

Grade 4 Science Assessment: Properties and Changes of Materials

Learning objective: To compare and group together everyday materials on the basis of their properties and understand reversible and irreversible changes.

Read each question carefully. Use your scientific knowledge to provide clear answers. Max and Bea are here to help you think through your answers!

Max the monkey is helping Bea the bee organize her workshop. They have a collection of items including metal spoons, plastic cups, sand, salt, and wax candles. They need to understand how these materials behave to complete their project.

Word bank: Thermal insulator · Electrical conductor · Soluble · Reversible · Irreversible · Transparency · Hardness · Density

1. Max finds a metal spoon and a wooden spoon. Explain why the metal spoon is a better electrical conductor than the wooden spoon. (2 marks)

2. Bea mixes salt into a beaker of water and it disappears. What is the scientific name for this process, and how could you recover the salt from the water? (3 marks)

3. Give one example of a reversible change and one example of an irreversible change. Explain why they are different. (4 marks)

4. If you wanted to keep a drink cold for a picnic, would you choose a container made of metal or a thermal insulator like polystyrene? Explain your choice. (3 marks)

5. Max wants to build a shelter that is waterproof and transparent. Suggest a suitable material and explain two properties that make it perfect for this job. (3 marks)

6. Bea is investigating how to separate a mixture of sand and iron filings. Describe a method she could use to separate these materials effectively and explain why it works. (5 marks)

Draw: Draw a diagram showing how you would set up an experiment to test which material is the best thermal insulator for a tea cosy.



Extension challenge: Write a short paragraph explaining why we use different materials for everyday objects, such as why electrical wires are covered in plastic rather than metal. Total: /25