




Learning Journal

Name: _____

Class: _____

School: _____

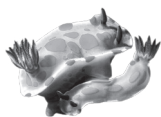




Fill in this booklet as you go through your Mountains to Sea Programme. Some activities are marine themed some are freshwater and some may cover both. Look out for these symbols to help you.



Freshwater activity



Marine activity



Combined activity

Mountains to Sea Whakatauki

Whakamana te maunga


Whakamana te wai

He mauri o ngā tangata

Ngā mea katoa he pai

If we look after the water from the mountains to the sea

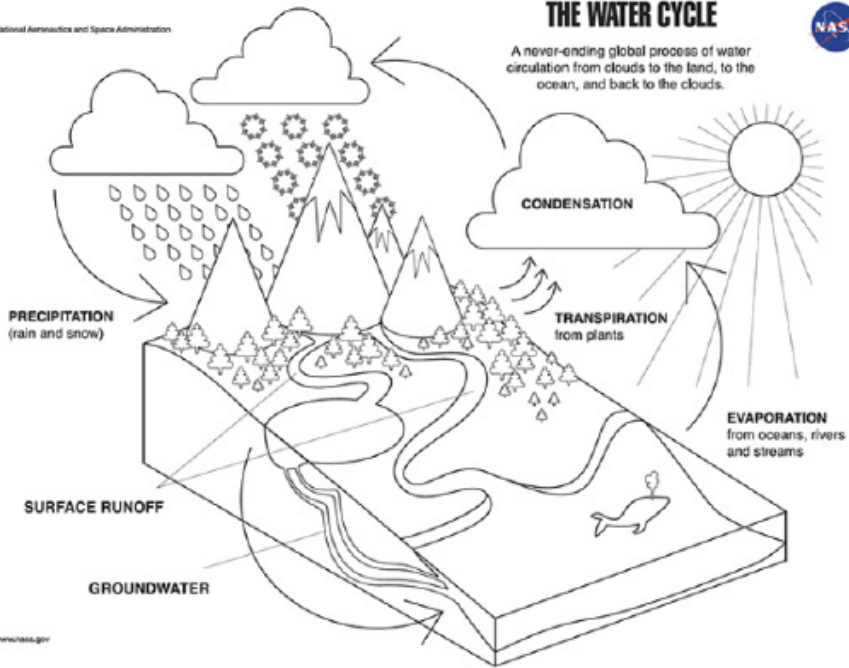
It will look after us, it is our life force.



THE WATER CYCLE



A never-ending global process of water circulation from clouds to the land, to the ocean, and back to the clouds.



How much water in the world is fresh?

How much water in the world is salt?

Everything is connected. We need to look at fresh water, the ocean and the land as a whole environment. This programme will encourage you to discover the connections and start thinking about how you can protect them.

What do I know.....



Fill in the boxes below

| | |
|--|--|
| <p>What I know about freshwater</p> | <p>What I want to find out about freshwater</p> |
| <p>What I know about the marine environment</p> | <p>What I want to find out about the marine environment</p> |

My values

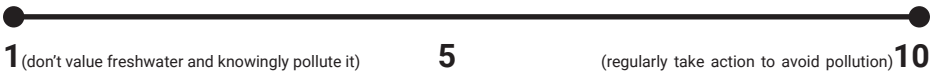


Draw a number on the scale below to show how much you value **fresh water**.



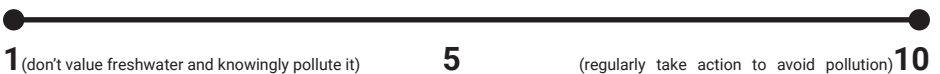
Explain your rating.

Draw a number on the scale below to show how much you value **salt water**.



Explain your rating.

Draw a number on the scale below to show how healthy your local environment is



Explain your rating.

Word definitions



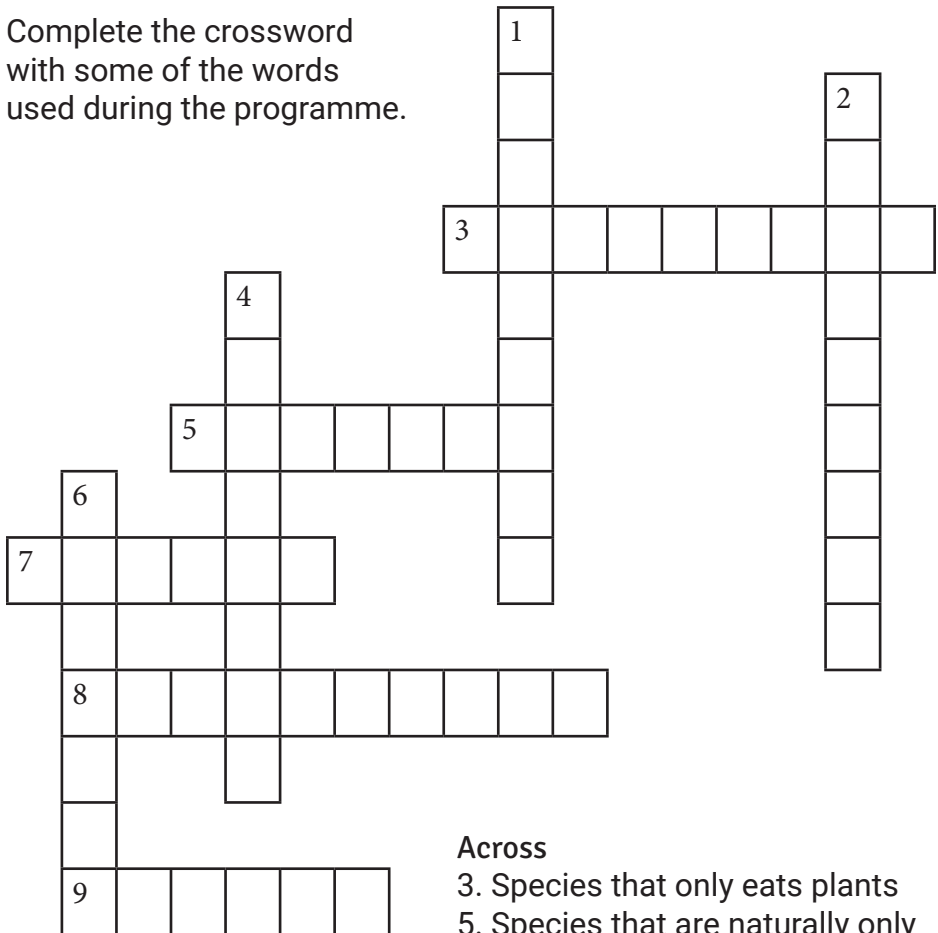
Below are some of the words used during the programme. Can you match the words to the correct definition?

| Word | Definition |
|---------------|---|
| Whitebait | anything to do with the ocean |
| Run off | The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable |
| Marine | An area of land where all of the water drains into one collection point |
| Riparian | The small silvery-white young of herrings, sprats, Galaxiids and similar marine fish, eaten in numbers as food |
| Catchment | Guardianship |
| Biodiversity | the draining away of water (or substances carried in it) from the surface or an area of land, a building or structure etc |
| Kaitiakitanga | the terrestrial zone that fringes the edges of an aquatic habitat |

Word definitions



Complete the crossword with some of the words used during the programme.



Down

1. The series of changes in the life of an organism
2. Species that only eats animals
4. Species that eats both plants and animals
6. Natural home or environment of a plant, animal or other organism

Across

3. Species that only eats plants
5. Species that are naturally only found in one place ie kiwi
7. Species that is naturally found in a place but may be found in several places ie pukeko
8. Species that have been accidentally or purposely transported to a new location by human activity
9. A person or thing that is likely to cause damage or danger

Habitats Wordfind



Can you find the different freshwater and marine habitats?

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | R | C | U | E | F | L | C | R | E | E | K | L | R |
| S | V | P | M | B | E | A | C | H | F | P | I | L | Z |
| T | P | L | D | E | E | P | S | E | A | L | K | S | V |
| U | T | L | B | Z | V | B | X | H | Q | U | A | G | D |
| A | S | T | R | E | A | M | R | G | R | B | U | K | O |
| R | L | U | X | L | R | H | A | S | O | P | C | P | E |
| Y | F | B | I | L | T | I | F | C | C | O | T | P | O |
| J | H | N | I | P | L | H | V | A | K | N | X | E | L |
| U | W | Q | H | X | Q | T | T | E | Y | D | A | L | Z |
| T | P | L | G | G | U | O | G | C | R | E | J | A | R |
| T | P | W | E | T | L | A | N | D | E | H | Y | G | H |
| T | M | L | T | W | V | S | R | O | E | L | M | I | J |
| A | T | Y | P | J | Q | T | R | Y | F | X | Q | C | L |
| B | D | X | D | Z | G | H | A | R | B | O | U | R | C |

Freshwater

Creek

Lake

Pond

River

Stream

Wetland

Marine

Beach

Deep sea

Estuary

Harbour

Pelagic

Rocky reef

Choose a marine and freshwater habitat from the list above and name 3 species that live in it

Freshwater Habitat:

Marine Habitat:

Species:

Species:

1. _____

1. _____

2. _____

2. _____

3. _____

3. _____

Habitats



Choose a habitat and deesign an animal that could live there.

A large, empty rectangular box with a black border, intended for drawing a habitat and an animal.

Write about the adaptations your animal needs to survive in it's habitat:



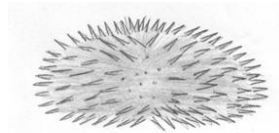
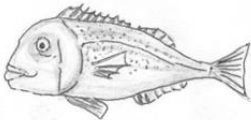
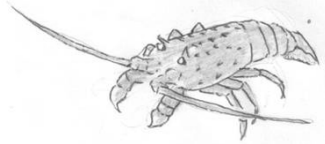
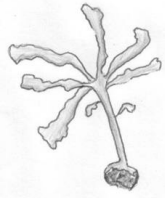
Foodchains



Food chains show how organisms rely on others for food. Arrows show the transfer of energy from one organism to the next.

For example: **BIRD** → **CAT**

Name the pictures below and then draw arrows to connect the



What happens if one thing is missing from the food chain?

Lifecycle



What is a lifecycle? _____

Fill in the blanks using the words below to describe the inanga lifecycle.

Adult inanga migrate _____ to spawn, laying their _____ on dense vegetation during full/new moon.

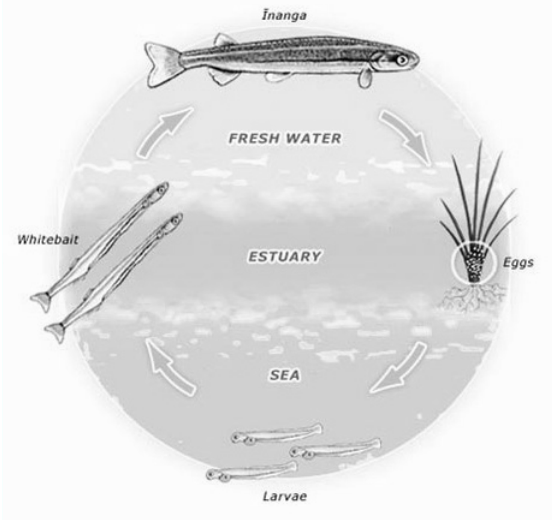
Eggs develop for _____ weeks and upon a spring tide, eggs are stimulated to hatch.

Larvae swim downstream, migrating out to _____, where they live for 6 months, feeding on plankton.

After _____ months the now juveniles (**whitebait**) migrate back up the rivers and streams, where some are caught and others grow into adults.

Adult inanga live in the upper reaches of streams/rivers, growing to 11cm in length. By late _____, inanga are mature and ready to spawn.

Females can lay up to _____ eggs.



Words to fill in

eggs
6-7
summer
13,000
downstream
sea
2-4

Freshwater macro invertebrates



What is an invertebrate? _____

Number the drawings of the freshwater invertebrates on the next page using the list of names below:

- | | |
|---------------------|---------------------------|
| 1. Amphipod | 7. Shrimp |
| 2. Damselfly | 8. Snail |
| 3. Dragonfly larvae | 9. Water boatman |
| 4. Koura | 10. Woody cased caddisfly |
| 5. Mayfly | 11. Backswimmer |
| 6. Mosquito larvae | 12. Pondskater |

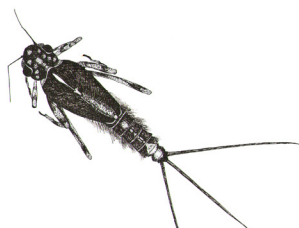
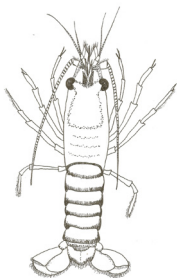
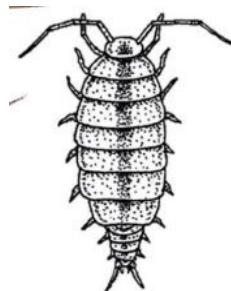
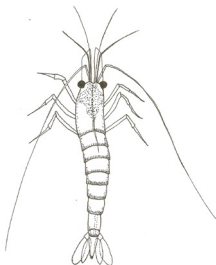
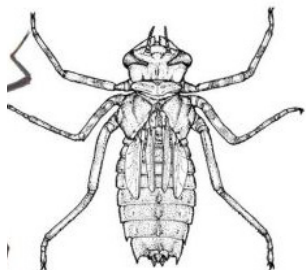
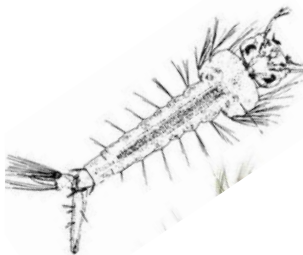
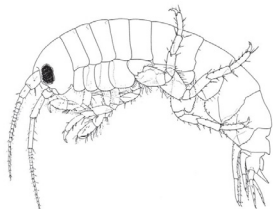
Which of these invertebrates need a healthy stream to survive?

Choose 2 of these invertebrates and describe how they move

Invertebrate 1:

Invertebrate 2:

Freshwater macro invertebrates



Introduction to Snorkelling



Equipment:

Label the following equipment with the correct names.



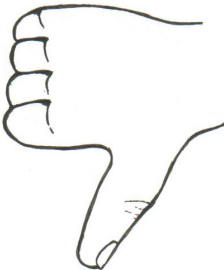



Communication:

1 whistle blast means: _____

3 whistle blasts means: _____

Write the meaning of the signals below the pictures

| | |
|---|---|
|  |  |
|  |  |
| | |

Introduction to Snorkelling



Three things I learnt about snorkelling:

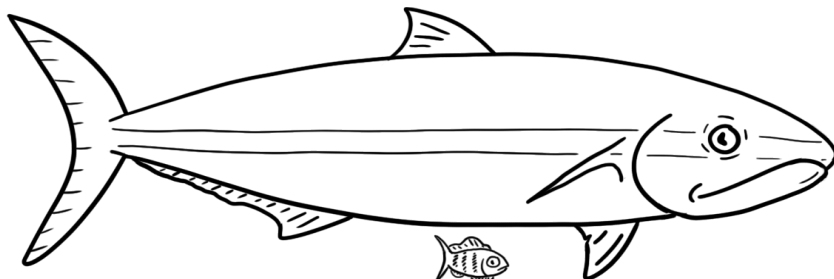
1. _____

2. _____

3. _____

I would like to improve my snorkelling skills by:

Write how you feel about snorkelling in the ocean



Freshwater equipment



Label the following equipment with their correct names and explain what they are used for.



Blank space for labeling and explanation.

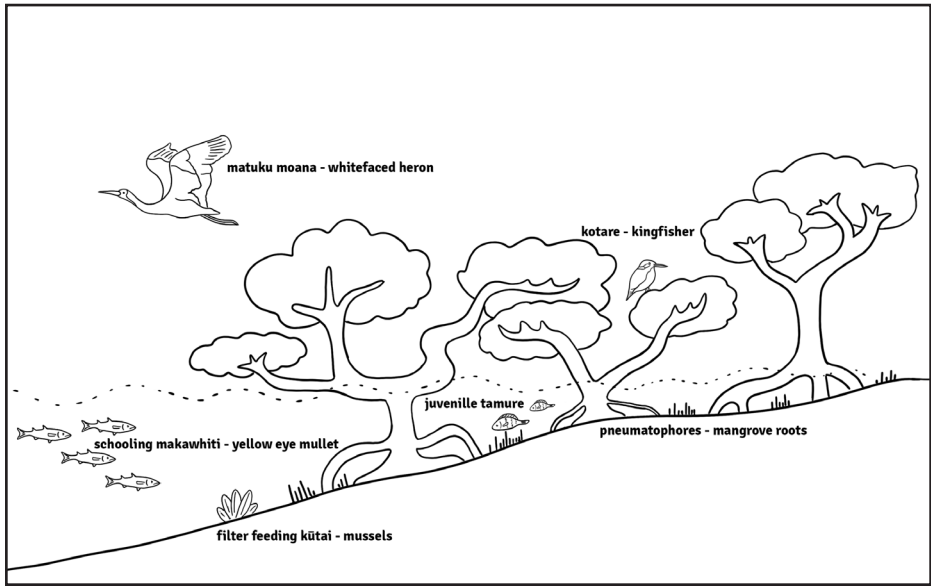


Blank space for labeling and explanation.



Blank space for labeling and explanation.

Mangroves



Name some differences between mangroves and trees at your school

Write why mangroves are important

Local Environment Investigation



Draw a map of your local habitat. Try to include both the marine and freshwater habitats and how they connect.

How did this place make you feel?

Local Marine Investigation



Draw 2 **marine species** that you found during your local investigation and write something interesting about them

Species name:

Fun fact:

Species name:

Fun fact:

Local Freshwater Investigation



Draw 2 **freshwater species** that you found during your local investigation and write something interesting about them

Species name:

Fun fact:

Species name:

Fun fact:

Rubbish



Sort the rubbish into the correct bin - Soft plastic, landfill, recycle, compost

- Rubbish**
Plastic bottle
Apple core
Paper
Juice box
Plastic food wrap
Coke can
Cardboard
Sandwich
Toothbrush
Chip packet
Glass bottle
Banana skin

| | |
|-----------------|---------------------|
| Landfill | Recycle |
| Compost | Soft plastic |

List 3 ways you can reduce rubbish going to landfill or ending up in your local environment

1. _____

2. _____

3. _____

Threats to local habitats



Describe what threat means: _____

Can you find the threats in this

- Climate change
- Habitat loss
- Microplastic
- Overfishing
- Pollution
- Rubbish
- Run off

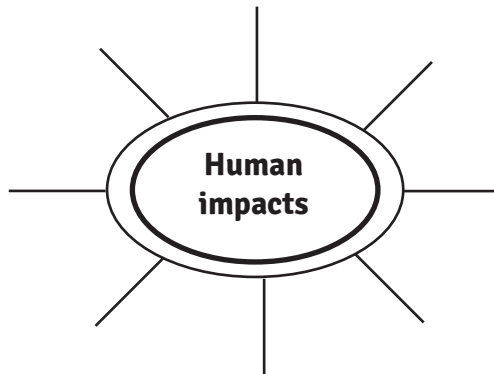
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | O | L | L | U | T | I | O | N | H | S | E |
| I | P | M | P | G | R | A | N | F | C | O | C |
| H | E | F | O | I | S | R | M | M | B | V | L |
| H | S | V | C | N | O | R | I | H | N | E | I |
| L | N | I | A | L | I | F | C | A | A | R | M |
| I | A | M | B | A | L | G | R | B | H | F | A |
| U | O | P | I | B | R | H | O | I | U | I | T |
| L | U | O | C | L | U | N | P | T | T | S | E |
| L | F | V | V | R | E | R | L | A | R | H | C |
| U | I | F | A | L | S | S | A | T | L | I | H |
| R | N | U | O | S | P | N | S | L | E | N | A |
| R | S | H | I | N | R | R | T | O | A | G | N |
| H | B | S | N | L | U | M | I | S | M | C | G |
| I | I | S | L | T | S | R | C | S | B | N | E |

Choose a threat and describe how it may effect your local environment: _____

Local Investigation



Human impacts can be positive or negative. Brainstorm some of the human impacts you observed at your local environment.



Choose two of your impacts above and fill in the table below

| Impact | Effect on species |
|--------|-------------------|
| | |
| | |

Te Reo Māori



Fill in the blanks of the table by choosing the right translation from the list below.

Piriwai
Pātangatanga
Whenua
Whai repo
Tāmure
Wai Māori
Tuna

Sea urchin
Sea
Guardian
Octopus
Water
Crayfish
Seaweed

| | |
|----------|------------|
| Moana | |
| | Snapper |
| Kōura | |
| | Land |
| Wai | |
| | Eel |
| Kina | |
| | Mayfly |
| Wheke | |
| | Freshwater |
| Kaitiaki | |
| | Starfish |
| Rimurimu | |
| | Eagle ray |

Rocky Shore



Draw 2 species that you found along the **rocky shore** and write something interesting about them

Species name:

Fun fact:

Species name:

Fun fact:

Rocky Shore



Can you unscramble the letter tiles to discover some of the species that live here? We have added some tiles to start you off.

| | | | | | |
|----|---------------|---------------|----|---------------|----|
| MU | CR | AN | BA | MP | LS |
| | SS | RN | EL | OY | AC |
| | | SN | AB | GU | ST |
| | | | ON | RI | EM |
| | | | ES | LL | AI |
| | | | | LE | SH |
| | | | | | ER |

1. G U _ _
2. _ _ _ _
3. _ _ S S _ _
4. _ _ _ _ _
5. _ _ _ _ _
6. _ _ _ _ M P
7. _ _ _ _ _ _ _
8. A N _ _ _ _ _

How were the species you found in the rockpool different from those at your local environment?

Snorkelling



Draw 2 species that you saw while **snorkelling** and write something interesting about them

Species name:

Fun fact:

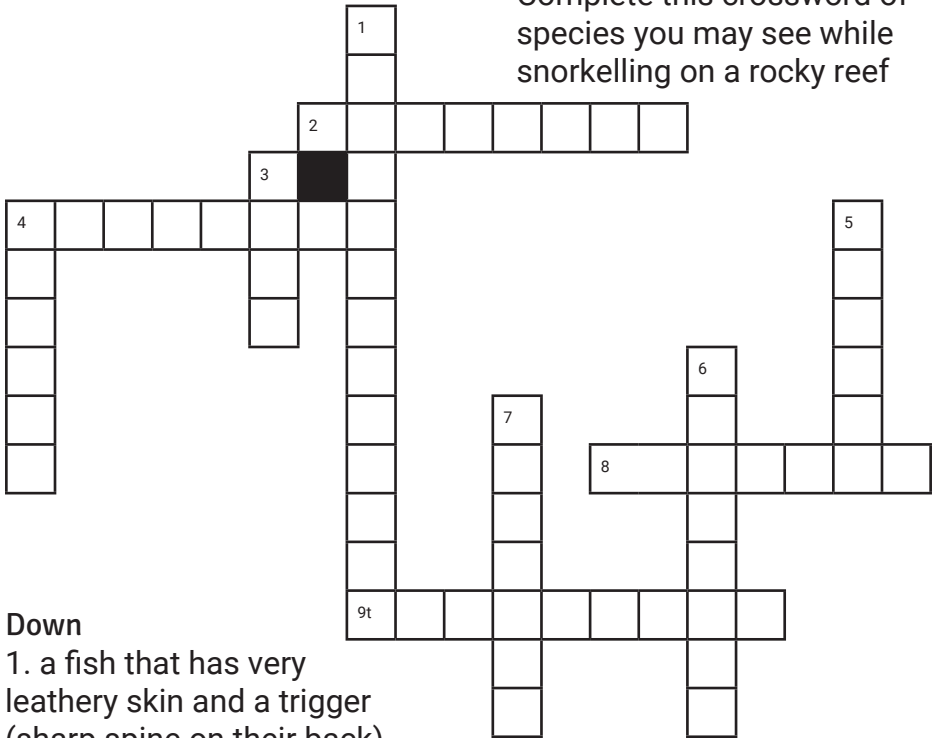
Species name:

Fun fact:

Species on a Rocky Reef



Complete this crossword of species you may see while snorkelling on a rocky reef



Down

1. a fish that has very leathery skin and a trigger (sharp spine on their back)
3. a very prickly animal that eats seaweed
4. a fish; the female has a round black dot on the side, the male has more of a black smudge
5. an animal that has no arms or legs, and filters water
6. a fish that has 2 barbels/ tentacles coming out of its chin for feeding in the sand
7. animal with 3 hearts, blue blood and 8 arms

Across

2. an animal that swims like a bird, usually seen lying in the sand
4. an animal that spits its stomach out of its mouth to feed
8. a fish that has dark stripes when young and blue spots when older
9. a fish that is about the size of your finger and there are 26 endemic species in NZ

Freshwater



Draw 2 species that you saw in the **stream** and write something interesting about them

Species name:

Fun fact:

Species name:

Fun fact:

Stream Health Report

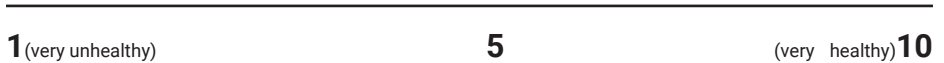


Location: _____

Write the tests and the results you did to find out the health of the stream

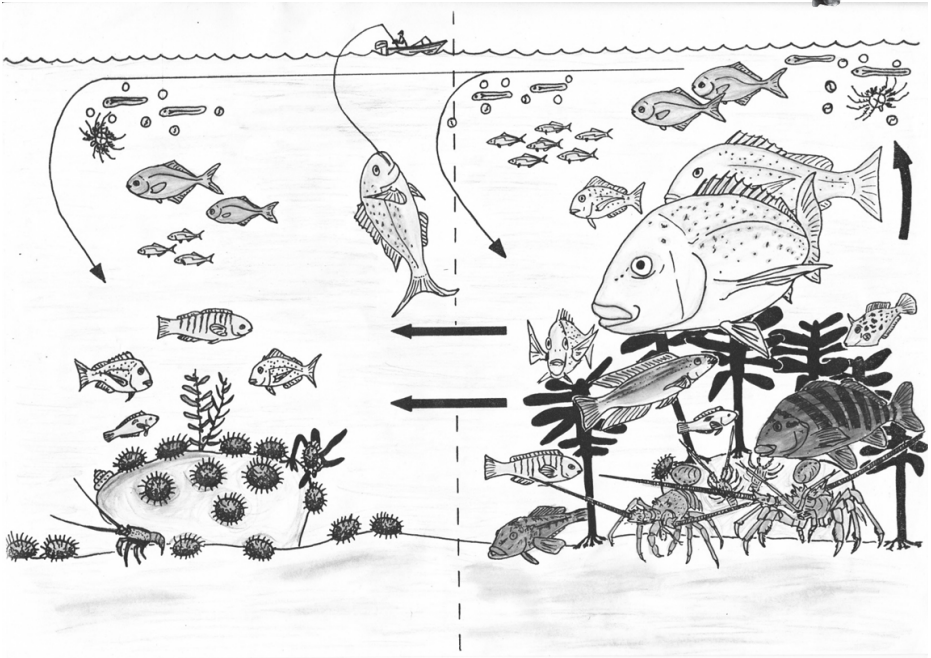
| Test: ie water clarity | Result |
|-------------------------------|---------------|
| | |
| | |
| | |
| | |
| | |

Draw a number on the scale below to show how healthy you think this stream is:



Write down your observations of the stream that help explain your rating (ie. is there many plants, is it shaded, is there rubbish)

Compare the Habitats



The diagram above is based on Te Hāwera-a-Maki (Goat Island) Marine Reserve, what differences can you see inside compared to out side the marine reserve?

Marine Reserves



True or False?

Can you answer these questions about the marine reserves.

Scientific study is not allowed in a marine reserve. **T** **F**

Feeding the fish can change their natural behaviour. **T** **F**

You are allowed to collect shells in a marine reserve. **T** **F**

Up to 80% of NZ's biodiversity is found in the sea. **T** **F**

Commercial fishing is allowed in a marine reserve. **T** **F**

Less than 1% of NZ's mainland coast is fully protected compared to up to 30% of the land. **T** **F**

On average 7 new marine species are discovered every fortnight. **T** **F**

You are not allowed to swim, snorkel, dive or picnic in a marine reserve. **T** **F**

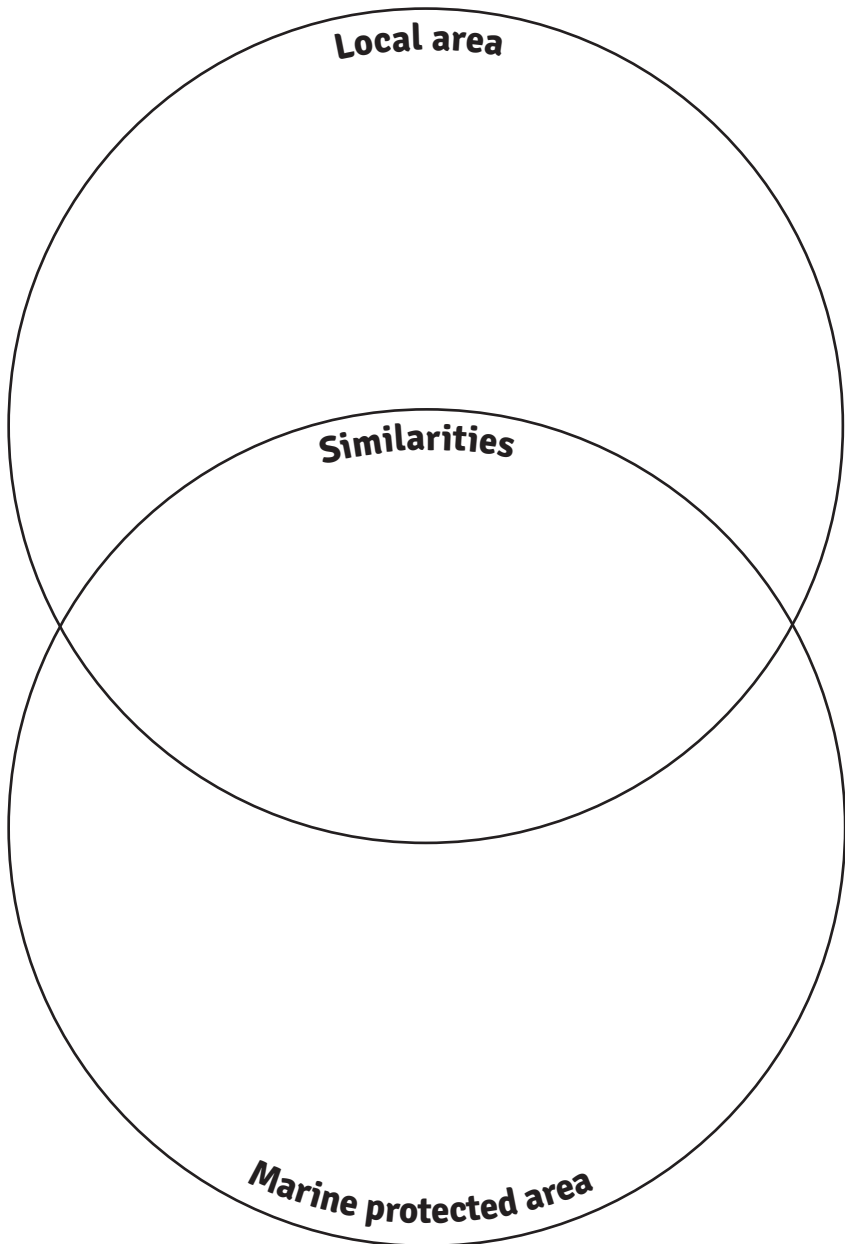
Te Hāwera-a-Maki (Goat Island) was the first marine reserve in NZ. **T** **F**

The Māori name for snapper is tāmure. **T** **F**

Compare the Marine Habitats



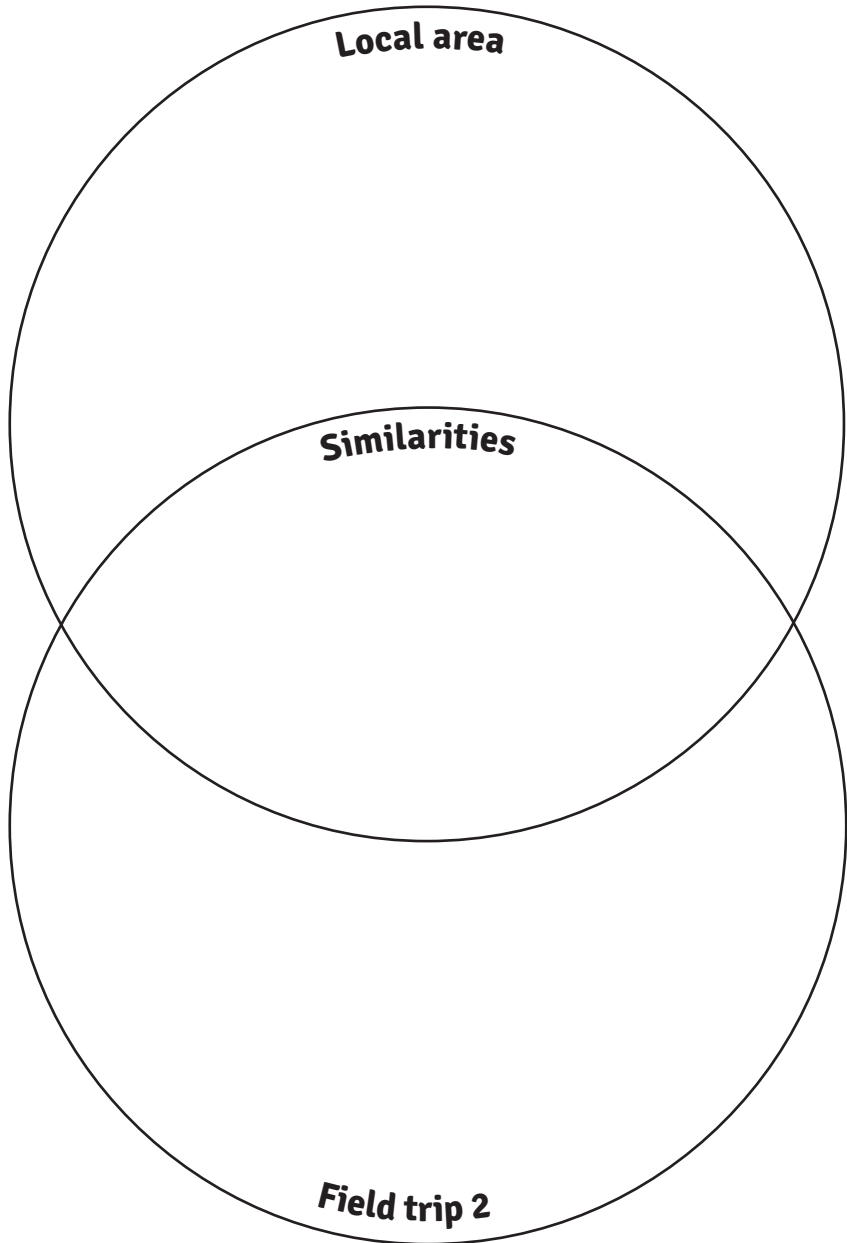
Record your observations of the **marine** habitats from your field



Compare the Freshwater Habitats



Compare your observations of the **freshwater** habitats from



Action Planning



You've now observed the differences between your local environment and somewhere more protected. How can YOU take action to improve your local environment?

Let's remember what the main issues and threats were.



Step 1: Write down the top 3 issues or threats you identified at your local environment



Step 2: What is 1 threat you think you can fix or do something about



Step 3: What or where is your threat effecting?

Action Planning



What do you want to do?

Questions
to think about:
what
where
when
who
why
how

How is your
community going to
know of your action?

Who will you need to ask
for help?

Think
outside the box!
What are you good at and
how can you use those
skills in your action
project?

When are you going to
complete your action?

Action Planning



What skills do you need?

What do you need to research?

What challenges might you face?

How can you overcome those challenges

Where will your action happen?

Why is this important?

Action Planning

Continue your action planning here.



Get creative



Write a song, poem or story about something you have seen or learnt during the Mountains to Sea programme.

We would love to hear them! Please share next time we see you!