

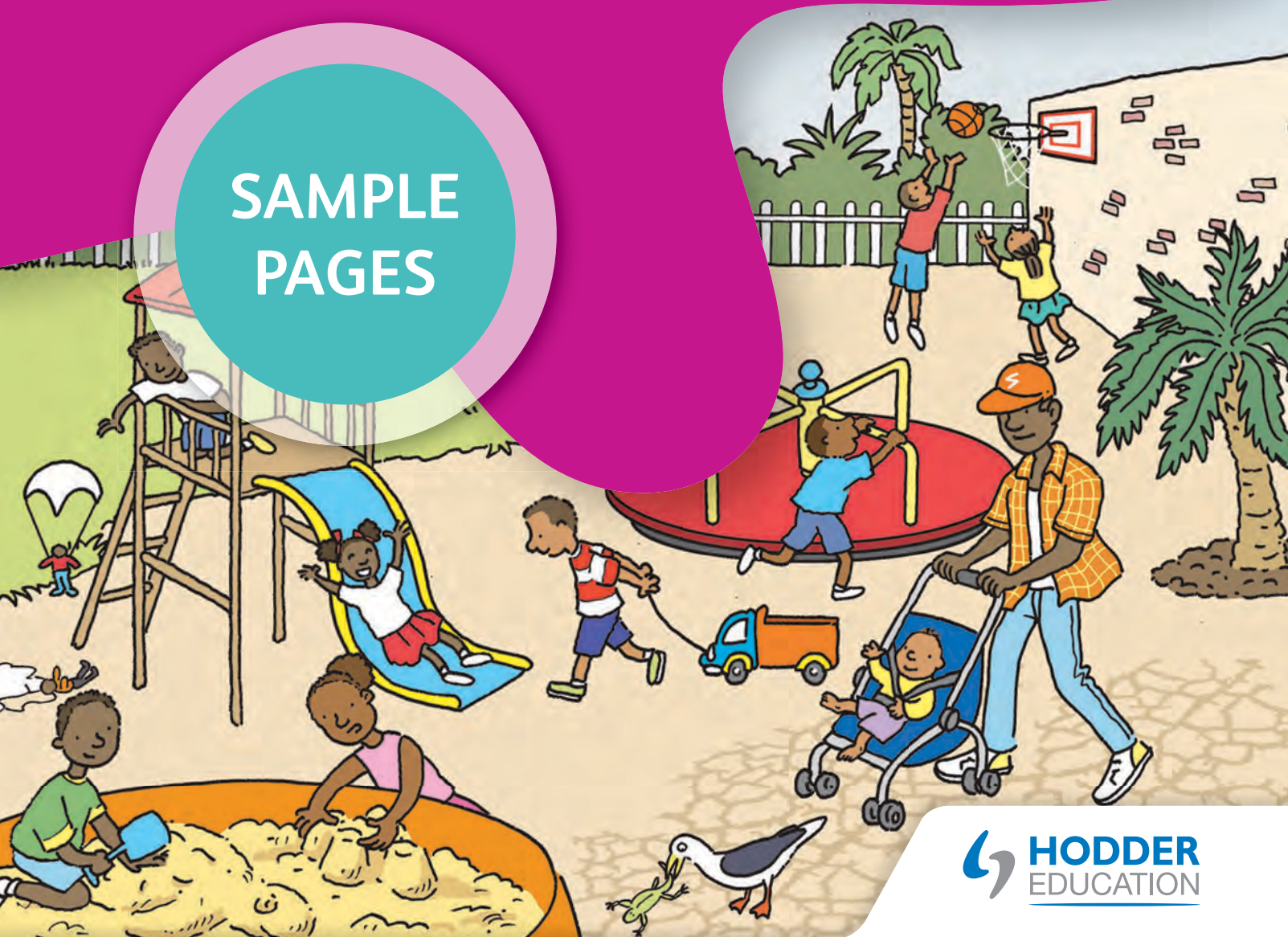


Caribbean Primary Science



Level 3

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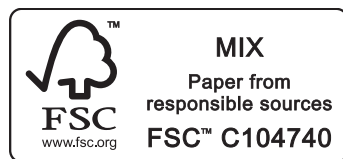
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Being a scientist

In this topic you are going to learn more about the skills that scientists use. You will also try these skills out yourself.

Last year you used some skills as you worked through your science course. You will need these skills again this year, and you will learn new ways of using them.

Let's think back

Work in pairs. Take turns to match each skill on the left to its correct definition.

Observe

Use special instruments to find out how long, wide, heavy or hot something is.

Measure

Look carefully to find what is the same and what is different.

Record

Work out what is happening using what you know and what you can see or have read.

Classify

Say what you think is likely to happen before you do something.

Infer

Put into groups using different features.

Predict

Read information from tables and graphs and work out what it tells you.

Experiment

Write down or draw what you find out.

Design

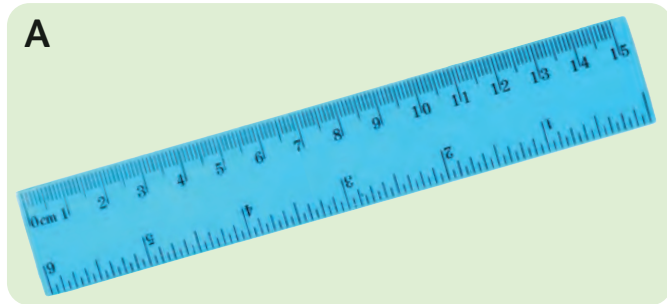
Plan and choose materials to build or make something.

Interpret data

Do a test to see what happens.

Let's measure scientifically

We use different measuring instruments and units of measurement to investigate objects and conditions in science.



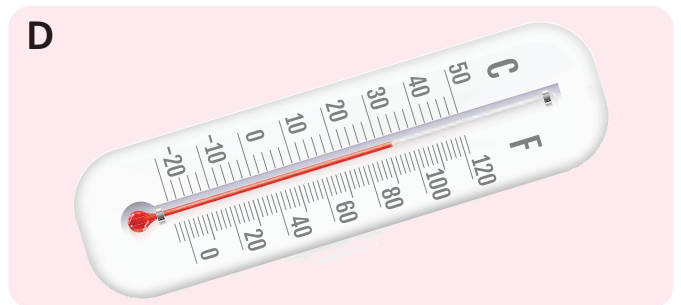
We use a ruler to measure length and height. We can measure in different units, for example, metres, centimetres and millimetres.



We measure how heavy things are using a balance scale. Heavy objects are measured in kilograms, and lighter objects are measured in grams.

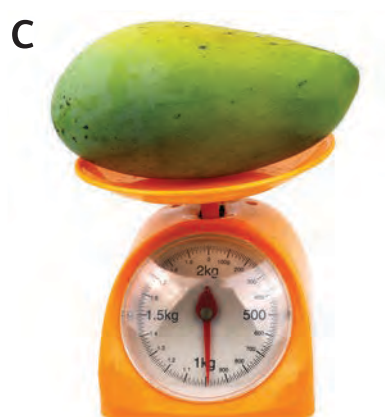
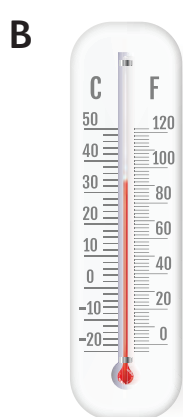
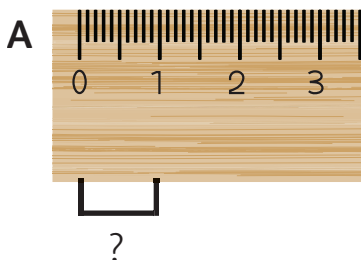


We can measure how much liquid we have by using a measuring jug and looking carefully at the marked units. This jug shows litres and millilitres.



A thermometer measures temperature and tells us how hot or cold it is. Temperature is measured in degrees. You can use degrees Celsius or degrees Fahrenheit.

Read the measurement each picture shows.
Write each measurement in your book with the correct units.



Let's use a thermometer

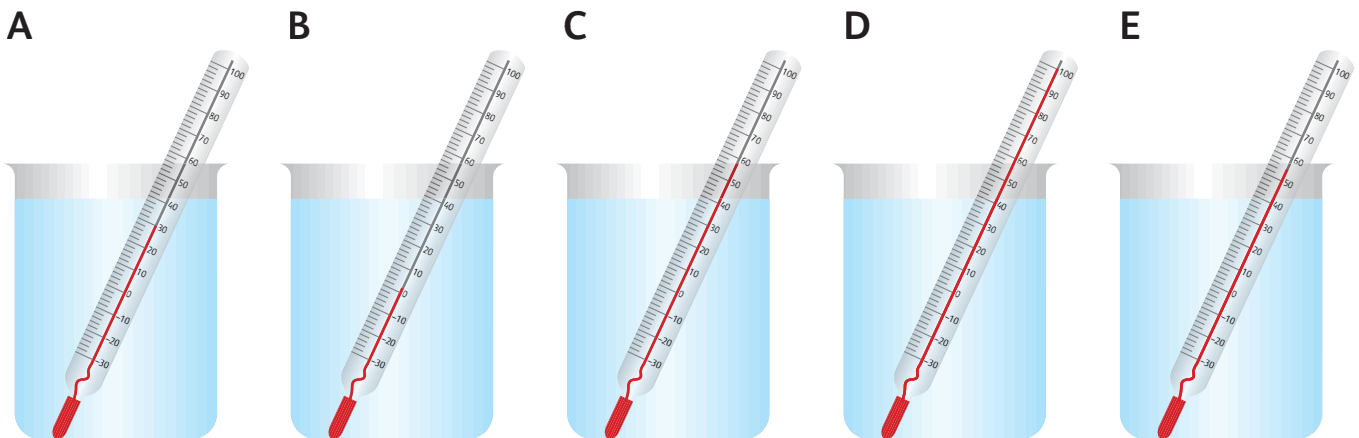
When we measure temperature, it is important to get an accurate measurement. There are some simple steps you can take to make sure your measurements are as accurate as possible.

- * Set up your equipment or experiment and leave it for a few minutes before you measure and record any temperatures.
- * Read the measurement on the thermometer in place. For example, if you are measuring how hot water is, read the measurement while the thermometer is in the water.
- * Shake the thermometer gently to reset the liquid or let it return to room temperature before using it for a different task.

Safety note

Always be careful when you are using a thermometer, as it can break easily.

1 Record the temperature shown on each of these thermometers.



- 2** Which liquid is closest to freezing? Explain how you know this.
- 3** Use a thermometer to measure and record the temperature:
- a** of tap water
 - b** of cold water (from the fridge)
 - c** inside your classroom
 - d** outside in the Sun
 - e** outside in the shade.

Let's do experiments and fair tests

We do experiments to find the answers to questions. For example, what happens to candy if we put it into hot, cool and cold water?

To answer the question, you need to plan what you will do and work out what equipment you will use. You should also think about safety.

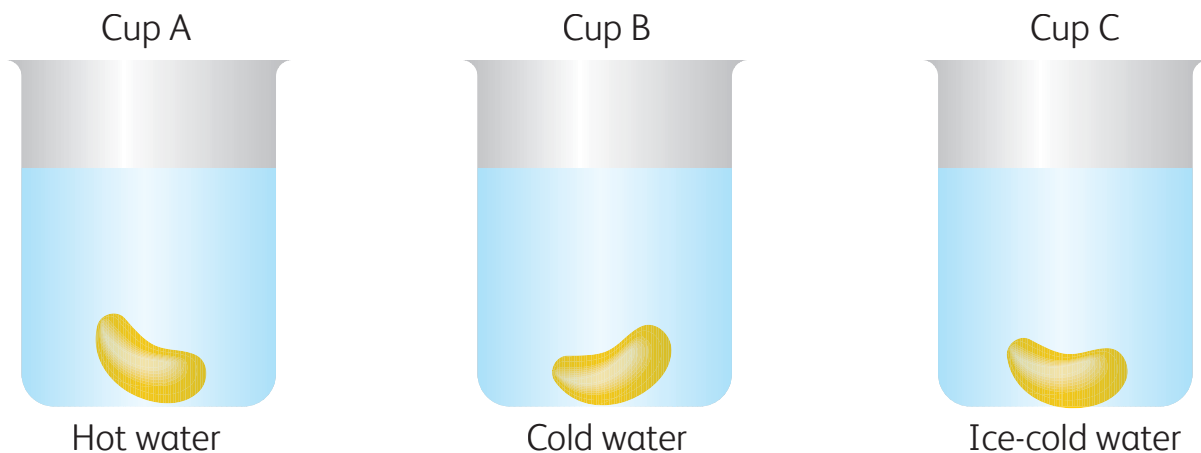
For example, I will get three candies and put them into water from the kettle, water from the tap and water from the fridge. I will need three candies, three containers for water and hot, cool and cold water.

I will need to be careful with the hot water, as it can burn.

When you do an experiment or scientific investigation, you need to make sure that you are doing a fair test.

When you do a fair test, you change one thing only. You keep all the other things in the experiment the same.

- 1 How does changing only one thing make a test fair? Discuss this in your groups.
- 2 Look at this experiment that Ambika has set up.



Answer these questions about the experiment.

- a What did Ambika change?
- b What three things did she keep the same?
- c How did Ambika make sure she was doing a fair test?
- d Predict what you think her results will be. Give a reason for your answer.

Let's ask questions

You can do an investigation to find the answers to scientific questions.

Some questions can be answered by doing a fair test. Some questions need to be answered in other ways.

Read these questions.

- A** Which type of kitchen cloth absorbs most water?
- B** Are there any plants that are dangerous to have in your garden?
- C** What is the best way to store flammable liquids like gasoline?
- D** Will plants grow differently if they get different amounts of water?
- E** Which types of rocks are the most slippery?
- F** Do all spiders spin webs?
- G** Which is the most common type of injury in sports?
- H** Is brown paper stronger or weaker than newspaper?

1 Make a table like this one in your book.

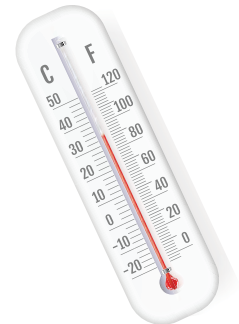
These questions can be answered by doing a fair test	These questions cannot be answered by doing a fair test

- 2 Sort the questions into two groups and write the letters in the correct columns in your table.
- 3 Look at the questions that cannot be answered by doing a fair test. Discuss in groups how you could answer these.

Let's answer questions

Here are some methods that scientists use to answer questions when they cannot do a fair test.

- * **Observe and compare:** When you look closely or watch something you are observing it. We compare things by looking at how they are similar and how they are different.
- * **Measure and record:** Scientists take measurements over time to find out how things change or grow, they may repeat their measurements to make sure they are accurate. It is important to record both the measurements and the units of measurement.
- * **Carry out a survey:** When you do a survey you collect and record data to answer your question. Some surveys involve interviewing people to get their responses, others involve counting or comparing objects.
- * **Using sources:** You may need to look for information in books or on the internet to answer some questions. You can also ask experts to find the answer to your questions.



Which method would you use to find the answers to these questions about paper?

- 1 How is paper made?
- 2 How many people in your community recycle used paper?
- 3 What happens to newspaper if you bury it in the soil?
- 4 Do different kinds of paper all cost the same?
- 5 What craft items are made from paper?
- 6 Draw a table like this one in your book. Fill in two examples of science questions you could answer using each method.

Observe and compare	Measure and record	Do a survey	Use sources

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The picture on the front of this book shows a playground with lots of activity and fun. You can use the picture to introduce science concepts and vocabulary and make links with the children's daily lives. Encourage the children to love science throughout their school life.

Look at what the children are doing in the picture and count the number of different ways they are moving – for example, jumping, pulling, pushing, throwing.

What is the weather like in the picture? What do you think will happen next? There are more ideas on the inside of the cover.

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