

Food chains and webs

Reading

Read the text about food chains and food webs. All the words in bold are in the glossary at the end of the text.

In nature there is a fundamental rule that may appear very cruel to us: if you are a predator you eat other animals; if you are prey you get eaten by predators! Predation means feeding on animals or plants. Between predators and their prey there exists a relationship called the food chain.

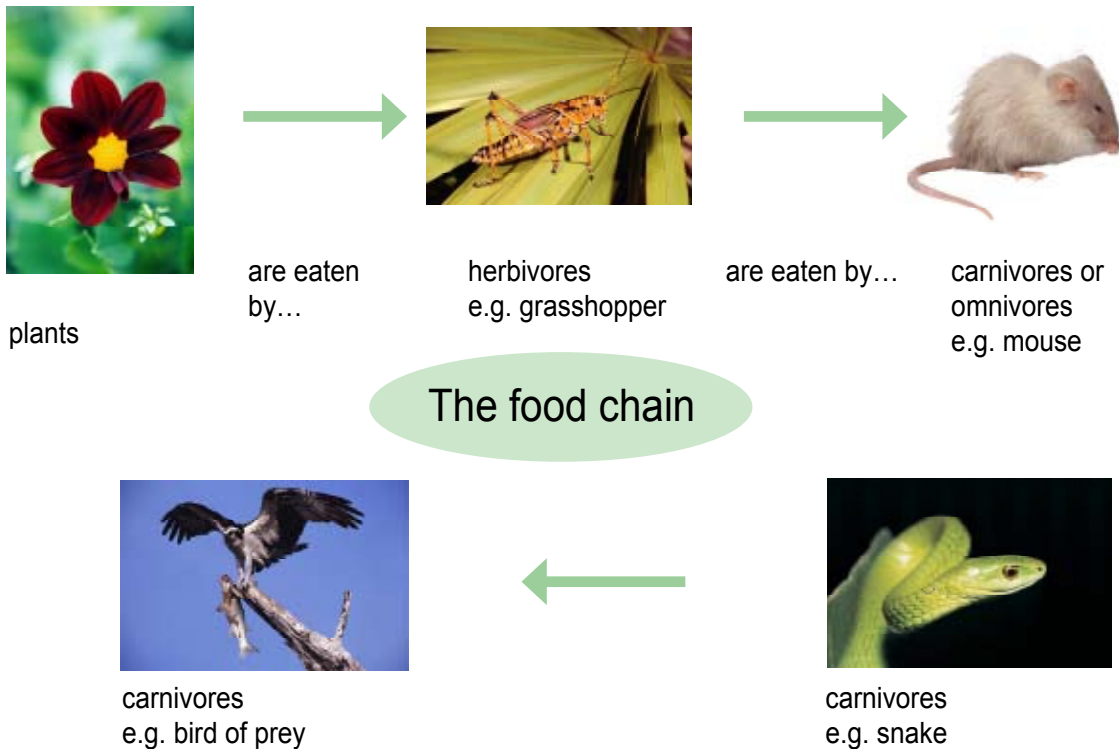


Figure 1. The food chain.

The diagram above shows that animals eat other animals. They use the other animals or plants as food. Food is a source of energy necessary for survival. The path of this energy is called the food chain. The arrow of the food chain shows the direction of energy flow.

In each ecosystem the components of a food chain are divided into three categories:

- 1 Plants are called **producers** because they are the first organisms in the food chain. This means that they make their own food using light energy from the sun.
- 2 Animals, on the other hand, get their energy from other organisms. They are called consumers. Animals that eat producers are called **primary consumers**. For example, sheep feed on grass. Primary consumers are usually **herbivores**. Animals that eat primary consumers are called **secondary consumers**. For example, birds of prey eat mice. Secondary consumers are usually carnivores. Humans are secondary consumers as well as **omnivores**.
- 3 The third category consists of **decomposers**. These are fungi, bacteria, insects, etc. Decomposers use dead material as food. They break down organisms into simpler substances. They also put important substances into the soil and water. The term 'decay' is used to describe this process.

Food Webs and Ecological Pyramids

Some food chains contain the same animals or plants. In this example the chicken is eaten by two predators: foxes and humans.

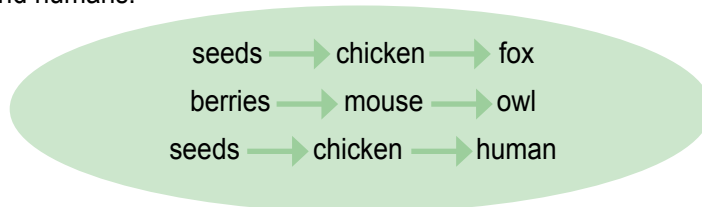


Figure 2. Food chains containing the same animals or plants.

If we link the food chains together we obtain a food web. Here it takes the form of a pyramid:

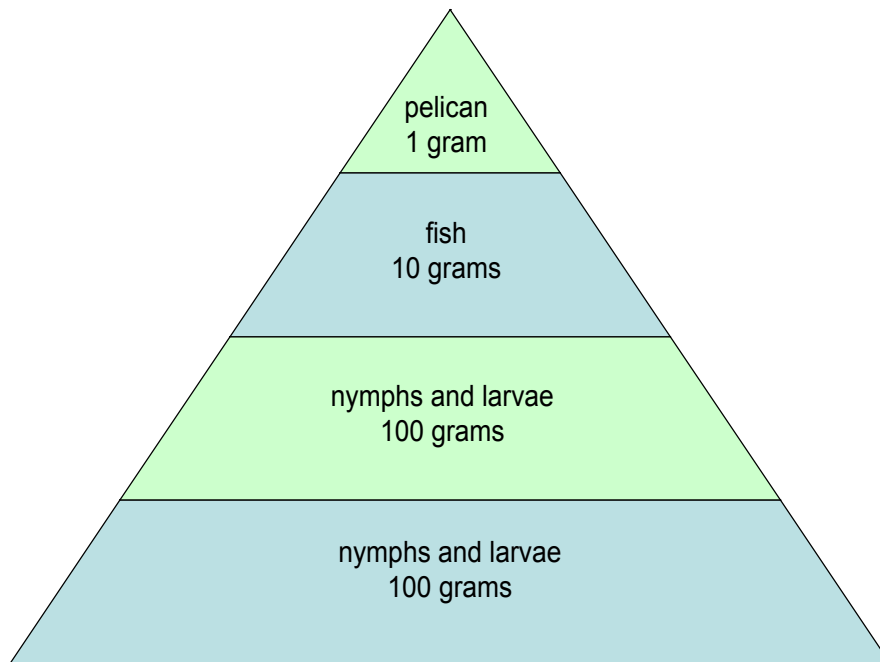
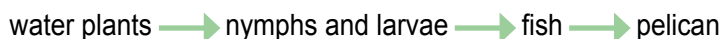


Figure 3. A food pyramid.

Think about this food chain:



In this pyramid it will take more than one grass plant to feed the nymphs and larvae and more than one nymph to feed a fish. The number of individuals in each feeding level goes down as you go higher in the food chain. This is called the ecological pyramid. It has a large base containing the producers. Going further up there is a lower number of consumers. On top of the pyramid there are a very low number of superpredators. These are tertiary consumers; they are at the top of the food chain and can eat all levels of consumer below them.

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Energy is lost at each level of the food chain. Therefore, there are fewer and fewer organisms the further you go up each level. There are fewer primary consumers than plants, for example.

All the animals and plants in a food web depend upon each other. If one of them is lost, it will affect all the others.

Glossary

carnivore	= an animal that eats other animals
consumer	= an animal that eats another organism
decomposer	= fungi and bacteria which break down dead material
ecological pyramid	= a diagram showing the number of individuals or the energy which is present in a food chain
food chain	= a diagram showing what eats what
food web	= a number of interconnected food chains
herbivore	= an animal that eats plants
omnivore	= an animal that eats everything
primary consumers	= animals that eat producers
producers	= a plant which gets its energy from sunlight
secondary consumer	= a consumer which eats other consumers in a food chain
tertiary consumer	= the superpredator at the very top of the food chain

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Reading, Writing

1 Now look at these pictures. Can you write the names of these animals and plants in English? Check your answers with a partner.



a _____



b _____



c _____



d _____

2 Complete the sentences using your answers from exercise 1. Check your answers with a partner.

a *is a*
 It is a primary consumer. Primary consumers are animals that

b *is a*
 It is a secondary consumer. Secondary consumers are animals that

c *is a*
 It is a producer. Producers are living beings that

d *is a*
 It is a tertiary consumer. Tertiary consumers are animals that

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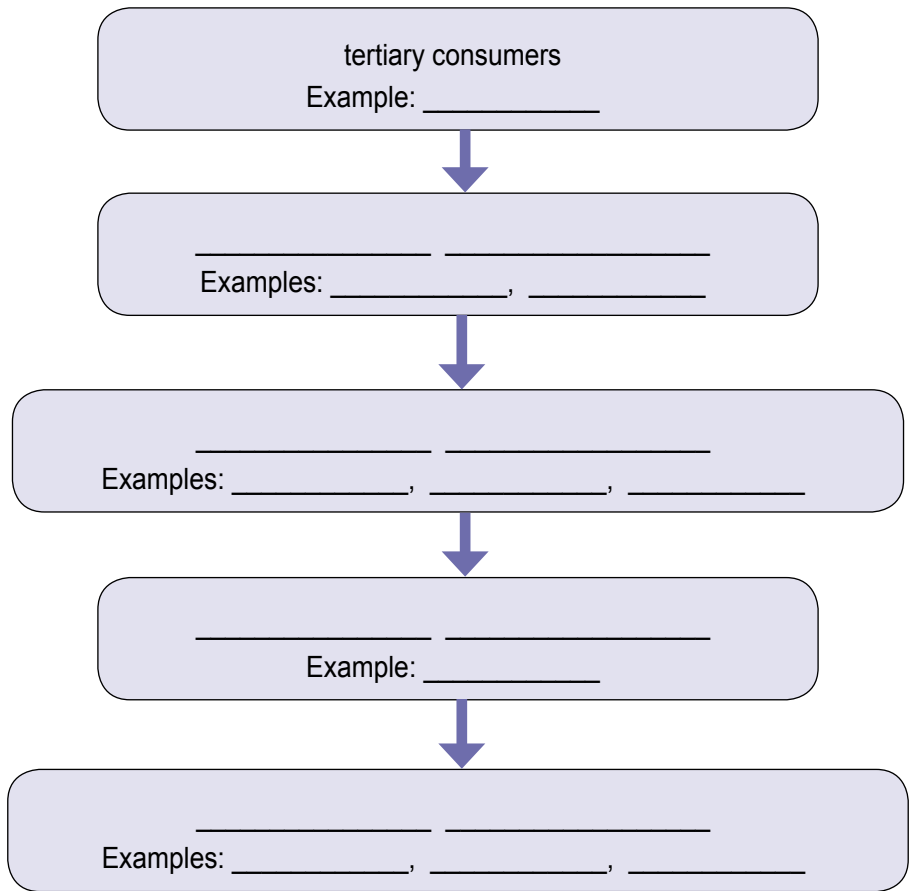
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3 Complete the sentences.

- a If you are a you eat other animals.
- b Plants are always the in the food chain.
- c Arrows represent the passing along the food chain.
- d Primary consumers are usually
- e Secondary consumers are usually
- f Humans are and
- g Decomposers organisms into simpler substances.
- h At each level of the food chain, energy is

4 Put these words/phrases into the correct level of the food chain. The first one is done for you.

bacteria ~~tertiary consumers~~ birds of prey plants insects primary consumers
sheep secondary consumers humans decomposers producers fungi



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5 Some of these sentences are wrong. Correct the wrong sentences.

a Food is a source of light necessary for survival.

.....

b Animals use other animals or plants as food.

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c The path of this energy is called the food pyramid.

.....

d Plants are called consumers.

.....

e Consumers are always carnivores.

.....

f Humans are not herbivores.

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