



MOUNTAINS TO SEA
CONSERVATION TRUST



EXPERIENCING
MARINE RESERVES



WHITEBAIT
CONNECTION

THE

ACTION PLANNING

IDEAS BOOK

by Mountains to Sea
Conservation Trust

Table of Contents



- 1 Introduction
- 2 Environmental Monitoring
- 3 Actions Outside of School
- 4 Actions at School
- 5 Actions in the Classroom
- 6 Printables
- 7 Templates



Mountains to Sea Conservation Trust is a registered charity (CC# 23406) that provides marine and freshwater education, experiences, and conservation-related services.

www.mountainstosea.org.nz

1. INTRODUCTION

The Experiencing Marine Reserves (EMR), Whitebait Connection (WBC) and Mountains to Sea programmes are national programmes focused on experiential learning about marine and freshwater conservation. These programmes empower schools and communities by providing hands-on experiences in freshwater and marine environments. Through our programmes, we also encourage students to do their own action projects. Action projects foster kaitiakitanga - guardianship and facilitate action to address freshwater and marine issues. They can be done individually, in small groups, or as a whole class!

Action projects are not limited to our suggested theme areas in this booklet but must be NZ relevant, reach beyond the classroom, and relate to conservation, monitoring, addressing local issues, and/or building public environmental awareness.

Key ideas and issues students focus on:

- Local action, campaigning and fundraising
- Raising awareness for issues in their local area/community
- Environmental monitoring and community volunteering
 - Issues such as storm-water/wastewater, waste/rubbish/littering, declining biodiversity and ecosystem health and the lack of biodiversity and water quality in their local area

When helping your students to plan their action projects, it is important to keep them achievable and their goals clear - a good guide is to follow SMART goals and our printable planning sheets. The S.M.A.R.T. in SMART goals stands for Specific, Measurable, Achievable, Relevant, and Time-Bound. It is also important to consider whether the students will need financial or technical support and how they can access this.

For example: I want all of my students (measurable) to each create a poster (achievable) on a local issue (relevant) they care about which we will display in the local library to reach more people in our community (specific) by the end of term 1 (time-bound).

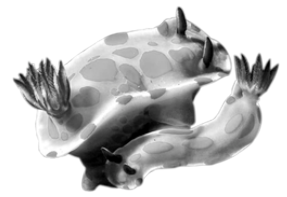
What can Mountains to Sea do to support you?

We can provide advice and different methods/ways you can do your actions and link you with existing community groups, stakeholders and organisations who can help you. We can also help plan and/or assist with clean-up projects/days, planting days and the celebration of your student's success! We can also link these activities to the curriculum and provide additional resources specific to your action.

How can you support Mountains to Sea?

By mentioning Mountains to Sea in your projects you can help raise awareness and visibility to our funders and other schools, helping us to be able to reach more rangatahi throughout Aotearoa!

Annual Poor Knights Competition Trip



If taking part in an EMR or Mountains to Sea programme your students have the opportunity to win a spot on our annual Poor Knights competition trip!

Marine kaitiaki-guardians from the Far North to the Deep South rewarded with Poor Knights snorkel experience! Students are selected based on their action projects undertaken and enthusiasm they show when studying & experiencing the marine environment.

The annual EMR competition trip is made up of representative students from each region that participates in the programme. We now offer the trip to all eight regions where EMR is operating, thanks to sponsorship from Dive! Tutukaka and the Bobby Stafford-Bush Foundation.

Since 2002, we have taken representatives from 373 schools, totalling 531 students on this annual trip!



Bobby Stafford-Bush EMR Ocean Art Prize

In addition to the opportunity to represent the region for the action project prize, students can also submit their entry for the Bobby Stafford-Bush – EMR Ocean Art prize. The Bobby Stafford-Bush Foundation supports this special prize for young kiwis that have experienced the marine environment with EMR and display that passion and experience through art.

To enter you must be under the age of 18 and participated in either an EMR or Mountains to Sea full programme (including snorkelling), an EMR ocean snorkel experience or attended an EMR Community Guided Snorkel Day in the regions EMR is operating in. Your art piece **MUST** match our criteria below.

Bobby Stafford-Bush – EMR Ocean Art Criteria:

Must convey a marine conservation message relating to:

- Protecting or education people about marine biodiversity/marine issues
- Human impacts on your local marine environment
- Marine conservation (different marine conservation measures)
- Marine reserves (rules, boundaries, local marine reserves)
- Differences and similarities between your local area and marine reserve
- Kaitiakitanga-Guardianship
- Taking action for the marine environment
- NZ relevant

You must mention Experiencing Marine Reserves or EMR in some way. You will also be judged for creativity and presentation.



2. Environmental Monitoring

Marine and freshwater monitoring is a fantastic way to help your students contribute to citizen science. It includes a variety of methods to assess the health of ecosystems through assessing the status and trend of biodiversity, pollution and other metrics. Citizen science and marine and freshwater monitoring may include:

- Surveillance monitoring looking at the presence and absence of species
- Monitoring impacts that face a local marine or freshwater environment
- Research monitoring to understand ecological questions
- Large scale or general monitoring to add to knowledge about ecological patterns and processes in an area
- Small local scale monitoring - measure the effectiveness of different environmental states



By helping to contribute to citizen science initiatives, students can help community groups monitor changes in their environments and assess the impact of environmental action projects.

Marine Metre Squared Surveys



Skills: Gather and interpret data, critique evidence | Difficulty: Medium

Marine Metre Squared is a New Zealand citizen science project that supports communities to monitor their local seashore. The project has been designed to provide meaningful, valid environmental baseline data on the state of seashores around New Zealand against which future changes can be measured.

Marine Metre Squared is an easy way for anyone to survey the plants and animals living on their local seashore. All you need to do is mark out a 1 metre x 1 metre patch, count the animals and plants you find there, record them on a data sheet and upload the information to the MM2 database. You will be able to compare what is on your shore with other areas, monitor how things change over time, learn lots and have fun along the way. On this website you will find everything you need to get started - instruction sheets, videos, ID guides, data sheets and much more.

Choosing marine metre squared as your action project can help students learn more about the animals and plants that live between the tides around New Zealand. Students will collect valuable scientific information that will help build a picture of the biodiversity, distribution and abundance of seashore animals and plants in New Zealand's marine environment. By collecting data your students can help scientists to monitor change in this habitat over time and investigate what might be causing the change. While carrying out your MM2 surveys you can also record the presence and absence of marine pests in your area.

Materials

- ID guides
- Data Sheets
- Sieve (optional)
- Quadrat (1m x 1m square, plastic/bamboo sticks, rope, twine, etc.)



<https://www.mm2.net.nz/get-involved>
<https://www.mm2.net.nz/resources/>

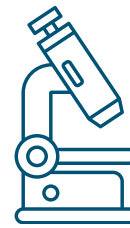
Reef Savers Fish Surveys

Skills: Gather and interpret data, critique evidence | Difficulty: Hard

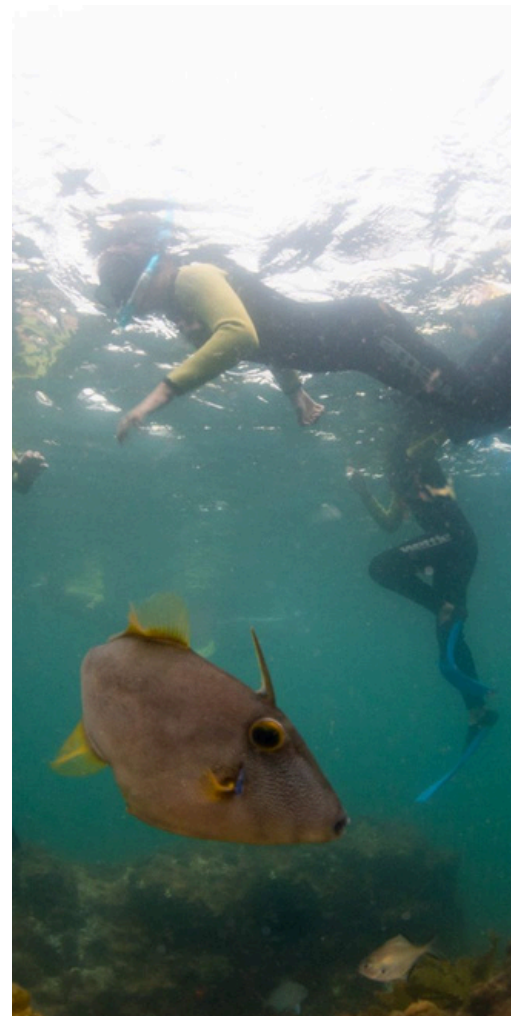
With the multitude of pressures impacting our coastal marine ecosystems it's important that we are aware of the changes that are occurring so we can respond appropriately. Timed swim fish surveys provide a quick and simple method to measure the diversity and abundance of fish communities on shallow reef ecosystems. The results of these surveys can give us an idea as to how fish diversity and abundance change over time, and can also be used to compare fish communities between different locations (e.g. fished areas vs. protected areas). To find out more about carrying out a fish survey check out the link below. This resource outlines a series of activities building from fish identification skills through to full-in-water timed swim fish surveys. The resource is standalone and can be adapted to your particular context.

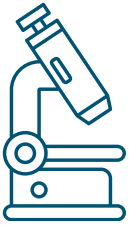
To begin, a land based theory session will be used to inform participants on the theory behind timed swim fish surveys and to teach fish identification skills to a level required to undertake surveys. Following this, a fish ID practice survey will be used to provide participants with an opportunity to practise fish identification skills in the water without the additional stress of having to also accurately count fish. The third section of this activity is the Timed Swim Fish Survey. The full timed swim fish survey provides a method of collecting data on the abundance of predetermined key species at a chosen site. This is a more complex survey and is suitable for people who are already confident in identifying fish and recording data while snorkelling. Following this, participants can use the data to report on the health and biodiversity of their local area and upload the data to inaturalist.

Materials



- Snorkelling equipment
- Waterproof watch
- Survey slate (field sheet) with pencil or laminated field sheet,
- Fish ID guide
- Waterproof camera (if available)





Litter-trap Monitoring

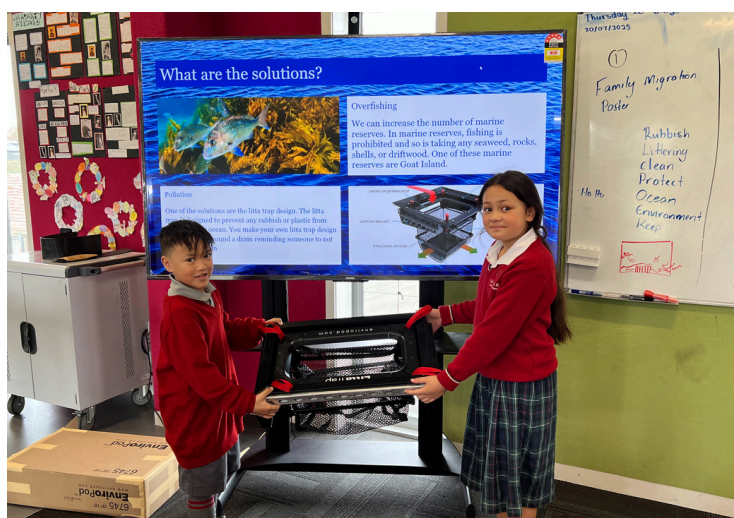
Skills: Gather and interpret data | Difficulty: Medium

Litter traps are innovative tools and technology which prevent litter from reaching our oceans and waterways. They are designed to be easily fitted over new and existing storm water drains and are a great addition for school drains to not only prevent litter from entering waterways but also to raise awareness for litter issues within your school. When stormwater enters a storm grate or catch pit with a litter trap installed, the water passes through the litter trap filter bag and litter, debris, and plastic larger than the holes in the filter bag (5mm) are captured and retained. When the bag is full, it can be simply lifted out and tipped into either recycling or landfill. A litter trap is very cost-effective and easy to install and maintain.

Stormwater systems are designed to manage flood risk and the water is not typically treated so everything that goes down the drain will end up in the sea. You could try and invent your own model. Students can be involved in emptying the traps and creating an inventory of rubbish collected. Another litter trap method could be to install rain guards/ filters on gutters which can catch rubbish that might flow into the stormwater system.

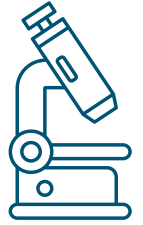
The design and creation of litter traps to install in school drains can help to prevent rubbish from entering the stormwater. These student designed traps can also supported with the installation of professional litter traps. Your students can then identify commonly occurring rubbish within your school grounds and identify seasonal trends - such as ice cream wrappers in summer. Students can then use collected rubbish for art projects, communication of litter issues in their schools, and wider community.

Litter traps have a small cost for purchasing and installation. Stormwater360 offers discounts for school groups for their Litta Traps and fundraising can be an option for self funding.



<https://www.stormwater360.co.nz/products/stormwater-management/gross-pollutant-traps/prod/LittaTrap->

Community Based Freshwater Monitoring (CBFM)



Skills: Gather and interpret data | Difficulty: Medium

SHMAK

SHMAK (Stream Health Monitoring and Assessment Kit) is a citizen science freshwater monitoring toolkit developed by NIWA. SHMAK helps students, schools and community groups measure the health of streams by looking at water quality, stream habitat and stream life. SHMAK allows students to collect consistent data over time and understand how human actions can improve or harm freshwater ecosystems. SHMAK resources and manuals can be downloaded online, and some local councils or organisations may have kits available to borrow.

Learn more: <https://niwa.co.nz/freshwater/stream-health-monitoring-and-assessment-kit>

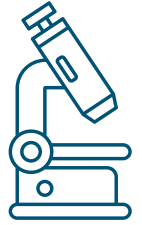
The NZ Water Citizens website is an online platform where schools and community groups can upload and store SHMAK monitoring data, create their own freshwater monitoring projects, and track changes in stream health over time. NZ Water Citizens also provides access to SHMAK resources, guidance and tools, helping students understand how to collect data correctly and use it to support real-world environmental action. By sharing data on NZ Water Citizens, students contribute to a national picture of freshwater health and connect their local monitoring efforts with others around the country.

Visit: <https://www.nzwatercitizens.co.nz/>

Wai Care (Auckland region only)

Wai Care is a water quality monitoring, education and action programme, delivered across the Auckland region for community groups, individuals, businesses and schools. The Wai Care programme is about people of all ages learning about and taking care of their local waterways and catchments. Wai Care supports communities to be actively involved in the protection, health and management of their local freshwater environments. The programme provides education, knowledge, resources and practical support to enable action in a wide range of ways. Schools within the Auckland region can help set up regular water quality monitoring in their local waterways. Schools may be able to access a Wai Care water monitoring kit, or share one with other groups in their local area. Students can compare results and collect consistent data over time to track changes and improvements in catchment health. These activities support the protection, restoration and enhancement of local freshwater ecosystems.

Citizen Science Opportunities



Skills: Gather and interpret data | Difficulty: Easy-Medium

Spyfish:

Come and visit Aotearoa New Zealand's underwater world in this online citizen science project. Discover, count and identify unique fish species that live within our marine reserves. Classifications by citizen scientists will be used to help teach an artificial intelligence tool about fish in Aotearoa.

- <https://www.zooniverse.org/projects/victorav/spyfish-aotearoa>
- <https://www.sciencelearn.org.nz/resources/3152-spyfish-aotearoa>

Litter Intelligence:

Litter Intelligence is a citizen science project that aims to establish a New Zealand litter database. Students can adopt a beach and clean it up to help contribute to citizen science data.

- <https://litterintelligence.org/>

Garden Bird Survey:

This New Zealand citizen science project collects observational data about bird sightings and allows you to compare your region with others over time.

- <https://www.sciencelearn.org.nz/resources/2732-new-zealand-garden-bird-survey>

The Great Kiwi Earthworm Survey:

You can take part from your farm, backyard, or anywhere you've got permission to dig a small hole. Kids, grab a grown-up and a spade, pick a spot and check on the health of your soil.

- <https://www.agresearch.co.nz/earthworms>

3. Actions Outside of School

Teacher prep for most of these activities will include:

- Complete field trip requirements and permission slips
- Set up transportation if location is away from school grounds
- Gather materials in preparation for the event



Rubbish Clean-Up



Skills: Community service, data surveying | **Difficulty:** Easy - Medium

Helping to clean-up your local area can provide students with the opportunity to provide a service to the environment and the community while learning about recycling, reusing and reducing waste.

Instructions:

- During this activity students can participate in a discussion about waterways and storm drains and how these are connected to their local waterways. After collecting as much debris as possible, students will separate the trash in different groups or types of materials. They will weigh each group and calculate the percent that each type of debris represents out of all the trash found at the site. This can then be used as part of the litter intelligence programme by sustainable coastlines!

Sustainable coastlines offer free beach clean kits to schools and provide reusable sacks, gloves, hand sanitiser, sharps container and safety briefing to help you prepare for your clean-up event. If you find sources of pollution or large items of rubbish, then call a council such as the Auckland Council Pollution Hotline 09-377-3107.

- <https://sustainablecoastlines.org/get-involved/diy/>

For a full breakdown of how to run a beach clean check out the resources below!

- <https://www.doc.govt.nz/get-involved/run-a-project/restoration-advice/beach-clean-ups/>
- <https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/archive/ocean-guardian-recipe15/beachcleanup.pdf>

Materials:

- Reusable gardening gloves for each student (use disposable rubber gloves if necessary)
- Reusable sacks or - one garbage bag for non recyclable trash and one for recyclable trash per team of 3-4 students
- Sharps container



Planting Bee



Skills: Community service, gardening/planting | **Difficulty:** Easy - Medium

Planting your local areas is a fantastic way to give back to the community and have a positive impact. By hosting a planting event at your stream, or joining one at a nearby stream you can help improve riparian (near stream) health, preventing erosion, and improving fish spawning habitats. Īnanga rely on grasses in the salt water wedge for spawning, laying their eggs on the grasses at a spring high tide, with the following spring high tide washing the eggs into the stream. Plantings can also be on school land to promote the regeneration of native bush and attract native birds!

Materials:

- Reusable gardening gloves for each student (use disposable rubber gloves if necessary)
- Spades/shovels
- Stakes/pegs for nearshore/near stream areas
- Plants (local nursery or grown from seedlings)

Planting is a simple process, but can be challenging once you have 30 students all clamoring to get their hands in the soil.

Key things to keep in mind when running a planting are:

- Letting your students know what they are planting and why - this helps to give context on what they are learning about.
- Planting with students requires direct attention from an adult so working in small groups allows you to give that direct attention. Having parent helpers or volunteers can help your planting event go smoothly.

Mountains to Sea can help you plan your planting day, order plants, decide where to plant and connect you to local conservation initiatives incorporating planting. When planting in the riparian area (near stream) care must be taken to ensure that the plants are planted in the correct area to avoid 'wet feet' or being washed away when water levels rise.

Planting bee's could also be done in sand dune areas, preventing shoreline erosion and providing nesting habitats for our shore birds.

You could join the Million Metres Streams project - This is a New Zealand wide project to plant a million meters of riparian area.

- <https://millionmetres.org.nz/>

Install Fish Passageway Tools



Skills: Communication, scientific investigation | **Difficulty:** Hard

Is your local stream blocked by in-stream structures, such as culverts, weirs and dams? Why not install a fish passageway tool to help reduce the impact on native freshwater species. Often small, low-cost changes can be made to barriers in streams to restore fish passage. Mussel spat rope can fix a small perched culvert and a small fish pass beside a weir can allow fish to move up and downstream.

If there are barriers to fish passage in your stream, there are ways you can mitigate this. Mountains to Sea can connect you with experts on fish passage. The cost of installing or altering a fish passageway varies and can involve putting mussel spat ropes up waterfalls or making fish ramps.

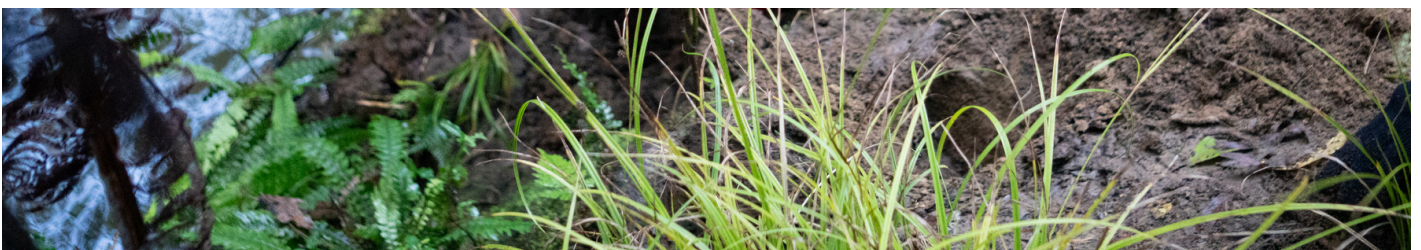
Remediation tactics: How a fish passage barrier is fixed will depend on the species present, and what ability they have to move through the waterway. It will also need to be site-specific to ensure the solution will work in the specific location.

Fish passageway tools often require a financial investment - your class could help contribute to this by writing letters to their local council in support of creating fish passageway tools and helping our native fishes migrate. Students can submit letters, ideas for how to fix barriers and more to their local representatives. Templates for writing letters and submissions is at the end of this booklet.

For older students, there is a free culvert baffle design calculator, which allows students to take measurements from a real culvert and see what baffle designs are recommended. This is a great way to combine practical fieldwork with design thinking: <https://ats-environmental.com/flexibaffle-configuration-tool/>

Check out these links for more information:

- <https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/fish/fish-passage/how-to-fix-fish-passage-barriers.pdf>
- <https://www.doc.govt.nz/nature/habitats/freshwater/fish-passage-management/fixing-barriers-to-fish-passage/>
- <https://www.gw.govt.nz/assets/Documents/2021/06/Fish-passage-fact-sheet..pdf>



Pest and Weed Control

Skills: Monitoring and surveillance, hands-on science | **Difficulty:** Medium

Animal pests and threats have a major detrimental effect on our environment and controlling them is essential for the survival of our native plants and animals. New Zealand has been geographically separated from other land masses for over 80 million years, so our native wildlife has evolved in isolation and in the absence of land mammals.



Weeds are smothering our native plants and destroying our native landscapes. Invasive weeds are destroying our native plant communities and transforming the natural landscapes that make New Zealand unique. Weeds can provide hiding places for pest animals, which is a risk to our native bird species. Weeds can also carry diseases, alter the soil pH and use more water than native plant species.

You and your students can do weeding bees and pest trapping alongside or near local streams and walkways, beaches and bush. Ideally this is done without pesticides as these can affect stream and marine life. Alternatives can be planting native species that shade out the pests, or manual removal of weeds.

You could also monitor pest activity at your local site, and then set up a trap or bait line to decrease the effects of land pests on the waterway. This will require consulting with landowners and pest management experts. Local trapping and pest control groups will be able to assist you with getting the right materials and help you to understand the presence and density of pests and predators detected. Connecting with local pest control groups can also lead to long term community based actions and relationships.

Weeding bee materials:

- Gloves
- Bags
- Pest plant ID guide (optional, laminating will help it last longer)

Potential pest monitoring materials:

- Traps
- Baitlines
- Wax-tags
- Chew cards
- Tracking tunnels



- <https://www.doc.govt.nz/parks-and-recreation/places-to-go/toyota-kiwi-guardians/take-action/become-a-backyard-detective/>

To find out more check out:

- <https://predatorfreenz.org/get-involved/find-a-group/>
- <https://www.trap.nz/find-projects>
- <https://www.doc.govt.nz/nature/pests-and-threats>

4. Actions At School

Ways to have an impact in your school grounds:

Action projects at school are a great way to engage your students with issues that they care about through easy to access tools and communicate these issues with other students who may not have been a part of a Whitebait Connection, EMR or Mountains to Sea programme.

When doing projects on school grounds ensure you have permission from principals/grounds keepers before carrying out your projects - you may like to get the students involved by asking them to write a letter or ask for permission in person themselves.



Drain Art



Skills: Painting, raising awareness | **Difficulty:** Easy

Painting storm water drains can help raise awareness about what goes into them, and what ultimately ends up in our waterways. Painting drains is an art project, an education project and a public awareness campaign for students and the general public. Students can be challenged to come up with artwork for storm drains that would make people think about what flows into them.

Drains need to be painted with a base coat that makes the surface easier to paint on and a clear overcoat to help protect the paint from the elements.

Drains can be painted with pictures of animals that live in the creeks, rivers, estuaries and the coastlines and messages to raise awareness such as:

- "Keep our seas plastic free"
- "These drains lead to the ocean"
- "Don't litter"
- "Rain water only"

As an alternative or complement to painted drains, metal signs or drain fish such as those from the Endangered Species Foundation's Awhi Awa kete can also be installed to reinforce the message.



Materials:

- Paint brushes
- Undercoat
- Outdoor paint (acrylic)
- Top/over coat
- Stencil (optional)

Before painting drains or installing metal signs or drain fish, get permission from senior staff or local council if decorating public drains. Pick drains that are accessible and will be seen. Clean the surface before painting and allow it to fully dry. Students should come up with ideas prior to painting so they have the right colours and enough paint. An undercoat should be applied when possible to ensure the paint can stick onto the surface. Once dried a clear coat should be applied, particularly in high foot traffic areas.

Drain painting and installation of signs and drain fish can be accompanied by student presentations about why they have done this action project and why storm water is an issue and is important to them.

<https://www.endangeredspecies.org.nz/awhi-awa>

Install a Rain Collecting Tank



Skills: Writing letters, fundraising | **Difficulty:** Medium

Installing a rain tank is a fantastic way to teach students about water conservation and campaign to make a long-term change to how we use water. Collected water could be used to water school gardens or plants.

Water collection tanks can be self funded, fundraised by the class/school or gifted by local businesses. Teachers can encourage students to write letters to local businesses and local council representatives to request sponsorship for rain collectors.

For inspiration check out Waipa's Vienna Seabright who wrote a letter to her local council to get a rainwater tank for the local school!

- <https://www.waipadc.govt.nz/our-council/news?item=id:2de1kvlv17q9sxmsrqw>

For more information on setting up rainwater tanks check out the link below:

- <https://www.aucklandcouncil.govt.nz/environment/looking-after-aucklands-water/rainwater-tanks/Pages/rainwater-tank-components-maintenance.aspx>

Materials:

- Letter writing materials
- Access to a computer (research and letter writing)
- Fundraising materials



Colgate Recycling Programme



Skills: Art, raising awareness | **Difficulty:** Easy

Colgate Oral Care Free Recycling Programme! Your class and school can help collect colgate toothpaste, mouthwash and floss packaging and send it in via a free courier slip for recycling!

Simply collect colgate branded waste, download a free shipping label to ship your used oral care to TerraCycle, and they'll recycle it.

This aligns with the students learning around recyclable products and how not all plastic products are recyclable.

By encouraging students to bring in their colgate waste you are not only raising awareness about different types of landfill wastes but also diverting recyclable products from landfills.

Materials:

- A box to collect the toothpaste tubes
- Posters/signage to communicate what the box is for and instructions (i.e., this is for colgate only, don't need to clean first)



Painting or Installing New School Bins



Skills: Art, campaigning, raising awareness | **Difficulty:** Medium

Painting the school bins different colours is an excellent way to add vibrancy to your school and encourage students to use the bins instead of littering. Painting bins can be accompanied with student presentations or posters to communicate to other students why they have painted the bins and why they think littering is a big issue to them.

Students may like to paint patterns or pictures onto the bins or put messages around the base of bins to raise awareness for littering.

Alternatively - students may like to campaign for more bins or more bin options (like paper, plastic recycling and soft plastics) at their schools. Students can write letters or make presentations to ask for new school bins and why they think it will help. Your class may also like to start a composting bin or worm farm! Composting in schools helps keep food waste out of landfills, which is acknowledged as one of the best and easiest ways to combat the climate crisis. It may also help reduce rubbish disposal costs, by reducing how much your school sends to landfill.

The most important thing is to ensure that everyone in your school community – teachers, caretakers, students and whānau, are fully supportive of composting.

Check out the link below for starting your own compost bin or worm farm!

- <https://compostcollective.org.nz/composting-in-schools/>

Materials:

- Cleaning materials and sanding paper - to prepare the bins
- Primer and top coat
- Outdoor paint (acrylic)
- Brushes
- Paint aprons (optional)
- Template for design (hand drawn or printed)
- Stencil (optional)

Materials for worm farms or compost bins will vary. Check out the compost collective website to find out which compost bin style is suitable for your school.

Native Nursery Building



Skills: Planting, gardening | **Difficulty:** Medium

A community nursery can be a collaborative project to grow seedlings which can then be planted back into local areas. Growing your own native plants is exciting. There are so many reasons to start your own nursery. You may want to grow plants to make sure you are getting closely eco-sourced seed, or to save money in a restoration project, or to get your whānau and community engaged and educated on plants.

‘Nurseries’ can exist in many different shapes and sizes. You may want to start by keeping a few plants in your yard with some shade cloth draped over them, or you may want to create a full-blown community nursery producing thousands of plants to sell or donate.

There are many benefits to having a native garden and nursery for native plants in your school, including:

- School children learn how to pot up plants
- Providing an attractive environment for enjoyment and recreation
- Providing habitat for wildlife and attracting native birds
- Providing learning about the creatures that live in a garden
- Providing plants for “touch”, “smell”, “shape”
- Involving children in growing plants from seed at the community nursery
- Involving children in designing their own garden for the school – including paths, signs, picnic tables, etc.
- Building weta boxes, bird feeders, bird nesting boxes, a worm farm

For more information check out:

- <https://www.mountaintosea.org.nz/work-with-us/he-kaakano-nursery>
- <https://www.southlandcommunitynursery.org.nz/restoring-your-patch/planning-your-project/creating-a-school-garden/>



5. Actions in the Classroom

These action projects are designed to be able to be completed in the classroom or in an online learning environment. They can be modified to suit the ages/year level of the students and can be done as a take home activity too.



Design a Plaque or Sign



Skills: Painting, raising awareness | **Difficulty:** Easy

Plaques and signs are a great way to share information and get a message across! They can be bright and colourful and designed for long term and short term use.

Ideas for plaques and signs can include:

- Keep our streams litter free
- Native species live here, take care
- Help keep our eels safe, take your rubbish home
- Native birds nesting here, keep your dogs on a leash

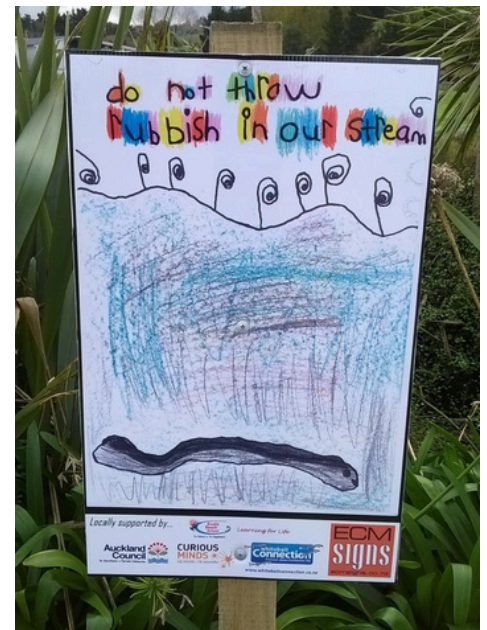
These informative/interesting signs can be put close to your stream to tell those going by about it. Perhaps what lives in the stream, a threat to the stream or about what the public can do to protect it?

Plaques could be placed in school gardens, by storm water drains and rubbish bins, or local parks, streams and beaches (with permission from local authorities). Plaques should be made out of suitable materials to last being outdoors.

Ensure you have permission before putting signs on school grounds and in public areas. You may like to accompany the plaques and signs with a presentation in assembly to tell other students about what the plaques are for/some of the things the students have learnt through their EMR/Whitebait Connection or Mountains to Sea programme.

Materials:

- Material to be painted - wood, rocks, sheet of plastic etc.
- Outdoor paint (acrylic)
- Brushes
- Paint aprons (optional)
- Template for design (hand drawn or printed)
- Stencil (optional)



Design a Marine Reserve



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Designing a marine reserve is a fun activity students can do by themselves, in pairs or small groups. Students should pick an area, learn about the habitats within that area and design a marine reserve. Students can choose to present their marine reserve in a variety of ways.

Ideas include:

- A diorama or model
- Presentation to the class
- Science fair style report
- Present to the local community board about what they see as issues for the marine reserve

When planning their marine reserve students should consider:

- Why do we need more marine reserves
- Where a good one would be
- Why do we need more marine reserves
- Where it would go
- How big would it be
- What habitats are there
- What research they think would be needed to find out how healthy it is

Students should do research to find out what animals are there/what habitats are in their chosen area and why they are important. Check out our guide to designing marine reserves and submissions for marine protection here: www.howtokit.org.nz

If the area is degraded - this can also be used as an argument for restoration.



Submissions and Letters to Parliament



Skills: Letter writing, raising awareness | **Difficulty:** Easy

Letters and submissions to parliament are a great way for students to communicate their thoughts, ideas or local issues to representatives in parliament. Students can hand write letters and send them free of charge (no stamp needed) using the following address:

[insert MP name]
Freepost Parliament
Private Bag 18 888
Parliament Buildings
Wellington 6160

Materials:

- Paper and other stationery items
- Envelope to send letter

Students should research which MP is in charge of the issue they are writing about using the government website. They may also like to contact their Local MP who may be interested in issues in their electorate/area

<https://www.parliament.nz/en/get-involved/have-your-say/contact-an-mp/>

Students should research their issue and the MP they would like to contact before writing their letter. You may like to double check their work before they send their letter. You can see an example template in the templates section of this document.

Letters should be:

- Written in formal language, with attention being paid to spelling
- Keep it brief. Letters should be no longer than one page and should be about one issue only. Be as concise as possible and state the topic/issue clearly
- Use your own words, your own words are better than a copy paste text
- Personalise your letter. Include a personal story or information on how the issue affects you
- Be polite. Politicians are people too

What should I write?

You should explain why a particular issue is important to you and your community/young people/New Zealanders. Be clear and to the point. Be constructive - what are you asking them to do? Include your values and opinions on the issue. Make sure you include your name and school address, so that they can write back to you.

Emails to Parliament



Skills: Letter writing, raising awareness | **Difficulty:** Easy

Materials:

- Access to a computer

Email is the least effective way of communicating your views to your representatives.

However when you are unable to find time to mail a letter or make a phone call, it is better to send an email than do nothing. MP's email addresses follow this formula:

firstname.lastname@parliament.govt.nz and cabinet ministers use this formula: initial.surname@ministers.govt.nz

To maximise the chance of your email being read:

- Write to appropriate politicians, not everyone. Send your email to your local representative and people responsible for the matter, not to everyone. Mass emailing politicians can be blocked like spam, either technically by the computer or mentally by the assistant reading them all.
- Use the "To" field. Place the politician's email address in the "To" field of your email, not in the 'cc' or 'bcc' fields, to minimise the risk of your email being treated like spam and automatically deleted or sent to a junk mail folder.
- State the topic in the subject line of your email.
- Address a person. Commence with "Dear ...", so your email doesn't look like junk mail.
- Include your name and address. Email can come from anywhere in the world so be sure to identify yourself as a constituent by including your address (preferably at the top of your email). Politicians are most likely to pay attention to people who live in their electoral district or at least in NZ.
- Use the formality of a letter, not the informality of typical emails. The formality of a letter makes a better impression on most politicians than the informal style often used in email messages. Pay attention to spelling, punctuation, capitalisation, etc.



Petitions



Skills: Letter writing, raising awareness | **Difficulty:** Easy

A petition is a request asking the House of Representatives (Parliament) to take a specific action. The request might ask for a law or policy to be changed, or to put right a local or private concern. People can sign a petition to show their support for the request. students should do some research before creating the petition to have a clear idea for what they are asking for/raising awareness for.

Materials:

- Access to a computer

You can petition on any issue as long as it fits certain criteria:

- Is this an issue that Parliament can take action on?
- Raising awareness about an issue
- Initiating or building momentum towards a change in policy or services
- Proposing a new law or influencing one that's being considered

Petitions must:

- Be in English or te reo Māori
- Ask the House of Representatives to take an action
- Use respectful and moderate language
- Be serious in intent
- Be succinct and not contain irrelevant information

Petitions can be paper/hard-copy, electronic or both. Paper petitions can be good for reaching people who do not have access to the internet while electronic petitions are able to be shared online and collect more signatures.

Good platforms for creating petitions include:

- change.org
- www.parliament.nz/en/pb/petitions/
- our.actionstation.org.nz/

Petitions, once completed, can be presented to the House of Representatives by a current member of parliament (MP). Check out this link for more information on making petitions

- <https://www.parliament.nz/en/get-involved/have-your-say/guide-for-petitions/#can-i-petition-parliament>

Check out this incredible 2021 petition by Jessica Woodhams from Ōrākei School

- <https://www.change.org/p/new-zealand-government-ban-destructive-fishing-practices-in-the-hauraki-gulf>

Write a Report



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Student can pick an issue to write a report on. Research reports are a great way for students to practice their critical thinking and communication skills while learning more about issues in their local areas.

Step One:

- Students should brainstorm issues in their local area and pick one to focus on.

Step Two:

- Pick a purpose or a reason for the report. Am I aiming to inform, persuade, or offer a perspective?

Step Three:

- Create a research question, i.e., what are issues in my local area that are important? What animals live in my local area? What kind of marine reserves do we have in New Zealand?

Step Four:

- Once students have their topic or plan the next step is to find sources or search for reliable information. Now-a-days, most information can be found online. However, students should write the report using their own words not copying and pasting.

Step Five:

- From here, students can take notes and create an outline for their report, using useful pieces of information to craft their story. They might like to use photos or videos they find online to help them in writing their report.

Report topics may include:

- Researching their local environments and issues facing the animals and plants that live there
- Sharing ideas for new marine reserves or marine conservation tools
- Investigating the UNESCO sustainable development goals and how they apply to student's local areas.
- Methods of dealing with pests and how they can be eradicated in their area.
- Students may like to raise awareness of impacts such as
 - over stocking, over fertilizing, intensification, stock in waterways, nutrient overloading, clearance of wetlands, clearance of hillside vegetation, spread of pests
 - overfishing, marine invasive species, sedimentation, run off etc.

Reports could then be presented to the class, shared to other classes or in school newsletters or on a website.

Classroom Campaigning



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Your classroom can become leaders and role models for other students by promoting good environmental practices and pledging to do something good for the environment

Examples may include:

- Plastic-free and litter-less lunches days
- Walking and cycling to school challenges
- Pick up '3 pieces of trash to protect the sea' every day
- Promoting responsible dog ownership (i.e., not letting your dogs chase birds)
- Carpooling or catching the bus - reduce carbon emissions
- Saving water
 - Using grey water, collecting rainwater, installing low-flow taps, having shorter showers and not leaving taps running

You could make signs or posters to tell people about what your class is doing or present in class and or/assembly. Students can share their new knowledge far and wide, presenting to students who may not have had the opportunity to be involved in the programme.

If your class has done environmental monitoring or report writing you could present your findings at a public event or a community meeting or event (like at the local library) and tell locals about the stream they live close to.

Your classroom can celebrate a local existing marine reserve or rahui or other protected areas, you can help educate your local community about the rules of marine reserves, their boundaries, and what they protect. Students may choose to do reflect on their experience at their local marine reserve and how they can share this with other students.



Technology Skills 1



Skills: Critical thinking, digital art, design, communication | **Difficulty:** Easy

Making a Video/Presentation

Videos are a great way to share information far and wide! Students can develop their technology skills by filming and editing videos together to share messages and information. Past students have:

- Created videos to help convince businesses to change their packaging to more sustainable alternatives
- Promoted going plastic-free
- Created a short film about looking after the environment called 'Kaitiaki Kid' to inspire younger students to become future kaitiaki-guardians and change their behaviours around littering
- Shared messages about what happens to stormwater and how it impacts the freshwater and marine environment
- Shared stories about their local waterway and restoration efforts

Videos and presentations can be easily shared on Facebook and YouTube to maximise the reach of students' work! You can check out past student's videos on our Facebook and YouTube page. Student's could present their presentations and videos to the wider community to have a greater reach, beyond the classroom and their peers.

Making a Song/Music Video

Communicating messages through music is a fantastic way to share the information you have learnt through the programme! We have had students create songs, raps and spoken word presentations to share stories about various topics to educate their communities.

Song topics may include:

- teaching people not to litter
- problems in our environment
- how to be a good kaitiaki

Check out a previous student song here:

- <https://www.facebook.com/emr.mtsct/videos/1350824581597818>

Technology Skills 2



Skills: Critical thinking, digital art, design, communication | **Difficulty:** Easy

Making a Website

Past students have put their efforts into creating a collaborative space to share original resources and information from their research on various environmental issues. Creating a website can be a way for students to build their technical skillset and share information. Students can create articles sharing information, share fun facts, make quizzes and online games

Check out this awesome website from students at Meadowbank School:
<https://sites.google.com/meadowbank.school.nz/mountains-to-sea/home?>

Making an Online Game

Online game development using scratch can be an awesome way for students to develop their coding/technical skills and share information on what they have learnt in class. Students have used the platform scratch to build games which have simple controls to move characters around the ocean and more.

To check out and play a scratch game developed by past students check out the link below:

- <https://scratch.mit.edu/projects/657983114>
- <https://scratch.mit.edu/projects/295001025/>

Student's have also created online kahoot games and online quizzes to share the information they have learnt in class.

Hard Materials Projects

Past students have done a variety of hard materials projects including building robots to help pick up litter and circuit board games with marine themed questions and designs.

Art and Design Skills 1



Skills: Critical thinking, digital art, design, communication | **Difficulty:** Easy-Medium

Posters and Fliers

Posters and fliers are an excellent way to summarise information learnt in class in an engaging and creative manner. Students can create posters using online tools such as canva.com and google docs or using art materials. Check out our planning guide for planning effective posters.

When creating posters and fliers it is important to have a key message or call to action in mind to ensure posters are an effective action project. Key messages could be to encourage people to use keep cups, choose to reuse, encourage support for more marine reserves, limiting environmental impacts.

Posters could be shared in:

- Local markets and libraries
- Local shops/cafes
- School classrooms, libraries and halls

Fliers could be distributed in:

- People's mailboxes
- Handed out to local coffee shops

Dioramas and Theater Plays

Dioramas and theater plays are fun and engaging way for students to showcase their learning.

Examples include:

- Comparisons of before and after protection or protected vs. unprotected
- Lifecycles of fish (particularly migratory fish which move from freshwater to saltwater)
- Celebrate rahui/MPA's by showing how biodiverse they are by acting it out or showing it through dioramas.

Board Games

Board games with fun environmental messages can be a creative way for students to showcase their learning. Past students have worked on games inspired by marine/freshwater threats and shared them amongst other students. Some students have redesigned games such as monopoly to give them a marine twist - such as marine monopoly where people can purchase Aotearoa's beaches and turn them into marine reserves. Games could also be outdoor games played on school fields or courts.

Art and Design Skills 2



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Writing Personal Pieces/Stories

A great way to encourage students to reflect on their programme is to write a story about what they saw/experienced or write a story to communicate some of their ideas. These stories could be about the places they visited, creatures they learnt about or local people they have met who are helping to restore their local environment. These stories and personal pieces could be shared beyond the classroom in the school newsletter, e-journals/portfolios, or even local newsletters and newspapers!

Animal Hotels

Animal hotels are a fun way to help support local restoration efforts, support thriving insect communities and help support native species. The 'hotels' you build can be placed on school grounds or in local areas with permission to ensure they do not get removed by people. Creating instream habitats for macroinvertebrates can be achieved by making structures out of natural materials including wood, ferns, logs and rocks.

- Bug hotels in streams: <https://www.youtube.com/watch?v=90dtZNb2ntQ>
- Bug hotels in gardens: <https://kiwifamilies.co.nz/articles/make-bug-hotel/>
- Lizard lounge: <https://www.doc.govt.nz/get-involved/conservation-activities/attract-lizards-to-your-garden/>

Murals

Mural art can brighten up school grounds, student's can help to design and paint the mural with murals communicating messages to other students. Your students may like to vote for their favourite theme/message to have one unified mural. Permission needs to be given by senior staff before painting school grounds.



Art and Design Skills 3



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Creative Storytelling

Students can creatively tell stories and share conservation messages through a variety of art and design projects. Past students have created comic books and pop up books, educational books, scrapbooks and journals and collages.

Art projects are also encouraged, with past students creating fish measuring trays, reusable face masks, nature mobiles, sock puppet shows, and 3D models.

Waste Sculptures and Artworks

Students may like to use waste collected from school grounds, home or clean up events to create sculptures and artworks about waste issues. Students can make a variety of art from waste, however, ensure the waste is cleaned so it does not make the classroom smelly. Sculptures and art can be displayed in the school hall, reception area, library etc. to showcase the work of the students and communicate the issues they care about.

Ecofriendly Products

Past students have also taken their learnings from their programme and put it into practice by creating eco-friendly and reusable products! Students can do research and develop eco-friendly products that they can use themselves or sell to fundraise and raise awareness for environmental issues.

Past students made beeswax wraps to sell to parents and students as an alternative to plastic, donating the funds to shark research and advocacy groups. Other students created eco-friendly soaps to raise awareness for stormwater issues in their local community.

You can find lots of 'recipes' for zero waste and ecofriendly products - encourage your students to think about what wastes they create and how it can be minimised with reusable materials.



Create an Enviro Group



Skills: Critical thinking, art, design, communication | **Difficulty:** Easy

Creating an environmental group at your school is a fantastic way to create a space for students to come together and create meaningful actions. Students should be encouraged and empowered to lead the group with teachers guiding the direction.

When starting an environmental group, it can be helpful to compile ideas about their school environment and the sustainability initiatives the school already has in place. Students can brainstorm what issues they are passionate about and how they can run activities to help these issues.

A map of the environment, both natural and built, can help understand your school or local areas current situation and provide a base to create a vision for the future and measurable change.

Past students have focused their activities on issues they are passionate about including:

- Collecting rubbish in their school, auditing it, and learning about how much rubbish the school creates and where it ends up
- Other students created a group which does local litter clean-ups and educate other students about local litter issues

Other options can include creating compost bins or worm farms, planting on school grounds or in local areas, and doing citizen science projects. Once you have established an environmental group you can join the Enviroschools network and work on your school becoming a recognized Enviroschool. See: <http://enviroschools.org.nz>



Fundraise



Skills: Critical thinking, organisation, fundraising | **Difficulty:** Easy

Fundraising can come in a variety of ways - ideas can include hosting a gold coin mufti day, bake sales, marine or freshwater themed school discos, art exhibitions and sausage sizzles. Fundraising can be an awesome way for students to have a role in raising funds for improving the school's sustainability such as:

- Installing rain tanks
- Building compost bins and worm farms

Fundraise to Support Mountains to Sea

You can also pay it forward, fundraise for other students to experience our programmes, to contribute to new equipment, or to secure your schools future participation. Contact info@mountainstosea.org.nz to make arrangements for your donation or pay it forward project!

Fundraise to Support other NZ Based Marine or Freshwater Conservation Projects

A list of some conservation projects across the country you could support can be found on these websites:

<https://www.doc.govt.nz/our-work/restoring-places/>

<https://gotchatraps.co.nz/resources/conservation-projects/>

<https://www.forestandbird.org.nz/projects>



6. Printable Materials

These printable materials can be used for in class planning, guiding your students in their action projects and for assessing the impact of your actions. Feel free to print, or use as a guide for students to complete in their own workbooks.



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Mountains to Sea Action Planning Worksheet | 2026

My name is... _____

My local area is... _____

Issues in my local area are: _____

- _____
- _____
- _____

Pick one issue and write it here: _____

Who/What does this issue impact? _____

What can I do to prevent this issue? _____

What can I do to fix this issue? _____

Using the 'prevent' and 'fix' box pick one action! _____

What will I do? _____

What do I need to research first? _____

Who will do it and who might I need help from? _____

When will I do it? _____

Where will I do it? _____

Who do I ask permission? _____

Are there any costs? _____

What tools, equipment and resources do I need? _____

- _____
- _____
- _____

How will I know I've succeeded? _____

How will my community know about my action? _____

Issues Brainstorm



.....

.....

.....



.....

.....

What issues are facing
my local environment?

.....

.....

Choose two impacts and describe how they impact your local environment

Impact 1:

Impact 2:

Rubbish Clean-Up



Planning sheet - the big W's!

Where am I going to do my clean-up (specific location)?

.....

When will I do my clean-up (time and date)?

.....

Who will join my clean-up (friends, classmates, family etc.)?

.....

Who do I need permission from?

.....

What equipment do I need (bags, gloves, buckets etc.):

.....

What will I do with the rubbish when I am finished?

.....

How will I recruit people to help me?

.....

How will I share my success with the community?

.....

Am I going to count my litter/do a litter audit?

.....

What will I need to be able to count how much rubbish I have collected?

.....

What do I think will be the most common rubbish found?

.....

.....

Rubbish Clean-Up



Audit Sheet

School & Student Name:

Location & Date:

Total participants:

Food related	
6 pack holders	
Beverage bottles (glass)	
Beverage bottles (plastic)	
Beverage cans	
Caps/lids	
Cups, plates, knives, forks, spoons	
Food wrappers / containers	
Straws	
Lollypop sticks	
Smoking related	
Cigarette butts	
Lighters	
Tabacco packaging/wrappers	
Vape pens/materials	

Other	
Construction related	
Foam	
Polystyrene	
Glass pieces	
Toys	
Vehicle related	
Toothbrush	
Clothing / Fabric	
Pens/Stationery	

Plastics	
Microplastics	
Plastic bags	
Nurdles (plastic pellets)	
Unidentifiable plastic pieces	

Fishing related	
Fishing nets, rope	
Fishing lines, hooks	
Fish traps	

Rubber	
Rubber bands	
Rubber gloves	
Unidentifiable rubber	

Total number of pieces collected:

.....

Total weight of pieces collected:

.....

Notes:



Poster Planner

Name:

.....

Title of my poster?

.....

What is the goal of your poster?

.....

What are the main messages I want to share?

.....

What is the call to action? What do I want people to take away?

.....

Who is my audience/who do I want to share it with?

.....

Where do I want to share my poster?

.....

How will I make my poster?

.....

Before printing or doing a good copy:

- Is my poster clear?
- Is my message easy to understand?
- Can people read my poster?
- Do I need to make the letters bigger?
- How will I know my posters have made an impact?
- What am I hoping to achieve with my posters?

Action Project Reflection

Name:

.....

School and Year Level:

.....

My action project was:

.....

What were the main messages I wanted to share?

.....

What did I want people to take away/learn?

.....

Did I finish my action?

.....

What went well?

.....

How has my action helped my community?

.....

7. Templates

These templates can be used for in-class planning and actioning of student action projects.

Feel free to print, or use as a guide for students to complete in their own workbooks.

Submissions and Letters to Parliament Template



[insert MP name]

Freepost Parliament

Private Bag 18 888

Parliament Buildings

Wellington 6160

Dear Hon. [insert MP's name],

My name is [insert name] and I am a student at [insert school name]. I recently took part in the Whitebait Connection programme.

Through this programme, I learned about whitebait, freshwater ecosystems, and how streams, wetlands, and rivers support native species and our communities. Healthy freshwater habitats are like living classrooms – places where students and their whānau can learn, observe, and connect with freshwater species in their natural environment.

I believe that every school and community group in Aotearoa should have access to healthy, protected freshwater habitats, such as streams, wetlands, and river margins that support native fish like whitebait. By accessible, I mean places that are close to where people live, safe to visit, and supported by good water quality, habitat protection, and appropriate management.

Please consider freshwater protection and accessibility when making decisions on community and government proposals that affect rivers, streams, wetlands, and the species that depend on them, including whitebait.

Ngā mihi,

[insert name]

Submissions and Letters to Parliament Template



[insert MP name]

Freepost Parliament

Private Bag 18 888

Parliament Buildings

Wellington 6160

Dear Hon. [insert MPs name],

My name is [insert name] and I am a student at [insert school name]. I recently took part in the [insert programme name] programme.

Marine reserves and other no-take marine protected areas, are like ‘Wet libraries’, places students and their whānau can learn and observe marine life in their natural habitat.

I believe that every school and community group from every region of Aotearoa should have access to an accessible ‘Wet library’ (no-take marine protected area). By accessible, I mean within 2 hours driving distance, with adequate access for snorkelling or kayaking opportunities from shore.

Please consider ‘Wet library’ accessibility when making decisions on community and government proposals to advance marine protection in Aotearoa.

Ngā mihi,

[insert name]

Submissions and Letters to Parliament Template



[insert MP name]

Freepost Parliament

Private Bag 18 888

Parliament Buildings

Wellington 6160

Dear Hon. [insert MPs name],

My name is [insert name] and I am a student at [insert school name]. I recently took part in the EMR programme.

Possible ideas to include:

- What marine reserves or local freshwater environments have you visited as part of your programme?
- Talk about what you enjoyed about your experience and how it has shaped your view of marine and/or freshwater conservation.
- What you saw in the marine or freshwater environments you visited and what threats you observed.
- Why do you think we should have more marine reserves?
- What ideas do you want to share with this MP? I.e., Make more marine reserves? Litter traps in schools? More riparian planting? Nurdle/Litter traps?

Ngā mihi,

[insert name]