

THE OCEAN IS NOT A RUBBISH BIN!

This activity explores the effect of marine debris (rubbish) on the ocean and marine life. Students can explore the consequences of littering (in particular plastics) on the marine environment through video, text, internet research and discussion. There are two levels of reading material and worksheets to suit reading ability.

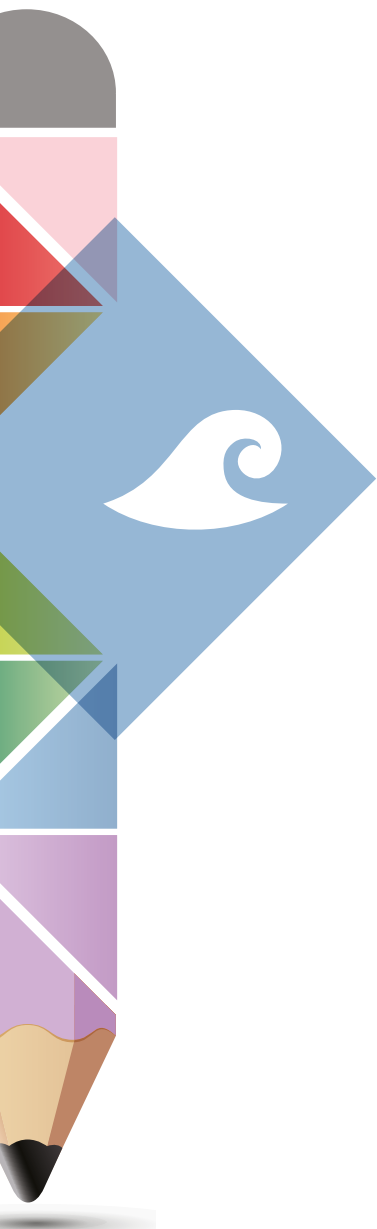
See the *Teacher's Guide – Beach Activities* for hands on beach lessons dealing with marine debris.

Biological Sciences

Year	Content Description	Elaborations	Teaching Points
Four	<p>Science as a Human Endeavour/Use and Influence of Science Science knowledge helps people to understand the effect of their actions. ACSHE062</p>	<ul style="list-style-type: none"> • Considering methods of waste management and how they can affect the environment. • Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment. 	<ul style="list-style-type: none"> • Biodegradable vs non-biodegradable. • What happens to waste? <ul style="list-style-type: none"> · Landfill; · Recycling; · Reuse; and · Stormwater. • Issue - plastic rubbish and storm water pollution (to ocean).
Five	<p>Science as a Human Endeavour/Use and Influence of Science Scientific knowledge is used to inform personal and community decisions. ACSHE217</p>	<ul style="list-style-type: none"> • Consider how scientific knowledge may influence a person's choices e.g. use of cloth shopping bags, recycling practises. • Explore how the local community authority uses scientific knowledge to make decisions about waste management. 	<p>As above +</p> <ul style="list-style-type: none"> • Options for waste management at a personal and community level e.g. recycling, reusing, composting, chooks, picking up rubbish.

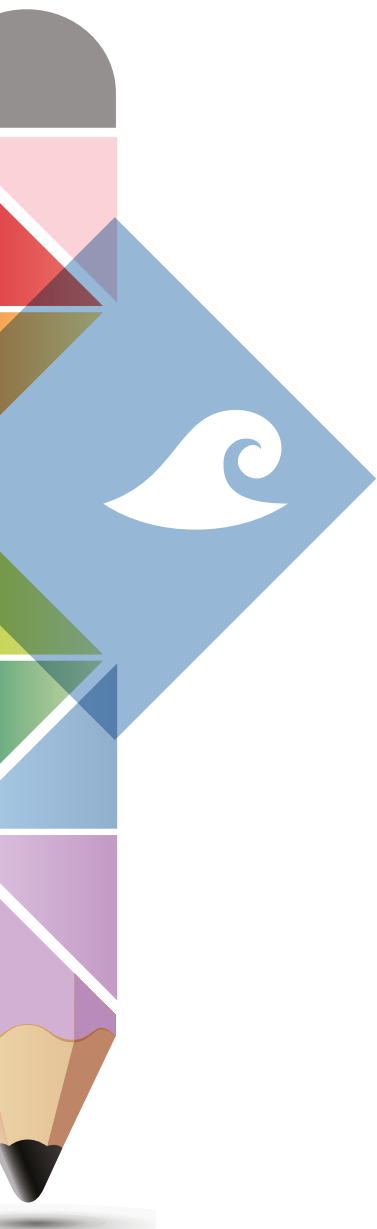
Biological Sciences

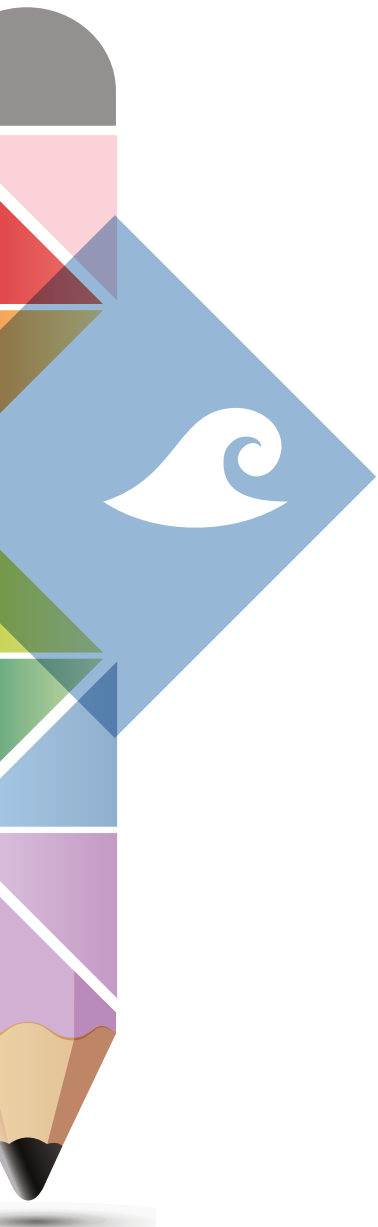
Year	Content Description	Elaborations	Teaching Points
Six	<p>Science as a Human Endeavour/Use and Influence of Science Scientific knowledge is used to inform personal and community decisions. ACSH220</p>	<ul style="list-style-type: none"> • Consider how scientific knowledge may influence a person's choices e.g. use of cloth shopping bags, recycling practises. • Explore how the local community authority uses scientific knowledge to make decisions about waste management. 	<ul style="list-style-type: none"> • Biodegradable vs non-biodegradable. • What happens to waste? <ul style="list-style-type: none"> · Landfill; · Recycling; · Reuse; and · Stormwater. • Issue - plastic rubbish and storm water pollution (to ocean) • Options for waste management at a personal and community level e.g. recycling, reusing, composting, chooks, picking up rubbish.
Seven	<p>Science Understanding/ Biological Sciences Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions. ACSSU112</p> <p>Science as a Human Endeavour/Use and Influence of Science Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations. ACSH120</p>	<ul style="list-style-type: none"> • Investigating the effect of human activity. • Exploring how living things (humans) can cause changes to their environment and impact other living things. • Considering how human activity in the community can have positive and negative effects on the sustainability of ecosystems. 	<p>As above +</p> <ul style="list-style-type: none"> • Food chains and webs. • Changes in food chains/webs. • Plastic & toxins. • Biomagnification (for more able students)



Geography

Year	Content Description	Elaborations	Teaching Points
Four	<p>Geographical Knowledge and Understanding The sustainable management of waste from production and consumption. ACHGK025</p>	<ul style="list-style-type: none"> Describing how natural processes can break down and recycle some wastes safely, for example, through composting or purifying water as it moves through the environment. Exploring different ways of managing waste sustainably and how these may include the principles of reduce, reuse, recycle and replace. 	<ul style="list-style-type: none"> Renewable vs non-renewable. Forms of recycling: <ul style="list-style-type: none"> Reuse; Renew; and Recycle (composting and water reclamation).
Five	No relevant curriculum content		
Six	No relevant curriculum content		
Seven	<p>Geographical Knowledge and Understanding Unit 1: Water in the World The ways that flows of water connect places as it moves through the environment and the way this affects places. ACHGK038</p>	<ul style="list-style-type: none"> Explaining how the movement of water through the environment connects places. Investigating the environmental, economic and social effects of water as it connects places. 	<p>As above +</p> <ul style="list-style-type: none"> Ocean currents and the effect on gyre's. Effect of pollution carried by ocean currents: <ul style="list-style-type: none"> contamination of beaches; death of wildlife; and plastic toxicity.





Background Activities and References

- Explore the impact of rubbish, in particular plastic, on the environment (with an emphasis on fauna). There are some excellent images and short videos on the net, in particular videos on Midway Island and Lord Howe Island.
 - Pacific Voyagers Foundation, 2012, *Midway Atoll: The Plastic Plight of the Albatross*, <http://pacificvoyagers.org/midway-atoll-the-plastic-plight-of-the-albatross>
 - Fantastic video showing stomach contents of dead albatross, really good visual of the consequences of throwing plastic into the environment.
 - WARNING - some children may find these images very confronting. Please preview the video before showing it to the children.
 - Midway, 2013, *Midway*, www.MidwayJourney.com
 - Great videos and blogs about Midway Island and the plastic problem.
 - ABC, 2012, *Catalyst: Plastic Oceans*, <http://www.abc.net.au/catalyst/stories/3583576.htm>
 - Refers to Lord Howe Island (an Australian version of the Midway Island problem).
- The websites below have good background information on plastic pollution:
 - Good Worldwide LLC, no date, *Through the Gyre*, <http://awesome.good.is/transparency/web/0905/trans0509throughtheyre.html>

- Great infographic on the Pacific Garbage Patch.

- Greenpeace, 2013, *The Trash Vortex*, <http://www.greenpeace.org/international/en/campaigns/oceans/pollution/trash-vortex/>
- All-recycling-facts.com, 2013, *Garbage Patch in the Oceans*, <http://www.all-recycling-facts.com/garbage-patch.html>
- Tangaroa Blue, no date, *Marine Debris*, <http://www.tangaroablue.org/>

Student Activities

- Use the *Ocean is NOT a Rubbish Bin* worksheet.
- This worksheet has a large amount of information on it so may not be suitable for weaker readers however it may be used in small groups. There is an alternative worksheet as a simple version.
- This worksheet is best completed after viewing some/all of the web videos or images cited above.
- There is a language sheet to support this information sheet - may be used with either versions.
- When creating this task it was envisaged that the poster would be completed using a collage technique incorporating plastic waste. The image could be representative of some of the images of dead birds and fish seen on the videos. Students may wish to draw their own birds or fish outlines.

References

- City of Joondalup, 2009, *Environment: Waste Education – Reduce, Reuse, Recycle*, <http://www.joondalup.wa.gov.au/Explore/SchoolConnections/GeographyandScience.aspx>
 - program has been designed to educate students about waste minimisation and management through implementing reduce, reuse, recycle and recover principles
- Government of Western Australia, no date, *Perth Beachcombers Education Kit*, <http://beachcombers-kit.fish.wa.gov.au/>
- Keep Australia Beautiful, 2013, *Keep Australia Beautiful*, <http://kab.org.au>
- Mindarie Regional Council (MRC), 2013, *Tours and Excursions*, [http://www.mrc.wa.gov.au/Community-2/Tours---Excursions-\(1\).aspx](http://www.mrc.wa.gov.au/Community-2/Tours---Excursions-(1).aspx)