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All LEARNZ field trips targeting primary and secondary schools are closely linked to the New Zealand curriculum, in particular science, social studies and geography. They can also be used by other subject teachers.

Key concepts

Earth processes, earthquake research, earthquakes, emergency management, faults, hazards, landslides, plate tectonics, tsunamis .

The New Zealand Curriculum - NZC

Key Competencies

LEARNZ virtual field trips contribute to the development of all five key competencies:

Key Competencies	Examples of Related Field Trip Components
Thinking	Constructing questions to put to experts during Audioconferences and via Ask-an-Expert.
Using language, symbols and texts	Interpreting and making meaning of a variety of language and symbols in the Background Pages and throughout the web site.
Managing self	Numerous content-related Activities provide students with chances to engage with the material and create their own interpretation of the content.
Relating to others	Videos connect students with a range of expert opinions. Students listen actively

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	when seeking answers to video questions.
Participating and contributing	LEARNZ Virtual Field Trips are an ideal medium for group-based topic inquiry. They also enable students to transfer new learning into the context of their own communities where they are encouraged to take action.

(See page 12-13 NZC 2007)

Values

The *Geohazards* field trip encourages, models and explores these values:

- innovation, inquiry and curiosity
- ecological sustainability
- community and participation

(see page 10 NZC 2007).

E-learning and pedagogy

The *Geohazards* field trip directly involves learning that is supported by information and communication technology (ICT).

In particular, the trip will:

- Assist the making of connections by enabling students to enter and explore new learning environments, overcoming barriers of distance and time.
- Facilitate shared learning by enabling students to join or create communities of learners that extend well beyond the classroom.
- Enhance opportunities to learn by offering students virtual experiences and tools that save them time, allowing them to take their learning further (Page 36 NZC 2007).

Social Science

Strand	Achievement Aims	Background Pages	Related Activities
Social Studies	Continuity and Change	<ul style="list-style-type: none">• What are Geohazards [2]• Monitoring	<ul style="list-style-type: none">• Activities [6] [7]



- Level 2: Understand how time and change affect people's lives
 - Level 4: Understand that events have causes and effects
- [and Detecting Geohazards](#) [3]
 - [The Earthquake Commission](#) [4]
 - [Geohazards in Marlborough](#) [5]

Place and Environment

- Level 2: Understand how places influence people and people influence places
- Level 3: Understand how people view and use places differently

Identity, Culture, and Organisation

- Level 4: Understand how people participate individually and collectively in response to community challenges

Economic World

	<ul style="list-style-type: none"> Level 5: Understand how economic decisions impact on people, communities, and nations.
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Science

Strand	Achievement Aims	Background Pages	Related Activities
<p>The Nature of Science</p> 	<p>Participating and contributing</p> <ul style="list-style-type: none"> Levels 1-2: Explore and act on issues and questions that link their science learning to their daily living. Level 3-4: Use their growing science knowledge when considering issues of concern to them. <p>Understanding about science</p> <ul style="list-style-type: none"> Levels 1-2: Appreciate that 	<ul style="list-style-type: none"> ALL [8] [9] 	<ul style="list-style-type: none"> Activities [6] [7]

	<p>scientists ask questions about our world that lead to investigations and that open-mindedness is important because there may be more than one explanation.</p> <ul style="list-style-type: none"> • Level 3-4: Identify ways in which scientists work together and provide evidence to support their ideas. <p>Communicating in science</p> <ul style="list-style-type: none"> • Level 3-4: Begin to use a range of scientific symbols, conventions and vocabulary.
<p>Planet Earth and Beyond</p>	<p>Earth systems</p> <ul style="list-style-type: none"> • Level 2-5; Explore and describe natural features and resources <p>• [9] ALL [8]</p> <p>• [6] Activities [7]</p>



The five science capabilities

Science Capability	Description
 <p>Gather and interpret data</p>	<p>Learners make careful observations and differentiate between observation and inference.</p> <p><i>Science knowledge is based on data derived from direct, or indirect, observations of the natural physical world and often includes measuring something. An inference is a conclusion you draw from observations - the meaning you make from observations. Understanding the difference is an important step towards being scientifically literate.</i></p>
 <p>Use evidence</p>	<p>Learners support their ideas with evidence and look for evidence supporting others' explanations.</p> <p><i>Science is a way of explaining the world. Science is empirical and measurable. This means that in science, explanations need to be supported by evidence that is based on, or derived from, observations of the natural world.</i></p>
 <p>Critique evidence</p>	<p>Not all questions can be answered by science.</p> <p><i>In order to evaluate the trustworthiness of data, students need to know quite a lot about the qualities of scientific tests.</i></p>
 <p>Interpret representations</p>	<p>Scientists represent their ideas in a variety of ways, including models, graphs, charts, diagrams and written texts.</p>

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	<p>Learners think about how data is presented and ask questions such as:</p> <ul style="list-style-type: none"> • What does this representation tell us? • What is left out? • How does this representation get the message across? • Why is it presented in this particular way?
 <p>Engage with science</p>	<p>This capability requires students to use the other capabilities to engage with science in “real life” contexts.</p> <p><i>It involves students taking an interest in science issues, participating in discussions about science and at times taking action.</i></p>

Technology

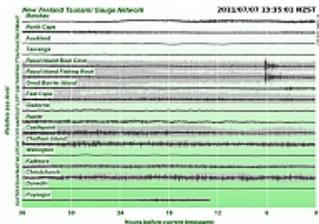
Strand	Achievement Aims	Background Pages	Related Activities
<p>Nature of Technology</p> 	<p>Nature of Technology</p> <ul style="list-style-type: none"> • Level 1-3; Understand how technological development expands human possibilities and how technology draws on knowledge from a wide range of disciplines. 	<ul style="list-style-type: none"> • What Causes Geohazards [10] • Monitoring and Detecting Geohazards [3] 	<ul style="list-style-type: none"> • Activities [6] [7]

Mathematics

Strand	Achievement Aims	Background Pages	Related Activities

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<h2>Number and Algebra</h2>	<p>Level 3: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages</p>	<ul style="list-style-type: none"> • What Causes Geohazards [10] • Monitoring and Detecting Geohazards [3] 	<ul style="list-style-type: none"> • [6]Field Trip Number Challenge - Word [11] (32k) PDF [12] (204k) • Geohazards Let's Work it Out - Word [13] (39k) PDF [14] (292k)
	<p>Level 4: Use a range of multiplicative strategies when operating on whole numbers</p>		
	<p>Level 4: Generalise properties of multiplication and division with whole numbers</p>		

English

The selected processes and strategies indicators used in the table below are from Level three of the NZC, but aim to cover indicators from levels two to four.

Strand	Processes and Strategies Indicators	Example of Related Field Trip Component
<p>Speaking, Writing and Presenting</p> 	<ol style="list-style-type: none"> 1. uses an increasing understanding of the connections between oral, written, and visual language when creating texts 2. creates a range of texts by integrating sources of information and processing strategies with increasing confidence 	<ol style="list-style-type: none"> 1. making the connection between Audioconferences, Background Pages, Videos, and own discussion when generating written responses 2. assimilate information from Audioconferences, Background Pages, Videos, and Ask-an-Expert to create a range of texts
<p>Listening, Reading and</p>	<ol style="list-style-type: none"> 1. selects and reads 	<ol style="list-style-type: none"> 1. printed copies of

Viewing



- for enjoyment and personal fulfilment
2. recognises connections between oral, written, and visual language
 3. integrates sources of information and prior knowledge confidently to make sense of increasingly varied and complex texts
 4. thinks critically about texts with increasing understanding and confidence

- Background Pages could be part of classroom library
2. making links between Audioconferences, Background Pages, and Videos
 3. Audioconferences, Audioconference Backchannel, Videos, Diaries, and Ask-an-Expert can be used to make sense of Background Pages and Diaries and generate questions to put to experts for further clarification

NCEA

Science

- Science 1.3: Demonstrate understanding of the formation of surface features in New Zealand. See the NCEA Internal Assessment Resource AS90952 "Let's Look at Our Local Area" - PDF (292k)
- Science 1.16: Investigate an astronomical or Earth science event. See the NCEA Internal Assessment Resource AS90955 "When Christchurch Shook" - PDF(210k).
- ESS 2.3: Investigate geological processes in a New Zealand locality. See the NCEA Internal Assessment Resource AS91189 "Taupo Volcanic Zone" - PDF (242k)
- ESS 2.5: Demonstrate understanding of the causes of extreme Earth events in New Zealand
- ESS 2.7: Demonstrate understanding of physical principals related to the Earth System
- ESS 3.3: Demonstrate understanding of the evidence relating to geological events

Geography

Level 1

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- 1.1 Demonstrate geographic understanding of environments that have been shaped by extreme natural event(s) (AS91007) - earthquake, tsunami or landslide.
- 1.6 Describe aspects of a contemporary New Zealand geographic issue (AS91012) - planning for a geohazard, hazard assessment, impacts, risk mitigation.
- 1.8 Apply spatial analysis, with direction, to solve a geographic problem. See the NCEA Internal Assessment Resource AS91014 "Ruaumoko Erupts" - PDF (327k) - co-ordinating a response to a natural disaster.

Level 2

- 2.1 Demonstrate geographic understanding of a large natural environment (AS91240) - fault line features, volcanic landscapes
- 2.6 Explain aspects of a contemporary New Zealand geographic issue (AS91245) - planning for a geohazard, hazard assessment, impacts, risk mitigation.

Level 3

- 3.1 Analyse natural processes in the context of a geographic environment (AS90701) - landslides, seismology, predicting earthquakes, frequency and magnitude earthquakes, fault lines.
- 3.6 Analyse a contemporary geographic issue and evaluate courses of action (AS90706) - planning for a geohazard, hazard assessment, impacts, risk mitigation.

Source URL: <https://www.learnz.org.nz/geohazards152/curriculum>

Links

[1] <https://www.learnz.org.nz/geohazards152/curriculum>

[2] <http://www.learnz.org.nz/geohazards152/bg-standard-f/what-are-geohazards%3F>

[3] <http://www.learnz.org.nz/geohazards152/bg-standard-f/monitoring-and-detecting-geohazards>

[4] <http://www.learnz.org.nz/geohazards152/bg-standard-f/the-earthquake-commission-on-ecq>

[5]

<http://www.learnz.org.nz/geohazards152/bg-standard-f/geohazards-in-marlborough>

[6] <http://www.learnz.org.nz/scienceonice144/activities>

[7] <http://www.learnz.org.nz/geohazards152/activities>

[8] <http://www.learnz.org.nz/geohazards152/bg-standard>

[9] <http://www.learnz.org.nz/scienceonice144/bg-standard>

[10]

<http://www.learnz.org.nz/geohazards152/bg-standard-f/what-causes-geohazards%3F>

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[11]

https://www.learnz.org.nz/sites/learnz.org.nz/files/field-trip-number-challenge_2.doc

[12]

https://www.learnz.org.nz/sites/learnz.org.nz/files/field-trip-number-challenge_2.pdf

[13] <https://www.learnz.org.nz/sites/learnz.org.nz/files/geohazards-work-it-out.doc>

[14] <https://www.learnz.org.nz/sites/learnz.org.nz/files/geohazards-work-it-out.pdf>