



Hoea te Waka, piki te mātau

MĀORI FISHING TECHNOLOGY

In this module you will compare traditional and conventional methods of fishing through first hand experience. Find out which natural resources were used to make nets, spears and traps and have a go at making some yourselves. Discover why the fish hook was developed further by Māori than any other culture in the world, and investigate the advantages of the traditional shape.

Included in this module:

- Favourite fishing grounds
- Creating your own fishing legend
- How a Māori fish hook works

Favourite fishing grounds - background reading

How do we find re-locate a specific place when we do not have a GPS? Traditional māori used features of the land, such as maunga, rocks and other prominent land features like GPS coordinates. This is why they are used extensively in waiata, mihi, pēpeha and whaikōrero, they are coordinates to a particular place.

Fishing grounds were of great importance to Māori as these areas were relied upon as a main food source for the whole tribe. Māori communities made fishing nets so large that one catch could feed the entire community! Early settlers recorded some net reaching lengths of 1,000 yard (0.9 km), and one from Ngāti Pikiao that measured 2,090 yards (1.9 km) and required 500 men to use.

Some fishing grounds were not necessarily marked by Pou (see more about these in section B) and so would be more difficult to find and so their location would be located by remembering visual landmarks. Much like a GPS coordinate, two bearings would be taken, each one lined up two features of the land. For example, a great big rock that lines up with a mountain in the distance, and to the other side of that, a hill-saddle in line with a hill peak. The bearings will have been chosen to give you a point where these two lines cross over, which will be your fishing spot!

Can we find our favourite fishing spot without modern day technology?

Patai – Questions:

- Are there landmarks out at sea?
- What other methods could you use to find your fish?
- What happens when technological advances allow everyone to find the fish?



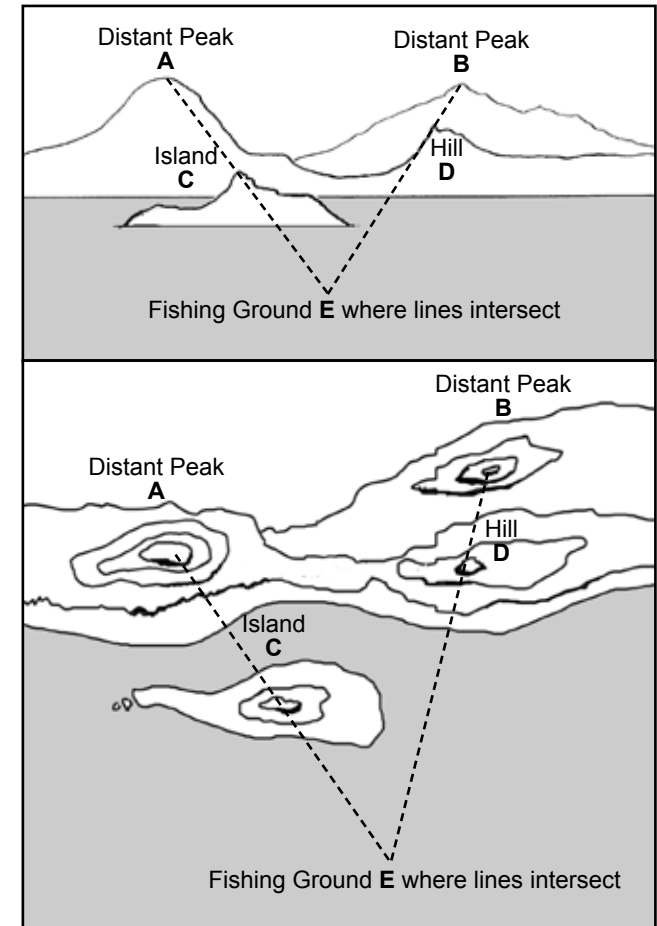
Favourite fishing grounds - activities

A. Identify & Find A Good Fishing Spot

1. Choose a field or suitable location for your ocean.
2. In small groups find a spot to hide a chocolate fish – this will be your good fishing spot.
3. Take a GPS reading if you can and write it down on a piece of paper.
4. Take two visual bearings, in one direction describe them on a piece of paper.
5. From the same spot, take two visual bearings in another direction and describe them on the same piece of paper.
6. Give this piece of paper to another group to see if they can follow your directions to your favourite fishing spot.
7. If they are successful they will reap the rewards (chocolate fish).
8. Grab the directions from another group and see if you can find their favourite fishing spot. Have half your group use GPS and have half use the visual bearings. Who will win the race to the chocolate fish?

Patai - Questions:

- Could you use trees and plants as visual bearings? Would they be reliable features?
- What other things could you use to take visual bearings in today's society other than land features?
- \What other features could you use when you are out at sea?
- For traditional Māori, what were the benefits of working as together as one (Kotahitanga) to provide for the community? How does this apply to tackling science challenges?



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B. Make a pou to mark your fishing spot

Pou are carved and decorated posts that have many purposes. In the marine environment they were used to mark tribal fishing grounds, so other iwi knew to not enter or to respect them for various reasons. Today, pou are used in a similar way but also to mark areas where there are bans on taking kaimoana (rahui), lands of traditional importance, or areas that are protected marine reserves. In many examples of their use today they serve as kaitiaki (guardians).

The pou pictured right is from Karitane and is called 'Ki uta ki tai' meaning 'from the mountains to the sea', to remind us to look after our water as it runs out to our moana. The pou marks the area that is under the care of the local Taiāpure committee. It stands within the traditional pā site, Huriawa, where the committee has been working to increase the abundance of kaimoana to its traditional state. Another purpose is to look after those that are journeying in and out of the harbour, this is the reason why it has two faces.

The other pou (below right) are from Fiordland and mark the marine reserves. There are many of these and some represent different deities from ancestral kōrero that were involved in the Fiordland area. Of these is Tuterakiwhanoa, who carved the fiords into the land with the help of the goddess of travel; Kahukura. Another deity, Heuheu, is of Maui's voyaging crew and is acknowledged to have set the travelling of man to explore to the area. These are few of the deities that are represented in the pou (pictured).

1. See what resources you can find on the beach and make a pou of your own.
2. Give it a name and a story.

Patai - Questions:

- Do you know of any other pou in your marine areas?
- What do you think are their uses in other areas?



Creating your own fishing legend - background reading

Haere ki te hī!
Go fishing!

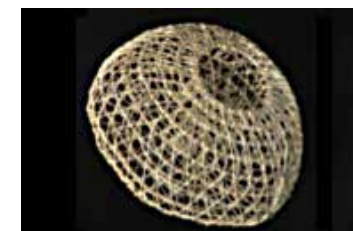
Stories pertaining to fishing technology in the Te Ao Māori (the Māori world) are numerous! Māui caught the sun with a fishing net and fished up Aotearoa with a matau he made himself, what can you catch? (No pressure!). Fishing technology was such a large part of our ancestors' lives that they are now worn as taonga.

Traditional Māori fishing methods and knowledge were prized by early settlers. In Kāi Tahu, the traditional methods of catching mangā (barracouta) were so efficient that it was adopted by commercial fishermen in the Otago harbour. The method consisted of thrashing a lure on a short line on top of the water on a calm day.

Fishing gear is easy to make because a range of different resources can be utilised and so are still used today. Flexible branches (such as mangemange (climbing fern) in the North, and kiekie in the South) were used to shape traps while plant fibre was used to make the netting. Hīnaki are a type of eel trap. It works by funnelling the eels through a very small entrance that once inside it is very difficult to get out. In some water systems a dam would be built up around the trap to force the eels to pass through and be caught.

Another common trap is the Taruke, which is used for crayfish like a crayfish pot. Much like the Hīnaki the crayfish fall through the opening surrounded by flax netting to prevent the animals from escaping.

Matau (or fishing hooks) were made from wood, bone and shell. Tree branches could be manipulated to grow into hook shapes by tying limbs. These were then cut and hardened by heating underneath the earth of a fire. Some hooks (such as the 'Pa kahawai) were lashed with iridescent shells such as pāua and were dragged behind a waka to lure fish like kahawai.

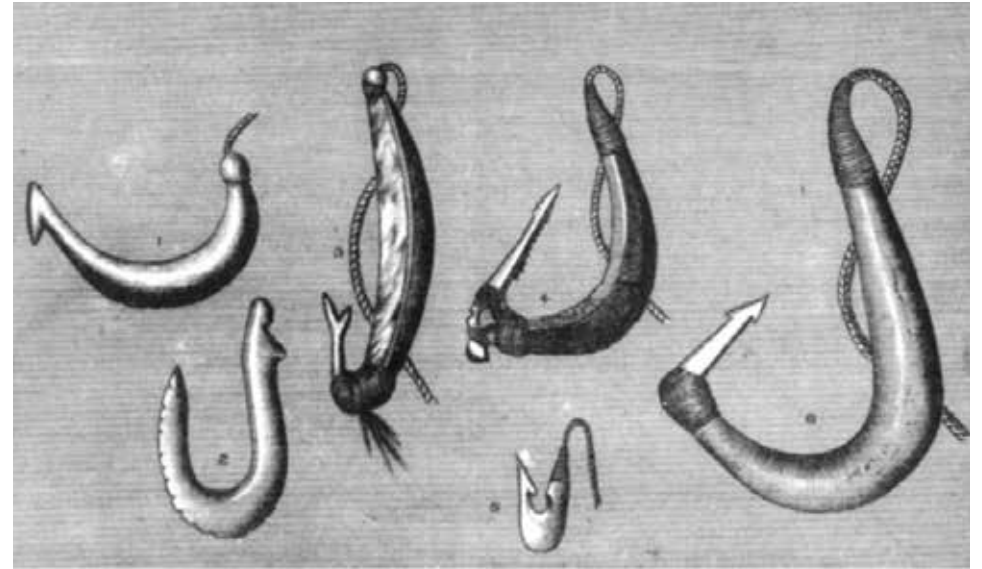


MĀORI FISHING TECHNOLOGY

How matau work

According to a marine science educator in Nelson, some hooks did not need to pierce the cheek of the fish, this could be why some matau appear more blunt rather than sharp. He has experimentally shown that the fish control their own capture by holding and locking the hook on the inner cheek of their mouth (see the “How a Māori fish hook works” diagram on the next page.) Once they grab onto the kai on the hook, they do not let go!

Here are some examples of the different hooks that were used.

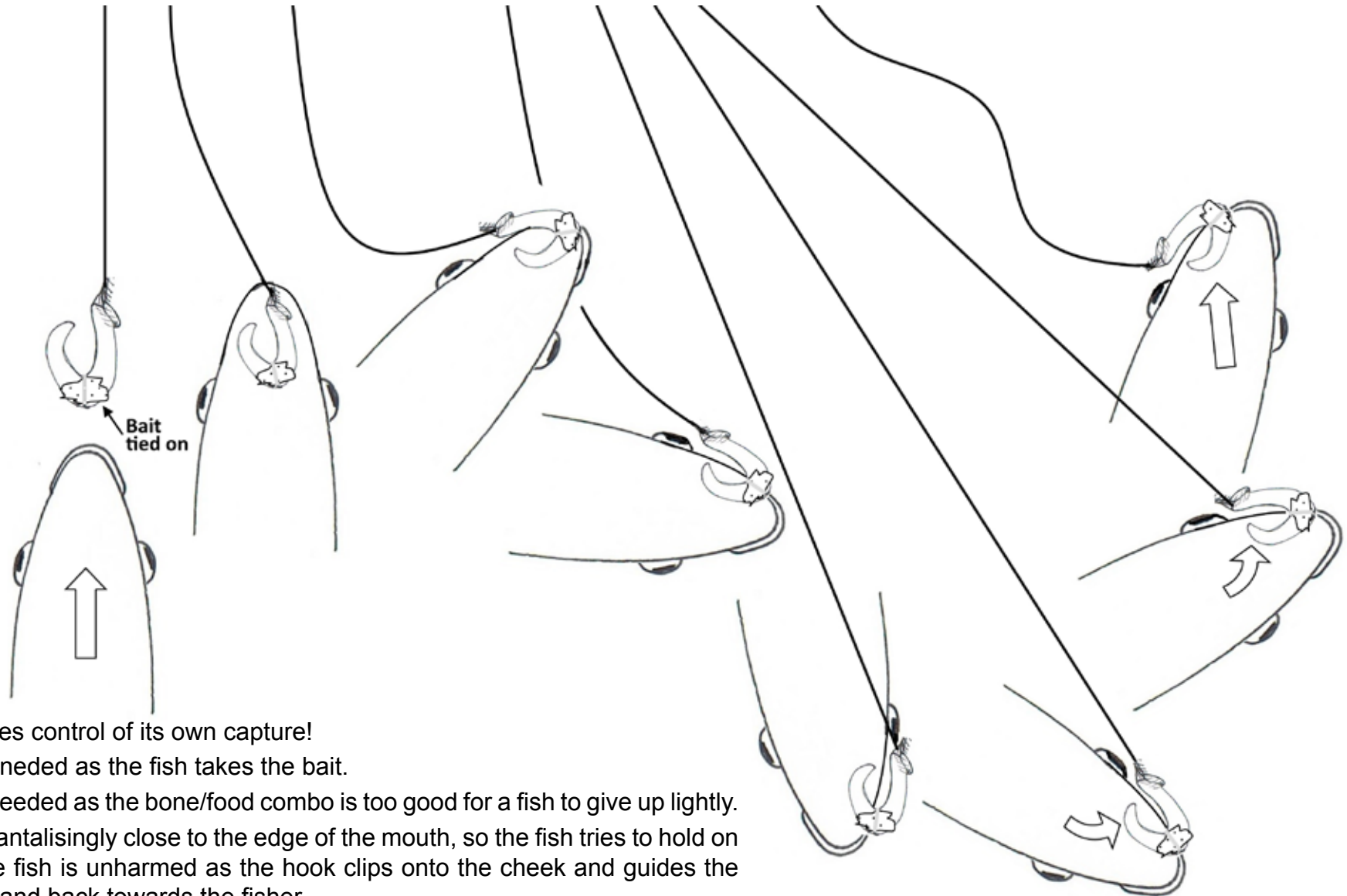


FISH HOOKS (Matau or Matika)
Mangaa; 2 Mango(Moriori); 3 Kahawai; 4 Mango; 5 Tamure; 6 Tuatini.



How a Māori fish hook works

This is how educator, Richard De Hamel, has found the traditional fishing hooks work:



- The fish takes control of its own capture!
- No strike is needed as the fish takes the bait.
- No barb is needed as the bone/food combo is too good for a fish to give up lightly.
- The bait is tantalisingly close to the edge of the mouth, so the fish tries to hold on harder. The fish is unharmed as the hook clips onto the cheek and guides the fish around and back towards the fisher.



Creating your own fishing legend - activities

A: Make a traditional net

Materials you can use are harakeke for the netting and flexible vines. There are many ways to skin a cat, like there are many ways to tie a net. Here is a diagram of one way to tie the knots that you can use to make a net. Here is an even easier one you can do.

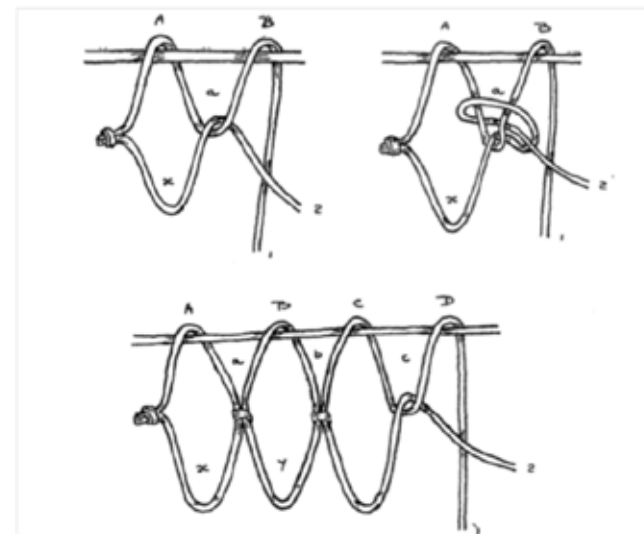
1. Make a foundation by shaping some vine. You can join the ends with harakeke.
2. Attach your netting material and start tying your knots to make your net to the desired length.

Pictured right: a diagram of how to tie the double strip knot for making a net. Left: how to make a net using a simple through the loop knot.

Patai to think about:

1. What do you want to catch?
2. What is the environment like and how might that affect your design?

Once you know how to tie the knots, you know how to make a net, pick your size, here are a few ideas on shapes.



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B: Carve your own matau (hook)

Ever seen an old sheep or beef bone buried in some sand or the garden? Grab it! If the bone still has meat on it then chop the knuckles off (the ends of the bone) and boil for easy removal of the meat and marrow. Bones that are collected from the environment will need to be cleaned with a disinfectant such as bleach or Dettol.

You will also need to be careful not to breathe in the dust from carving and shaping the bone, as it is not good for your lungs.

1. Slice the bone as indicated in the picture <what> to obtain rings that will be your matau. This can be done with either a jigsaw, jewellery saw or a dremel.
2. Mark the shape and style of your matau on the cut out this shape, if you are needing some guidance then have a look at some traditional hooks <pictured>. Once you have cut your shape then sand it to a more slender shape, ensuring that there is space for the fish to fit its cheek into the gap.
3. Tie some bait on with a bit of flax at the base of the hook and go fishing! Try dropping it in amongst the kelp, off a rock, or off the wharf.

You can tie the hook using some plated harakeke fibre or scan the beach for some old nylon string to recycle.

Patai to discuss:

- What kind of shape did you make? And why?
- What are the different kind of tools available that you might be able to use?
- Our ancestors did not have the tools that we have today, what do you think they might have used to do the same job?

