

Lesson 1: Investigate: Why do we need to help?



ZEALANDIA™
TE MĀRA A TĀNE



Overview:

Lesson Number:	1 of 5
Key Competencies:	Thinking ; using language, symbols, and texts; managing self; relating to others ; participating and contributing .
Unit/Topic:	Primary focus: Science Secondary focus: Social studies Understand how people make decisions about access to and use of resources.
Te Reo/Tikanga Māori:	Names of animals in Māori. Pre- European Māori world view.
Values:	Excellence; Innovation, inquiry , curiosity; Diversity ; Equity; Community and participation ; Ecological sustainability ; Integrity; Respect.
Science Strand:	Nature of Science Living world
Level:	3
Achievement Objectives: Nature of Science	<i>Students will:</i> Understanding about science: <ul style="list-style-type: none"> Appreciate that science is a way of explaining the world and that science knowledge changes over time. Investigating in science: <ul style="list-style-type: none"> Build on prior experiences, working together to share and examine their own and others' knowledge.
Achievement Objectives: Living World	<i>Students will:</i> Ecology <ul style="list-style-type: none"> Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.
Lesson Objective:	Students will be able to identify the factors both natural and human that affect the unique biodiversity that we have in New Zealand.

Resources in Folder:

- Examples of photographs of New Zealand fauna and introduced predator species which can be printed and laminated for use in class (“New Zealand Fauna and Introduced Predators” resource supplied in this folder).
- Pre/post assessment test of knowledge, with marking rubric.

Resources Online:

Essential resources:

- https://www.youtube.com/watch?v=dt5I_v_tkNg on how to set up an iNaturalist account. Note: while this video is based in the Northern Hemisphere, the process for setting up an account is very similar to what you will see when using <https://inaturalist.nz/> site.
- <https://www.youtube.com/watch?v=2K4pluSPNpM> how to use your iNaturalist account to make observations. Alternatively, visit iNaturalist’s help page for a series of video tutorials on making observations: <https://inaturalist.nz/pages/video+tutorials>
- <https://inaturalist.nz/pages/getting+started> how to make your school a ‘place’ on iNaturalist.
- <https://predatorfreenz.org/resources/introduced-predator-facts/> information about introduced predators and how they threaten native biodiversity.
- <https://www.mfe.govt.nz/more/biodiversity/about-biodiversity/biodiversity-new-zealand> or <https://www.sciencelearn.org.nz/resources/1454-biodiversity> information for introducing the concept of biodiversity.

Additional resources:

- ‘Plant me instead’ booklet: <https://www.weedbusters.org.nz/resources/plant-me-instead-booklets/>
- Region-specific local planting guides: <https://www.doc.govt.nz/get-involved/run-a-project/restoration-advice/native-plant-restoration/local-planting-guides/>
- Five Minute bird counts: <https://www.doc.govt.nz/our-work/five-minute-bird-counts/>
- <https://www.youngbirdersnz.com/> – a birding website set up by young people for young people.
- https://www.landcareresearch.co.nz/_data/assets/pdf_file/0005/29597/nzgs-bird-guide.pdf – a resource for identifying common garden birds in Aotearoa. Alternatively, the Manaaki Whenua website has other resources and games relating to native species in Aotearoa:

<https://www.landcareresearch.co.nz/science/plants-animals-fungi/animals/birds/garden-bird-surveys/activities-for-schools>

- <http://nzbirdsonline.org.nz/> – the digital encyclopedia of Aotearoa's birds.
- <https://www.doc.govt.nz/nature/native-animals/> – information about New Zealand's many unique native fish, insects, birds, lizards and frogs.
- <http://www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/> – The New Zealand Threat Classification System is used to assess the threat status of our taxa (species, subspecies, varieties and forms).

Resources to Set Up:

- Print “New Zealand Fauna and Introduced Predators” resource and laminate photographs.
- Set up a log-in name for the class at <https://inaturalist.nz/> (follow the log-in instructions on the home page).
- iPads or tablets with a pre-installed iNaturalist app (both iOS and Android apps are available).
- A range of predator traps.
- Optional resource: Vocabulary lists in English and Māori (Conservation Kupu and He Manu lists supplied in He Tikanga lesson).

The Science Learning Hub link provides information and tools you can use to introduce the concept of biodiversity to your students (<https://www.sciencelearn.org.nz/resources/1454-biodiversity>).

This could provide a useful platform for inspiring the students to explore a local special place (ZEALANDIA, Kaitoke, Sandfly Bay, Riccarton Bush, Wellington Zoo etc.).

You can also use your local school as your special place. By surveying the flora and fauna present, then thinking about what could be done to improve biodiversity and protect the species present, students will gain a sense of kaitiakitanga.

Becoming a ‘place’ on iNaturalist

Using iNaturalist and Google Earth, it is possible to set up your school (and possibly your local community) as a ‘place’, which can also be displayed on the Google map. The benefits of making your school a ‘place’ are:

- All observations that anyone makes in the area are collected and logged for your ‘place’.
- Data is gathered and can be analysed easily for your ‘place’.

- Various filters and add-ons can help to give clarity and ease of access to data.
- Other schools can view and compare your place to theirs. This helps to extend the sense of online community for your students and a sense of working with others for a common goal.

A crucial element for this success of this programme is to inform parents of the action the school is taking. Sending a letter home to parents explaining why students are helping to restore their native species, as sharing information about tracking and trapping is important prior to any actual work being done. It also can outline what they can start to do at home and what their children may bring home (e.g. tracking tunnels/chew cards). This letter can also include how to use the tracking tunnels/chew cards and how to log their observations to the relevant project on iNaturalist.

Lesson Structure:

Introduction and overview:

Give a quick overview of the unit. Use the titles of each of the five sessions and discuss what they could mean. It is important to highlight the ‘**inspire, investigate, instigate and evaluate**’ model. These concepts are at the heart of any conservation education programme.

It is important for the students to see the connection between ‘learning about’ something and being able to take action and make a real-world difference.

You will see these key themes of **investigate, instigate and evaluate** coming through the lesson plans. Explain that you will:

- Use a project in iNaturalist to log observations of species found around your school.
- Use a five-minute bird count and the laminated “New Zealand Fauna and Introduced Predators” photographs to survey your school (optional).
 - For data entry templates useful for recording your bird count data, go to the DOC website: <https://www.doc.govt.nz/our-work/five-minute-bird-counts/resources/>
 - Downloadable bird count data template: <https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/birds/5mbc-standard-data-form.pdf>

Theme and content:

Start off by introducing the pre-test and explaining the importance of it for gathering information about the class’ prior knowledge.

This pre and post-test is to evaluate the shift in knowledge over the five sessions. This activity can be done individually/pairs or in groups.

Run through the key vocabulary in the test so that everyone understands what is being asked. Allow about 20 mins for the test.

Follow this by a group learning session. Split class into groups of three. Allocate each group an endemic animal. Show them how to research their animal using the 'Explore' resources on the iNaturalist site, or the Seek by iNaturalist app (<https://inaturalist.nz/pages/teacher's+guide>).

Each group will have 20 minutes to explore this unique New Zealand animal. They will present to the class about their animal with key facts on large A3 paper or some other feedback method such as Prezi or PowerPoint. In their groups, the students will answer "why is it important to protect our animal?" The content and the way they wish to use the information is up to them.

There is also a Trading Card Game by Zealandia which you can print and set up: <https://www.visitzealandia.com/Education/ZEALANDIA-Trading-Card-Game>

This is a fun way for students to learn about what bird species we have in New Zealand and why we need to protect and restore them.

Wrap:

To finish the session, using a large screen, show your students the iNaturalist website and an example of a class who has used iNaturalist to log their conservation action. Classroom examples you could use are linked below:

Westlake Girls in Auckland:

<https://www.inaturalist.nz/projects/westlake-girls-school-citizen-science-ecoblitz-project>

St Teresa's School in Wellington:

<http://iNaturalist.nz/observations/stteresasroom6>

Lincoln University's "Biological Diversity" identification exercise:

<https://www.inaturalist.nz/projects/ecol202-backyard-mammal-tracking>

If you have already set up an iNaturalist log in and can put this on a screen, log in with your class and explore how it works. You may like to ask for a species to search. A great way to engage parents in iNaturalist is to send your class iNaturalist page home as a hyperlink.

Points for Next Session:

Evaluation:

Points to Improve: