



Game



The String Game

Games and activities for classrooms



Recycle me

The String Game

Ocean plants and animals are connected to each other in a food web. Humans are part of that food web too, when we eat fish, seafood and sea plants. Food webs are complex, but a good way to introduce this connection we have with the ocean is with the string game.

The game takes about 15 minutes and works best with a group of 10-12 learners aged 8+. With a larger or older group, use the extension activity after playing the game, to introduce the concept of how changes in the marine environment impact food webs.

How to play

You'll need a **ball of string** and either **sticky labels** or **paper** (you can print the following page onto an A4 sheet and cut it into 10 pieces, or on a sheet of sticky labels measuring 80mm by 50mm).

A group of learners stands in a circle. Each young person receives a sticky label or piece of paper featuring one species in the food web, which they read to the rest of the group. They play the role of that species in the game. Phytoplankton are tiny plants that get their energy from the sun; all the other species eat either plants, animals, or both.

Ask learners taking on the roles of sea species: **What do you know about it? Is it a plant or an animal? If an animal, what does it eat – plants or other animals? Do people like to eat it?**

One young person holds the end of the string and passes the ball to another they think they have a connection with and say why. For instance, the seal would be linked to the herring because seals eat herring.

The young person with the string 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.

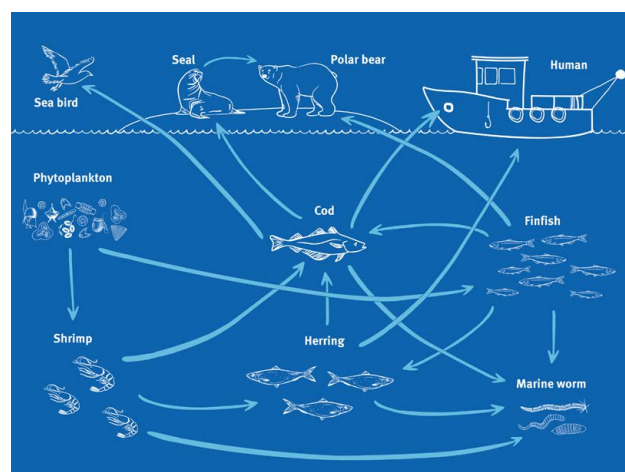
If they need help, you could display the North Atlantic food web diagram below.

Ask young people: **What does the string show?**

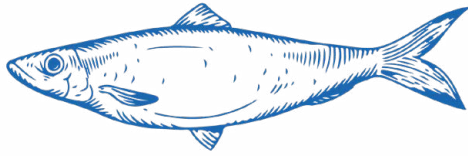
Prompt the group to share about the connections between different sea creatures. All organisms are linked in a food web and rely on the whole ocean ecosystem to survive.

In this string game, the food web features creatures living in the Arctic, but you could alternatively focus on a food web for the Southern Ocean (in this PowerPoint) and create your own labels.

Arctic Ocean food web



You can print this page onto a sheet of sticky labels measuring 80mm by 50 mm.



Herring



Shrimp



Human



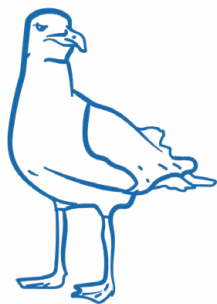
Seal



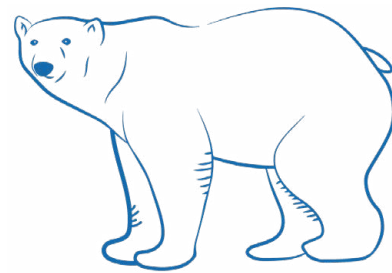
Cod



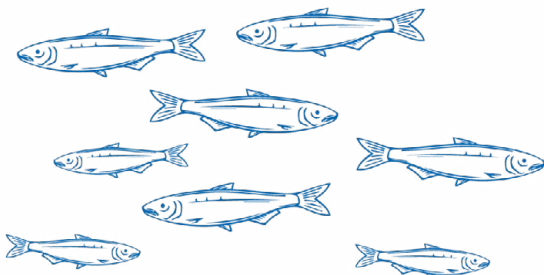
Phytoplankton



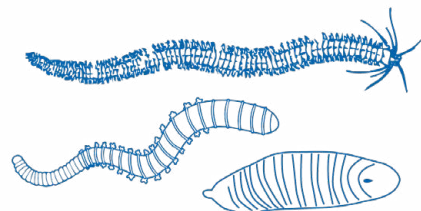
Sea bird



Polar bear



Finfish



Marine worm



Extra activity

With the web of string still in place and learners holding it, give them the scenarios involving changes that could happen in the marine environment (these scenarios are relevant to the Arctic Ocean). Ask them to read one out at a time.

In response to each scenario, the learners holding the string, who think that their sea creature/human is affected by the change, wiggle the string up and down. For example, a scenario involving humans eating more cod would make the cod and human wiggle the string.

As one or two young people start to move the string, others should be able to feel the string moving too. What affects one species in a food web has an impact on others too.

Ask learners: ***Can anyone else feel the string moving? Why do you think that is? What happens when one creature is affected? How do you think they are affected by the change?***

Scenarios

- Cod are overfished and their numbers go down sharply.
- Phytoplankton bloom in the Spring, leading to a sharp increase.
- Climate change is heating the oceans, reducing the amount of sea ice that seals and polar bears use to hunt for their food.
- Quotas for herring are introduced, meaning fishers take fewer of them and their numbers slowly increase.

Scenarios - possible impacts

Cod are overfished

The result of this could be less food available for narwhals and seals, and their numbers would decrease. This would also impact the polar bears. There would be more herring, which could mean fewer shrimp, finfish and phytoplankton available.

Phytoplankton bloom

More phytoplankton means more food for shrimp and finfish. That would lead to more of them as prey for bigger predators. But if there are not enough fish such as cod to eat the shrimp and finfish, there could be too many, and the amount of phytoplankton would go down.

Climate change

Climate change is impacting the ocean in many ways. A reduction in sea ice means that polar bears and seals have nowhere to rest or raise their young. A reduction in sea ice makes it harder for polar bears to find seals, which are their main food. Without sea ice, there is nowhere for polar bears to hunt.

Herring quotas

Quotas are designed to prevent overfishing. A quota is a permit to catch a certain number of a species of fish, set per fishing season. Setting a quota for herring allows the herring to reproduce and grow to maturity so the population of fish can replenish itself faster than it is being fished. So a quota could mean an increase in the number of herring. Carefully managed fish populations can support the ecosystem's needs. This includes providing food for all their predators - cod, seals, and humans.

