TEST B
INSTRUCTIONS

Read this carefully.

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

**Answers**

This 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) Halim watches dead leaves in a bonfire. He can see smoke rising from the fire.

Tick **ONE** box to show what the smoke is.

Smoke is ...
- liquid from evaporation. [ ]
- new materials made by burning. [ ]
- liquid from melting. [ ]
- new materials made by the leaves. [ ]

(b) The next day, Halim’s teacher holds some materials over a candle flame.

Describe **ONE** thing in the picture that Halim’s teacher has done to help make the investigation safe.

- tongs
- wood
- sand
- metal dish
(c) Halim records the results in a table.

Write **yes** or **no** in each row to show whether the changes are reversible.

<table>
<thead>
<tr>
<th>Material</th>
<th>Does it burn?</th>
<th>Is the change reversible?</th>
</tr>
</thead>
<tbody>
<tr>
<td>wood</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>bread</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

(d) Halim wants to know what other materials will burn.

Tick the boxes next to all the materials below that burn in a candle flame.

One has been done for you.

- cardboard ✔
- cotton wool
- stone
- kitchen foil
- newspaper
- steel spoon
(a) Emma makes a stick puppet. She draws a face on it. The puppet has a metal crown. When Emma shines a light on the puppet, the crown looks shiny.

Why does the metal crown look shiny when the light is on it?

............................................................................................................................................
............................................................................................................................................

(b) Draw **TWO** arrows on the diagram below to show how Emma can see the light shining on the puppet’s crown.
(c) When the light shines on the puppet, Emma can see a shadow of the puppet on the wall behind.

Why does a shadow form behind the puppet when the light shines on it?

................................................................................................................
................................................................................................................

(d) Which of the following shows the correct shadow of Emma’s puppet?

Tick ONE box.

- [ ]
- [ ]
- [ ]
- [ ]
(a) Some children set up an investigation as shown below.

They split part of a plant in half. They put one half in water and the other half in water mixed with blue dye.

After some time, half of the flower turns blue.

What part of the plant did the dye travel through to get to the flower?
(b) Predict what would happen if the children put a bunch of white flowers into **red** dye.

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(c) For which life process is the **flower** important to the plant?

Tick **ONE** box.

- reproduction
- growth
- nutrition
- movement

(d) Draw **three** lines to match each part of the flower to its function.

<table>
<thead>
<tr>
<th>Flower part</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>stamen</td>
<td>seeds are made here</td>
</tr>
<tr>
<td>ovary</td>
<td>produces the pollen</td>
</tr>
<tr>
<td>stigma</td>
<td>pollen collects here</td>
</tr>
</tbody>
</table>
(a) Some children draw a food chain about living things they see in the garden. There is a mistake in their food chain.

![Diagram of food chain: cabbage → caterpillar → bird → cat]

What is the mistake in their food chain?

(b) The children correct their food chain. They make a table showing if each animal in the food chain is a predator, prey or both.

Tick ONE box in each row of the table to show whether each animal in the food chain is a **predator**, **prey** or **both**.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Predator</th>
<th>Prey</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>caterpillar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bird</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cat</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(c) Which word best describes the function of the **cabbage** in the food chain?

Tick ONE box.

- fertiliser
- consumer
- organism
- producer
(d) The children make a table about some other animals they found.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Where they found it</th>
<th>Number of legs</th>
<th>Number of wings</th>
</tr>
</thead>
<tbody>
<tr>
<td>mayfly</td>
<td>near the pond</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>spider</td>
<td>in the grass</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>female glow-worm</td>
<td>in the grass</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>duck</td>
<td>near the pond</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

They use their table to make a key.

(i) Use the table above to help you write in the missing question on the key below.

(ii) Write the name of each animal from the table in the correct box on the key below.

One has been done for you.

Question:
Does it have six legs?

Yes

Question:
Does it have wings?

Yes

Question:
………………………….

No

………………………….

Yes

………………………….

No

………………………….

spider
Dissolving sugar

(a) Look at the picture of Luis using a thermometer to measure the temperature of some water.

What is wrong with the way he is trying to measure the temperature of the water?

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(b) Luis and Jack want to find out how the temperature of water affects the time taken for sugar to dissolve.

What is the ONE factor they should change as they carry out their investigation?

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(c) Name ONE of the factors they should keep the same to make their investigation fair.

..............................................................................................................
(d) They carry out their investigation 3 times and record their results.

**Time taken for sugar to dissolve**

<table>
<thead>
<tr>
<th>Temperature of water (°C)</th>
<th>Time (minutes)</th>
<th>Test 1</th>
<th>Test 2</th>
<th>Test 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>8</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

For which temperature does one of the results seem unlikely?

........................................................................................................................................

................................................... °C

(e) Jack predicted that sugar will dissolve more quickly when the water is hotter.

(i) Is Jack’s prediction supported by the evidence in the table?

Tick **ONE** box.

   Yes [ ] No [ ]

(ii) Use the evidence in the table to explain your answer.

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Acid rain

(a) Sometimes rain mixes with pollution in the air to form acid rain. Some children want to find out what happens when acid rain falls on rocks.

Vinegar can be used to show the effects of acid rain. The children add vinegar to chalk rock. The pictures below show what happens.

Bubbles are produced.

Write **true** or **false** next to each sentence below.

- The change is non-reversible. ...............................................
- The bubbles evaporate. .............................................
(b) Write **solid, liquid** or **gas** next to each material in the table.

<table>
<thead>
<tr>
<th>Material</th>
<th>Solid, liquid or gas?</th>
</tr>
</thead>
<tbody>
<tr>
<td>inside the bubble</td>
<td></td>
</tr>
<tr>
<td>vinegar</td>
<td></td>
</tr>
<tr>
<td>chalk rock</td>
<td></td>
</tr>
</tbody>
</table>

(c) The children test more rocks. The table below shows their results.

<table>
<thead>
<tr>
<th>Rock</th>
<th>Are bubbles produced when vinegar is added?</th>
</tr>
</thead>
<tbody>
<tr>
<td>granite</td>
<td>no</td>
</tr>
<tr>
<td>sandstone</td>
<td>no</td>
</tr>
<tr>
<td>limestone</td>
<td>yes</td>
</tr>
<tr>
<td>slate</td>
<td>no</td>
</tr>
<tr>
<td>pumice</td>
<td>yes</td>
</tr>
</tbody>
</table>

Look at these pictures of a statue. The statue is in a city that has acid rain.

Statue when new

Same statue after 200 years

Use the table to name **ONE** rock that this statue could have been made from.

...............................
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.

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

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

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(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..........................................................................................

(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.

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

[Graph with bars labeled A, B, C showing brightness readings]

Circuit ....................... 电路 ....................... 电路 .......................
(a) Joanne is watching 5 brine shrimps in a container. She has covered the container to make one half dark and one half light.

(b) Amy and Rebecca planned to investigate whether brine shrimps prefer to swim in the light or the dark.

<table>
<thead>
<tr>
<th>Amy’s Plan</th>
<th>Rebecca’s Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Put 1 shrimp in one dish.</td>
</tr>
<tr>
<td></td>
<td>Watch the dish for 5 minutes.</td>
</tr>
<tr>
<td></td>
<td>Record the amount of time the shrimp was in the light.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Compare the amount of time the shrimp spent in the light with the time spent in the dark.</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td>Put 10 shrimps in one dish.</td>
</tr>
<tr>
<td></td>
<td>Watch the dish for 1 minute.</td>
</tr>
<tr>
<td></td>
<td>Count how many shrimps were in the light every 10 seconds.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Compare the number of shrimps seen in the light with the number out of sight in the dark.</td>
</tr>
</tbody>
</table>
Look at Amy’s plan.

What measurements should Amy compare to decide whether shrimps prefer light or dark?

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............................................................................................................................................

(c) Look at Rebecca’s plan.

How did Rebecca work out how many brine shrimps were in the dark each time she looked?

............................................................................................................................................

............................................................................................................................................

(d) Look at Amy’s and Rebecca’s plans.

(i) Which do you think is the better science plan?

Tick ONE box.

Amy’s [ ] Rebecca’s [ ]

(ii) Explain why.

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The water cycle

(a) This picture shows part of the water cycle.

Tick ONE box to say what the arrow shows.

- cold water rising
- water vapour condensing
- water evaporating
- gas changing to liquid

(b) Tick ONE box in each row to show if each sentence is true or false.

Clouds form ...

- from water produced by condensation. True False
- from water vapour in the air. True False

(c) In the water cycle, water from the sea becomes rain water.

Why is rain water not salty when it comes from salty sea water?

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Total
END OF TEST

Please check your answers