

	Waste	Energy	Water	Examples of suitable science enquiry questions
2	<p><u>Science as a Human Endeavour:</u> Use and influence of science People use science in their daily lives, including when caring for their environment and living things (ACSHE035) - <i>identifying the ways humans manage and protect resources, such as reducing waste and caring for water supplies</i></p>		<p><u>Science Understanding:</u> Earth & Space Sciences Earth's resources, including water, are used in a variety of ways (ACSSU032) - <i>describing how a resource such as water is transferred from its source to its point of use</i></p> <p><u>Science as a Human Endeavour:</u> Nature and development of science Science involves asking questions about, and describing changes in, objects and events (ACSHE034) - <i>identifying and describing sources of water</i></p> <p><u>Science as a Human Endeavour:</u> Use and influence of science People use science in their daily lives, including when caring for their environment and living things (ACSHE035) - <i>identifying the ways humans manage and protect resources, such as reducing waste and caring for water supplies</i></p>	<p>How does a compost heap/garden change over time?</p>
4	<p><u>Science as a Human Endeavour:</u> Use and influence of science Science knowledge helps people to understand the effect of their actions (ACSHE062) - <i>considering methods of waste management and how they can affect the environment</i> - <i>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</i></p>			<p>How is pollution measured and controlled? (L3)</p> <p>What personal actions can be taken to reduce, reuse and recycle materials and how can the effectiveness of these actions be measured? (L3.5)</p> <p>How can we save water at school and at home? (L3.5)</p>
6		<p><u>Science Understanding:</u> Physical Sciences Energy from a variety of sources can be used to generate electricity (ACSSU219) - <i>considering whether an energy source is sustainable</i></p> <p><u>Science as a Human Endeavour:</u> Nature and development of science Important contributions to the advancement of science have been made by people from a range of cultures (ACSHE099) - <i>investigating how people from different cultures have used sustainable sources of energy, for example water and solar power</i></p> <p><u>Science as a Human Endeavour:</u> Use and influence of science Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100) - <i>investigating how electrical energy is generated in Australia and around the world</i> - <i>researching the use of methane generators in Indonesia</i> Scientific knowledge is used to inform personal and community decisions (ACSHE220) - <i>considering how personal and community choices influence our use of sustainable sources of energy</i></p>		<p>How is water/air quality affected by human activities? (L5)</p> <p>How can the water cycle be manipulated so that arid environments may have greater access to clean water? (L5)</p> <p>How can efficiencies of wind turbines, solar panels, biogas generators and/or geothermal energy converters be improved, and how viable are they as alternatives to fossil fuels for electricity generation? (L5.5)</p> <p>Which form of alternative energy would best replace the use of energy derived from fossil fuels in a given location? (L5.5)</p> <p>What is the role of decomposers in an ecosystem?</p>

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7		<p><u>Science Understanding:</u> Earth & Space Sciences Some of Earth's resources are renewable, but others are non-renewable (ACSSU116) <i>- comparing renewable and non-renewable energy sources, including how they are used in a range of situations</i></p>	<p><u>Science Understanding:</u> Earth & Space Sciences Water is an important resource that cycles through the environment (ACSSU222) <i>- considering the water cycle in terms of changes of state of water</i> <i>- investigating factors that influence the water cycle in nature</i> <i>- exploring how human management of water impacts on the water cycle</i></p> <p><u>Science as a Human Endeavour:</u> Nature and development of science Science knowledge can develop through collaboration and connecting ideas across the disciplines of science (ACSHE223) <i>- considering how water use and management relies on knowledge from different areas of science, and involves the application of technology</i> <i>- identifying the contributions of Australian scientists to the study of human impact on environments and to local environmental management projects</i></p> <p><u>Science as a Human Endeavour:</u> 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 (ACSHE120) <i>- considering issues relating to the use and management of water within a community</i> <i>- considering how human activity in the community can have positive and negative effects on the sustainability of ecosystems</i></p> <p><u>Science as a Human Endeavour:</u> Use and influence of science Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management (ACSHE121) <i>- investigating everyday applications of physical separation techniques such as filtering, sorting waste materials, reducing pollution, extracting products from plants, separating blood products and cleaning up oil spills</i> <i>- investigating how advances in science and technology have been applied to the treatment of water in industrial and household systems</i></p> <p>People use understanding and skills from across the disciplines of science in their occupations (ACSHE224) <i>- recognising that water management plays a role in areas such as farming, land management and gardening</i></p>	<p>How does urbanisation impact on ecosystems?</p> <p>What difference has recycling made to the availability of natural resources?</p> <p>How can soil quality be improved?</p> <p>How do different sewage treatment methods compare in terms of outputs and water quality?</p> <p>How could you design a more energy-efficient house?</p>
8	<p><u>Science as a Human Endeavour:</u> 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 (ACSHE135) <i>- investigating requirements and the design of systems for collecting and recycling household waste</i></p>			

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10			<u>Science Understanding:</u> Earth & Space Sciences Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189) <i>- modelling a cycle, such as the water, carbon, nitrogen or phosphorus cycle within the biosphere</i>	How can alternative energies be made more viable? (L9.5) What is the capacity for alternative non-fossil fuel energy sources meeting the needs of current and future societies? What proportion of scientific research efforts and funding should be allocated to development of renewable versus non-renewable energy technologies? (L11.5)

Poo Power! together with 'Dog Poo - The Truth At Last' can be taught in the Australian science curriculum from as early as Level 2 all the way through to Level 10. It is best fits in Levels 6 and 7, where Science Inquiry Skills can additionally be demonstrated through the experiment suggested in the Study Guide (p. 11). VCE applicability is also inherent.

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Links:

ACARA Science Curriculum - <http://www.australiancurriculum.edu.au/Science/Curriculum/F-10>

AusVELS Science Curriculum - <http://ausvels.vcaa.vic.edu.au/Science/Curriculum/F-10>

