

Department of Science

SCIENCE SAMPLE PAPER

General information

1. You do **not** need to answer in full sentences.
2. You can write in pencil or pen.
3. If you are unsure about a question, read it again carefully and look for clues in the question. If you are still unsure, move on to the next question and come back to this one at the end.
4. Please do not worry if you have not covered some of the topics and skills in your current school – this lets us see which areas you might need a bit of help with at the start of Year 6.

Entry to Year 6

Q1. Circle the number which **best** completes each of the following sentences:

(a) An example of a vertebrate animal is:

1. worm
2. octopus
3. crocodile
4. beetle

(b) The force which pulls all objects to the centre of the Earth is called:

1. friction
2. gravity
3. upthrust
4. magnetism

(c) The ends of a magnet are called the:

1. tips
2. terminals
3. fields
4. poles

3 marks

Q2. (a) Jay and Lana want to find out how quickly cooking oil flows at different temperatures.

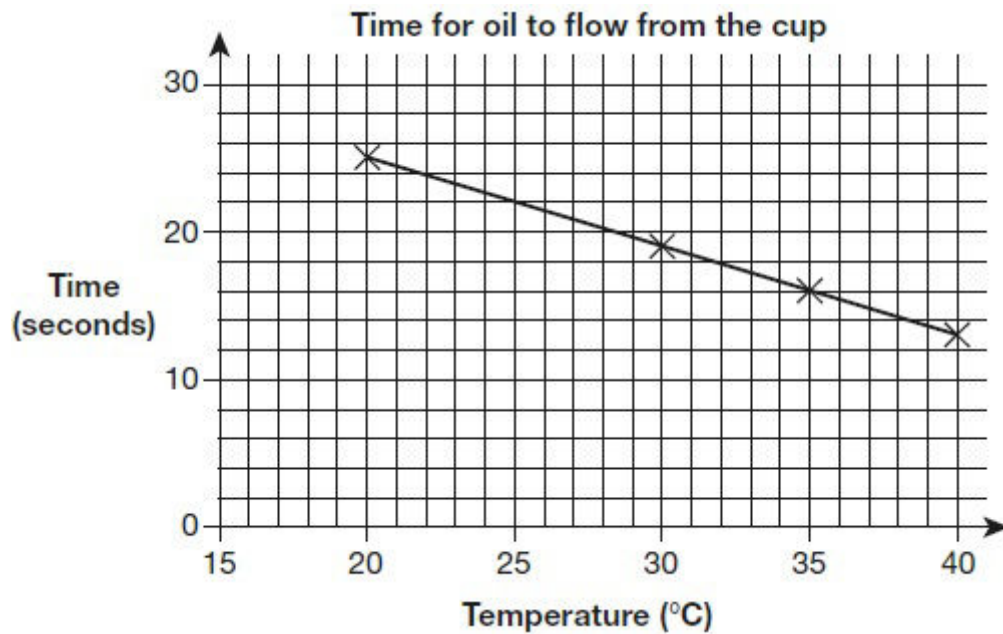
Jay has some oil at room temperature. He pours it into a cup with a hole in the bottom.

Lana measures the time it takes for 20 ml of oil to drip out of the cup.



They repeat this with oil heated to 30°C, 35°C and 40°C.

They record their results on a graph shown on the following page.



Use the graph to estimate how long it would take for the oil heated to **25°C** to drip out of the cup.



_____ seconds

1 mark

- (b) As the oil becomes hotter, it flows more easily.

This changes the time it takes to drip out of the cup.

Use the graph. Describe how the **temperature** of the oil affects the **time** taken for the oil to drip out of the cup.



1 mark

- (c) Describe **ONE** thing that Jay and Lana did to make their test fair.



1 mark

- (d) The teacher told Jay and Lana to heat the oil by putting it in a bowl of hot water.

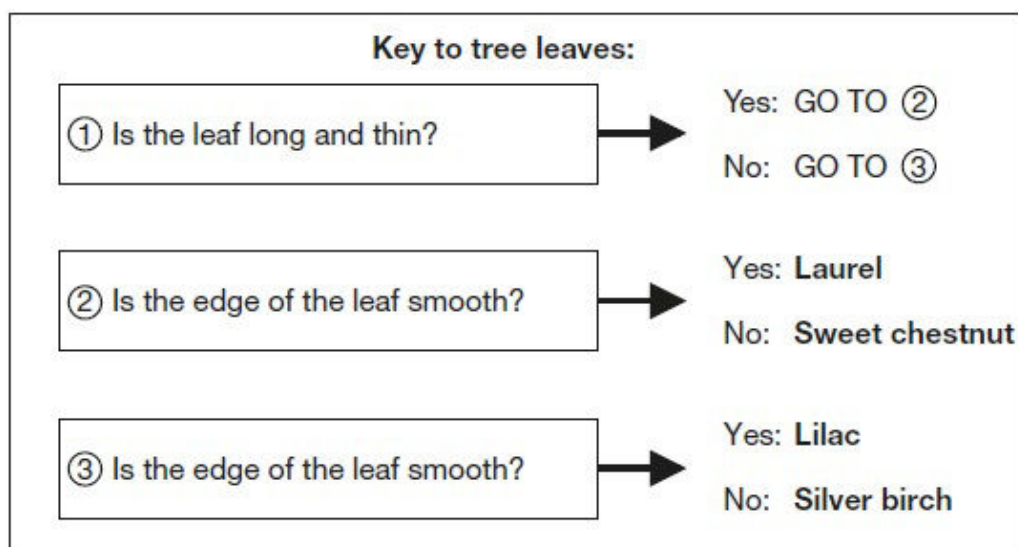


Give **ONE** reason why it could be dangerous to heat the oil over a flame.

1 mark

Q3. (a) 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.



(i) Use the key above to identify the tree it comes from.

The leaf is from a _____ tree. 1 mark

(ii) 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

(b) Complete the sentences below to show the function of the leaves and roots.

(i) The tree uses its leaves to _____.

1 mark

(ii) The tree has roots to _____.

1 mark

(c) Ella finds a seed.



Why does the tree need to produce seeds?

1 mark

(d) Squirrels live in trees.



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

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

How the feature helps: _____

_____ 1 mark

Q4. (a) Joe is finding out about the solar system. He writes four statements about the Sun.

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

True or False?

The Sun is a light source. _____

The Sun orbits the Earth. _____

The Sun is smaller than the Earth. _____

The Sun is a circle. _____

2 marks

(b) Joe finds out that days and years take different amounts of time on different planets.

Planet	Time for one day (Earth days)	Time for one year (Earth days)
Mercury	59	88
Venus	243	225
Earth	1	365
Mars	1	687
Jupiter	0.4	4329

Look at the table.

(i) Which planet has the shortest day?

1 mark

(ii) Which planet orbits the Sun quickest?

1 mark

(c)



Joe

The planets with shorter days have shorter years.

Look at the table above. Do the planets with shorter days have shorter years?
Tick **ONE** box.



yes

☐

no

☐

Use the information in the table to explain your answer.

1 mark

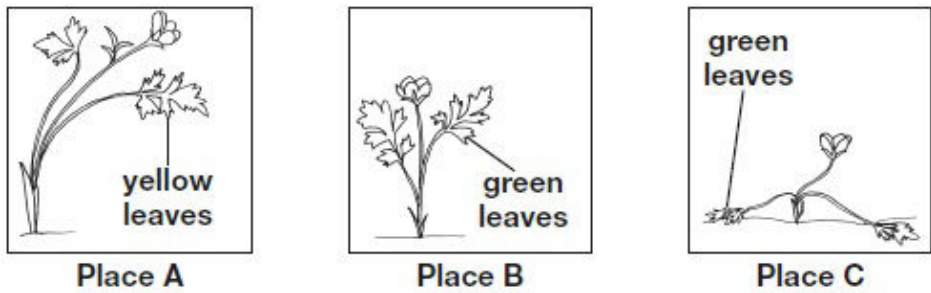
(d) All of the planets in our solar system have days and nights.

What movement in space causes day and night on Earth?

1 mark

Q5. (a) Some children are finding out about plants. They get three buttercup plants. They put each plant in a place with different conditions.

After two weeks, the buttercup plants look like this:



Write **A**, **B**, and **C** in the table below to match each place to the conditions found there.

Place	Conditions	
	Does the plant have light?	Does the plant have water?
	✓	✓
	✓	✗
	✗	✓

1 mark

(b) There are differences between plants. These differences help people sort plants into groups.

Write **true** or **false** next to each reason that explains why plants need to be sorted into groups.

Plants need to be sorted into groups...	True or False?
to stop plants becoming extinct.	
to help people identify plants	
to help plants reproduce.	

1 mark

- (c) The children look at different plants on the school field.

They record the number of common plantain and buttercup plants in 1m² in different places.



Common plantain



Buttercup

The children think they see a pattern in the place that the plants grow.

The table shows their results.

How many children are playing in each place?	Number of plants (in 1m ²)	
	common plantains	buttercups
lots	12	0
some	4	3
few	1	9

Describe the relationship between **how many children** are playing in a place and the **number of common plantains** found there.



1 mark

- (d) The buttercup plant has a long thin stem.

The long thin stem of the buttercup plant stops it surviving in places where lots of children play. Explain why.



1 mark

