

CLEAPSS Freshwater food chains and food web resource

Children work in pairs and individually to create at least two different food chains that exemplify producer and consumer, and predator/prey relationships. Once the children have produced their food chains they could combine them to make a food web. This resource could be used in a variety of ways to support learning including assessment and promoting dialogue.

Suitability

Year 4-6

How to use this resource

Print out the cards (back to back) cut out and laminate. Cut out the laminated cards and you will have a complete set of cards for one pair of children. The activities below are only one way of using the resource. You may prefer to use a selection of the cards or create some of your own cards using the blanks provided.

Classification (working in pairs)

1. Give each pair of children a complete set of cards (including doubles).
2. Find the following category cards: **the source of nearly all energy on our planet, producers, primary consumers** and **secondary consumers**, and space them out on the workspace.
3. Read the information on the sun and organism cards and group them under the correct categories. You can use the glossary card to help.

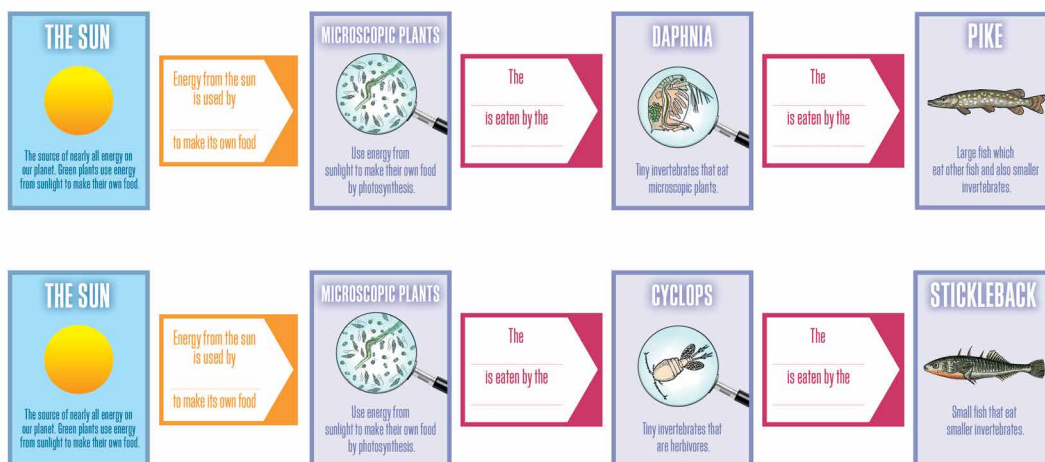
Making food chains (working individually)

1. Each child chooses one card from each category, reading the cards to ensure they pick organisms which are eaten by the next i.e. each child will have: a sun, one producer, one primary consumer and one secondary consumer.
2. Each child creates their own food chain by placing an 'orange energy arrow' between the sun card and their producer, then 'red feeding arrows' between each of the other organism cards.
3. Fill in the writing frames on the feeding arrows e.g. 'The microscopic plant is eaten by the Daphnia'

Note: feeding arrows point at the organism which is eating, not the organism being eaten! A useful aid memoire is that the arrow is pointing at the tummy of the organism eating.

4. Using the sentence starter 'In my food chain energy from the sun is used by.....to make its own food.' each child describes to their partner what is happening in their food chain using the feeding arrow writing frames to help.

Your two separate food chains may look like this. There are other possibilities:



Making a food web (working in pairs)

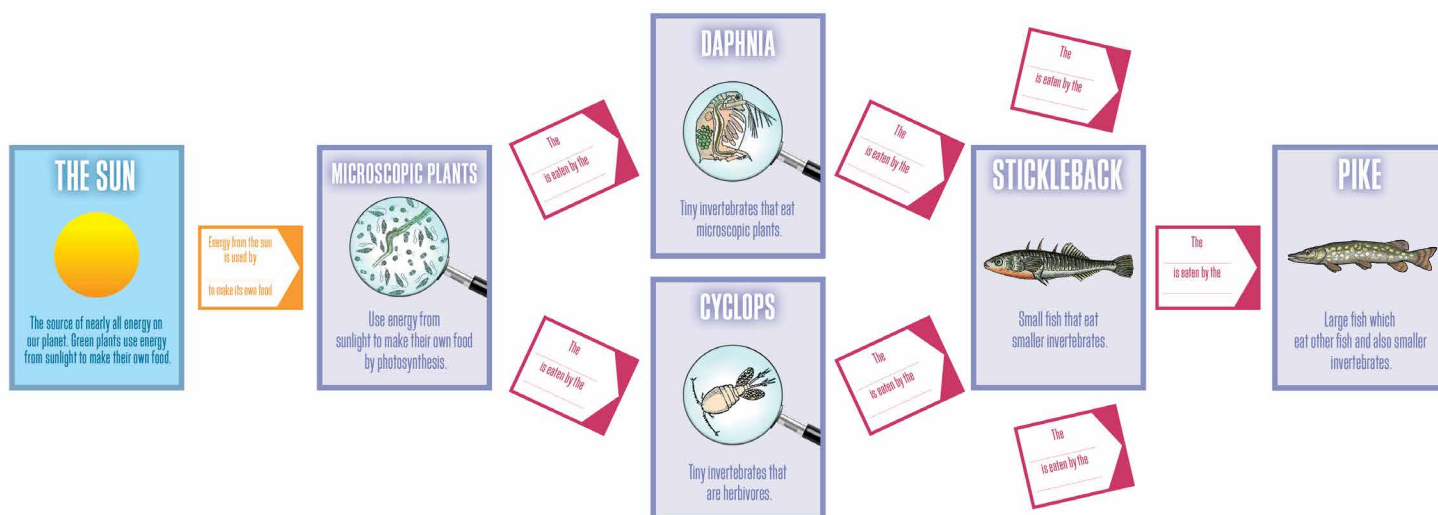
In reality, the picture is never as simple as the food chains described because food chains intertwine.

Pike, for example, will eat a variety of smaller secondary consumers e.g. perch, roach and stickleback as well as primary consumers such as Daphnia.

1. Each pair compares their food chains by lining them up one underneath the other (as shown in the pictures earlier).
2. Merge the two food chains together. Where the two chains have cards in common e.g. the sun, producer cards and arrows, pile the cards on top of each other so that only one card is showing (or remove excess cards).
3. Where the children have different cards in their chains, place the organism cards next to each other with arrows pointing to each organism from the common prey card.

Note: The children will need to add their leftover red feeding arrows from the prey card to show that their prey organism is also eaten by the consumer organism in their partner's chain.

An example of a food web is shown below. There are other possibilities.



Extension:

- Use the blank cards to add other organisms to your food chain or web.
- Pond dipping is a fun and exciting way of introducing the children to the smaller organisms in this food web. The children can use the organism cards and magnifiers to help them identify what they've captured.

Background information, teaching notes and ideas

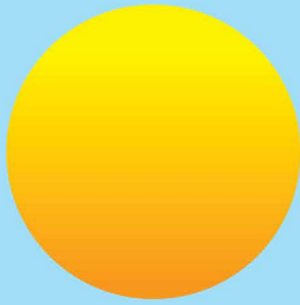
All living things need energy to live and grow, this activity illustrates how energy (food) is passed through a food chain.

Comparing and contrasting food chains, will promote conversations between the children about how food chains can differ even if common organisms exist in them. This could be an interesting 'leap off' point for a discussion, or piece of work about the consequences of the removal of a species from the environment and the advantages of a species having a varied diet.

You might ask:

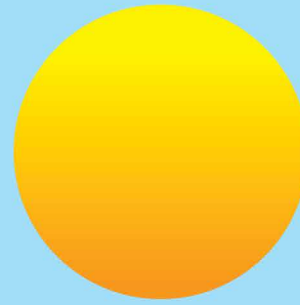
- Why are the microscopic plants green? (They are producers i.e. can make their own food via photosynthesis.)
- Why are plants near the start of the food chain next to the sun card? (Plants need sunlight to make their own food therefore they cannot be further along the food chain).

THE SUN



The source of nearly all energy on our planet. Green plants use energy from sunlight to make their own food.

THE SUN



The source of nearly all energy on our planet. Green plants use energy from sunlight to make their own food.

Energy from the sun
is used by

.....
to make its own food

Energy from the sun
is used by

.....
to make its own food

The source of nearly
all energy on our planet

PRODUCERS

Living things that make their
own food (plants)

PRIMARY CONSUMERS

Animals that only eat plants
(herbivores)

SECONDARY CONSUMERS

Animals that eat other animals
(carnivores or omnivores)

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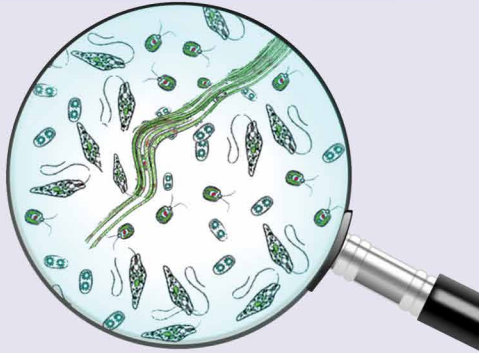
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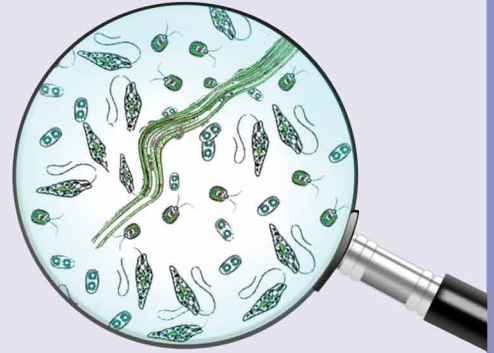
is eaten by the

MICROSCOPIC PLANTS



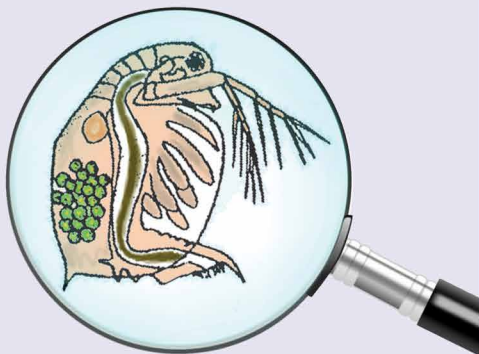
Use energy from sunlight to make their own food by photosynthesis.

MICROSCOPIC PLANTS



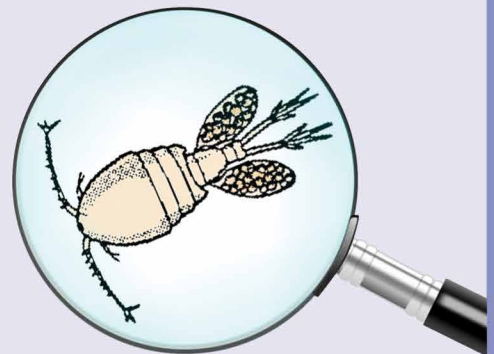
Use energy from sunlight to make their own food by photosynthesis.

DAPHNIA



Tiny invertebrates that eat microscopic plants.

CYCLOPS



Tiny invertebrates that are herbivores.

DID YOU KNOW?

Unlike most plants they are not rooted to the ground, but float freely in the water.

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Unlike most plants they are not rooted to the ground, but float freely in the water.

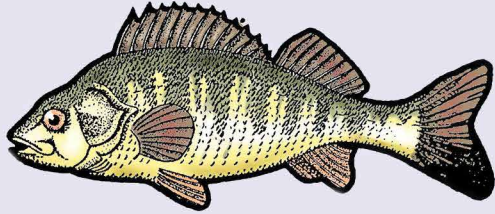
DID YOU KNOW?

They seek out, grab and eat microscopic plants.

DID YOU KNOW?

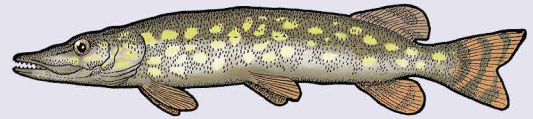
Inside their shells are tiny legs that beat, drawing in water, oxygen and floating microscopic plants, which they eat.

PERCH



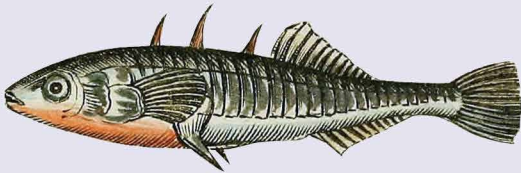
Large fish that eat many different things including smaller fish and herbivores.

PIKE



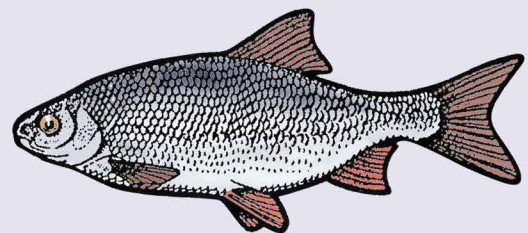
Large fish which eat other fish and also smaller invertebrates.

STICKLEBACK



Small fish that eat smaller invertebrates.

ROACH



Medium sized fish that feed on invertebrates.

DID YOU KNOW?

Pike have sharp teeth and hunt and kill their prey. They eat perch, roach and stickleback.

DID YOU KNOW?

Perch like to eat sticklebacks but also Daphnia and Cyclops.

DID YOU KNOW?

Roach like to eat Daphnia, Cyclops and phantom midge larvae.

DID YOU KNOW?

Sticklebacks like to eat Daphnia and Cyclops.

PHANTOM MIDGE LARVAE



Tiny carnivorous invertebrates which prey on Daphnia and Cyclops.

GLOSSARY

Herbivore – animals that eat only plants

Carnivore – animals that eat other animals

Omnivore – animals that eat other animals and plants

Photosynthesis – plants using energy from sunlight to make their own food

Blank card template with a white background and a blue border. It features a horizontal dashed line near the top and three horizontal dashed lines near the bottom, defining writing areas.

Blank cards for children to fill in with their own ideas

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Blank cards for children to fill in with their own ideas

GLOSSARY

Invertebrate – animal without a backbone

Microscopic – so small you can only see it using a microscope

Predator – an animal that eats other animals

Prey – animals that are eaten by predators

DID YOU KNOW?

Phantom midge larvae catch their prey by seizing them with their antennae.

DID YOU KNOW?

DID YOU KNOW?
