Sustainability Challenge:
Teacher Information

This program has been developed through a partnership between SA Water and the Department of Education and Children's Services. It has been based on the learning needs of students in secondary schooling with emphasis on problem solving of real world issues.

Participation in the Sustainability Challenge program provides an opportunity for students to explore the issues of water supply and demand. Teams of students tackle a water design challenge to ensure a sustainable future for their town. The challenge submerges students in studies of geography and sustainability while exploring the options for water supply that will meet growing demands.

Concepts underpinning the program are:

**Water resources are managed**
- Water resources require complex monitoring and management
- Water resources are managed by individuals and communities of people
- Water resource management sets objectives based on needs and issues
- Water resource management develops strategies to resolve issues such as supply & quality of water
- Waste water, stormwater, groundwater, recycled and reclaimed water management is complex
- Water management effectiveness is determined by assessing progress toward expected outcomes

**Water resources exist within social constructs**
- Water resources have value based on economic systems
- Water resources are governed through political systems

**Perspectives**
- Acknowledge the complexities of the water management system
- Reflect on their learning experiences and beliefs to guide their actions and act towards creating preferred futures

**Skills**
- Gathering, analysing, interpreting and applying information
- Critical thinking and decision making skills

**Fast Water Facts**

SA Water operates and maintains across South Australia:
- about 26 000 kilometres of water mains
- about 8 800 kilometres of wastewater mains
- 29 water treatment plants
- 25 wastewater treatment plants
Supplying potable, or ‘fit to drink’, water in South Australia is a challenging task. Faced with a widely dispersed population in one of the driest inhabited places on earth SA Water has had to develop significant expertise in the management and transportation of water over vast distances. SA Water transports, filters and disinfects the water from our rivers, reservoirs and other supplies and manages these vital resources in an environmentally sustainable manner.

To find out more about the water system in our state and how SA Water delivers clean safe drinking water to more than 1.4 million people in South Australia try this link: http://www.sawater.com.au/SAWater/Education/OurWaterSystems/.

**Background Information**

**Useful Resources**

One of the most powerful resources can be people – SA Water has developed a Living Loan process whereby experts will visit your school to talk to students about water related science and issues. Visit the website www.sawater.com.au/education, for details and an application form.

Resources available from the SA Water school resources library:

- *Sustainable Living 2008*, Edited by Justin Healey
- *The New Inventors Save Water*, 2008 The New Inventors ABC, DVD
- *Adelaide Water of a city 2010*, Chris Daniels
- *Ollie's Island and Ollie Saves the Planet* (CD ROM), Games

**Water Websites**

Visit the education section of the SA Water website at: www.sawater.com.au/SAWater/Education/


**Water Recycling**

http://www.abc.net.au/catalyst/stories/2514066.htm

*What is it about?*

A video report from Catalyst regarding the treatment process of wastewater as it is recycled into drinking water to be re-used.

*How you could use it?*

Background information for teachers or useful for middle school students. Introduce the issue with a debate around the statement: Cities should recycle wastewater for drinking.
Urban Water

http://urbanwater.info/index.cfm

What is it about?
Covering a wide range of topics regarding the recycling of water including catchment and stormwater. Also provides specific information to organisations and communities including planning for future developments using water sensitive urban design.

How you could use it?
Senior student research projects would find many useful resources on this site. Also a catchment audit template and information for engineers, environmental educators and land use planners.

Water Education Resources Directory


What is it about?
The Water Education Resources Directory is a public online searchable database of water-related education resources and programs in Australia.

How you could use it?
Teachers could use the database as a way to find specific topics that they want to teach about or activities and games.

Ideas for Post Visit Classroom Activities

Issues investigation
Students write an essay or debate the argument for and against a desalination plant, or the use of reclaimed water. This could tie in with a class excursion to Bolivar Wastewater Treatment Plant.

Water Audit at school or home
Use the teacher resources and templates available from the Sustainable and Attainable website (http://www.sustainableschools.sa.edu.au/pages/assessteach/33530/), to audit your school's use of water.

Education for sustainability is part of the cross curricular perspectives of the Australian Curriculum.

Interactive House and Garden
Have students conduct a water audit of the school or home. Use the SA Water Interactive House and Garden online program, to engage students and link the learning of I.T. skills with the ideas of water conservation. Available on the SA Water website: www.sawater.com.au/interactivehouse/.

Rate Household Water Activities
Have students rate the household activity, in litres, of water used. Put them in order eg. toilet, teeth brushing, clothes washing / dish washing / of the most water use to the least. Then discuss. Draw graphs from the data students generate. Investigate the change over different seasons.

Visit a local wetland area
SA Water has resources available for the Cox Creek Wetland (near Bridgewater in the Adelaide Hills).