

Food chains

A food chain shows the feeding relationship between organisms. They always start with an organism that makes food. The producer. In this example, it's grass.

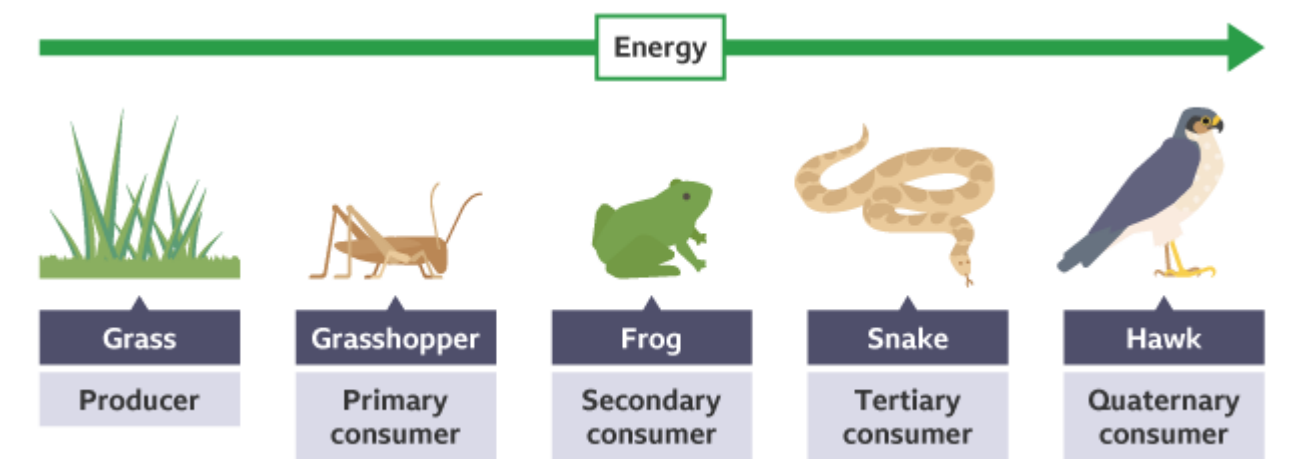
The first consumer in the chain, in this case the grasshopper, is also called the primary consumer. A consumer that only eats plants is called a herbivore.

The frog is the secondary consumer. Because it only eats other animals, it's called a carnivore.

The hawk is the tertiary consumer and, in this chain, the term given to the organism found at the top of a food chain, which is not preyed upon.

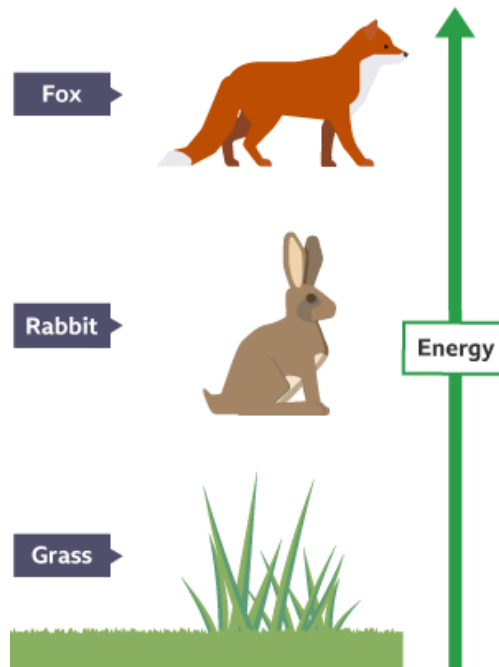
It is important to remember that the arrows in food chains show the flow of energy from one organism to another.

On planet Earth, there are many different food chains that often overlap and interconnect, that play their part in the world's ecosystems.



Trophic levels

A food chain is a list of organisms in a *habitat* that shows their feeding relationship, i.e. what eats what. The organisms are joined by arrows which show the transfer of energy in food between them. The stages in food chains are called trophic levels.



Food chains always start with a producer. This is usually a green plant or algae that completes *photosynthesis* to store energy from sunlight as glucose. Grass is the producer in the grass → rabbit → fox food chain. Photosynthesis provides the energy for most life on Earth.

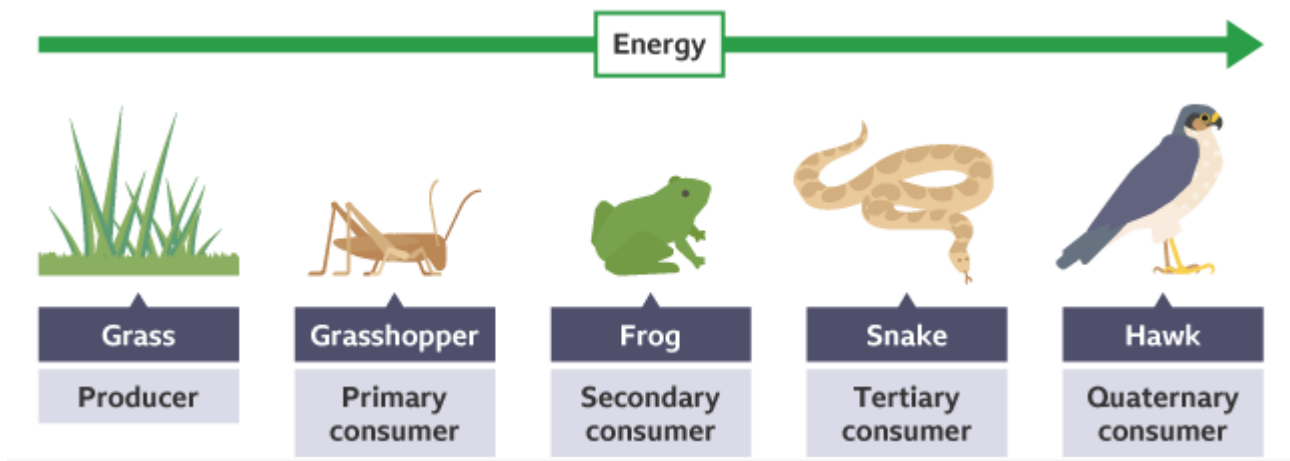
A primary consumer eats a producer. The rabbit is the primary consumer in the example food chain. This is in turn eaten by a secondary consumer, which is the fox.

After this might be a tertiary consumer (which eats a secondary consumer) and possibly a quaternary consumer (which eats a tertiary consumer), but not in this example.

Animals that are hunted and eaten are prey, and these are consumed by predators. The final consumer at the top of the food chain is called a top (or apex) predator and is not eaten by anything else.



What is the final consumer in this food chain?



The hawk is the final consumer, or apex predator, in this food chain.

Food webs

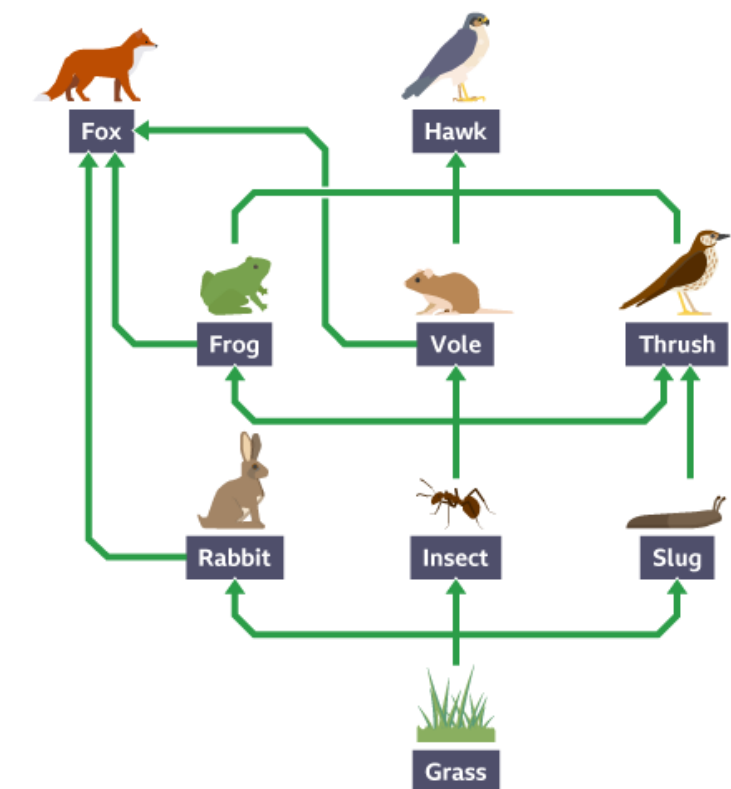
Most *populations* of organisms that live in a habitat usually have more than one food source. They usually consume more than one organism from the trophic level below.

This means that there are almost always more than one food chain and these are interlinked into a food web.

This food web is made up of lots of food chains, including:

- grass → insect → vole → hawk
- grass → insect → frog → fox
- grass → insect → vole → fox

Some organisms, like the rabbit and slug, have just one consumer. Others, like the frog and vole, have two.



Study questions

1. What is an apex predator?
2. Name two apex predators.
3. What provides the energy for most life on Earth?
4. What is a producer?
5. From where do producers obtain their energy?
6. What is the word used to describe an animal that only eats other animals?
7. What word is used to describe an animal that only eats plants?
8. What passes along a food chain from producers to predators?
9. What are trophic levels?
10. In the food web shown above name an animal that has three consumers.