

**YEAR RECOMMENDATION: 9-12**

**Friday, 23 March 2018**

**10.00 am-11.00 am**

Space Junk: Cleaning Up After Ourselves at the World Science Festival Brisbane can provide Year 9-12 with valuable curriculum links and a unique classroom learning experience.

*The Queensland Museum acknowledges the expertise and support of the Department of Education in developing these curriculum links.*

## Year 4-12 Curriculum Links

### Links with Cross-Curriculum Priorities

#### Sustainability

- OI.6 The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future.
- OI.7 Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments.
- OI.8 Designing action for sustainability requires an evaluation of past practices, the assessment of scientific and technological developments, and balanced judgements based on projected future economic, social and environmental impacts.
- OI.9 Sustainable futures result from actions designed to preserve and/or restore the quality and uniqueness of environments.

### Links with General Capabilities

#### Literacy

##### Grammar knowledge

Express opinion and point of view - use language that indirectly expresses opinions and constructs representations of people and events, and consider expressed and implied judgments

##### Information and Communication Technology (ICT) Capability

Identify the impacts of ICT in society - assess the impact of ICT in the workplace and in society, and speculate on its role in the future and how they can influence its use

##### Personal and Social Capability

Engage in science inquiry, learn how scientific knowledge informs and is applied in their daily lives, and explore how scientific debate provides a means of contributing to their communities.

##### Ethical understanding

Reasoning in decision making and actions. Exploring values, rights and responsibilities.

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## Links with Cross-Curriculum Priorities

## Links with General Capabilities

### Numeracy

Students solve problems in authentic contexts that involve collecting, recording, displaying, comparing and evaluating the effectiveness of data displays of various types. They use appropriate language and numerical representations when explaining the outcomes of chance events

Students visualise, identify and sort shapes and objects, describing their key features in the environment. They use symmetry, shapes and angles to solve problems in authentic contexts and interpret maps and diagrams, using scales, legends and directional language to identify and describe routes and locations.

### Critical and creative thinking

Students pose questions and identify and clarify information and ideas, and then organise and process information. They use questioning to investigate and analyse ideas and issues, make sense of and assess information and ideas, and collect, compare and evaluate information from a range of sources.

The possible curriculum links between Space Junk: Cleaning Up After Ourselves and the Australian Curriculum are described in the table below. The applicable Achievement Standard, content descriptions and C2C units have been outlined for Years 9-12. The applicability is dependent on the school pre- and post- activities and incorporation of the World Science Festival Brisbane event into the overall unit of work that the students are engaged with.

Year	Achievement Standard	Content descriptions	Curriculum into the Classroom
	<p>By the end of Year 9, students.... They analyse how biological systems function and respond to external changes with reference to interdependencies, energy transfers and flows of matter.</p> <p>They describe social and technological factors that have influenced scientific developments and predict how future applications of science and technology may affect people's lives. Students design questions that can be investigated using a range of inquiry skills.</p>	<p><b>Science Understanding</b> Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)</p> <p><b>Science as a Human Endeavour</b> Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discovers (ACSH158)</p> <p><b>Science Inquiry skills</b> Formulate questions or hypotheses that can be investigated scientifically (ACSIS164)</p> <p>Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS170)</p> <p>Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS174)</p>	<p>Year 9 Unit 6 Responding to change</p>

Year	Achievement Standard	Content descriptions	Curriculum into the Classroom
10	<p>Students describe and analyse interactions and cycles within and between Earth's spheres.....</p> <p>Students evaluate the validity and reliability of claims made in secondary sources with reference to currently held scientific views, the quality of the methodology and the evidence cited.</p>	<p><b>Science Understanding</b></p> <p>Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)</p> <p><b>Science as a Human Endeavour</b></p> <p>Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSH158)</p> <p>People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE194)</p> <p>Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</p> <p><b>Science Inquiry skills</b></p> <p>Formulate questions or hypotheses that can be investigated scientifically (ACSI164)</p>	Year 10 Unit 7 Global systems

### Senior Syllabus (Years 11-12 Subjects) Curriculum Links

#### Science in Practice

Elective: Resources, energy and sustainability

Solutions to humanity's energy and resource challenges are likely to come from the application of science and technology. Students should develop an awareness of the consequences of using resources by considering their short-term and long-term impacts as well as their sustainability.

#### Year 2-8 Curriculum Links

Although the discussion at this event will be pitched at year 9-12 students, there is also a direct content curriculum link to the following descriptors in other year levels.

Year	Achievement Standard	Content descriptions	Curriculum into the Classroom
2 Science	<p>Students ..... describe changes in their local environment.....</p> <p>Students respond to questions, make predictions, and participate in guided investigations of everyday phenomena.</p>	<p><b>Knowledge and Understanding</b></p> <p>Earth's resources are used in a variety of ways (ACSSU032)</p>	Unit 4 Science Save planet Earth

Year	Achievement Standard	Content descriptions	Curriculum into the Classroom
4 HASS (Humanities and Social Sciences)	Students recognise the importance of the environment and identify different possible responses to a geographical challenge.	<b>Knowledge and Understanding Geography</b> The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090 )	Unit 2 HASS Sustainable use of places
6 Science	Students develop a view of Earth as a dynamic system, in which changes in one aspect of the system impact on other aspects; similarly, they see that the growth and survival of living things are dependent on matter and energy flows within a larger system.	<b>Knowledge and Understanding</b> Sudden geological changes and extreme weather events can affect Earth's surface (ACSSU096)	Unit 4 Life on earth
7 Science	By the end of Year 7, students... They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems.	<b>Science as a Human Endeavour</b> Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)	Year 7 Unit 1 Water- waste not, want not  Year 7 Unit 2 Water- waste not, want not
8 Science	By the end of Year 8, students ..... explain how evidence has led to an improved understanding of a scientific idea and describe situations in which scientists collaborated to generate solutions to contemporary problems. They reflect on implications of these solutions for different groups in society.	<b>Science as a Human Endeavour</b> Use and influence of science  Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE135)	Year 8 Unit 5 Energy in my life & 6 What's up

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