

Teacher guide to British Science Week activity: Lower key stage 2

Explore

- Take the class outside and organise pupils into groups of five.
- Ask pupils to collect a range of natural materials and place them next to the bowl of water.

Question

- Write the question prompt ‘Which ones...?’ on the flipchart and read it aloud.
- Ask the pupils to think of at least one question using the same structure. Encourage them to consider:
 - the natural materials they have collected;
 - the equipment available (the bowl of water);
 - their knowledge of materials and properties explored so far.
- Ask the pupils to share their questions within their group.
- Invite each group to share one question with the class and record these on the flipchart.
- Repeat the process using the following prompts:
 - ‘What happens if...?’
 - ‘Do these act differently...?’
 - ‘Is there a pattern...?’
- Add ‘Is there a pattern in the types of natural materials that float?’ to the flipchart as a model question.

Assess

- Invite the pupils to underline questions on the flipchart using different colours:
 - ‘which’ questions;
 - ‘what’ questions;
 - ‘do’ questions;
 - ‘is’ questions;
 - easy-to-test questions (can be tested using a Super Science Skill);
 - hard-to-test questions (cannot be tested using a Super Science Skill).
- Explain that scientists do not test every question; they choose questions that can be investigated.
- Optional: to extend thinking, select a few questions and discuss which Super Science Skill could be used to test each one.

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Focus question

- Introduce focus question: **‘Is there a pattern in the types of natural materials that float?’**
- Explain that this ‘is’ question can be tested using the enquiry type ‘pattern-seeking’.
- Define floating (stays on top of water) and sinking (goes to the bottom).

Test

- Invite one pupil at a time to choose a material.
- Ask the class to predict whether it will float or sink.
- Place the material in the water and ask the pupils to observe carefully.
- Ask the pupils to stand if their prediction was correct.
- Optional: to extend skills, ask the pupils design a table and record results on their whiteboards.
- Repeat with a range of materials.
- Optional: run the experiment in groups of five, with each group using their own bowl of water.

Reflect

- Use think, pair, share for the following questions with their group:
 - What did we find out? (Most plant materials float, though some sink; non-plant materials such as stones and sand sink.)
 - How easy was it to test our question? (It was easy because we could place the materials in water and observe what happened.)
 - What new questions do we have now?
- Discuss responses as a class.
- Explain that answering questions often leads to new questions.

Extend

- Ask pupils to:
 - draw and label a diagram showing a bowl of water with materials that floated and sank;
 - write a conclusion using the word ‘pattern’.
- Alternatively, provide groups with their own bowl of water and allow them to choose one further question to investigate (see web page for examples).