SCIENCE

Lesson 2

Year 1

Topic: Investigating everyday materials

Exploring physical change actions

Aboriginal and Torres Strait Islander histories and cultures

Aboriginal peoples and Torres Strait Islander peoples are warned that resources in this lesson may contain images, voices and names of persons who may now be deceased.

Lesson concepts

- Everyday materials can be physically changed in a variety of ways
- Science involves asking questions and describing changes
- People use science in their daily lives
- Questions can be responded to
- Investigations can explore and answer questions
- Observations can be collected and recorded
- Information can be compared with others
- Observations and ideas can be represented and communicated

Today students will:

- understand that physical changes can be made to materials
- recognise that specific changes are made for a purpose.

Resources

Digital

Video collection — Actions to physically change materials

Slideshow — Make a paper folding cup

Sheet

Sheet 4 — Physical change word cards (cut out)

Sheet 5 — Change investigation

Being a safe scientist

Find and prepare

Property word cards (saved from Lesson 1)

Samples of everyday materials: aluminium foil, paper, wood (for example, iceblock stick or ruler), fabric and waterproof modelling clay (for example, Plasticine)

A small sample (approx. 3 cm square) of aluminium foil, paper, wood, fabric and waterproof modelling clay (for example, Plasticine)

A sheet of paper approx. 20 cm square

Key terms

physical change

For definitions and explanations of terms, please see the Glossary.

Learning alerts

Be aware of students suggesting physical changes which could be made without considering the properties of the material for examples: fold and wood.

Suggested next steps for learning

- Ask students to describe the properties of a material, and then ask them to make a physical change to the material.
- Explain that the properties of the material allow certain physical changes to be made.

Lesson

Review properties of materials

Say to students

Remember that in the last lesson you investigated some materials to find out about their properties. When we describe a material, we are talking about its properties.

1. Display samples of aluminium foil and paper, and ask students to describe the properties of these materials.
   a. Select the property word card (from Lesson 1) to match student descriptions.

Focus questions

Q. *What are the properties of aluminium foil?*
A. For example: smooth, shiny

Q. *What are the properties of paper?*
A. For example: soft, light

Observe actions to make physical changes to materials

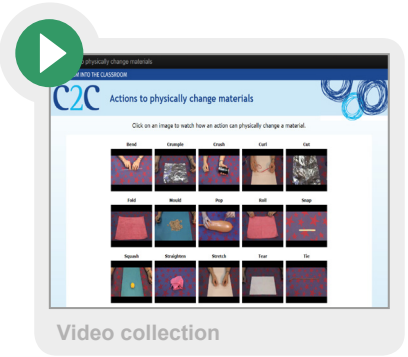
Say to students

In this lesson, we are going to be investigating how some materials can be physically changed, for example: in look, texture, shape or size. It is the **properties** of the materials that enable them to be physically changed.

When you conduct these investigations, you will be working just like scientists who use knowledge of materials and their properties to investigate how materials can be physically changed.

Let's watch some videos that demonstrate actions that can physically change materials.

2. View the **Video collection — Actions to physically change materials** to observe how an action can physically change a material.



Video collection

Focus questions

Q. *What action is being used?*
A. For example: bend

Q. *How has the item been physically changed?*
A. For example: Before it was straight, now it is bent.

Q. *What other things can you bend?*
A. For example: a straw, my arm

3. Students choose words cut from **Sheet 4 —** Physical change word cards to describe the actions that can physically change materials (for example: bend, roll, fold, and curl). Write additional words on paper for students.

Investigate actions to make physical changes to materials

4. Display the following items:
   a. samples of everyday materials, for example: aluminium foil, paper, wood (for example, pop stick), fabric and waterproof modelling clay (for example, Plasticine).
   b. **Sheet 5 —** Change investigation

Say to students

"Now it is your turn to use actions to physically change materials. I want you to find out how many different actions you can use to physically change these materials. We will list the actions you use to physically change each material on **Sheet 5 — Change investigation**."

Note

Remember to always be safe when conducting any science investigation. Read the sheet Being a safe scientist and discuss with the students what they might need to think about when conducting their science investigation so they stay safe.

   c. Provide time for students to investigate changing each of the materials listed.
   d. As each new action is performed, ask students to describe the action and list it on the sheet.

Focus questions

Q. *What action did you use to physically change the paper?*

A. For example: fold, tear, cut, crumple

Q. *What action did you use to physically change the waterproof modelling clay?*

A. For example: roll, squash, stretch, flatten

Say to students

Just like scientists, you have used your science knowledge about the properties of materials to make physical changes to them.

Knowing about properties of materials and how materials can be changed helps scientists decide which materials are suitable to be used for different purposes.

5. Refer to **Sheet 5 — Change investigation**.

Focus questions

Q. *Which of these materials do you think would be suitable for making a cup?*

A. For example: aluminium foil, waterproof modelling clay

Q. *Why would those materials be suitable for making a cup?*

A. For example: You can bend them and they are flexible.

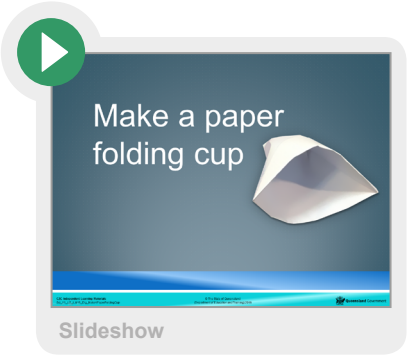
Q. *Do you think you would be able to change a piece of paper to make a cup? Why/why not?*

A. For example: Yes, but you would need sticky tape.

Say to students

Now we are going to use one of the materials you have explored to make a cup. It is possible to make a cup by folding a piece of paper and without using sticky tape. Let's see how.

6. Display the **Slideshow — Make a paper folding cup**.



a. Support students to follow the steps to make a cup.

Focus questions

Q. *For what purpose would you be able to use your cup?*
A. For example: popcorn

Q. *What would happen if you put water in your cup?*
A. For example: It would tear and the water would spill.

b. Refer students again to the materials on **Sheet 5 — Change investigation** which was completed earlier in the lesson.

Focus questions

Q. *What other material could you use to make a cup that you could put water in?*
A. For example: aluminium foil

Q. *What are the properties of aluminium foil that make it a good material to make a cup that you could put water in?*
A. Because you can fold it; it can hold water without tearing.