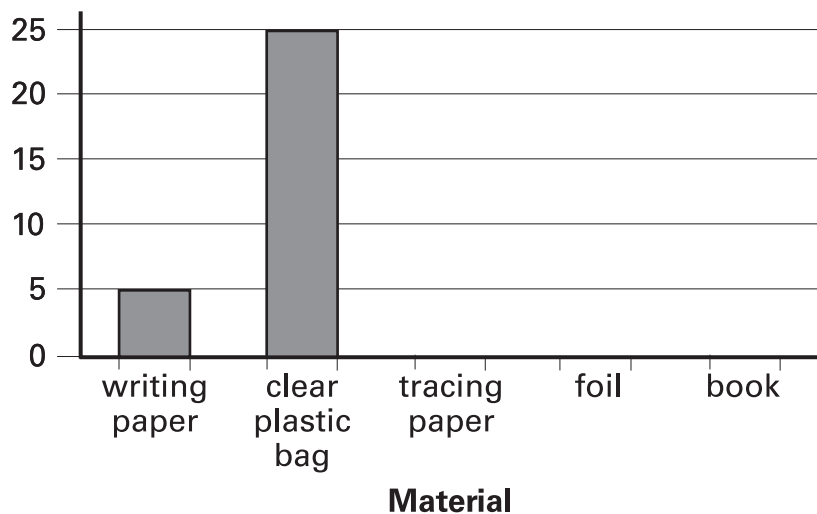


Material	Distance from TV when remote does not work (steps)
writing paper	5
clear plastic bag	25
tracing paper	8
foil	0
book	0

Complete the graph to show the results for the tracing paper.



Distance from TV when remote does not work (steps)



8a  
1 mark

- (b) Ruth's brother says she should not test the book as it makes the test unfair.

Why does the book make her test unfair?



.....

8b

1 mark

- (c) Ruth's brother repeats the investigation to check the results. He takes fewer steps back for each material before the TV does not turn on.

Tick **ONE** box to explain why Ruth's brother takes fewer steps back before the TV does not turn on.



he presses the remote control harder

he uses smaller pieces of each material

his steps are bigger

the batteries in the remote control are newer

8c

1 mark

- (d) Ruth could improve her investigation by getting more accurate results.

Describe how Ruth could get more accurate results.



.....

8d

1 mark

- (e) Ruth sees a pattern in her results. She states 'My results suggest that the remote control uses light to turn on the TV.'

Describe the evidence in Ruth's table of results that supports her statement.



.....

.....

8e

1 mark

- (a) Yeast is a type of micro-organism.  
Class 6G know that bread needs yeast to rise.  
The yeast must be mixed with water and sugar.

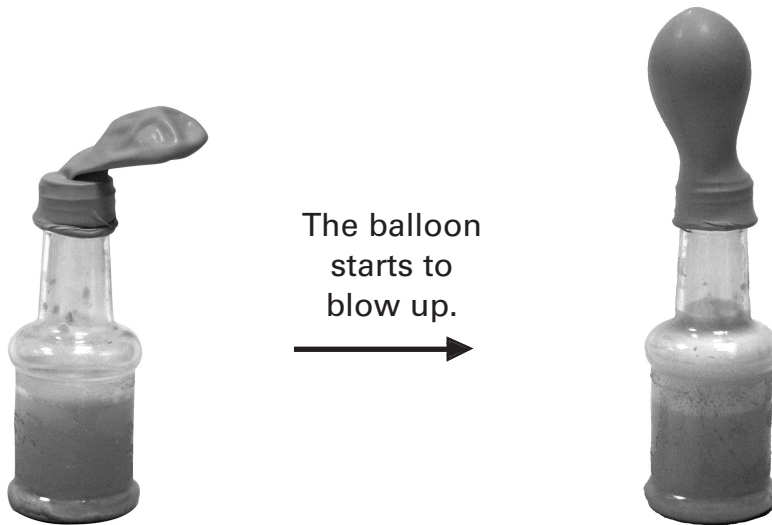
They want to find out if the temperature of the water affects the yeast.  
They put sugar in a bottle and add water at a temperature of 20°C.

Name the scientific word that describes what happens to the sugar when it is mixed with water.

9a  
1 mark


 .....

- (b) The class then add yeast to the sugar and water in the bottle.  
They put a balloon over the top of the bottle. They time how long it takes for the balloon to stand up.



Write **true** or **false** next to each statement about the investigation.

**True or false?**

 A gas is produced by the yeast. ....

A reversible change has happened. ....

The balloon is flexible. ....

9b  
1 mark

- (c) The class repeat the test using water at different temperatures. The teacher adds the same amount of yeast, sugar and water each time. The table below shows their results.

Temperature of water (°C)	3	20	30	50
Time taken for balloon to stand up (mins)	52	18	16	4

Describe how the **temperature** of the water affects the **time taken** for the balloon to stand up.



.....

.....

9ci

1 mark

9cii

1 mark

- (d) A cook book says that yeast works **most quickly** with water at a temperature of 20°C to 30°C.

- (i) Tick **ONE** box to show if the results in the table support the information in the cook book.



yes

no

- (ii) Use examples from the results table to help you explain your answer.



.....

.....

9d

1 mark

**END OF TEST**

**Please check your answers**

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