

Science Detectives: Five Ways to Find Out

Scientists answer questions in five different ways. Can you spot which one is being used, and how to stay safe?



1 Draw a line to match each type of enquiry to what you do.

3 marks

- | | | |
|------------------------------------|---|---|
| researching | ● | ● sort things into groups |
| fair testing | ● | ● watch something change over days or weeks |
| identifying and classifying | ● | ● find answers in books, videos or the internet |
| looking for patterns | ● | ● look for a link, like 'the bigger ... the more ...' |
| observing over time | ● | ● change one thing and keep everything else the same |

2 Which type of enquiry is it? Write the letter in the box.

5 marks

- | | | |
|-------------------------------|------------------------------|--------------------------------------|
| A researching | B fair testing | C identifying and classifying |
| D looking for patterns | E observing over time | |

	Letter
Sorting buttons into metal and plastic	
Watching a bean seed grow for three weeks	
Finding out where gold comes from in a book	
Testing if sugar dissolves faster in warm or cold water	
Finding out if taller children have bigger hands	

3

Tick (✓) **true** or **false** for each sentence about staying safe.

4 marks

	true	false
Taste the materials to see if they dissolve.	☐	☐
Wipe up spills straight away.	☐	☐
Ask an adult to pour hot water.	☐	☐
Run while you carry a cup of water.	☐	☐

4

Zawadi sorts her materials into solids and liquids. Which type of enquiry is she doing?

1 mark

5

Write a question you could answer by **research**.

1 mark

6

Write a question you could answer with a **fair test**.

1 mark

7

Juma wants to find out how a puddle changes during a sunny day. Which type of enquiry should he use? Why?

2 marks

8

In the bicarbonate of soda and vinegar activity, a gas is made. Write **two** ways to stay safe.

2 marks

9

Why is it never safe to taste materials in a science lesson?

1 mark

10

Sort these questions into the table.

3 marks

What do lions eat? ·

Does a ball bounce higher on grass or on concrete? ·

Do children with longer legs jump further? ·

Which paper towel soaks up the most water? ·

How long do elephants live? ·

Are the tallest plants the ones with the biggest leaves?

Research	Fair test	Pattern

11

In a fair test about which liquids salt dissolves in, what do you change? Name **two** things you keep the same.

3 marks

Did you know?

Scientists do not always need a laboratory. Watching birds from a window for a month is real science: observing over time!

How did I do?

Easy



Okay



Tricky

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Science Detectives:

Five Ways to Find Out: answers

Answers and marks for every question.

- 1 researching → books, videos or the internet; fair testing → change one thing; identifying and classifying → sort into groups; looking for patterns → look for a link; observing over time → watch something change (3 marks for all five; 2 marks for three or four; 1 mark for one or two) 3
- 2 C; E; A; B; D (1 mark each) 5
- 3 false, true, true, false 4
- 4 identifying and classifying 1
- 5 Any question answered from books, videos or the internet, e.g. Where does iron come from? What is copper used for? 1
- 6 Any question where one thing is changed, e.g. Does salt dissolve faster in warm water than in cold water? 1
- 7 Observing over time (1), because the puddle changes slowly over many hours (1). 2
- 8 Any two: an adult helps; keep your hands away from your eyes; wash your hands; do not taste or drink anything; wipe up spills; do it on a tray. (1 mark each) 2
- 9 They might be harmful, poisonous or dirty, and you cannot be sure what they are. 1
- 10 Research: lions, elephants. Fair test: the ball, the paper towel. Pattern: long legs, tall plants. (3 marks: all six; 2 marks: four or five; 1 mark: two or three) 3
- 11 Change: the liquid (1). Keep the same, any two: the amount of salt, the amount of liquid, the size of the cup, how long and how much you stir, the temperature (1 mark each). 3