



Octopus School



Renewable Energy Links to New Zealand Curriculum

Science	Learning Outcomes
Nature of science	Investigate and develop simple explanations. Develop investigations extending science knowledge. Understand the relationship between investigations and scientific theories. Develop and carry out investigations that extend science knowledge. Develop an understanding of the relationship between investigations, scientific theories and models.
Communicating in science	Use scientific symbols, conventions, and vocabulary. Use accepted science knowledge, vocabulary, symbols, and conventions when evaluating accounts of the natural world. Use growing science knowledge when considering issues.
Participating and contributing in science	Use science knowledge considering issues of concern. Explore aspects of an issue and make decisions about actions. Use relevant information to develop a coherent understanding of socio-scientific issues and identify possible responses.
Living World: Ecology	Investigate the interdependence of living things in an ecosystem. Investigate the impact of natural events and human actions on a New Zealand ecosystem.
Plant Earth and Beyond: Earth systems	Develop an understanding of the causes of natural hazards and interactions with human activity on Earth. Appreciate that water, air, rocks and soil, and life forms make up our planet and recognize these are also Earth's resources. Investigate the water cycle and its effect on climate, landforms, and life. Investigate the components of the solar system, developing an appreciation of the distances between them. Investigate how heat from the Sun, the Earth, and human activities is distributed around Earth by the geosphere, hydrosphere, and atmosphere. Develop an understanding of how the geosphere, hydrosphere, atmosphere, and biosphere interact to cycle carbon around the Earth. Explain the nature and life cycles of different types of stars in terms of energy changes and time. Develop an in-depth understanding of the interrelationship between human activities and the geosphere, hydrosphere,

atmosphere, and biosphere over time.

Physical inquiry and physics concepts:

Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat. Identify and describe the effect of forces on the motion of objects; identify and describe everyday examples of sources of energy, forms of energy, and energy transformations. Investigate trends and relationships in physical phenomena (in the areas of mechanics, electricity, electromagnetism, heat, light and waves, and atomic and nuclear physics). Investigate how physics knowledge is used in a technological or biological application. Explore a technological or biological application of physics. Investigate physical phenomena (in the areas of mechanics, electricity, electromagnetism, light and waves, and atomic and nuclear physics) and produce qualitative and quantitative explanations for a variety of unfamiliar situations. Use physics ideas to explain a technological or biological application of physics. Use physics ideas to explain a technological, biological, or astronomical application of physics and discuss related issues.

Material World:

Relate the observed, characteristic chemical and physical properties of a range of different materials to technological uses and natural processes. Begin to develop an understanding of the particle nature of matter and use this to explain observed changes. Investigate the chemical and physical properties of different groups of substances, acids and bases, fuels, and metals. Describe the structure of atoms. Link the properties of different groups of substances to the way they are used in society or occur in nature. Explore factors that affect chemical processes. Use particle theory to explain factors that affect chemical processes. Investigate how chemical knowledge is used in a technological application of chemistry. Relate properties of matter to structure and bonding. Apply knowledge of chemistry to explain aspects of the natural world and how chemistry is used in society to meet needs, resolve issues, and develop new technologies.

Investigating in Science:

Ask questions, find evidence, explore simple models, and carry out appropriate investigations to develop simple explanations. Develop and carry out more complex investigations, including using models.

Social Studies

Learning outcomes

- Understand people make decisions about the use of resources.
 - Understand the management of resources impacts environmental sustainability.
 - Understand interaction with the natural environment has consequences.
 - Understand ideas and actions in the past have a significant impact on future.
 - Understand perception and interactions with natural environments differ over time.
 - Understand that events have causes and effects.
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English

Learning outcomes

Listening, Reading, and Viewing

- Integrate information and prior knowledge.
- Develop critical thinking skills.
- Identify and think about main ideas.
- Develop increased vocabulary.
- Make meaning by understanding sophisticated ideas.

Speaking, Writing, and Presenting

- Identify, form, and express ideas.
 - Create a range of texts with an awareness of purpose.
 - Develop a personal voice.
 - Use oral, written, and visual language features.
 - Use a range of vocabulary.
 - Use increasing vocabulary to communicate precise meaning.
 - Creates a range of increasingly coherent, varied, and complex texts by integrating sources of information.
 - Reflect about the production of their own texts: monitor and self-evaluate progress, articulate their own learning with confidence.
 - Develop, communicate, and sustain increasingly sophisticated ideas, information, and understandings.
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The Arts

Learning Outcomes

Visual Arts

- Explore and use art-making conventions.
 - Develop visual ideas, in response to motivations, observations, and imagination.
 - Explore and describe ways meaning can be communicated.
 - Consider contexts underlying their own and other's work.
 - Apply understanding from research into established practice to extend skills for particular art-making purposes.
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Extend skills, in a range of materials, techniques, and technologies.

Health and Physical education

Learning Outcomes

Healthy communities and environments

Analyze ways in which the environment and the well-being of a community are affected by population pressure and technological processes.
Describe how the body responds to physical activity.

Technology

Learning Outcomes

Understand how society and the environment are influenced by technology.
Understand the relationship between the materials used and their performance properties.
Understand how society and environments impact on and are influenced by technology.
Understand that materials can be formed, manipulated, and/or transformed to enhance the fitness for purpose of a technological product.
Understand how technological development expands human possibilities.
Understand the implications of technology as intervention by design and how interventions have consequences, known and unknown, intended and unintended.

Maths and Statistics

Learning Outcomes

Geometry and measurement

Use linear scales and whole numbers of metric units for length, area, volume and capacity, weight (mass), angle, temperature, and time.
Represent objects with drawings and models.
Measure at a level of precision appropriate to the task.
Apply co-ordinate geometry techniques to points and lines.

