Linking the Australian Curriculum with NRM Education resources

Water (Years F-2)

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
English Foundation	**Literacy** Creating texts	Collect the materials needed to tell the Danny the Drip story. Run through the story with the different types of pollution. Recount one part of the story using drawing and familiar words. Create a Danny the Drip book with the collection of recounts, and share with another class. *Critical and creative thinking, Ethical understanding, Literacy, Personal and social capability*	Danny the Drip story pack Danny the Drip teachers notes
English Year 2	**Literacy** Creating texts	Re-write and illustrate (drawings or digital media) the Danny the Drip story to reflect the path of stormwater at the school to suit a younger class. Share the story with them and discuss actions that you can take to keep stormwater clean at school. *Critical and creative thinking, Ethical understanding, Literacy, Personal and social capability*	Danny the Drip story pack Danny the Drip teachers notes Catchment education teacher information pack
Mathematics Year 1	**Statistics and Probability** Data representation and interpretation	Observe a collection of live aquatic macroinvertebrates in trays, or in an aquarium. Represent the different types of creatures with drawings or objects that represent one value. Describe which creatures there are the greatest number of and which there are the least of. *Critical and creative thinking, Numeracy*	Junior macroinvertebrate ID chart
Mathematics Year 2	**Statistics and Probability** Data representation and interpretation	Visit a local wetland and collect an aquatic macroinvertebrate sample, or use the wetland birds ID charts, to collect data about the number and type of creatures living at the site. Classify according to sensitivity (macroinvertebrates) or by type or habitat (birds). Display this data using lists, tables or picture graphs and interpret what they tell you about the health of the wetland. *Critical and creative thinking, Literacy, Numeracy*	Junior macroinvertebrate ID chart Nets, trays & viewers (available through loan library) Wetland birds ID chart

Science Foundation	**Science Understanding** Biological sciences	Use the models and drawings of the frog lifecycle to identify what frogs and tadpoles need to survive. Create a mini-habitat for a tadpole and a frog, and verbally describe how the habitat meets the different needs of these animals. *Critical and creative thinking, Literacy*	Teacher information pack Frog ID chart
	Science Inquiry skills Planning and conducting	Observe a collection of live aquatic macroinvertebrates in trays, or in an aquarium. Describe the different ways that they move and identify which parts of their body help them to move. Use the images from the chart to create groups based on how they move. *Critical and creative thinking,*	Junior macroinvertebrate ID chart
Science Year 1	**Science Understanding** Biological sciences	Describe the differences between two habitats (healthy and degraded). Predict what types of animals would be able to live in each. Which external features or behaviours of these animals help them to survive in these environments? Go through each of the creatures in the set and assign them to the habitat that will meet their needs. *Critical and creative thinking,*	Habitat zones series Learning about water bugs – An Early Years investigation into freshwater environments as special places; assessing water quality by learning about macroinvertebrates and making site improvements
	Science as a Human Endeavour	Collect the materials needed to tell the Danny the Drip story. Run through the story with the different types of pollution. Predict what will happen to the environment and the living creatures in the river with each addition. At the end discuss how you could clean the water, and try some of these strategies. Describe why some of them were successful and some were not. *Critical and creative thinking, Ethical understanding, Literacy, Personal and social capability*	Danny the Drip story pack Danny the Drip teachers notes
Science Year 2	**Science Understanding** Biological sciences	Explore the similarities and differences between the lifecycles of these animals (frogs, freshwater snails, dragonflies, water mites, mosquitoes). *Critical and creative thinking, Literacy*	Teacher information pack Frog ID chart
	Science Understanding Earth and space science	Identify the areas that water is used in the school. Look at the water wasteful and water wise behaviours, and identify similar and new actions you can take at school to conserve water. *Critical and creative thinking, Literacy, Personal and social capability*	
		Consider how rainwater is transferred from a building to the ocean or a river in the Stormwater Series. Identify the path/s of rainwater within the school, and actions you can take to keep this stormwater clean. *Critical and creative thinking, Literacy, Personal and social capability*	Catchment education teacher information pack
	Science as a Human Endeavour	Identify the path of water from a tap inside a building, and describe how it differs from stormwater. What would happen if the taps didn't work? How far would you have to go to get	Catchment education teacher information pack

	Use and influence of science	water? *Critical and creative thinking,*	
Other resources	**Identification charts**		
	Teacher information packs		
	Fact sheets		
	Other links		