

# Recycling Researchers

## Level 3 – Level 6

### Teacher notes

This curriculum resource has been designed to support students in the City of Casey to understand what items are accepted in kerbside recycling, the recycling process, and the impact of contamination.

Council collects hard plastics with numbers 1 to 5, clean paper and cardboard, glass bottles and jars, and aluminium and steel packaging for recycling (for a full list of acceptable items, [please refer to the website](#)). These materials are taken to Hallam Transfer Station and then transported to Coolaroo Material Recovery Facility (MRF) to commence the recycling process.

Non-recyclable materials are pulled out by hand, then materials are sorted using optical sorters, screens, magnets and currents into plastic, aluminium, steel, glass, and paper and cardboard. These materials are then baled and prepared for transport or screened for infrastructure, processed and turned into new products for purchase and use.

When incorrect items (such as food, liquid and other non-recyclable materials) are placed in the recycling bin, this leads to contamination and can be a safety hazard for workers processing the recycling. It may result in the entire truckload being diverted to landfill, which impacts our environment.

In this lesson, students work collaboratively to investigate the changes to kerbside recycling in Casey, what happens once items are collected for recycling, and the impact of contamination. Students are encouraged to take action at school and in their community to 'Recycle Right'.

## Victorian Curriculum links

### Science

- Science knowledge helps people to understand the effects of their actions ([VCSSU056](#))
- Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives ([VCSSU073](#))

### The Humanities

- Types of natural vegetation and the significance of vegetation to the environment, the importance of environments to animals and people, and different views on how they can be protected; the use and management of natural resources and waste, and different views on how to do this sustainably ([VCGGK082](#))

### English

- Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations and use interaction skills, including active listening and clear, coherent communications ([VCELY275](#))
- Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular audiences and purposes such as informative, persuasive and imaginative, including multimodal elements ([VCELY308](#))
- Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences, and present and justify a point of view or recount an experience using interaction skills ([VCELY337](#))
- Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions, and use interaction skills, varying conventions of spoken interactions according to group size, formality of interaction and needs and expertise of the audience ([VCELY366](#))

## ResourceSmart Schools links

This activity relates to [ResourceSmart Schools](#) Waste Module actions B1.2, B1.3, B1.4 and C1.1.

## Learning intentions

- Students will be able to identify and explain common contaminants in Casey's kerbside recycling.
- Students will be able to work collaboratively to research the recyclability of a range of materials.
- Students will be able to reflect upon the impact of contamination on society and the environment.

## Resources

- Access to an IWB/whiteboard
- Post-its.
- Computers or tablets with internet access
- A sample of common materials that contaminate the recycling stream (e.g. soft plastics, food waste, bagged recycling, clothing, polystyrenes, e-waste, black plastics, plastic caps, tetra pak/cartons) **or** images of these items.
- Coloured pencils, pens/grey leads.

- 'Recycling Researchers' template.

## Differentiation

- **Support:** Establish small, teacher-led groups to provide direct assistance or organise mixed ability groups to enable peer support, use simplified images or hands-on materials, and modify questions to suit student ability.
- **Extension:** Invite students to investigate other options to recycle items not accepted in kerbside recycling (e.g. soft plastics, clothing, e-waste, stationery, etc.) and create a plan to collect and recycle at home or school. Students may also like to create and share their own 'Recycle Right' campaign to educate their school community or household. This could be in the form of a story, poem, comic, poster or short animation.

## Assessment

As students complete learning tasks, monitor their understanding, and provide feedback as required. Collect and annotate student work samples and note understanding through discussion and reflection questions.

## Lesson structure

### Warm up

- Display the word 'recycling' on the whiteboard/IWB and ask students to jot down what they know and what they want to know about the topic on two separate post-its. If completing the task remotely, use [Padlet](#) or another shared brainstorming tool.
- Group and discuss ideas as a group and identify misconceptions (e.g. what is accepted in kerbside recycling).

### Mini lesson

- Explicitly teach students that once the items in their recycling bin are collected, they are taken to the Transfer Station and then taken to a Material Recovery Facility (MRF) for recycling. Explain that non-recyclable materials are pulled out by hand, then recyclable materials are sorted by machines and prepared for transport or to be turned into new products.
- Highlight that there have been some [changes to recycling](#) and that contamination (or placing incorrect items in the recycling bin) is a problem. Explain that students will be working together in 'expert groups' to research changes and explore the impact of contamination.

### Learning tasks

- Divide students into small, expert groups and ensure that they each have a number.
- Share the 'Recycling Researchers' template and distribute a common item (or item image) that contaminates the recycling stream (e.g. soft plastics, food waste, bagged recycling, clothing, polystyrene, e-waste, black plastics, plastic caps, tetra pak/carton) to each group.
- Students work collaboratively to research what the item is made of, why it cannot be recycled, what happens if it placed in the wrong bin, and more sustainable alternatives. They will each need to record their ideas on the template. Suggested websites for students to use to research their items include the City of Casey's [What you can put in your bins](#), [Other Disposal Options](#), [What happens to your waste](#), [Cleanaway](#), and [Sustainability Victoria](#).
- Have students stop and reflect on what they have learned about their item.
- Then, ask students to create new groups based on their number (e.g. all students with the number 1 will need to sit together with their own template). If completing task

remotely, group students in separate 'break-out rooms'. Students will then have the chance to share their item information within the mixed group.

### Reflection

- As a group, come together and share key information. Ask students to reflect upon who is impacted by contamination and what actions they can take as an individual, household or school to recycle right.
- Revisit questions from the beginning of the lesson and identify opportunities for future learning.

### Further learning

- Invite students to share their own 'Recycle Right' campaign to educate their school community or household. This could be in the form of a story, comic, poster or short animation.
- Ask students to investigate and create an action plan for a school community recycling scheme for items such as soft plastics, bottle caps, etc.
- Have students write a persuasive letter to their household, school community or local business to avoid non-recyclable items. This could be shared in a school bulletin or newsletter.
- Follow up this learning task by [contacting the Waste Education Team](#) for a 'Recycle Right' incursion, Q&A session, staff, or parent workshop.