

Curriculum Links and Learning Outcomes

This document demonstrates how these activities link to the New Zealand Curriculum. The challenges have been designed so that the outcome can be tailored to suit the focus of your learning and the time you have to spend on the programme. You could set up a challenge as a fair test and have the students complete an investigation, have students develop a design brief for a stakeholder (e.g. the Navy), use the content for a literacy activity or a mathematics activity e.g. scaling up the helicopter template.

Suggested Science learning outcomes:

1. Define force as a push or a pull.
2. Show how to draw forces using simple pictures (force diagrams).
3. Explain how things move when forces are balanced or unbalanced.
4. Explain that an object's weight is because of gravity pulling on it.
5. Recognise the difference between mass (how much stuff is in something) and weight (how heavy it is).
6. Show that friction is a force that slows things down when they rub against each other, and how it affects movement.

New Zealand Curriculum Links:

Science Curriculum

Strand	Level Three and Four
Nature of Science	<p>Investigating in science</p> <ul style="list-style-type: none">• Build on prior experiences, working together to share and examine their own and others' knowledge.• Ask questions, find evidence, explore simple models, and carry out appropriate investigations to develop simple explanations. <p>Communicating in science</p> <ul style="list-style-type: none">• Begin to use a range of scientific symbols, conventions, and vocabulary.• Engage with a range of science texts and begin to question the purposes for which these texts are constructed.
Physical World	<p>Physical inquiry and physics concepts</p> <ul style="list-style-type: none">• Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement and forces.

Strand	Level Three	Level Four
Technological Practice	<p>Planning for practice</p> <ul style="list-style-type: none"> Undertake planning to identify the key stages and resources required to develop an outcome. Revisit planning to include reviews of progress and identify implications for subsequent decision making. <p>Brief development</p> <ul style="list-style-type: none"> Describe the nature of an intended outcome, explaining how it addresses the need or opportunity. Describe the key attributes that enable development and evaluation of an outcome. <p>Outcome development and evaluation</p> <ul style="list-style-type: none"> Investigate a context to develop ideas for potential outcomes. Trial and evaluate these against key attributes to select and develop an outcome to address the need or opportunity. Evaluate this outcome against the key attributes and how it addresses the need or opportunity. 	<p>Planning for practice</p> <ul style="list-style-type: none"> Undertake planning that includes reviewing the effectiveness of past actions and resourcing, exploring implications for future actions and accessing of resources, to enable the development of an outcome. <p>Brief development</p> <ul style="list-style-type: none"> Justify the nature of an intended outcome in relation to the need or opportunity. <p>Outcome development and evaluation</p> <ul style="list-style-type: none"> Investigate a context to develop ideas for feasible outcomes. Undertake functional modelling and develop the outcome that best addresses the key attributes.
Technological knowledge	<p>Technological products</p> <ul style="list-style-type: none"> Understand the relationship between the materials used and their performance properties in technological products. 	<p>Technological products</p> <ul style="list-style-type: none"> Understand that materials can be formed, manipulated, and/or transformed to enhance the fitness for purpose of a technological product.
Nature of Technology	<p>Characteristics of technology</p> <ul style="list-style-type: none"> Understand how society and environments impact on and are influenced by technology in historical and contemporary contexts and that technological knowledge is validated by successful function. <p>Characteristics of technological outcomes</p> <ul style="list-style-type: none"> Understand that technological outcomes are recognisable as fit for purpose by the relationship between their physical and functional natures. 	<p>Characteristics of technology</p> <ul style="list-style-type: none"> Understand how technological development expands human possibilities and how technology draws on knowledge from a wide range of disciplines. <p>Characteristics of technological outcomes</p> <ul style="list-style-type: none"> Understand that technological outcomes can be interpreted in terms of how they might be used and by whom and that each has a proper function as well as possible alternative functions.