

Different materials, different uses



SmartSteps

FOR PRIMARY SCHOOLS

AusVELS: Foundation

Science Understanding – Chemical sciences (ACSSU003)

Science as a Human Endeavour – Nature and development of science (ACSHE013)

Science Inquiry Skills – Questioning and predicting (AC SIS014)

– Planning and conducting (AC SIS011)

– Processing and analysing data and information (AC SIS233)

– Communicating (AC SIS012)



Suggested time

Before we go: 30 minutes

Walk: 20–30 minutes

When we get back: 20 minutes



Key learning outcomes

Students will be able to:

- use their senses to explore the use of materials for familiar objects
- observe the use of different materials for particular uses in everyday life and the world around them
- sort, collate and discuss information
- represent the observable properties of an object

Lesson

Before we go



- Display three or four everyday objects made from different materials with varying textures, colours and characteristics (e.g. flexibility).
- Discuss the science skill of observation, which means to look closely at something and describe what you see.
- Students observe the objects and describe their observations. Encourage students to agree with, add to or challenge observations.
- Encourage students to think of other ways they can find out more about the objects. Ask students to consider what senses they could use.
- Students carry out further exploration of the objects' properties using their senses. Caution the use of taste, for safety reasons.
- Lead a class discussion about the properties of each object using the senses. For example, a pencil is hard, smooth, smells like wood and is shiny and colourful.
- In small groups, students sort a small collection of other objects according to different properties.
- Discuss why the materials have been used for the objects.
- Explain to students that they will be going for a walk around the local area to:
 - » observe how different materials are used for objects, equipment and buildings
 - » collect a sample of objects.
- Discuss safety protocols for collecting objects.

Out and about

- During the walk, stop students at key locations (e.g. houses, shops, fences, play equipment, street furniture) and prompt their observations with questions such as:
 - » What do you observe about the materials that this object is made from?
 - » What senses can you use to observe the object and its materials?
- **Teacher note:** Take a pair of tongs and a spare plastic bag to collect any unsafe objects.

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When we get back

- In small groups, students sort and group their collection of objects on the basis of observable properties.
- As a class, discuss the sorted objects, highlighting the observable properties of the materials. The class could make a picture list of the different properties (e.g. smooth, spiky, rough, flexible).
- Students draw their own representation of objects showing their observable properties. They can refer to the picture list for ideas.
- Students think about the objects they observed (but didn't collect) in terms of their purpose. Encourage them to suggest why certain materials were used for a specific purpose, for example why the materials used in play equipment are hard and shiny.
- Ask the class to discuss the importance of careful observation in science:
 - » How does making observations help us to find out about things around us?
 - » How has making observations helped us to understand why objects are made from different materials?
- As an oral 'fill the gap' activity, develop a class sentence to explain why a material has been used for a purpose. An example is 'Houses are made of bricks because they are hard and strong'.



Resources

- variety of everyday man-made objects from the classroom and home, made from different materials
- drawing paper
- coloured pencils
- plastic bags
- tongs (teacher only)

Suggested assessment

Assess student's ability to:

- sort and group materials based on their observable properties
- use their senses to gather information about the world around them
- share and communicate observed information
- use drawings to represent observations

Further connections

Students and their families could:

- draw a picture of an object at home with the same property as one they observed at school. A letter could be written to parents explaining the task
- complete a [Smart Steps: for Families – Activity Sheet](#) at home

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Strand	Sub-strand	Elaboration
Science Understanding	Chemical sciences Objects are made of materials that have observable properties (ACSSU003)	<ul style="list-style-type: none"> • sorting and grouping materials on the basis of observable properties such as colour, texture and flexibility • thinking about how the materials used in buildings and shelters are suited to the local environment
Science as a Human Endeavour	Nature and development of science Science involves exploring and observing the world using the senses (ACSHE013)	<ul style="list-style-type: none"> • recognising that observation is an important part of exploring and investigating the things and places around us • sharing observations with others and communicating their experiences • exploring and observing using hearing, smell, touch, seeing and taste
Science Inquiry Skills	Questioning and predicting Respond to questions about familiar objects and events (AC SIS014)	<ul style="list-style-type: none"> • considering questions relating to the home and school and objects used in everyday life
	Planning and conducting Explore and make observations by using the senses (AC SIS011)	<ul style="list-style-type: none"> • using sight, hearing, touch, taste and smell so that students can gather information about the world around them
	Processing and analysing data and information Engage in discussions about observations and use methods such as drawing to represent ideas (AC SIS233)	<ul style="list-style-type: none"> • taking part in informal and guided discussions relating to students' observations • using drawings to represent observations and ideas and discussing their representations with others
	Communicating Share observations and ideas (AC SIS012)	<ul style="list-style-type: none"> • working in groups to describe what students have done and what they have learnt • communicating ideas through role play and drawing