

The Plastic-free Challenge

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Year 4



Overview

This TSM contains information and suggestions for teachers to pick and choose from, depending on the needs of their students and their purpose for using the text. The material provides many opportunities for revisiting the text.

When the Room 5 students at Motueka South School saw a video about the Great Pacific Garbage Patch, they were inspired to take action. There's a lot of media attention on how plastic is polluting the oceans, and it sometimes seems as if the problem is too big to tackle. These students show that it's possible to make small changes that lead to big results.

This article:

- is an inspiring example of student-led action
- can be used to raise environmental awareness and support inquiry into issues related to sustainability, recycling, and pollution
- provides scope for a wide range of connections across the curriculum, particularly in the social sciences and science
- has illustrations, photographs, and sidebars that provide extra information.

A PDF of the text is available at www.schooljournal.tki.org.nz

Texts related by theme

“Our Recycled Worm Farm” JJ 40 | “Tiakina a Tangaroa” SJ L2 October 2011 | “Seals” SJ L2 August 2016 | “Ugly” SJ L2 November 2016 | “Giving the Ocean a Voice” *I Spy Connected* L2 2013 | “Down the Drain” *Taking Action Connected* L2 2017

Text characteristics from the year 4 reading standard

We have retained the links to the National Standards while a new assessment and reporting system is being developed.

For more information on assessing and reporting in the post-National Standards era, see: <http://assessment.tki.org.nz/Assessment-and-reporting-guide>

A group of students gets together regularly to discuss how the project is going. They share ideas, solve problems, and brainstorm ways to make the system better. They also decide who will be responsible for making the ideas happen.

The group is training younger students to be monitors, too. That means when the older students move on to high school, there will be others to take over and keep the project going. They want it to be sustainable.

some abstract ideas that are clearly supported by concrete examples in the text or easily linked to the students' prior knowledge

Everyone can make a difference

The students have learnt a lot about plastic and what it does to our planet. Now they are always looking for new ways to reduce plastic use and to share the “reduce, reuse, and recycle” message.

Most of all, they've learnt that although some problems can seem huge, it's still possible to make a difference. You might start small, but you can inspire others to join you. That can lead to really big changes – for your school, your community, your country, and your planet.

some places where information and ideas are implicit and where students need to make inferences based on information that is easy to find because it is nearby in the text and there is little or no competing information

Have you heard of the Great Pacific Garbage Patch? It's a mass of floating rubbish in the Pacific Ocean.

Most of the rubbish is plastic that's been thrown away by humans. The students of Room 5 at Motueka South School watched a video about it. The video showed images of dead or injured sea creatures. Some had eaten the plastic. Others had become tangled in it.

some words and phrases that are ambiguous or unfamiliar to the students, the meaning of which is supported by the context or clarified by illustrations and/or written explanations



The Great Pacific Garbage Patch

other visual language features that support the ideas and information, for example, text boxes or maps



Reading standard: by the end of year 4

VOCABULARY

Possible supporting strategies

- Topic-specific language, including “plastic”, “challenge”, “collected”, “collecting”, “collections”, “recycling”, “recycled”, “recyclable”, “lunchboxes”, “lunch paper”
 - The language of mathematics and statistics, including “mass”, “about 1.6 million square kilometres”, “nearly six times the size”, “80 million kilograms”, “a million seabirds”, “one hundred thousand marine mammals”
 - Other possibly unfamiliar words and phrases, including “Great Pacific Garbage Patch”, “tangled”, “marine mammals”, “wrapped”, “cling film”, “replaced”, “shop-bought”, “muesli”, “onstage”, “hooked”, “teamed up”, “reduced”, “bundled”, “Soft plastic recycling has landed”, “project”, “monitor”, “system”, “responsible”, “sustainable”, “achievements”, “booms”, “trailing”
 - The slogan “reduce, reuse, recycle”
- Identify words or phrases that may be unfamiliar.
 - Prompt the students to recall the strategies they can use to decode unfamiliar words, including:
 - applying knowledge of the prefix “re-”
 - inferring word meaning from known roots
 - looking for clues in the photographs and diagrams.
 - Challenge students to build word families, for example, “collect”, “collecting”, “collector”, “collected”, “collects”, “collection”, “recollect”, “collective”. They could extend the word families to include collocations (words commonly used together), such as “collection plate”, “collective bargaining”, “collective farm”, “collective security”, “collector’s item”.
 - Play word games, such as matching the vocabulary word with an image, word bingo, and mix-and-match activities.
 - *The English Language Learning Progressions: Introduction*, pages 39–46, has useful information about learning vocabulary.
 - See also [ESOL Online, Vocabulary](#), for examples of other strategies to support students with vocabulary.

SPECIFIC KNOWLEDGE REQUIRED

Possible supporting strategies

- Awareness of the issue of pollution caused by plastic waste
 - Awareness of where the Pacific Ocean is and of how currents move around the ocean
 - Familiarity with the concept of “think global, act local”
- Prompt the students to share their prior knowledge of the challenges posed by pollution, in particular plastic pollution, and of the efforts made by individuals and communities to address these issues. *Plastic has been in the news a lot lately. What do you know about this? What are people worried about?*
 - Prompt the students to visualise the size of the problem conveyed by the statistics. Consider a connection to students’ learning about [statistical literacy](#). (This could be part of a follow-up activity in which the students investigate rubbish at their own school.)
 - Check that the students can identify the Pacific Ocean on the map.
 - Explore ocean currents and what causes them by viewing websites or through shared reading of non-fiction texts.

TEXT FEATURES AND STRUCTURE

Possible supporting strategies

- The direct address to the reader
 - A mix of simple and complex sentences, with just one compound sentence
 - Rhetorical questions: “Have you heard of the Great Pacific Garbage Patch?”, “What could they do with it?”
 - Some use of the dash for emphasis: *They were shocked – there was so much!*
 - The structure of the text, with six subheadings, that takes the reader through the various steps as the challenge grew from one class to a school-wide initiative and from weekly collection to daily collection
 - “Talking head” quotes that add information from the students’ perspectives
 - Text boxes with statistical information and information about Boyan Slat
- Discuss the title. *There’s a lot of talk these days about plastic and going plastic-free. What is the problem with plastic? What is a challenge? What sort of challenge might the author be referring to?*
 - Have the students skim the text, using the title, subheadings, and illustrations to make predictions about what is happening, the people involved, and the challenge they will confront.
 - Clarify that the article is about a group of students who wanted to address the challenge of plastic pollution. Prompt discussion about what might be involved in addressing such a challenge, using examples from other texts the students have read and scientific investigations or community actions they have taken part in. *How do people decide what to do? How might you go about investigating an issue such as this and then deciding what you could do about it?*
 - Discuss the purpose of the rhetorical questions in engaging the reader. *What happens in your mind when you read a question like this? Do you find yourself thinking about possible answers? What are they? How do these thoughts affect your interest in reading the rest of the text?*
 - Point out the use of the dash on page 4. Read the sentence out loud. *How does the dash affect the way you read the text? What is its purpose?*



Possible curriculum contexts

ENGLISH (Reading)

Level 2 – Ideas: Show some understanding of ideas within, across, and beyond texts.

ENGLISH (Writing)

Level 2 – Structure: Organise texts, using a range of structures.

– Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.

SCIENCE (Nature of Science)

Level 2 – Participating and contributing: Explore and act on issues and questions that link their science learning to their daily living.

MATHEMATICS AND STATISTICS (Statistics)

Level 2 – Statistical literacy: Compare statements with the features of simple data displays from statistical investigations or probability activities undertaken by others.

Possible first reading purpose

- To find out how one class solves the plastic problem at their school.

Possible subsequent reading purposes

- To identify the steps the students took to reduce the amount of plastic rubbish at their school
- To find out some of the causes, effects, and solutions for plastic pollution
- To discover how individuals are able to make a difference when they take action together.

Possible writing purposes

- To list the steps you would take to reduce plastic at home or at school
- To write a letter to your school board or principal suggesting ways of reducing plastic at school
- To recount a time when your class took action on an important issue.



Instructional focus – Reading

English Level 2 – Ideas: Show some understanding of ideas within, across, and beyond texts.

First reading

- Share the purpose for reading.
- Confirm that the article is about some students who took action to address plastic pollution in their school.
- Use a graphic organiser, such as the one below, to support the students to summarise what the plastic-free challenge involved.

The challenge	
The solution	
The data they collected	
The background research they did	
The problems they faced	
The new ideas that they developed	

- Provide opportunities for the students to talk with a partner to get information from the diagram and photographs.

If the students require more scaffolding

- Initially, support the students to find the main ideas with think-alouds, prompts, questions, and through modelling. Reduce this support as they gain greater independence. *The title gives me the big idea that there is a challenge to confront and it's about plastic. There's a photo of a bird on a beach surrounded by plastic rubbish, so I'm guessing it's about plastic pollution. There are photos of school children, so I think that the challenge is about a group of people dealing with plastic pollution at their school.*
- Consider chunking the text into sections and using a shared reading approach for the section on Boyan Slat.
- Discuss the section on the statistics. *What is this section about? Why have we been given all these statistics? What do those numbers look like when we write them out as figures?*
- Check that the students understand the map and that the arrows show the direction of currents. You could let them experiment with swirling balls of paper around in a basin of water. *What does this suggest to you about the way pollution accumulates to form the Great Pacific Garbage Patch?*
- Have the students talk about what happened with the balls of paper in the water and then scaffold them to use more complex language and sentences.
- Explain that sustainability comes from the root word “sustain”. Discuss the meaning of “sustain” so that the students understand the concept of sustainability.
- Discuss what the writer means by “the ‘reduce, reuse, and recycle’ message”. *This phrase wasn't used earlier in the article. What do you think it means? What can you infer from the rest of the article? Do you know of other slogans that convey a similar message?*

Subsequent readings How you approach subsequent readings will depend on your reading purpose. Where possible, have the students work in pairs to discuss the questions and prompts in this section.

The teacher

Discuss what we mean by the term “main ideas” and the value of being able to summarise them in a simple way that others can understand.

Explain that finding the main ideas is a good way of making sure we understand the article and of identifying the processes involved in solving the plastic problem. Model how to review a summary of the text to check it succinctly captures the main ideas. Use think-alouds to show how you check that the summary contains key words and phrases that relate to the main ideas. For example:

For the section “The Statistics”, I've selected some key facts, such as 1.6 million kilometres of ocean are affected, there are 80 million kilograms of plastic, and a million seabirds and 100,000 marine animals are killed. When I reread that part of the text, I can see that these are very important facts because they tell us why the Great Pacific Garbage Patch is so dangerous to life in the ocean. Also, this information inspired the students to take action.

The students:

- locate the main ideas in the text
- find the key words that relate to the main ideas
- share their ideas with their partner
- reflect on whether the headings in their graphic organiser are the right ones and change them if necessary
- write their own summary of the text.

Subsequent readings (cont.)

The teacher

Have the students review their summaries and share them with a partner. The pairs then evaluate each other's summaries. Encourage the students to develop their own evaluative questions. These could include:

- *Would someone who has not read the article get the main ideas from this summary?*
- *Have all the main points been captured? How clear are they?*

Then, as a group, write a statement that captures the author's main message.

The teacher

Have the students revisit the text and use their summaries to list some of the causes, effects, and solutions for plastic pollution. Make sure they can identify where they found the information and how they identified the information as important. Ask them to reflect on what they have learnt and identify any questions they still have.

- *What else do you want to know?*
- *Where might you find this information?*

The Ocean CleanUp site has a video that explains [The Great Pacific Garbage Patch](#). Show the students the video to see if it helps answer their questions. You could use this opportunity to discuss the value of going to different sources for information. As part of an ongoing inquiry, you could help the students to find additional material that will answer their questions.

The teacher

Have the students reread the section on “The Ocean Clean-up Kid” (page 9). Discuss the concepts of “taking action”, “inspiration”, and “sustainability” and connect these to the students' personal responses to the article.

- *What does inspired mean?*
- *Why did the students in Motueka respond to the video by taking action in their school? How did they inspire others? Can you show this in a diagram?*
- *What are other examples of people feeling inspired in this article?*
- *How did this article make you feel? Do you feel inspired to take action? Why or why not?*
- *The article says “They want it to be sustainable” (page 8). What do they mean by sustainable? Where are the clues for understanding this word? What are the students doing to ensure that their project is sustainable? Why is this so important?*
- *How did the students turn their inspiration into action? What qualities did they show?*
- *Have you ever been inspired to take action on something important in your class, school, or community? What issues do you want to take action on? What would you need to think about before deciding what to do?*

METACOGNITION

- *How did your discussion with your buddy help you decide on the main ideas? What changed from when you did this by yourself to when you worked with him or her? Did your buddy say anything that made you ask different questions of the text?*

The students:

- read each other's summaries and reread the text
- make collaborative decisions, in pairs, about which ideas are the main ones and how to summarise them clearly and succinctly
- evaluate each other's summaries.



This activity could be completed on a shared Google doc so that it's easy to view and comment on each other's ideas and easy to edit after their discussion.

The students:

- revisit the text and identify some causes, effects, and solutions for plastic pollution
- reflect on their learning and record any questions
- record additional information after viewing the video
- browse through any additional material
- reflect on the value of seeking information from multiple sources.



The students could continue working on the Google doc.

The students:

- reflect on and discuss the concepts of taking action, inspiration, and sustainability
- make inferences about what inspired the students at Motueka South School to take action
- identify how the students moved from inspiration to action
- make inferences and draw conclusions about the qualities that are needed to turn inspiration into action
- reflect on what is required for an environmental project to be sustainable
- share personal experiences of community action
- consider whether this article might inspire them to take action of their own.

GIVE FEEDBACK

- *You found the key ideas by thinking about the title of the article and the paragraph title. Good spotting! And those key words you and your buddy predicted also really helped you to clarify that you were on the right track. Remember that next time you read non-fiction texts.*



Reading standard: by the end of year 4



The Literacy Learning Progressions



Assessment Resource Banks

Instructional focus – Writing

English Level 2 – Structure: Organise texts, using a range of structures. Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.

Text excerpts from “The Plastic-free Challenge”

Examples of text characteristics

Teacher (possible deliberate acts of teaching)

Page 4

It wasn't hard to reduce the amount of plastic in lunchboxes. The students wrapped their sandwiches in lunch paper instead of cling film. They replaced shop-bought muesli bars with home-made ones. They brought fruit instead of other snacks. The amount of plastic went down fast.

DESCRIBING A PROCESS

Writers describe a process by explaining what is done or what happens. They often use numbering or sequence words to show the order of the actions. They might also include the purpose of an action and visual information, such as photographs or diagrams. The writer's purpose is to make the process clear to readers.

Have the students create a mindmap of various ways to reduce plastic waste. Have them select the ideas they find most appealing and, if necessary, research how they could be put into place. Tell them they need to describe the steps involved in a way that convinces people. Emphasise that this isn't just a list of steps – the goal is to persuade people to adopt their idea.

DIGITAL TOOLS

They could use [Mindmap Chrome app](#) or [Google Drawing](#) to complete this activity.

Some English language learners would benefit from scaffolding the type of language used in persuasive texts. You could provide them with model texts and identify the language features used or provide paragraph or sentence frames. Alternatively, you could have them reconstruct paragraphs or whole texts from mixed-up sentences or paragraphs.

Page 7

The students presented their plan to the principal. He agreed that it was a great idea – the daily school-wide collection was under way.

PERSUASIVE LANGUAGE

To persuade their readers to agree with their points of view, writers use facts, opinions, and real-life examples. They can also use emotive language and pose rhetorical questions to make the reader think.

Have the students present their ideas for reducing plastic waste to each other and select the one they find most appealing. Have them review how the students at Motueka South School prepared a plan that convinced their principal.

- *What did they have to do to prepare their plan? We don't actually see their plan. What information would it have included? How would this be organised?*
- *What exactly do we want to persuade our principal to do? What are some words and phrases that will help us to make our argument?*
- *What visual imagery could we include to support our arguments?*
- *How could we show the principal that our project will be sustainable – that it won't just fizzle out?*

Have the students work together to use both written and visual language that will make a persuasive argument to the principal. Support them to move from informal spoken language to using a more formal, impersonal style. Model writing persuasive texts and develop lists of connectives that are used to show cause and effect, for example, “so”, “therefore”, “then”, “consequently”, “as a result”, “because of this”, and so on.

Some English language learners would benefit from talking about their plan orally before writing (either in their first language or in English). Review the students' understanding of sustainability. Explain that one way of sustaining something is to tell the story of how it started. For example, stories about what a community did to protect a stream can be passed down so that everyone wants to look after it.

Discuss the features of a recount and what writers do to make a recount interesting.

Have the students recount the story of the actions that they, or people they know, have taken to address an important issue.

- *What was the issue? Who was involved? When? Where?*
- *What was the difference that you or the people whose story you're sharing wanted to make? What motivated them? What did they decide to do? Why did they choose this course of action?*
- *How can we record this information so that it's easy for people to find and understand?*
- *How will you persuade your readers of the importance of sustaining this practice?*

If the students are recounting someone else's story, they will also need to prepare interview questions, conduct an interview, and record the responses. They will then be able to incorporate quotes in their recounts.

Page 8

The group is training younger students to be monitors, too. That means when the older students move on to high school, there will be others to take over and keep the project going. They want it to be sustainable.

RECOUNT

The purpose of a recount is to tell the reader about a past experience. The focus is on a sequence of episodes, usually around one event. Recounts typically begin with background information about who was involved, when, and where. They are also typified by the use of verbs describing actions and events and by linking words indicating sequence.

GIVE FEEDBACK

- *Your idea that we should learn to make lunch wrap out of beeswax was excellent. At first, we didn't understand the process and it looked too hard. But when you revised your work, the steps became clear and everyone got really excited!*

METACOGNITION

- *How did it feel to work with other people to develop the presentation for the principal? How did your input come through in the presentation? How successful was the presentation? How do you know? How could it have been better?*

Writing standard: by the end of year 4

The Literacy Learning Progressions