**Molesworth Environment Centre: Sustainability**

The Sustainability program at Molesworth Environment Centre correlates directly with the Australian Curriculum cross-curriculum priority. We aim to promote thinking about what students can do to ensure a sustainable world future. Elements of social awareness and ethical behaviour are also included. Examples of study areas can include:

* Recycled paper making and school paper recycling program.
* Discussion on resources (water, food, minerals and so on) and the importance of reducing consumption as well as reuse and recycle.
* Vegetable garden, worm farm and seed propagation. Sustainable/organic farming practices.
* Investigation of what students can do to minimise their biological footprint. Generate ideas on reducing power and water consumption, reducing landfill and waste.

**Sustainability program at Molesworth relates to the following Organising Ideas**

Systems

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| OI.1 | The biosphere is a dynamic system providing conditions that sustain life on Earth. |
| OI.2 | All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival. |
| OI.3 | Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems. |

World Views

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| OI.4 | World views that recognise the dependence of living things on healthy ecosystems, and value diversity and social justice are essential for achieving sustainability. |
| OI.5 | World views are formed by experiences at personal, local, national and global levels, and are linked to individual and community actions for sustainability. |

Futures

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| 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 judgments 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. |

**Sustainability Program at Molesworth and the Science Curriculum**

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|  |  | **Foundation Year** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Science Understanding** | **Biological Sciences** | Living things have basic needs, including food and water | Living things have a variety of external features  Living things live in different places where their needs are met | Living things grow, change and have offspring similar to themselves | Living things can be grouped on the basis of [observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=observable) features and can be distinguished from non-living things | Living things, including plants and animals, depend on each other and the [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment) to survive. | Living things have structural features and [adaptations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=adaptations) that help them to survive in their [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment) | The growth and survival of living things are affected by the physical conditions of their [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment) |
| **Chemical Sciences** | Objects are made out of materials that have observable properties. | Everyday materials can be changed in a variety of ways |  |  | Natural and processed materials have a range of physical properties; these can influence their use. |  | Changes to materials can be reversible, such as melting, freezing, or irreversible, such as burning or rusting. |
| **Earth and**  **space**  **sciences** |  |  | Earth’s resources including water, are used in a variety of ways. |  | Earth’s surface changes as a result of natural processes and human activity. |  | Sudden geological changes or extreme weather conditions can affect the Earth’s surface. |
| **Physical**  **sciences** |  |  |  |  |  |  | Energy from a variety of sources can be used to generate electricity. |
| Science as a Human Endeavour | **Nature and**  **development**  **of science** | Science involves exploring and observing the world using the senses |  | | Science involves making predictions and describing patterns and relationships | |  | |
| **Use and**  **influence of**  **science** |  | People use science in their daily lives, including when caring for their environment and living things | | Science knowledge helps people to understand the effect of their actions | |  | |
| Science Inquiry Skills | **Questioning and Predicting** | Respond to questions about familiar objects and events | Respond to and pose questions, and make predictions about familiar objects and events | |  | |  | |
| **Planning and Conducting** | Explore and make observations by using the [senses](http://www.australiancurriculum.edu.au/Glossary?a=S&t=senses) |  | |  | |  | |
| **Processing and analysing data and information** | Engage in discussions about observations and use methods such as drawing to represent ideas | Through discussion, compare observations with predictions | |  | |  | |
| **Communicating** | Share observations and ideas | Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play | |  | |  | |

**Possible activities offered at Molesworth based on Australian Curriculum**

Recycling and materials

1. Investigate the materials everyday items are made out of.
2. Describe the properties of everyday items and discuss how the materials may or may not be changed in recycling.
3. Investigate why everyday items are made out of certain materials, and suggest possible alternatives, eg lunch packing,
4. Participate in a recycled paper making activity to explore how materials change and can be used for a variety of purposes.
5. Consider what happens to an item after it has finished being useful. Where does it go and what happens to it? Eg landfill, recycle, water or air pollutant etc.

Resources

1. Investigate what is meant by a resource.
2. Discuss what resources are important for human survival and which resources are used for non-essential consumer items.
3. Consider where resources come from and how they are made.
4. Understand changes to the earth’s surface are made in human’s attempts to extract resources (mining, damning rivers and so on).
5. Consider what might happen if resources were to run out.
6. Suggest alternatives to some of the resources we currently use today.
7. Understand that using less of a resource could be considered a personal responsibility.

Energy

1. Understand some of the ways energy can be generated and how we use energy everyday.
2. Understand that some of the ways we produce energy have detrimental effects on aspects of the environment, such as heat and carbon dioxide production, changes to habitats from mining or damning and so on.
3. Consider alternative forms of energy production.
4. Generate ideas on ways to use less energy.

Global systems

1. Investigate whole-globe systems such as carbon and water cycle, greenhouse gasses or ozone depletion.
2. Discuss how changes in the amount of carbon dioxide in the atmosphere can affect weather systems or oceans.
3. Investigate how climate change might affect weather systems or extreme weather events.
4. Investigate how plants and animals are dependent on each other for survival.
5. Investigate the role plants play in providing oxygen and removing carbon dioxide from the atmosphere.

Farming and Food as a Resource

1. Consider where our food comes from originally and how it ends up on the table. Investigate the energy required for this to happen.
2. How do traditional farming and food preservations practices differ for current large scale farming and food preservation techniques?
3. Discuss the role of pesticides and fertilizers on farming practices and the possible effects these have on natural ecosystems.
4. Investigate genetic technologies in crop production.