**The Plastic Tide** – **unit plan**  **Koraunui** School

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| **Curriculum level:** 1–2**Age:** 6–10 | **Title/Context:** Litter, Kaitiakitanga and Koraunui**Time for unit:** Term 2 and 3 | **Key understandings:****●** Where litter comes from, where it goes and its impact on our world● We can take action to stop litter |
| **Curriculum achievement objectives level 1 and 2****Nature of science: Investigating in science*** Extend students’ experiences and personal explanations of the natural world through exploration, play, asking questions and discussing simple models.

**Nature of science: Understanding about science*** Students appreciate that scientists ask questions about our world that lead to investigations and that open-mindedness is important because there may be more than one explanation.

**Nature of science: Communicating in science*** Students begin to use a range of scientific symbols, conventions, and vocabulary.
* Students engage with a range of science texts and begin to question the purposes for which these texts are constructed.

**Nature of science: Participating and contributing*** Students use their growing science knowledge when considering issues of concern to them.
* Students explore and act on issues and questions that link their science learning to their daily living.

**Living World: Ecology*** Students understand how living organisms interact with each other and with the non-living environment.

**Planet Earth and Beyond: Interacting systems*** Students describe how natural features are changed and resources affected by natural events and human actions.

**Material World: Chemistry and society*** Students find out about the uses of common materials and relate these to their observed properties.
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| **Capability focus** **Gather and interpret data:*** Scientific data can be gathered using a variety of tools.
* Students observe closely and make inferences based on their observations.

**Engage with science:*** Students make logical connections between the data they gather and the data gathered by global scientists.
* Students take action to address both a local and global concern.
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| **Learning outcomes:***(combines the AOs, key understandings and your context for both the Contextual and Nature of Science strands)*Children will:* accurately collect, analyse and record data from lunch box audits
* accurately collect, analyse and record data from LittaTraps
* use the data to make inferences about the sources of litter in our local environment
* make links between their actions/practices and global issues of plastic pollution
* make links between litter and stream health
* develop an action project to encourage waste minimisation and improve habitat and fish passage in our local waterways.
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| **Māori and Pacific nations considerations**Ngā atua Māori: The Māori godsTangaroa: water Haumia-tiketike: uncultivated foods (kōura, īnanga, watercress)Papatūānuku: EarthRanginui: skyParawhenua: waterRakahore: rock**Karakia**Waiora kia ora, he waiora Salutations, the waters of life Puritia ngā mahi wairua Grasp and be steadfast in the works of the spirit Me whakawhetai, ki a Ihowā Give thanks to the Lord Te kaihanga o ngā mea katoa The Creator of all things Me whakawhetai i te ao, i te po Offer thanks throughout the day, and the night Homai he waiora ki ahau Give unto me the waters of life **Whakapapa**Ranginui + Papatūānuku**Whakataukī**E kore a Parawhenua e haere ki te kore a Rakahore Parawhenua will not come out in the absence of RakahoreHe wai Tangaroa i haere ki uta By means of water was Tangaroa enabled to travel inland**Ngā momo wai: types of water**<https://enviroschools.org.nz/creating-change/featured-stories/wai-water/> |
| **Integration with social sciences:*** Students understand how places in New Zealand are significant for individuals and groups (level 1).
* Students understand how people make choices to meet their needs and wants (level 2).
* Students understand how cultural practices reflect and express people’s customs, traditions, and values (level 2).
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| **Lesson structure and sequence****Part 1: Water**Learn karakia for freshwater.Water and ngā atua. Whakapapa of water. Water cycle.  | **Organisation/questions/sources/resources**<http://rangitaneeducation.com/wp-content/uploads/atuatanga/W.pdf><http://thekidshouldseethis.com/post/the-basics-of-freshwater-water-water-everywhere> [www.sciencelearn.org.nz/resources/2884-water-cycle-models](https://www.sciencelearn.org.nz/resources/2884-water-cycle-models) – activity[www.sciencelearn.org.nz/resources/2883-follow-the-water-droplet](https://www.sciencelearn.org.nz/resources/2883-follow-the-water-droplet) – activity[www.sciencelearn.org.nz/resources/804-building-a-water-cycle](http://www.sciencelearn.org.nz/resources/804-building-a-water-cycle) – activity[www.sciencelearn.org.nz/resources/713-h-o-on-the-go-the-water-cycle-introduction](http://www.sciencelearn.org.nz/resources/713-h-o-on-the-go-the-water-cycle-introduction)[www.sciencelearn.org.nz/image\_maps/90-learning-about-the-water-cycle](http://www.sciencelearn.org.nz/image_maps/90-learning-about-the-water-cycle)[www.sciencelearn.org.nz/resources/2888-wai-words](http://www.sciencelearn.org.nz/resources/2888-wai-words) – activity |
| Types of water (wai Māori).Freshwater invertebrates: observational drawing.Close observation: peer feedback with learning partner.Information poster on freshwater invertebrates.Freshwater invertebrates as stream health indicators. | [www.sciencelearn.org.nz/image\_maps/88-wai-maori](https://www.sciencelearn.org.nz/image_maps/88-wai-maori) <https://vimeo.com/38247060> – Austin’s Butterfly [www.sciencelearn.org.nz/resources/2071-developing-observation-skills-in-younger-students](http://www.sciencelearn.org.nz/resources/2071-developing-observation-skills-in-younger-students) – activity[www.sciencelearn.org.nz/image\_maps/85-new-zealand-aquatic-insects](http://www.sciencelearn.org.nz/image_maps/85-new-zealand-aquatic-insects)<https://static.sciencelearn.org.nz/documents/files/000/000/814/original/Freshwater_monitoring_%E2%80%93_Macroinvertebrate_Identification_Sheet_v2.pdf?1598846812> [www.sciencelearn.org.nz/resources/1820-freshwater-macroinvertebrates](http://www.sciencelearn.org.nz/resources/1820-) [www.sciencelearn.org.nz/image\_maps/93-water-quality-indicators](http://www.sciencelearn.org.nz/image_maps/93-water-quality-indicators)  |
| Shmak kit introduction.Set up tuakana-teina with Room 15 tamariki.Children use the kits to explore and practise with. | Shmak Tools[https://niwa.co.nz/our-science/freshwater/tools/shmak/shmak-manua](https://niwa.co.nz/our-science/freshwater/tools/shmak/shmak-manual)l [www.sciencelearn.org.nz/resources/2889-monitoring-stream-health](http://www.sciencelearn.org.nz/resources/2889-monitoring-stream-health) – activityStream etiquette.Visits to the stream. |
| **Part 2: Litter**Brainstorm types of litter.Lunchbox survey: group and classify waste from lunchboxes.Brainstorm types of waste that go into our waterways. |  |
| PowerPoint:Discuss where plastic comes from.Share plastics collected from [local beach]. Discuss.Group children and have them explore sand samples collected from Petone Beach. They sort the plastics, analyse and discuss the samples.Introduce The Plastic Tide. Share how to use the website.Allow 20 minutes for students to use the website.Finish with Kahoot quiz on plastic pollution. | Everything comes from the Earth PowerPoint[www.sciencelearn.org.nz/resources/2807-tracking-plastics-in-our-oceans](http://www.sciencelearn.org.nz/resources/2807-tracking-plastics-in-our-oceans) [www.sciencelearn.org.nz/resources/2847-rethinking-plastics](http://www.sciencelearn.org.nz/resources/2847-rethinking-plastics)[www.sciencelearn.org.nz/resources/2811-the-future-of-plastics-reusing-the-bad-and-encouraging-the-good](http://www.sciencelearn.org.nz/resources/2811-the-future-of-plastics-reusing-the-bad-and-encouraging-the-good) [www.sciencelearn.org.nz/images/3242-identifying-different-types-of-plastic](http://www.sciencelearn.org.nz/images/3242-identifying-different-types-of-plastic) [www.sciencelearn.org.nz/resources/2656-waste-a-growing-challenge](http://www.sciencelearn.org.nz/resources/2656-waste-a-growing-challenge) – activity[www.sciencelearn.org.nz/videos/1752-pet-plastic-recycling-process](http://www.sciencelearn.org.nz/videos/1752-pet-plastic-recycling-process) [www.sciencelearn.org.nz/resources/2824-thinking-about-plastic-planning-pathways](http://www.sciencelearn.org.nz/resources/2824-thinking-about-plastic-planning-pathways)[www.sciencelearn.org.nz/resources/2809-how-harmful-are-microplastics](http://www.sciencelearn.org.nz/resources/2809-how-harmful-are-microplastics)[www.sciencelearn.org.nz/resources/2528-what-happens-to-our-plastic-bottles](http://www.sciencelearn.org.nz/resources/2528-what-happens-to-our-plastic-bottles) – activityBook ICT suite and tablets.[The Plastic Tide](https://www.zooniverse.org/projects/theplastictide/the-plastic-tide) [alternatives include [Litterati](https://www.sciencelearn.org.nz/resources/2752-litterati) and [Litter Intelligence](https://www.sciencelearn.org.nz/resources/2755-litter-intelligence)]Kahoot quiz on plastic pollution: <https://create.kahoot.it/details/plastic-pollution/09ded17a-13d1-4b7c-9103-666fea6a19f5> |
| **Part 3: Connections**Help the students to see connections between the types of wrappings in their lunchboxes, the types of litter collected in LittaTraps, litter found by our local stream, litter found in sand samples from the beach and litter in The Plastic Tide project – use the opportunity to see litter as more than a local problem but a global problem. |  |
| **Part 4: Action**Collate data and present to our community.Use some IT to create posters to highlight the need for everyone to be kaitiaki of the environment, especially as regards littering and its effects on the environment. | Green screen photos, poster making, display the posters at our local shopping centre. |
| **Assessment: Diagnostic**[Assessment Resource Banks](https://arbs.nzcer.org.nz/) * Don’t waste water
* Water paths
* Model river
* River farm
* Draining pond
* What lives in our waterways?

  | **Formative assessment**Waterways tagTask: Students play a tag game that simulates the relationships between elements within a waterway and discuss how different scenarios impact on the populations living there. Assessment focus: changes within a habitat affect everything living there.To be able to make wise decisions about our environment we need to:* know what lives in a particular habitat
* know what their requirements are
* be able to predict the impact of any changes in conditions on the whole habitat.
 | **Summative assessment**[Assessment Resource Bank](https://arbs.nzcer.org.nz/): What lives in our waterways?Task: Complete a drawing of things found in or near a waterway and describe relationships between them. Assessment focus: interdependence in a waterways environment. |