

Years 3 – 6 WaterRight Curriculum Ideas

Learning Areas

Science (descriptors detailed in the table below)

For years 3- 6 Science Inquiry Skills (**SIS**) and Science as a Human Endeavour (**SHE**) all elements can be incorporated into a study of gardens and sustainability using inquiry teaching as the basis to the topic.

Geography

Note: The Geography descriptors listed are based on ideas from the Shaping paper as the curriculum document had not been completed at the time of going to print. This will be updated in due course.

- differences between places and why differences exist, for example, urban and rural places
- how people have changed the environment of their place and other places and also how these could be sustainably cared for and managed
- the interconnections and interdependence of places, comparisons of their own place with at least one other place outside Australia with a similar climate, for example Papua New Guinea, the main islands of the South Pacific and New Zealand, and the ways they are connected with Australia
- why places and environments should be cared for sustainably and what this means
- spatial patterns, local planning and the management of community issues

Links to Cross-curricular priorities – Aboriginal and Torres strait Islander histories and cultures, Asia and Australia's engagement with Asia, Sustainability

Links to General capabilities – literacy, numeracy, personal and social competence, critical and creative thinking, intercultural understanding, information and communication technology competence

NOTE: WaterRight is not a course of study but is designed to complement and inspire teachers in their lesson planning around a unit on gardens or water. Ideas are put forward with links to the Australian Curriculum (updates will be needed as more curriculum detail is released) and local South Australian resources and excursions. There is an expectation that teachers would design their own learning schedule and choose activities appropriate for their student cohort and classroom context. Activity suggestions can be used for various *assessment activities* such as elicitation of student knowledge, formative and/or summative assessment.

Further information

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Australian Curriculum Alignment:	Lesson ideas/tasks
<p>Aboriginal and Torres strait Islander histories and cultures Geography Science</p> <p>Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044) yr3</p> <p>Science involves making predictions and describing patterns and relationships (ACSHE050) yr3&4</p> <p>Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073) yr4</p> <p>Living things have structural features and adaptations that help them to survive in their environment (ACSSU043) yr5</p> <p>Scientific understanding, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100) yr5&6</p> <p>Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital</p>	<p><u>Theme: The garden environment</u></p> <ol style="list-style-type: none"> 1. Ask students to be detectives in the school or home garden. List all living and non living components of the environment and devise drawings to represent the food chains and webs present. Consider questions – what makes a living thing different from a non- living thing? How are non living things important to the life of organisms in a garden? 2. Investigate the insects present in the garden or local creek/pond. NRM has many great resources to help investigate and identify insects in the garden and natural surroundings. Particular emphasis on the adaptations of the insects which suit them to their environment (form & function). Follow up in class with a creative activity where students can design their own fictitious mini beast – listing its own adaptations, environmental preferences and eating habits etc. 3. Students of this age group can devise their own list of questions about the living organisms in the garden that they might investigate further. Start by listing observations and then come up with 3 questions for each observation. Eg. Observation: This plant has leaves of different colour shades. Questions: Is the plant dying? Are the growing leaves a different colour? Is the plant about to drop its leaves? For year 5 & 6 investigations (SIS) could be planned around their questions. 4. Draw and describe the use of various tools in a garden. Devise a manual on how to use each tool safely, with tips on maintaining the tool. Consider how technology and science have influenced the development of tools over time. Eg. From simple hand plough or hoe to the fuel driven contemporary models. How does science knowledge change the way we do things in the garden (eg. pest control) and WHY is technology so important to our way of life?

<p>technologies as appropriate (ACSIS055) yr3&4</p>	
<p>Geography</p> <p>Sustainability</p> <p>Aboriginal and Torres strait Islander histories and cultures</p> <p>Asia and Australia's engagement with Asia</p> <p>Science</p> <p>Science knowledge helps people to understand the effect of their actions (ACSHE051) yr3&4</p> <p>Earth's surface changes over time as a result of natural processes and human activity (ACSSU075) yr4</p> <p>Important contributions to the advancement of science have been made by people from a range of cultures (ACSHE099) yr5&6</p>	<p><u>Theme: Gardens in different countries/ places</u></p> <ol style="list-style-type: none"> 1. Compare gardens from different cultures. Eg. What types of gardens were used by Aboriginal people many years ago? Research the ideas from various cultures that have influenced our garden designs in Australia. Asian gardens, Water gardens and water features, traditional Japanese gardens etc. critically appraise the various types of gardens – what positive features do they have to offer Australian gardens. Which features should we be cautious of and why? 2. Pose the dilemma – Should a farm be considered a garden? Conduct a small debate. Uncover student ideas about rural and urban gardens and possible stereotypes around life in the country or city.
<p>Geography</p> <p>Sustainability</p> <p>Aboriginal and Torres strait Islander histories and cultures</p> <p>Information and communication technology competence</p>	<p><u>Theme: Why have Gardens?</u></p> <ol style="list-style-type: none"> 1. Consider the purpose of gardens in Australian life by drawing a mind map. There are many digital and online tools that can be used for this exercise. Undertake a study to compare housing with and without gardens. How could you design a great yard for a house without using a traditional garden? What are the impacts of such designs on the sustainability of the house/garden? Try using the SA Water Interactive House and Garden online learning tool at www.sawater.com.au/education. Education for Sustainability advocates action planning and with this in mind the Sustainable and Attainable website www.sustainableschools.sa.edu.au/ is a great resource. Students can gain guidance in performing a water audit at home or school from this site or your school could sign up to be an AuSSI-SA School.

<p>Science</p> <p>Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073) yr4</p> <p>Living things have structural features and adaptations that help them to survive in their environment (ACSSU043) yr5</p> <p>Scientific knowledge is used to inform personal and community decisions (ACSHE220) yr5&6</p> <p>The growth and survival of living things are affected by the physical conditions of their environment (ACSSU094) yr6</p>	<ol style="list-style-type: none"> 2. Gardens are managed spaces; with this manipulation of the natural environment comes responsibility to look after it. What are the consequences if people don't responsibly manage their own space/environment? Brainstorm the ways in which human action can change a garden environment or in small groups choose a human action that has impacted in a positive or negative way on the garden environment - consider the use of pruning, fertilizer use, poisoning, mulching, land clearing, retaining walls etc. Design a snakes and ladders board game to represent what might happen to the environment – living and non living if people don't manage their garden environment in a sustainable and responsible way or communicate the ideas through a dramatisation. 3. The bottle tree has an unusual name because it holds water and is shaped like a bottle. Be creative and design an unusual plant that can make your garden a great place to be in. Give it a name. Present your plant to the rest of the class. Use the Adelaide WaterRight Gardens Webtool and the WaterRight Gardens Field Guide to give you ideas on plant structures and suitability - http://waterrightgardens.sawater.com.au/. 4. Investigate seeds as a means of reproduction and growth and as a source of valuable nutrients. Dissect a large seed such as a broad bean seed and record findings in a scientific diagram with labelled parts.
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NOTE: Many of the ideas listed in F-2 and in year 7-8 WaterRight documents are suitable for use with this age group with slight modification.

ACARA

Student Work samples PDF format available from the ACARA website.

Year 3 – new species

Year 5 – animal features

Year 6 – microbe habitats

RESOURCES

A factsheet on endangerment in the Mediterranean basin.

http://cmsdata.iucn.org/downloads/the_mediterranean_a_biodiversity_hotspot_under_threat_factsheet_en.pdf

Adelaide WaterRight Gardens Webtool and the WaterRight Gardens Field Guide

<http://waterrightgardens.sawater.com.au/>

An ABC News story regarding Aboriginal Fire use.

www.abc.net.au/science/news/stories/s1398157.htm

Australian National Botanic Gardens, 2004, *Aboriginal Plant Use in south-eastern Australia*, Australian National Botanic Gardens, Canberra.

www.anbg.gov.au/education/programs/usingplants.html

Climate information for the Mediterranean zones.

www.uwsp.edu/geo/faculty/ritter/geog101/textbook/climate_systems/mediterranean.html

Gardening Australia Factsheet Mediterranean Plants – Information on a variety of plants that are well suited to Adelaide home gardens.

www.abc.net.au/gardening/stories/s1503307.htm

Information on how fires affect biodiversity.

www.anbg.gov.au/fire_ecology/fire-and-biodiversity.html

Information on fire in the Mediterranean basin.

<http://ag.arizona.edu/OALS/ALN/aln54/rackham.html>

Information on the biome of the Mediterranean basin.

www.mediterraneanaction.net/ma_v2/about_biome/med_basin.jsp Living with the Land – Learning resources for teachers relating to the SA Water

Mediterranean Garden.

<http://oac.schools.sa.edu.au/outreach/oes/botanic/living.htm>

SA Water Education – Find free resources, a teacher resource library and a program of free learning activities for R-12 students around water and water related issues.

www.sawater.com.au/education

The Mediterranean Garden Society – Home page of a group of gardeners, passionate about their Mediterranean gardens.

www.mediterraneangardensociety.org/

Further information

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The SA Water Mediterranean Garden – A brochure to assist in viewing the garden.

www.environment.sa.gov.au/botanicgardens/Visit/Adelaide_Botanic_Garden/SA_Water_Mediterranean_Garden

Watching Water – A brochure designed to educate on good water use in the home garden and a selection of the fascinating adaptations to lack of water in plants of the Botanic Gardens of Adelaide.

<http://oac.schools.sa.edu.au/outreach/oes/botanic/pdfs/watchingwater.pdf>

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