Topic and learning focus

What a waste!

The world we have created today … has problems which cannot be solved by thinking the way we thought when we created them.

Albert Einstein

All living creatures produce waste. Some waste such as animal dung, food scraps and plant material are broken down naturally. Other waste needs special treatment and can take years to decompose.

Humans produce a huge amount of waste including household materials, sewage and waste from factories, shops and power stations. Much of this cannot be broken down and must be dealt with wisely. It is our responsibility to help manage waste.

Did you know?
About one third of all food produced in the world is thrown away. Packaging makes up about 65% of all household rubbish.

We can reduce the amount of waste we create. We can reuse items before buying new things. Whenever possible, we should recycle. We also need to rethink our choices and replace non-renewable resources with renewable resources. Sometimes new technology can be used to support waste management and other times we can learn what to do from nature.

decompose rot and break down
sewage wastewater
non-renewable resources materials that cannot be regenerated or reproduced once they have been used up
renewable last indefinitely

Duncan Chew of Melbourne, Victoria, has invented a biogas generator which will generate energy from dog waste.

LET'S FIND OUT

- What is waste?
- What happens to waste in nature?
- What happens to the waste people produce?
- What are people doing to manage waste?
- Why is it important to manage waste in a sustainable way?

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In this topic 'What a Waste!', students investigate the ways in which waste is produced on earth and how it is managed. They will learn how the natural world deals with waste and will compare this with how people manage the enormous amounts of waste they create every day. Students will be immersed in finding out about sustainable ways to deal with waste and will investigate possible solutions to the worldwide issue of waste management.

In this topic students will read a range of text types that cover content from the Australian Curriculum, Year 4 Geography: Geographical knowledge and understanding. An information report compares and contrasts the way animals and people deal with the waste they produce. A procedural text gives instructions on how to create a worm farm. A persuasive text argues strongly in favour of the need to recycle water. An extract from the award-winning picture storybook *The Tin Forest* illustrates the value of reusing waste and encourages students to reflect on different ways that trash can be reused.

A range of activities facilitate student learning in this topic. Individual, small-group and whole-group activities are included as well as activities that cater for different learning styles and promote higher order thinking. EAL/D students are catered for through a range of speaking, listening and vocabulary activities.

Students will be engaged with literacy, numeracy, ICT capability, personal and social capability and ethical understandings, as outlined under the general capabilities in the Australian Curriculum. Strong links are also made with the cross-curriculum priority of sustainability.

Let's find out

Students will investigate the following key questions:

- What is waste?
- How does nature deal with waste?
- What happens to the waste people produce?
- What are people doing to manage waste?
- Why is it important to manage waste in a sustainable way?

Prior to commencing this topic, it is recommended that you complete a running record of an unseen text with each student. The running record text is a report about waste – what it is and the different ways that it can be disposed of. The running record text can be used to record student behaviours and provide a snapshot of their ability to read and understand unseen text. P

Getting started

Whole class

Look at the front cover and discuss what the title *What a Waste!* means.

- What is waste?
- What waste have you created today?
- What happens to the waste we make? Where does it go?

Give pairs of students a two-minute time limit to list as many examples of waste as possible. Use students' lists to compile a whole class list.

Direct students to the image on page 3. Read the caption.

- What has Duncan created?
- Why is this an interesting invention?
- What does sustainable mean?

Use students' responses to create a class definition.

- Why is it important to manage waste sustainably? What can you do to help?

Have groups of students collect a variety of photos/images of places on earth and classify them as positive or negative. Ask students to paste these images onto one of two large class posters – one showing beautiful, clean, healthy images of the earth and the other showing rubbish, graffiti, waste, pollution etc. Have students record words that describe the images and their feelings towards each image on the posters.

- What are the main differences between the images on each poster?
- How do you think some places around the world are kept beautiful while others are left grimy and polluted?
- Who is responsible for clearing waste in residential and public areas?

Read the quote to the class.

- Who was Albert Einstein? Discuss students' responses.
- What do you think this quote means?
- How can we change our thinking about waste?

Small group

Discuss positive behaviours when working collaboratively such as listening to other people's points of view, taking turns, giving positive feedback and support, offering ideas and information. Have students work in a small group to read and analyse the introduction. Students read a paragraph each, and then fill out a group PMI (plus, minus, interesting) chart about waste. P

Individual

Read the *Did you know?* fact. Have students respond by filling in a T-chart using the heading 'Feelings' and 'Actions'. In the first column students write about how each fact makes them feel and why. In the second column students respond by listing ideas on what could be done to change these facts for the better. P

Elicit students' prior knowledge by having them complete a Draw it! graphic organiser about waste. P

Have students read the *Let's find out* questions and then write a prediction of the types of sustainable waste management ideas that might be discussed in the magazine.