

Food chain

Topic: Food chain

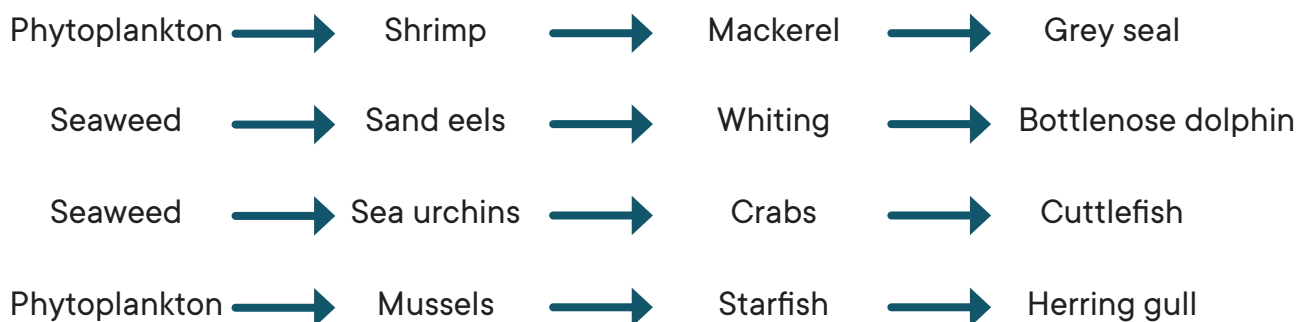
Food chains

Introduction:

All living things depend on each other to survive. Food chains are a way of showing how the energy from food moves from organism to organism.

Food chains always start with a **producer** - they create their own food from sunlight. Producers are eaten by **consumers** and consumers are eaten by other consumers.

Examples:



Food chains are made up of organisms that get their food in different ways. As previously described, producers make their own food usually from sunlight. These are then eaten by consumers. Consumers can be broken into different categories separated by what they eat.

Herbivores only eat plants.

Omnivores eat both plants and animals.

Carnivores only eat other animals.

These can be divided again by how they get their food.

Prey are animals that are eaten by another animal.

Predators are animals that get their food by killing other animals.

Scavengers eat what they can find, including dead animals.

Within food chains animals can be both predator and prey.



Food chains interlink and overlap with each other. This is called a **food web**. Understanding these food webs can help us to understand the effects of many things on the environment including pollution, habitat loss and species extinction.

Further research keywords:

Ecosystem, pyramid of numbers, photosynthesis, biomagnification, bioaccumulation, mercury in fish, trophic level, apex predator, autotroph, keystone species

30 - 45
mins



Find the food chain

Activity guide:

Equipment required:

- Printed photo cards
- Printed arrows

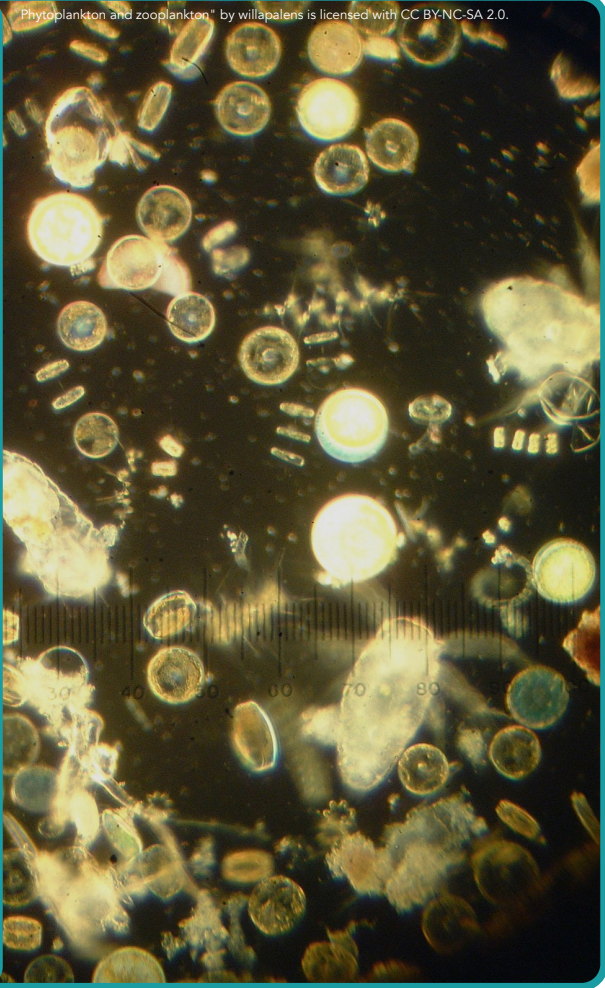
Before the lesson:

1. Print the species photos included for the food chains and a set of arrows. They are labelled S_FC_1.

In the classroom:

1. Either split the class into groups of four, or do the activity as a whole class, with four pupils holding the photos and the whole class deciding where they should stand.
2. Place the three arrows on the floor with gaps in-between. Give out the four photos from that food chain, get the pupils to put them into the right order.
3. There are six different food chains included based on UK marine species.

Phytoplankton



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Shrimp



Crangon crangon (dorsal).jpg" by Hans Hillewaert is licensed with CC BY-SA 4.0.

Mackerel



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Grey seal



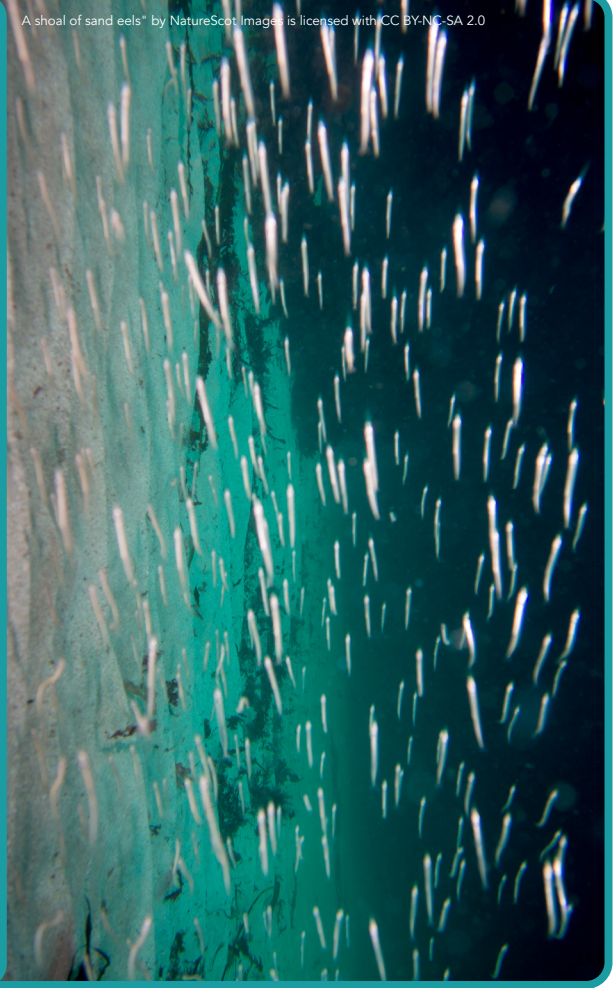
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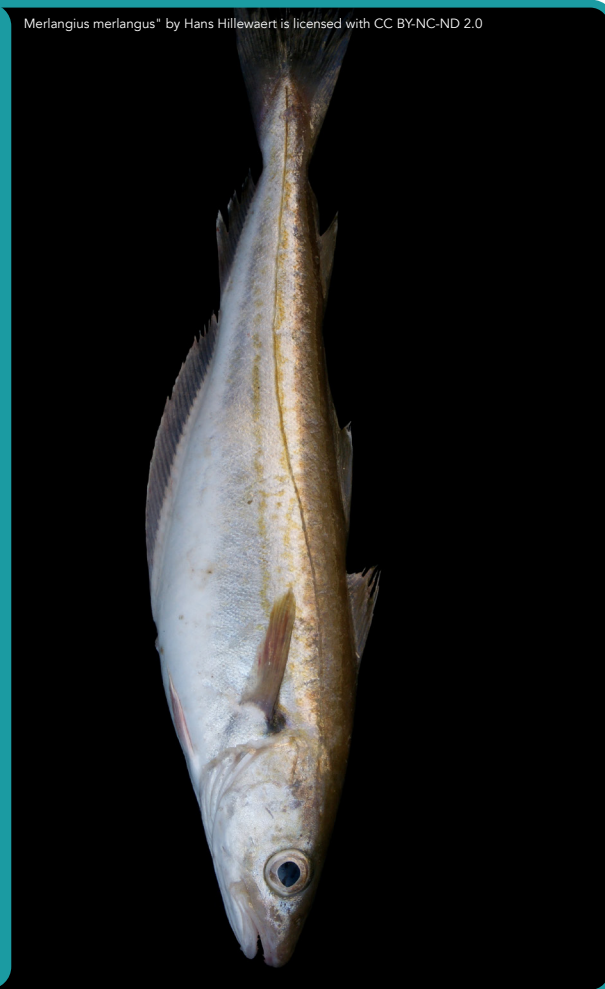
Seaweed

A shoal of sand eels* by NatureScot Images is licensed with CC BY-NC-SA 2.0



Sand eel

Merlangius merlangus* by Hans Hillewaert is licensed with CC BY-NC-ND 2.0



Whiting

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Bottlenose dolphin

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Seaweed

Sea Urchin by gordon.milligan is licensed with CC BY 2.0



Sea urchin

© Paul Kay

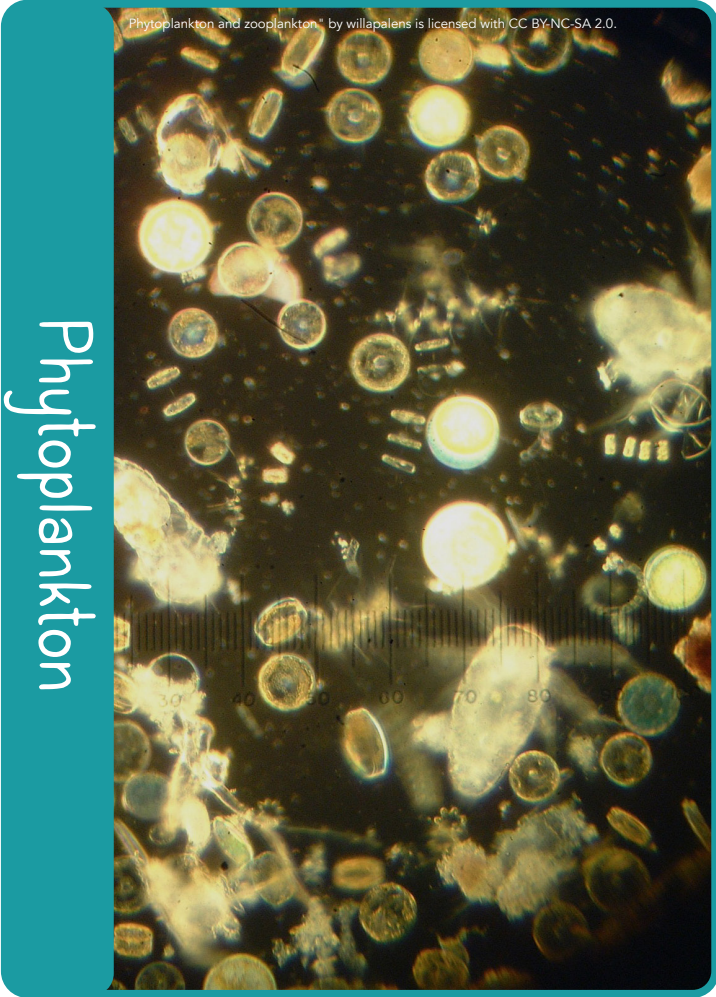


Crab

© Paul Naylor



Cuttlefish



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Phytoplankton



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Mussel



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Starfish



"Herring gull - European" by naturallengland is licensed with CC BY-NC-ND 2.0.

Herring gull

© NWWT

Seaweed



A shoal of sand eels" by NatureScot. Images is licensed with CC BY-NC-SA 2.0

Sand eel



© Jamie Larke / NWWT

Puffin



Great Skua by Noel Reynolds is licensed with CC BY 2.0

Great skua



Algae



Culzean Castle, by byb64 is licensed with CC BY-NC-SA 2.0

Limpet



© NWWA

Wrasse



© Paul Kay

Bull huss



© Rohan Holt

Predator versus prey

15 - 30
mins



Teacher's pack

Topic: Food chain

KS: 1/2

Activity guide:

Equipment required:

- Printed tokens
- Something to mark out the game area and the safe zone

Before the lesson:

1. Print the token page. They are labelled S_FC_2.
2. Set out the whole game area and the designated 'safe' area - this is the prey's habitat and they cannot be caught there because they are adapted to it and can find safe niches to hide in.
3. Distribute the plankton food tokens throughout the game area.

To play the game:

1. Pick 2 - 4 pupils to act as predators. The rest of the pupils are the prey.
2. The aim is for the pupils to collect as many plankton tokens as possible. They have to avoid being 'eaten' (tagged by the predators).
3. Set a timer for the game play and then start the game. The predators run around trying to tag the other pupils. If caught by a predator, the pupils move to the side and sit until the end of the timer.
4. Once the timer is up, all the 'prey' that survive come together and their plankton food tokens are counted. The one with the most wins. They have to have collected at least 3 - this is to demonstrate that the animals have to leave their safe hiding places to feed otherwise they would starve.

60 mins



Make a food chain

Teacher's pack

Topic: Food chain

KS: 2

Activity guide:

Equipment required:

- Print the 'Make a food chain' worksheet for all pupils
- Pencils or pens
- Books / resources and computers or tablets for independent research

Before starting the worksheet:

1. Introduce the idea of food chains to the class and share some examples. This could be done using the other two activities within the topic.
2. Introduce the idea of independent research and explain all the sources available.

To complete the sheet:

1. Each pupil spends time researching potential food chains in the marine environment.
2. The pupils then share their examples with the rest of the class. The lesson could be expanded by creating class food webs from any species in the pupils' food chain examples that overlap.

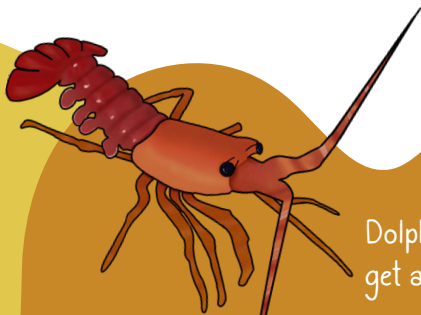


Make a food chain

Find out about food chains in the sea. Use the boxes below to draw in the plants and animals you have found out about to create two food chains. Write the organism's name and whether they are a herbivore, carnivore or omnivore.







Dolphins don't need to drink. They get all their water from their food.