

The Recycling Process

Like Learning Opportunity 1, this learning opportunity is aimed at Levels 3 & 4 of *The New Zealand Curriculum*. Aspects of the recycling process can be explored with Levels 1 & 2, for example, the fact that new things can be made from old things.

The focus of the opportunity is to:

- look at the way materials are sorted at the recycling plant
- discover how different plastics are identified, different colours of glass sorted
- understand that this is the first step in the recycling journey.

Possible achievement objectives

Science Levels 1 & 2: Material world

Chemistry and society: Find out about the uses of common materials and relate these to their observed properties.

Science Level 3: Material world

Chemistry and society: Relate the observed, characteristic chemical and physical properties of a range of different materials to technological uses and natural processes.

Science Level 4: Material world

Chemistry and society: Relate the observed, characteristic chemical and physical properties of a range of different materials to technological uses and natural processes.

Materials

Before you begin to explore this learning opportunity with students, gather appropriate materials from the list below, depending on the level at which you are working.

Levels 1 & 2

Examples of clean materials (for example, glass jar, tin, soda can, plastic milk bottle, newspaper)

Picture Set 2A: *You can make this from that*

Levels 3 & 4

Multiples of clean materials (for example, glass, tin, aluminium, plastic, paper)

Graphic Organiser 2A: *Step by step*

Picture Set 2B: *Closing the loop*

Graphic Organiser 2B: *Closing the loop*

Poster: *Recycle Right with Visy*

Learning Opportunity

Begin this learning opportunity by reviewing Learning Opportunity 1: *Recycle Right – It all starts with you and me!* Specifically, discuss:

- People like us have a responsibility for “recycling right”.
- As cities grow, so does waste and the need for recycling.
- Some things can be recycled at the kerbside, others can’t.

Also, answer students’ questions, clarify any misunderstandings, and discuss key findings from any inquiries undertaken as a result of Learning Opportunity 1.

Next, view **video 2: Sorting technology - Learning Opportunity 2** – Learning Opportunity 2. This video explains how technology has been used to ensure sorting is efficient.

Provide inquiry focuses that students can choose from:

- *What is a trammel? How does it work?*
- *What is a star screen? How does it work?*
- *How are steel and aluminium cans sorted?*
- *How does the technology sort different kinds of plastic?*
- *How are green, brown, and clear glass sorted in the MRF?*
- *What happens at the end of the process?*

Have one student report back to the class on each question

Next, give students the Graphic Organiser 2A: Step by step. Have them complete the definitions and the flow diagram.

Watch **Video 3: What can we recycle? – Learning Opportunity 2** – Learning Opportunity 2, which describes the types of materials that can and cannot be recycled. Ask the students to form groups and choose one of the following questions to report back on:

- *Why should you put smaller items such as crumpled bit of paper inside envelopes or boxes?*
- *Why should you leave the lids on jars and bottles?*
- *Why aren't glass cookware, drinking glasses, lightbulbs, or mirrors suitable for kerbside recycling?*
- *What kinds of plastic can you recycle? What is unsuitable?*

The poster Recycle Right with Visy can be placed on the wall as a reference. You can download it by clicking [here](#).

Next, share Picture Set 2B: Closing the loop and Graphic Organiser 2B: Closing the loop with the students. This allows them to explore the key steps in the recycling process. Based on knowledge gained from the video, students can cut and place the pictures and labels for the cycle into the correct spaces.

Working with Levels 1 & 2

The finer details and the science behind the recycling plant may be lost on students at this level. However, showing the section of the video will reinforce the fact that only glass, paper, steel, aluminium, and paper/card are recycled at plants such as this.

You can reinforce the “recycle cycle” using Picture Set 2A: You can make this from that. This is a pair-up game where students spread the images on a desk. They take turns to pick an image and match it with another, saying, “You can make this, with that.” For example, a plastic bottle can be matched with a plastic tray, but not with a tin can.

Reflect on Learning

The focus of this opportunity was to:

- look at the way materials are sorted at the recycling plant
- discover how different plastics are identified, different colours of glass sorted
- understand that this is the first step in the recycling journey.

Briefly discuss these three learning outcomes and address any points that are still unclear.