Lesson 4: Instigate: What's the solution?

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Overview:

Lesson Number:	4 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: Technology**
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:**	*Students will:* **Understanding about science**: • Identify ways in which scientists work together and provide evidence to support their ideas.
Achievement Objectives: **Living World**	*Students will:* **Ecology:** • Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.
Technology Strand:	**Nature of Technology**
Achievement Objectives: **Nature of Technology:**	*Students will:* **Characteristics of technological outcomes:** • Understand that technological outcomes are developed through technological practice and have related physical and functional natures.

Lesson Objective:	Students will use data they have collected to analyse a trend. From this trend they will suggest an action plan and its desired outcome for their community.

Resources in Folder:

- Health and Safety - Risk Analysis and Management form for Tracking and Trapping Programme
- Trap Setting Guidelines

Classroom Resources:

- Vocabulary list in English and Māori (Conservation Kupu and He Manu lists supplied in the He Tikanga folder).
- Laminates of New Zealand fauna and introduced predators (resource supplied in Lesson One folder).
- iPads/ tablets with a pre-installed app (iNaturalist).
- A3 laminates of school map showing tracking tunnel and/or chew card locations and current data from iNaturalist.
- Trap boxes can be obtained from your local DOC office, council or community conservation group. They may be able to provide you with advice, a trapping demonstration or let you borrow some basic equipment to use in your school or chosen 'place'.
- Potential trap suppliers can be found here: https://predatorfreenz.org/resources/where-to-buy-equipment/#traps
- Alternatively, https://www.doc.govt.nz/get-involved/conservation-activities/build-a-backyard-trapping-tunnel/ provides a template for trap box construction.
- You can also make your own wooden tunnels to house your trap using these plans: http://predatorfreenz.org/wp-content/uploads/2019/01/Rat-Tunnel-Weka-proof-length-template.pdf
- Health and Safety Guidelines (supplied in this Lesson Four folder).
- Trap Setting Guidelines (supplied in this Lesson Four folder).

Resources Online:

- https://inaturalist.nz/projects/zealandia-kaitiaki-schools-towards-a-pest-free-wellington is an example of an iNaturalist project, or if you are in the Wellington region you can add your observations here.

- http://www.mpi.govt.nz/document-vault/8521 provide the guidelines for assessing welfare performance of restraining and kill traps (NAWAC).
- A comprehensive list of traps that have met NAWAC guidelines: https://www.bionet.nz/rules/performance-traps/
- http://www.landcareresearch.co.nz/science/plants-animals-fungi/animals/vertebrate-pests/traps for a review of the welfare performance of animal traps.
- For recording catch data and evaluating the effectiveness of your trapping project: https://www.trap.nz
- For more information about trapping best practice: https://predatorfreenz.org/resources/trapping-best-practice/
- Resources to help with setting traps:
    - Victor professional in a tunnel: https://predatorfreenz.org/resources/setting-up-your-trap/setting-victor-rat-trap/ http://www.youtube.com/watch?v=aql_gFGRGoI
    - Modified Victor trap in a tunnel: https://www.youtube.com/watch?v=05htuGIq98U&feature=youtu.be
    - DOC200 https://predatorfreenz.org/resources/setting-up-your-trap/setting-doc-200/
    - Instructions for using T-Rex or Tomcat rat trap: https://predatorfreenz.org/toolkits/kids-schools-toolkit/school-resources/predator-free-school-guidelines/t-rex-rat-trap-in-a-tunnel/ https://www.youtube.com/watch?v=s0aDoPTxnd8&feature=youtu.be
    - Goodnature A24: https://www.youtube.com/watch?v=PvumcanRJc4&feature=youtu.be

Resources to Set Up:

- Laptop and data projector.
- iNaturalist log in for the class.
- Trap.NZ log in for class, if a larger trapping project is being undertaken.
- A selection of different kinds of traps that have met the NAWAC guidelines (Victor Professional in a tunnel, T-Rex in a tunnel, DOC 200 & Goodnature A24 rat and stoat trap).
- Means of 'housing' the traps e.g. wooden box.

Lesson Structure:

Introduction and overview:

Recap with your class what information they have gathered so far:

- How have they recorded evidence?
- Show laminated maps of their tracking tunnel and/or chew card locations. You can use coloured stickers to show results.
- Are there any connections between presence of prints and locations e.g. in the bush, out in the open, by the compost?
- Can your students see any patterns emerging?

At this point you may want to consider using the Maths/Statistics lesson.

Theme and content:

Using the data you have recorded from your tracking tunnels and/or chew cards, students will now look for patterns and suggest a solution to the introduced predator problem. You may choose to do this activity in groups.

Students will present to the class what they think the data means, what it shows and what they suggest as a solution. From this, as a group they will propose what would be an appropriate action to take and which sites are the most suitable for any proposed action.

The second group activity is investigating the options we currently have to control or remove introduced predators. Each group will be assigned a trapping system: Victor Professionals rat trap, Goodnature A24 etc.

They will present:

- The pros and cons of each trap. This will include the animals' welfare, cost, design etc.
- Where could each be used?
- How easy are they to use?

A common trap to profile is the Victor Professional. Demonstrate how to set and bait it, place the correct way around in a trap box and where to place the tunnel to ensure that that rodents can see through the box – i.e. parallel to a wall or fence.

Stress the importance of:

- Placing the traps inside wooden trap boxes or similar, to reduce the risk of injury to non-target species.
- Considering how humane the trap is.
- Ensuring the target species approaches the trap the right way (that the animals can only go over the trap in one direction).
- Preventing people getting hurt by uncovered traps.

Wrap:

As a class summarise the suggestions and decide on a course of action for the school.
This needs to include the following:

- Where you will place the traps?
- Do you need more traps/different traps?
- When will you put these out?
- Who will check them?
- When will you check them?
- Where will you dispose of the carcasses?

Make sure that any introduced predators you catch are recorded on the iNaturalist project.

Where your school is looking to set up and run a large ongoing trapping project, you can also use Trap.NZ to plot the location of your traps, and keep records of your catches. This will give you easy access to displaying maps of where the introduced predators are caught, numbers and timings of catches.

When and where you place these traps out is up to you.

NB: Traps will need to be set prior to the final session.

Points for Next Session:

Evaluation:

Points to Improve: