

# Suggested Inquiry activities related to

## KEA issues Levels 5 to 8

to fit with the New Zealand Curriculum, and National Certificate of Educational Achievement (NCEA).

Many will fit across curricula, but may only appear once. Teachers' discretion will decide where they best fit for their needs.

*Level 1 and 2 Achievement Objectives are current, but in 2013 Level 3 is due to be realigned to the curriculum and L.3 achievement objectives may be changed.*

# Biology/Science

Investigate .....	Learning outcomes (NZ Curriculum)	NCEA Level and Number	Achievement objective NCEA	Int Or Ext	# of Credits
<ul style="list-style-type: none"> <li>The current situation with kea populations in NZ. Where are they? What is their status? Are there problems?</li> <li>The diet of captive kea compared to the natural diet.</li> <li>The breeding habits of the kea.</li> <li>The environment which is the kea's natural habitat and the challenges it presents.</li> <li>The unique features of kea, particularly their intelligence.</li> <li>The issues and difficulties of managing kea in captivity.</li> <li>The implications of 1080, the arguments for and against. Debate.</li> <li>The need for and practicality of future nest</li> </ul>	<p>Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced. (L. 4)</p> <p>Investigate the interdependence of living things (including humans) in an ecosystem. (L. 5)</p> <p>Describe the basic processes by which genetic information is passed from one generation to the other. (L. 5)</p> <p>Investigate the impact of natural events and human actions on a New Zealand ecosystem. (L. 6)</p> <p>Explore patterns in the inheritance o genetically controlled characteristics. Explain the importance of variation within a changing environment. (L. 6)</p> <p>Explore ecological distribution patterns and explain possible causes for these patterns. (L. 7)</p> <p>Understand that DNA and the environment</p>	<p><b>Level 1</b> 90925</p> <p>90926</p> <p>90949</p> <p>90951</p> <p><b>Level 2</b> 91153</p> <p>91154</p> <p>91155</p>	<p>Carry out a practical investigation in a biological context, with direction.</p> <p>Report on a biological issue</p> <p>Investigate life processes and environmental factors that affect them.</p> <p>Investigate the biological impact of an event on a NZ ecosystem</p> <p>Carry out a practical investigation in a biology context, with supervision.</p> <p>Analyse the biological validity of information presented to the public</p> <p>Demonstrates understanding of adaptation of plants or animals to their way of life.</p>	<p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p>	<p>4</p> <p>3</p> <p>4</p> <p>4</p> <p>4</p> <p>3</p> <p>3</p>

<p><b>egg programmes for kea such as that for kiwi.</b></p> <ul style="list-style-type: none"> <li><b>The genetic issues that would be relevant if captive breeding of kea was to take place in the future.</b></li> <li><b>What research has been done about genetic variations in wild kea populations.</b></li> </ul>	<p>interact in gene expression. Explain how the interaction between ecological factors and natural selection leads to genetic changes within populations. (L. 7)</p> <p>Understand how humans manipulate the transfer of genetic information from one generation to the next and make informed judgements about the social, ethical, and biological implications relating to this manipulation. (L. 8)</p>	<p><b>91158</b></p> <p><b>91190`</b></p> <p><b><u>Level 3</u></b></p> <p><b>90714</b></p> <p><b>90716</b></p> <p><b>90727</b></p> <p><b>90728</b></p> <p><b>90729</b></p>	<p>Investigate a pattern in an ecological community, with supervision.</p> <p>Investigate how organisms survive in an extreme environment</p> <p>Research a contemporary biological issue</p> <p>Describe animal behaviour and plant responses in relation to environmental factors.</p> <p>Carry out a practical scientific investigation with guidance</p> <p>Research a current scientific controversy</p> <p>Describe genetic processes</p>	<p><b>I</b></p> <p><b>I</b></p> <p><b>I</b></p> <p><b>E</b></p> <p><b>I</b></p> <p><b>I</b></p> <p><b>E</b></p>	<p><b>4</b></p> <p><b>4</b></p> <p><b>3</b></p> <p><b>4</b></p> <p><b>4</b></p> <p><b>4</b></p> <p><b>4</b></p>
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# Social Science/Social Studies/Geography

Investigate .....	Learning outcomes	NCEA Level and Number	Achievement objective NCEA	Int Or Ext	# of Credits
<ul style="list-style-type: none"> <li>The significance of kea to Maori both in mythology, historically and currently</li> <li>How schools and other educational institutions access information about conservation in general and kea particular. Do they see it as important?</li> <li>Public perceptions about kea and the need for public education about kea to both citizens of, and visitors to, NZ.</li> <li>The history of kea in the Southern Alps and their relationships with landowners and visitors since the area was first settled.</li> <li>How media influence peoples perceptions about kea.</li> <li>Literature, music and art which focus on kea and the Southern Alps mountain environment.</li> <li>Human introduced hazards for kea populations and how they can be overcome.</li> <li>Current trends in kea populations, projections as to what will be the result of action or no action.</li> <li>Kea issues in a Southern Alp mountain community such as a ski</li> </ul>	<p>Understand how the ways in which leadership of groups is acquired and exercised have consequences for communities and societies. (L. 4)</p> <p>Understand how people pass on and sustain culture and heritage for different reasons and that this has consequences for people. (L. 4)</p> <p>Understanding how exploration and innovation create opportunities and challenges for people, places and environments (L.4)</p> <p>Understand how people participate individually and collectively in response to community challenges. (L.4)</p> <p>Understand how people's management of resources impacts on environmental and social sustainability. (L. 5)</p> <p>Understand how the ideas and actions in the past have had a significant impact on people's lives. (L.5)</p> <p>Understand that natural and cultural environments have particular characteristics and how environments are shaped by processes that create special patterns. (L.6) Understand how people interact with natural and cultural environments and that this interaction has consequences. (L. 6)</p> <p>Understand how the processes that shape natural and cultural environments change</p>	<p><u>Level 1</u></p> <p><b>91039</b></p> <p><b>90040</b></p> <p><u>Level 2</u></p> <p><b>91279</b></p> <p><u>Level 3</u></p> <p><b>90690</b></p> <p><b>90691</b></p> <p><b>90692</b></p>	<p>Describe how cultures change</p> <p>Conduct a social enquiry</p> <p>Demonstrate understanding of conflict(s) arising from different cultural beliefs and ideas.</p> <p>Describe personal involvement in a social action related to rights and responsibility.</p> <p>Explain people's responses to challenges facing society.</p> <p>Conduct an advanced social studies inquiry independently</p> <p>Explain a values system</p>	<p><b>E</b></p> <p><b>I</b></p> <p><b>E</b></p> <p><b>I</b></p> <p><b>E</b></p> <p><b>I</b></p> <p><b>I</b></p>	<p><b>4</b></p> <p><b>4</b></p> <p><b>4</b></p> <p><b>5</b></p> <p><b>5</b></p> <p><b>6</b></p> <p><b>4</b></p>

**field or Arthurs Pass village, and mitigation measures.**

over time, vary in scale, and from place to place, and create spatial patterns. (L.7)  
Understand how people's perceptions of and interactions with natural and cultural environments differ and have changed over time. (L.7 - Geography)

Understand how interacting process shape natural and cultural environments, occur at different rates and on different scales, and create spatial variations. (L.8)

Understand how people's diverse values and perceptions influence the environmental, social and cultural decisions and responses they make (L.8)

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## Education for Sustainability (NCEA Levels 2 and 3)

Investigate	Learning Outcomes	NCEA level and number	Achievement Objective NCEA	Int or Ext	# of Credits
<ul style="list-style-type: none"> <li>• The work of a group such as the Kea Conservation Trust to find an action that can be taken personally to assist in the mitigation of issues facing kea.</li> <li>• The range of perceptions people have about kea and the possible causes for these attitudes; their relationship to attitudes and values for other aspects of the environment?</li> <li>• At what point captive breeding of kea would become imperative.</li> </ul>	<p>Education for sustainability is infused throughout the curriculum. There are no specific Learning Outcomes. It is one of the values to be encouraged and fostered throughout this material.</p> <p>Education for sustainability includes learning about:</p> <ul style="list-style-type: none"> <li>• the environment - water, land, ecosystems, energy, waste, urban living, transportation</li> <li>• the interactions between the natural environment and human activities and the consequences of these</li> <li>• the choices and actions we can take to prevent, reduce or change harmful activities to the environment.</li> </ul>	<p><u>Level 2</u></p> <p>90810</p> <p>90811</p> <p>90813</p> <p>90815</p> <p><u>Level 3</u></p>	<p>Plan implement and evaluate a personal action that will contribute towards a sustainable future.</p> <p>Describe the consequences of human activity within a biophysical environment in relation to a sustainable future</p> <p>Describe values and associated behaviours in relation to a sustainable future</p> <p>Work cooperatively to develop and present a strategy or design for sustainability in response to a future scenario.</p> <p>Evaluate a planned personal</p>	<p>I</p> <p>I</p> <p>I</p> <p>I</p>	<p>6</p> <p>4</p> <p>3</p> <p>3</p>

<p>and the issues that would be faced if it became necessary.</p>		<p>90828</p>	<p>action that contributes towards a sustainable future.</p>	<p>I</p>	<p>6</p>
		<p>90829</p>	<p>Investigate the interrelationship between humans and a biophysical event in relation to a sustainable future.</p>	<p>I</p>	<p>4</p>
		<p>90832</p>	<p>Develop and justify a strategy for an organisation that will contribute to a sustainable future</p>	<p>I</p>	<p>5</p>

# English

Investigate.....	Learning Outcomes NZ Curriculum	NCEA Level and number	Achievement Objectives NCEA	Int or Ext	# of Credits
<p>The reporting phase of any of the inquiry suggestions in other curriculum areas could meet the requirements of the English achievement objectives listed.</p> <p><i>In Addition:</i></p> <p>Students could produce texts (stories, poems etc) both factual and fictional, using kea as characters or concerning kea issues.</p>	<p><b>Levels 5 and 6(NZC)</b></p> <p><b>LRV:</b> Integrate sources of information processes and strategies purposefully and confidently to identify, from and express increasingly sophisticated ideas.</p> <p><b>SWP:</b> Integrate sources of information, processes, and strategies purposefully and confidently to identify, form and express increasingly sophisticated ideas.</p> <p><b>Levels 7 and 8:</b></p> <p><b>LRV:</b> Integrate sources of information, processes and strategies purposefully, confidently, and precisely to identify, form and express increasingly sophisticated ideas.</p> <p><b>SWP:</b> Integrate sources of information, processes, and strategies purposefully, confidently, and precisely to identify, form and</p>	<p><b>Level 1</b></p> <p>90857</p> <p>90052</p> <p>90053</p> <p>90853</p> <p><b>Level 2</b></p> <p>90857</p> <p>91103</p> <p>91101</p>	<p>(O.L.) Conduct and deliver an oral text</p> <p>(W.L.) Produce Creative Writing</p> <p>(W.L.) Produce formal writing</p> <p>(W.L.) Use information literacy skills to form conclusion(s).</p> <p>(O.L.) Construct and deliver an oral text.</p> <p>(V.L.) Create a crafted and controlled visual and verbal text.</p> <p>(W.L.) Produce a selection of</p>	<p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p>	<p>3</p> <p>3</p> <p>3</p> <p>4</p> <p>3</p> <p>3</p> <p>6</p>

	express increasingly sophisticated ideas.	91105	crafted and controlled writing (W.L.) Use information literacy skills to form developed conclusions(s).	I	4
		<u>Level 3</u> 90725	(O.L.) Construct and deliver an oral presentation.	I	4
		90720	(W.L.) Produce an extended piece of writing in a selected style.	I	4

# Technology

Investigate.....	Learning Outcomes New Zealand Curriculum	NCEA level and number	Achievement Objectives NCEA	Int or Ext	# of Credits
<ul style="list-style-type: none"> <li>substances that repel kea to help in pest control in their habitat.</li> <li>construction of a predator control device that is kea proof.</li> <li>the use of GPS in kea survey work; and other ways GPS can be used to assist in conservation work.</li> <li>new trapping systems and write a report on the advantages and disadvantages of all systems available</li> <li>online data reports of trapping statistics in NZ and draw conclusions from this research as to trap popularity, effectiveness etc. Find what is the dominant trap used in kea territories and why.</li> <li>Creating new challenges and structures for kea in both</li> </ul>	<p><b>Technological Practice:</b></p> <p><b>All aspects of this strand at levels 5 to 8. Each builds on the previous level.</b></p> <p><b>Planning for practise</b></p> <p>Analyse their own and others' planning practices to inform the selection and use of planning tools. Use these to support and justify planning decisions (including those relating to the management of resources) that will see the development of an outcome through to completion.</p> <p><b>Brief Development</b></p> <p>Justify the nature of an intended outcome in relation to the need or opportunity. Describe specifications that reflect key stakeholder feedback and that will inform the development of an outcome and its evaluation.</p> <p><b>Outcome development and evaluation.</b></p> <p>Analyse their own and others' outcomes to inform the development of ideas for feasible outcomes. Undertake ongoing</p>	<p><u>Level 1</u></p> <p>91044</p> <p>91045</p> <p>91046</p> <p>91047</p> <p>91070</p> <p>91071</p> <p>91073</p> <p><u>Level 2</u></p> <p>91354</p>	<p>Undertake brief development to address a need or opportunity</p> <p>Use planning tools to guide the technological development of an outcome to address a brief.</p> <p>Use design ideas to produce a conceptual design for an outcome to address a brief.</p> <p>Undertake development to make a prototype to address a brief.</p> <p>Demonstrate understanding of basic concepts of information management.</p> <p>Implement basic procedures to produce a specified digital outcome</p> <p>Implement basic procedures to produce a specified digital media outcome.</p> <p>Undertake brief development to</p>	<p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>E</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p>	<p>4</p> <p>4</p> <p>6</p> <p>6</p> <p>3</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p>

<p><b>captivity and the wild; to test learning and memory (intelligence) and compare between environments.</b></p>	<p>functional modelling and evaluation that takes account of key stakeholder feedback and trialling in the physical and social environments. Use the information gained to select and develop the outcome that best addresses the specifications. Evaluate the final outcome's fitness for purpose against the brief. (L.5 +)</p>	<p><b>91355</b></p>	<p>address an issue Select and use planning tools to manage the development of an outcome</p>	<p><b>I</b></p>	<p><b>4</b></p>
		<p><b>91356</b></p>	<p>Develop a conceptual design for an outcome.</p>	<p><b>I</b></p>	<p><b>6</b></p>
		<p><b>91357</b></p>	<p>Undertake effective development to make and trial a prototype.</p>	<p><b>I</b></p>	<p><b>6</b></p>