

STRING GAME NZ

HOW TO USE?

See [Teacher Outline](#) for activities and slide set [Marine Food Webs](#) for further context.

MATERIALS

- Organism labels
- A ball of string
- Hole punch (for making name tags)

HOW TO PLAY

1. With others observing, a group of 12-22 learners stand in a circle. Allocate each learner an organism (they can make this into a label by punching holes and threading string through and popping over their heads – see picture to right). Allocate organisms in the order listed (see organisms list) to ensure game works well.

2. Each learner reads their label to rest of the group.

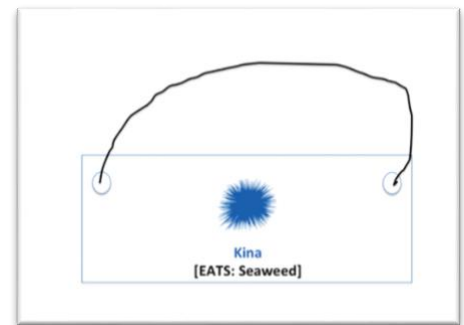
Game one [ball of string]

3. One learner holds the end of the string and passes the ball to another they think they have a link in the food chain with, and say why. For instance, the shark might be linked to the seal because sharks eat seals. This learner then chooses another that they feel they're linked to, and passes the string across or along, while keeping hold of the string themselves. After some time there will be a web of string across the circle.

4. Ask learners: What does the web show?

5. Learners in the circle keep hold of the string while others read out a few scenarios [see below] involving changes to the marine environment, and ask those affected by the change to wiggle the string.

6. Discuss: What did you learn? What more would you like to know? How might we find that out? If a species is overfished what does this mean for other species connected with the overfished species?





Game two [pieces of string]

7. Each learner has one or more piece of string [depending on the number of things they eat!]. Learners join themselves to those that they eat. Either see if they can find and make all the connections themselves (can be chaotic but fun!) and/or methodically join them one by one (starting with the sun).
8. Ask learners: What happens when there is an increase or decrease in one organism? How do they think they and others are affected by changes?
9. Make one species extinct. Have that learner sit down. All those that feel their string pulled sit down too.... Until most of them are sitting down.
10. Discuss
 - a. What did you learn? What more would you like to know? How might we find that out?
 - b. Discuss the ripple effect – what happens if one species is overfished? What does it mean for the other species connected to the overfished species?
 - c. Explain that this food web is way simpler than what happens in reality!

SCENARIOS

1. Snapper are overfished and their numbers go down sharply, while at the same time there is a mysterious disappearance of seaweed.
2. Warming oceans result in a massive die off of mussels.
3. A rāhui [temporary ban] is put in place to protect snapper and their numbers slowly increase.
4. Phytoplankton bloom in the spring, leading to a sharp increase.
5. Increased carbon dioxide emissions lead to more acidic oceans, meaning that shellfish [mussels] find it harder to build their shells and decline in numbers.
6. Human population increases – more food is required so fishing of everything edible increases!



ORGANISM LIST

1. The sun
2. Phytoplankton [makes food from the sun]
3. Seaweed [makes food from the sun]
4. Mussels [eat phytoplankton]
5. Kina [eats seaweed]
6. Snapper [eats kina]
7. Starfish [eats mussels]
8. Mullet [eats phytoplankton, eaten by shark]
9. Octopus [eats mussels, paua and small fish]
10. Seal [eats fish, stingrays, zooplankton & krill]
11. Orca [eats fish, seals, baby whales]
12. Human [eats all fish, seaweed, mussels, kina, octopus, crab, paua]
13. Shark [eats starfish, tuna, other fish, penguins, sting rays]
14. Tuna [eats small fish [including mullet]]
15. Zooplankton & krill [eats phytoplankton]
16. Blenny [eat small crustaceans, zooplankton & krill]
17. Crab [eat barnacles, seaweed, mussels]
18. Moray eel [eats octopus, kina, small fish]
19. Humpback whale [eats zooplankton & krill]
20. Blue penguin [eats small fish, zooplankton & krill]
21. Paua [eats seaweed]
22. Stingray [eats crabs, octopus, zooplankton & krill]



ORGANISMS LABELS [1-12]



The sun

Produces energy



Phytoplankton

Makes food from the sun



Seaweed

Makes food from the sun



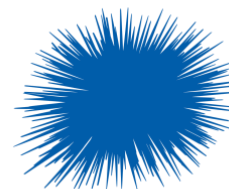
Mussels

EATS: Phytoplankton



Snapper

EATS: kina, crabs, barnacles



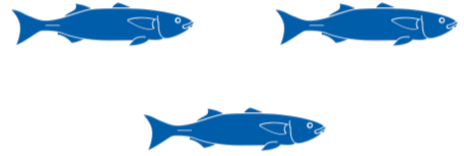
Kina

EATS: Seaweed



Starfish

EATS: Mussels



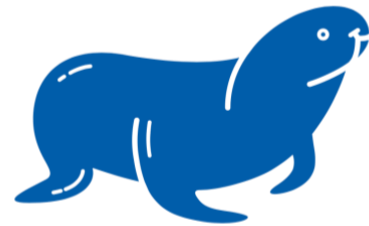
Mullet

EATS: Phytoplankton



Octopus

EATS: mussels, paua, small fish



Seal

EATS: fish, stingrays, zooplankton & krill



Orca

EATS: fish, seals, baby whales

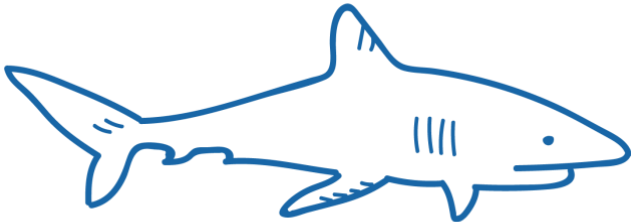


Human

EATS: fish, seaweed, mussels, kina, snapper, mullet, octopus

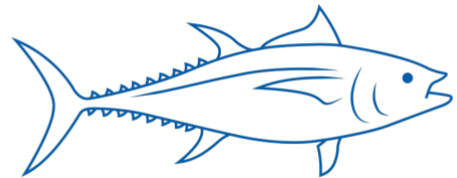


ORGANISMS LABELS [13-22]



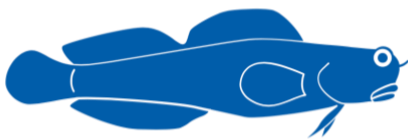
Shark

EATS: starfish, tuna & other fish, penguins, stingrays



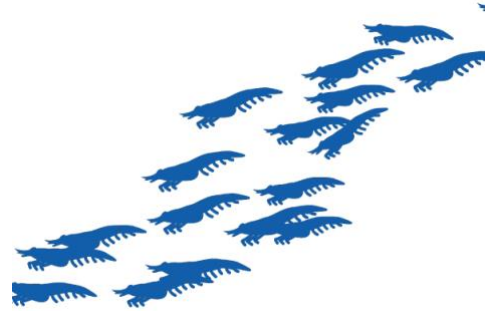
Tuna

EATS: small fish, mullet



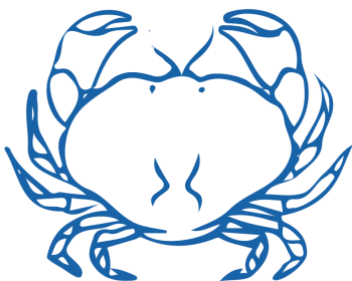
Blenny

EATS: small crustaceans, zooplankton & krill



Zooplankton & Krill

EATS: phytoplankton



Crab

EATS: barnacles, seaweed, mussels



Moray eel

EATS: octopus, kina, small fish



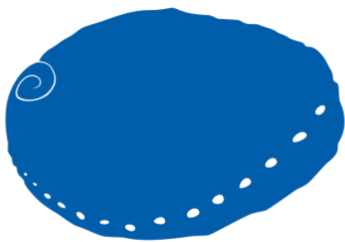
Humpback whale

EATS: zooplankton & krill



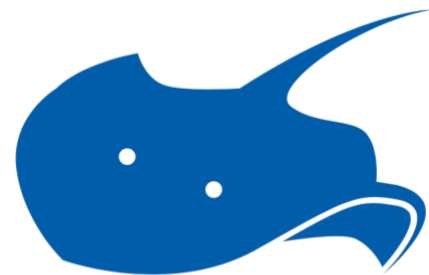
Blue penguin

EATS: small fish,
zooplankton & krill



Paua

EATS: seaweed



Stingray

EATS: crabs, octopus,
zooplankton & krill

NOTE: This game has been adapted from the original Marine Stewardship Council [String Game](#), Fish forever [Foodweb Game](#) and Environment Canterbury's [Canterbury's Spectacular Coast](#) and DOCs [Protecting our Marine World](#).