

Linking the Australian Curriculum with NRM Education resources

Water (Years 3-6)

Big ideas

Living more sustainably includes understanding and knowing the demands on water resources, including the needs of humans, and the needs of environment systems. Reducing water usage, and sharing water resources are essential for the long-term sustainability of the planet's water. Sustainable living requires sustainable water resources. Learning about water and the connections between the water cycle, catchments and ecosystems is essential to understanding issues affecting the sustainable use of water.

We live in the driest state on the driest inhabited continent on earth. South Australians truly feel the effects of water shortages, drought, climate change and a growing population. To ensure that we cope and in fact prosper under these conditions, it's essential that we use water sustainably now and forever. (Source: DEWNR - www.environment.sa.gov.au/managing-natural-resources/water-use)

Overview

There are many challenges in South Australia relating to water supply and sustainable usage.

The following are some of the sustainability water themes students can learn about and possibly take action for:

- capturing rain and using it as a resource in the local area
- the water cycle
- water in the home; where it comes from and where it goes when it leaves our house
- local and global water harvesting and recycling strategies
- groundwater salination and desalination strategies
- variations in global access to clean water
- social justice and water use and accessibility
- the demand for, and use of, water in agriculture and industry
- local use of water and how this can be reduced
- rain levels in the local area compared to areas around the world
- valuing water as a finite resource
- current and potential climate change impacts on water supply locally and globally
- effects of water pollution on environmental, social and economic systems
- impact of building water infrastructures e.g. dams, pumps for ground water, artificial wetlands
- water as a form of energy (hydropower)
- water management strategies for the local area
- innovative technologies related to water



- how water is bought and sold

Sustainability in the Australian Curriculum

Education for sustainability develops the knowledge, skills, values and world views necessary for people to act in ways that contribute to more sustainable patterns of living. It enables individuals and communities to reflect on ways of interpreting and engaging with the world. Sustainability education is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through informed action. Actions that support more sustainable patterns of living require consideration of environmental, social, cultural and economic systems and their interdependence. (Source: The Australian Curriculum v7.2: www.australiancurriculum.edu.au/CrossCurriculumPriorities/Sustainability)

These are just a few Curriculum links and ideas that connect to NRM Education resources.

You are encouraged to seek further connections when planning learning experiences.

Learning areas	Strands	Learning experience ideas	NRM Education resources
Civics and Citizenship Year 3	Civics and Citizenship Skills Questioning and research	Ask students to brainstorm what actions they can personally take to improve the health of their local catchment. Use the drain stencilling kit to raise awareness in the local community about the importance of catchment health. <i>Critical and creative thinking, Intercultural understanding, Literacy</i>	Human Impacts Drain Stencilling Teacher Pack Danny the Drip Story Pack Danny the Drip Teacher Notes
Geography Year 3	Geographical Knowledge and Understanding	Explore the local catchment area and ecosystems. Gain an understanding of how water moves through the catchment and investigate how land and human use impacts this catchment and the local ecosystems. Look at the Water: Learning and Living Poster and identify different ways in which people live, work and play in a catchment. Ask students what types of activities they do in their local catchment area and why this is important to them. Think about the activities undertaken in a catchment area and the possible impacts they have on the surrounding environments. <i>Critical and creative thinking, Intercultural understanding, Literacy, Personal and social capability</i>	Catchment Education Teacher Information Pack Water: Learning and Living Poster
Maths Year 3	Statistics and Probability Data representation and interpretation	Visit a local freshwater creek, river, wetland or dam and do some water quality monitoring. Collect data using various tools and discuss and compare results. What do the results tell us about the health (or quality) of the waterway? Interpret and compare the data displays.	Freshwater Quality Teacher Information Pack The Best of Catchment Connections



		<i>Critical and creative thinking, ICT capability, Literacy, Numeracy</i>	
Maths Year 5	Statistics and Probability Data representation and interpretation	Learn about different pollutants and how they get into our waterways. Discover why organic materials can be a problem in our waterways even though they are natural. Conduct a gutter sweep around your school and measure the total weight of organic matter, rubbish and soil collected. What did you find? Which category weighed the most? Brainstorm ways that the community can limit the amount of pollutants (such as organic materials) entering our stormwater system. Complete the 'how long does it take for a leaf to decompose' activity. <i>Critical and creative thinking, Literacy, Numeracy</i>	Gutter Guardians Teacher Pack
Science Year 3	Science Understanding Biological sciences	Students learn about macroinvertebrates by looking at drawings of different animals and compare similarities and differences on the basis of observable features. Draw a macroinvertebrate and label its body parts. <i>Critical and creative thinking, Literacy</i>	An investigation into biodiversity through macroinvertebrates and water quality for Years 2 - 7 Macroinvertebrate Teacher Information Pack Junior Macroinvertebrate ID Chart Advanced Macroinvertebrate ID Chart Fish ID Chart
	Science Inquiry Skills Planning and conducting	Visit a local fresh waterway and record the variety of plant species present in each riparian zone. Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate. Collect plant samples for further identification or create a herbarium. <i>Numeracy</i>	Riparian Habitat Assessment Teacher Resource Pack Freshwater Quality Teacher Information Pack
Science Year 4	Science Understanding Biological Sciences	Students learn about macroinvertebrates by looking at drawings of different animals and compare similarities and differences. Go to a local waterway and collect a sample from the water and identify the different types, and number of, macroinvertebrates you find. What does this tell us about the health of our local waterway? Discover what else might be living in our waterways using the fish and frog identification charts. Investigate how living things, including plants and animals, depend on each other and the environment to survive. <i>Critical and creative thinking, Literacy</i>	Macroinvertebrate Teacher Information Pack Junior Macroinvertebrate ID Chart Advanced Macroinvertebrate ID Chart An investigation into biodiversity through macroinvertebrates and water quality for Years 2 - 7 Fish ID Chart
Other	Identification charts	Frog ID Chart	



Resources		Wetland Birds ID Chart
	Teacher information packs	Frogs Wetland Birds
	Fact sheets	Habitat Zone Series A4 Big Bug Cards with Information Wetland Fact Sheets (Apex Park and Breakout Creek, Morphetville Racecourse, Barker Inlet, Northgate Reserve, Urrbrae, Warriparinga)
	Other links	SA Water Brainwave School Program EPA Critter Catalogue Critters – Where They Wriggle video The Barker Inlet and Port Estuary – part land, part waterway, part sea Creating Frog Ponds brochure Frog Calls - audio Walkerville and St. Leonard's Primary Schools Case Studies

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