

Sc

Science test

KEY STAGE

2

LEVELS

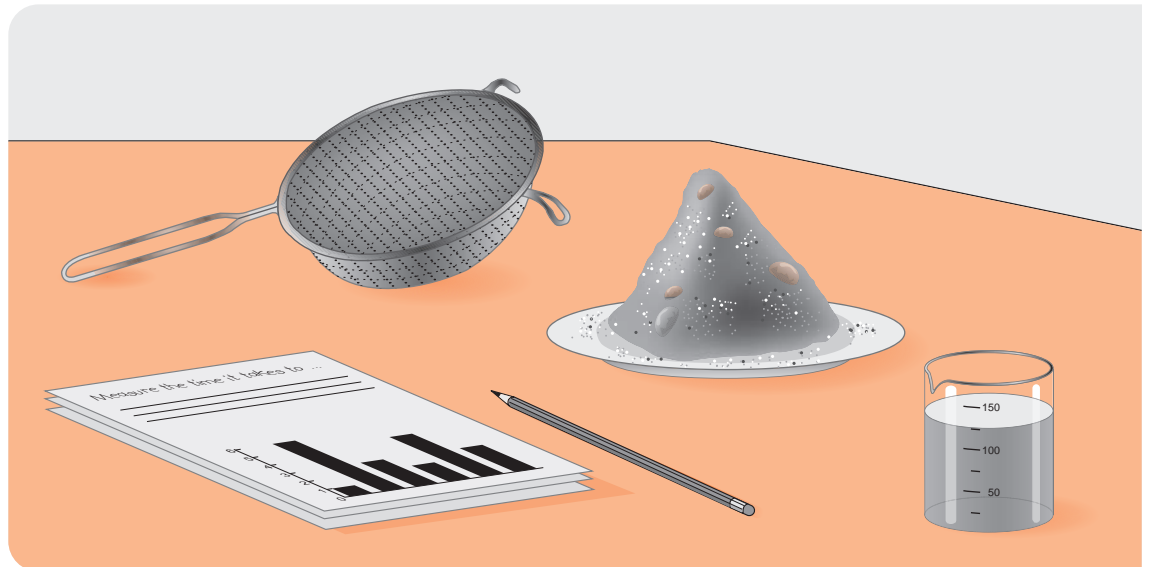
3-5

Test A

First name _____

Last name _____

School _____



2008

For marker's use only

| Page | Marks |
|--------------|-------|
| 5 | |
| 7 | |
| 9 | |
| 11 | |
| 13 | |
| 15 | |
| 17 | |
| 19 | |
| 21 | |
| TOTAL | |

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.

1

Solids, liquids and gases

- (a) Megan has three cups.
There is a solid in one cup, liquid in another, and gas in another.

Megan writes a description of what is in each cup.

Draw **THREE** lines to match solid, liquid and gas to the best description of what is in each cup.



solid

Description
I cannot see anything inside the cup.

liquid

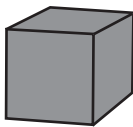
I cannot pour the material out of the cup.

gas

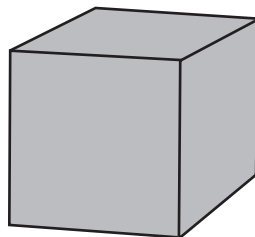
When I move the cup, the material changes shape.

1a
1 mark

- (b) Megan's teacher says gases spread out to completely fill up any container.



A small container of gas.



All of the gas from the small container can fill up a big container.

Write **yes** or **no** in each row to complete the table.



| | Do they spread out to completely fill up any container? |
|---------|---|
| Gases | yes |
| Liquids | |
| Solids | |

1b
1 mark

2

Teeth

(a) Sue wants to find out how four **different** drinks affect teeth.

Egg shell and teeth are made of the same type of material.

Sue puts the same amount of egg shell in four beakers.

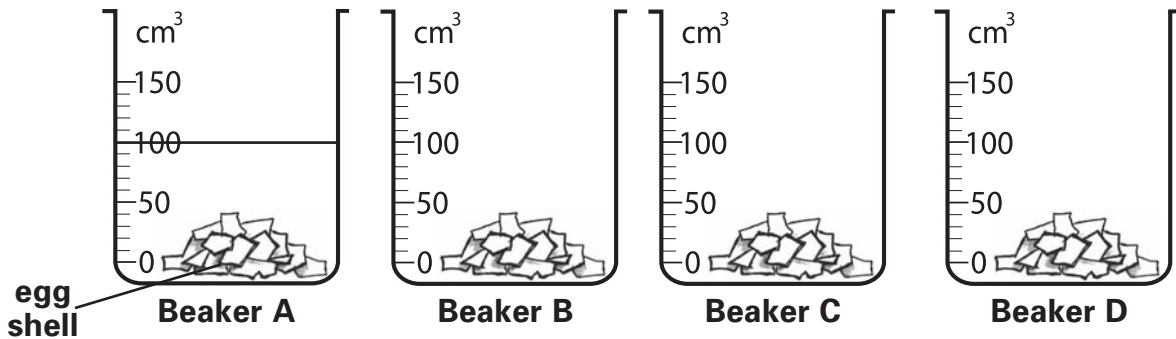
She puts a **different** drink into each beaker.

Show how much drink Sue must put in each beaker for her test to be fair. Draw a line on beakers B, C and D.

Beaker A has been done for you.



1 mark



(b) After six days, Sue looks in the beakers.

Beaker C has the **least** amount of egg shell left in it.

Tick **ONE** box to show which drink is most likely to be in beaker C.



1 mark

| | | | |
|----------|--------------------------|-------|--------------------------|
| lemonade | <input type="checkbox"/> | milk | <input type="checkbox"/> |
| tea | <input type="checkbox"/> | water | <input type="checkbox"/> |

(c) Sue decides to drink less of the drink in beaker C to help stop tooth decay.

Give **TWO other** ways Sue can help stop tooth decay.



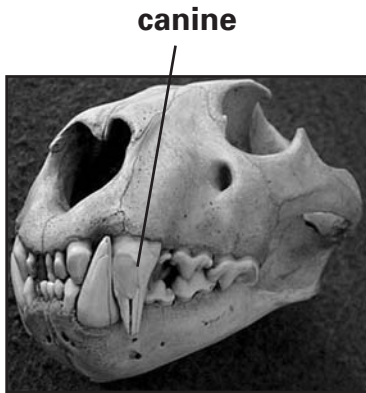
(i)

(ii)

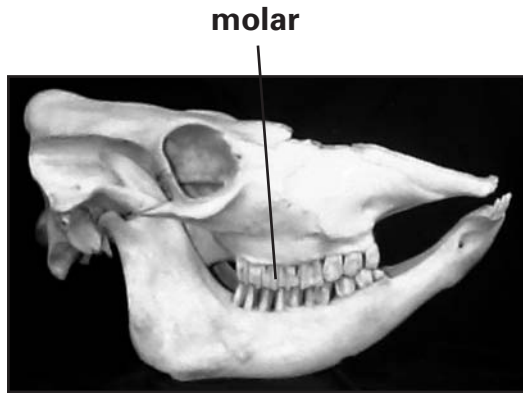
2ci
1 mark

2cii
1 mark

(d) The shape of animals' teeth can be different because they eat different things.



Lion



Cow

A lion has long, sharp canine teeth for eating meat.

(i) How do canine teeth help the lion to eat meat?



.....

2di
1 mark

A cow has large, flat molar teeth for eating grass.

(ii) How do molar teeth help the cow to eat grass?



.....

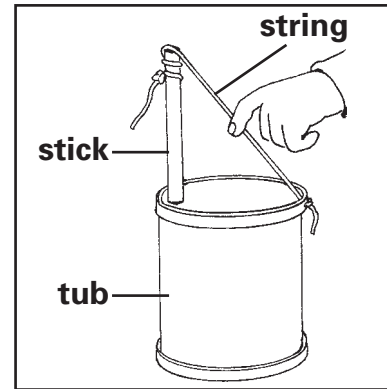
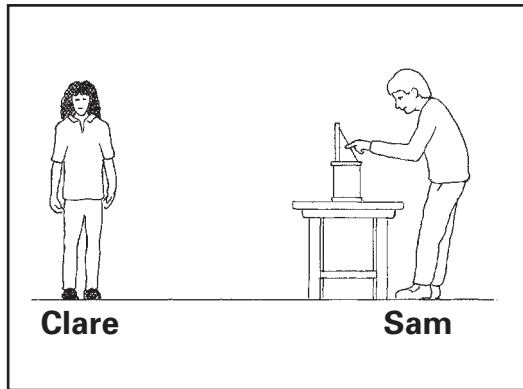
2dii
1 mark

1 mark

3

String instruments

- (a) Sam makes a string instrument. He ties the string tightly. He plucks the string. The instrument makes a sound.



Clare hears the sound.

What does the sound travel through to reach Clare's ear?

3a
1 mark



.....

- (b) Sam plucks the string again. It sounds louder.

How did Sam pluck the string with his finger to make it sound louder?

3b
1 mark



.....

(c) Clare looks carefully at the string as Sam plucks it.

When Clare looks carefully at the string, what can she see that tells her the string is making the sound?



.....

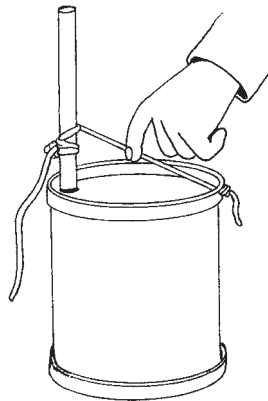
3c

1 mark

(d) Sam makes the string shorter by tying it further down the stick.

He ties it tightly.

He plucks the string.



How is the sound of the **shorter** string **different** from the sound of the longer string?

Tick **ONE** box.



With the shorter string...

- the note is lower.
- the note is higher.
- the sound lasts longer.
- the sound travels further.

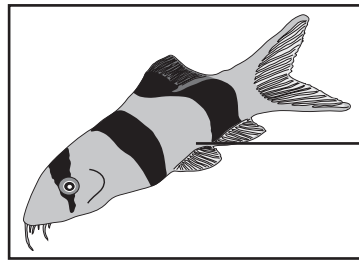
3d

1 mark

4

Fish tank

(a) Neil has a tropical fish tank. He has Clown Loach fish in his tank.



Clown Loach fish

Algae also grow in his tank. Algae are small green plants. Neil moves his fish tank from a dark corner into the sunlight.

Tick **ONE** box to show what will happen to the algae in Neil's tank when he puts it into sunlight.



More sunlight will make the algae (green plants)...

stop growing.

die.

grow more quickly.

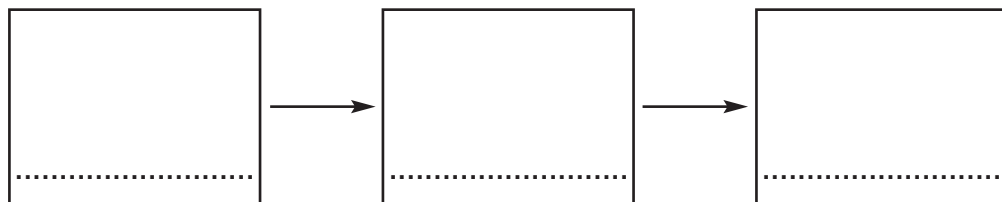
turn yellow.

4a
1 mark

(b) Neil wants to keep his fish tank clean of algae. He knows **water snails** eat **algae**. Neil decides to buy water snails.

He then reads that **Clown Loach fish** eat water snails.

Write the food chain for the Clown Loach fish.

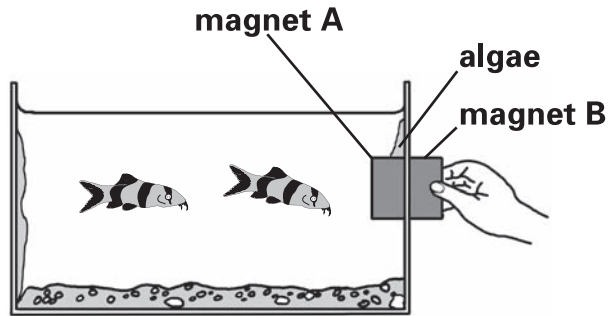


4b
1 mark

- (c) Instead, Neil uses two magnets to clean algae off the sides of the tank. He puts magnet B on the outside and magnet A on the inside.

Neil moves magnet B on the outside of the tank.

As he moves magnet B, magnet A moves with it.



Magnet A scrapes away the algae inside the tank.

Explain why magnet A moves with magnet B.



.....

4c
1 mark

- (d) Neil must keep the temperature of the water at 25°C to keep his fish healthy.

This thermometer shows the temperature of the water in Neil's tank.



- (i) Tick **ONE** box to show if the temperature of the water will keep the fish healthy.



yes no

- (ii) Explain your answer.



.....
.....

4d
1 mark

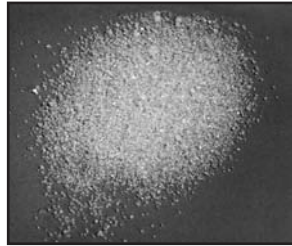
5

Sieves

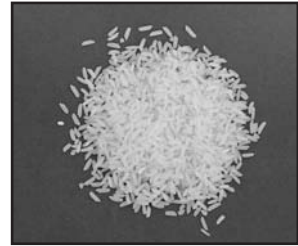
(a) Ahmed uses different sieves to separate different mixtures. His mixtures are made of salt, sugar, rice, dried peas and pasta.



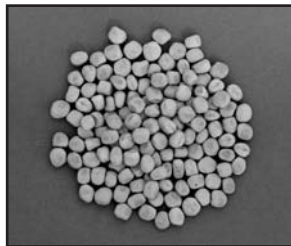
Salt



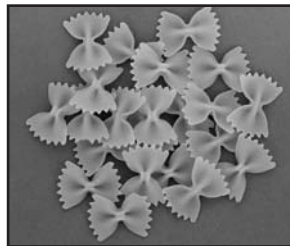
Sugar



Rice



Dried peas



Dried pasta

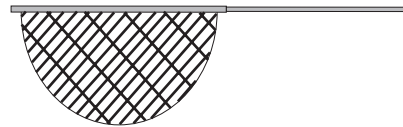
Ahmed has three sieves. Draw **THREE** lines to match each mixture to the sieve that separates the mixture.



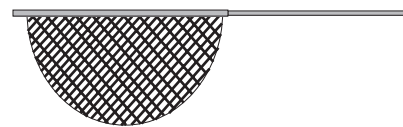
Mixture

Sieve

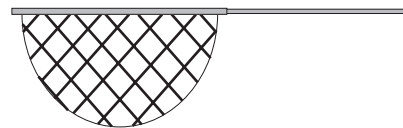
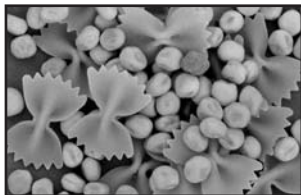
Salt and rice



Rice and peas



Peas and pasta



5a
1 mark

(b) Ahmed **cannot** separate a sugar and salt mixture with any of his sieves.

Explain why both the sugar and salt go through all Ahmed's sieves.



.....

5b

1 mark

(c) Ahmed mixes salt and water.
Salt and water cannot be separated with any sieve.

(i) Explain what happens to the salt when he mixes it with water.



.....

5ci

1 mark

(ii) Describe how Ahmed could separate a mixture of salt and water.



.....

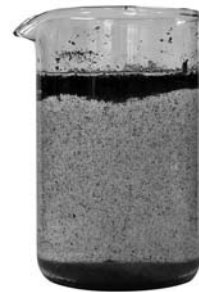
.....

5cii

1 mark

(d) Ahmed makes a new mixture of soil and water.

He sieves the mixture. Some of the soil stays in the sieve but some soil goes through the sieve with the water.



What is a better way for Ahmed to separate more of the soil from the water **quickly**?



.....

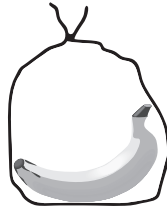
5d

1 mark

6

Bananas

- (a) Alan hears that bananas ripen and turn yellow more quickly if they are kept with a ripe apple. He takes two bags and puts an unripe, green banana in each. Then he puts a ripe apple in one of the bags.



Bag A



Bag B

Write **true** or **false** next to each statement below to show how Alan should make the test fair.



To make the test fair...

True or false?

6ai
1 mark

both bananas must be unripe.

.....

6aia
1 mark

an apple must be put in both bags.

.....

the bags must be left in the same place.

.....

- (b) Alan leaves the bags for 7 days. His results are shown below.

TEST 1:

| |
|--|
| <p>Results after 7 days The banana in bag A is green. The banana in bag B is yellow. The apple in bag B has not changed.</p> |
|--|

Tick **ONE** box to show what Alan has recorded.



measurements


predictions

observations

conclusions

6b
1 mark

(c) (i) Tick **ONE** box to show if the results from Test 1 support the statement that apples make bananas ripen more quickly.

 yes no

(ii) Give examples from Alan's results to explain your answer.



6c
1 mark

(d) Alan does a second test. He puts different types of ripe fruit in bags with a green banana. He leaves the bags for 7 days. His results are shown below.

TEST 2:

| Bag | What fruit is in the bag with the banana? | After 7 days, the banana is... |
|-----|---|--------------------------------|
| C | nothing | yellow |
| D | lemon | yellow |
| E | orange | yellow |
| F | grapes | yellow |


What question was Alan investigating?



6d
1 mark

(e) Alan says 'My results are **not** what I expected. I must do Test 2 again to check my results.'
Look at the results for **both** of Alan's tests.

What evidence from **Test 1** shows that the results from **Test 2** need to be checked?

 In Test 1

.....

6e
1 mark

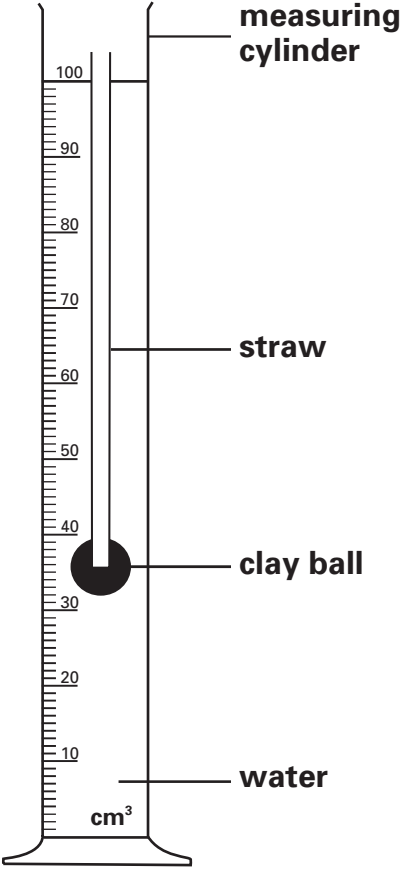
7

Floating on salty water

(a) Dominic wants to find out if the saltiness of water affects how well things float.

Dominic pushes a straw into a clay ball. He puts them in a measuring cylinder filled with water.

Dominic notices the bottom of the clay ball floats level with 32 cm³ on the measuring cylinder.



(i) What force is pulling down on the straw and clay ball?

1 mark

.....

(ii) What force makes the straw and clay ball float even though there is a force pulling them down?

1 mark

.....

- (b) Dominic records the height of the clay ball in the measuring cylinder. Then he repeats his test. Each time he adds another teaspoon of salt to the water.
The table below shows his results.

Estimate the height of the clay ball in the measuring cylinder when two teaspoons of salt are added.



| | | | | |
|---|----|----|-------|----|
| Amount of salt in water (teaspoons) | 0 | 1 | 2 | 3 |
| Level at which clay ball floats (cm³) | 32 | 34 | | 39 |

7b
1 mark

- (c) Tick **ONE** box to show which material caused the forces acting on the straw and clay ball to change.



water salt sand air

7c
1 mark

- (d) Circle the correct word from each box to complete the sentence about the force on the clay ball.



The greater the

| |
|------------------|
| upwards |
| downwards |

 force on the clay ball,

the

| |
|---------------|
| higher |
| lower |

 it floats.

7d
1 mark

8


Sleeping babies

- (a) Scientists have found out that babies who spend more time in daylight sleep better at night.



To test their idea, the scientists needed to find out how well some babies sleep at night normally.

What could the scientists measure or observe to find out how well babies sleep?




.....

8a
1 mark

(b) The scientists asked the parents to increase the time their babies spend in daylight. They measured how well the babies slept again.

Write **yes** or **no** next to each statement to show how parents could increase the time their baby spends in daylight.

|  Parents could... | Would the baby spend more time in daylight? | |
|--|---|---|
| play with the baby more often in the garden. | | <input type="checkbox"/> 8bi 1 mark |
| keep the curtains closed in the baby's room. | | <input type="checkbox"/> 8bii 1 mark |
| take the baby for a walk in the pram. | | <input type="checkbox"/> 1 mark |


(c) The parents must be careful that the sunlight does not burn the baby.

Describe **ONE** way parents can keep babies safe in sunlight.

 8c
1 mark

(d) To test their idea, the scientists needed to do the test with more than one baby.

Explain why they needed to do the test with more than one baby.


..... 8d
1 mark

9

Candle

(a) When a candle is lit, some changes happen.

Some of the wax melts.
Some of the wax burns.



Are the changes in the table reversible?
Write **yes** or **no** in each row.



| Change | Is the change reversible? |
|----------------|---------------------------|
| The wax melts. | |
| The wax burns. | |

9a
1 mark

(b) Write **true** or **false** next to each statement below.

True or false?



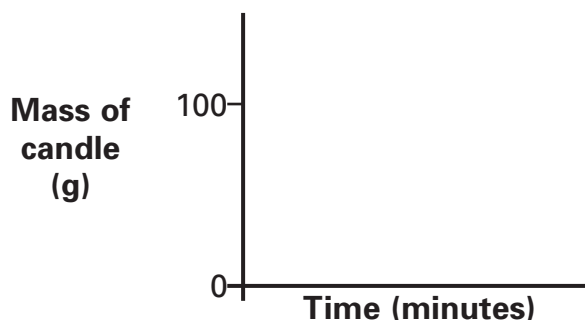
The wax must be heated to melt.

When a solid melts it changes into a gas.

Temperature shows how hot or cold something is.

9b
1 mark

(c) Draw a line on the graph to predict what will happen to the mass of a 100 g candle when it is lit.



9c
1 mark

END OF TEST

Please check your answers

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