

Read About Food Webs

FOOD WEB DEFINITION

To understand how plants and animals interact, scientists make diagrams called food chains. A *food chain* shows a sequence of living things in which one organism eats the one below it. Most animals eat more than one thing, so to show ALL the feeding relationships, we use *food webs* which are made of many intersecting food chains.

To better understand the food web definition....

LET'S BREAK IT DOWN!

Energy in food can be traced back to the sun.

Living things need a constant supply of energy. The sun provides that energy, which is transformed into food by plants through photosynthesis.

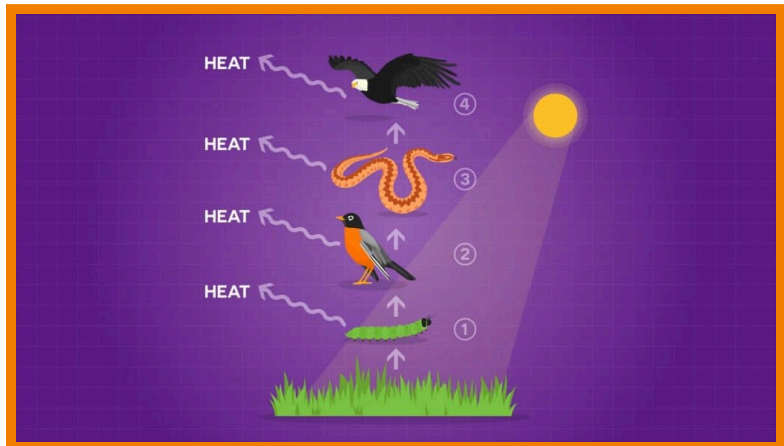
Herbivores (plant-eating animals) eat the plants and receive energy.

When the herbivore is eaten by a carnivore (an animal that eats herbivores), the energy from the herbivore is transferred to the carnivore. The transfer of energy from one organism to another makes up a *food chain*.



Animals eat to get energy and building blocks.

All living things need food to provide materials for growth. Food chains start with organisms that make their own food, called *producers*. Plants are the most common producers. Animals are called *consumers* because they do not make their own food -- they eat, or consume, other organisms.



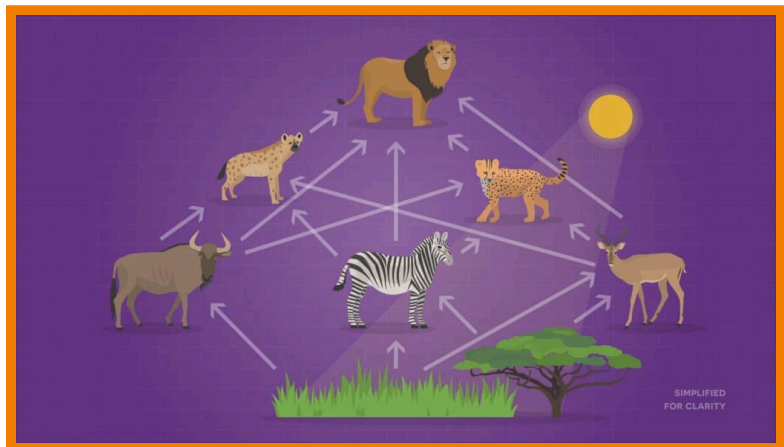
A food chain typically only has a few steps (usually 4 at the most). This is because each time one organism eats another, some of that energy is used up and released as heat.

In fact, you are releasing heat energy right now as you read this because your body is burning food to keep warm! Since some energy gets used up in each step of the food chain, there can only be a few steps, otherwise there is not enough energy left for the organism at the top.

A food web is a model of intersecting food chains.

Most organisms can eat, and be eaten, by many different animals. A food chain wouldn't be able to show this. Food webs show all these connections. They are more complicated but more accurate.

In the African savannah food web shown here, we can see multiple



arrows pointing to different animals. The arrows show the direction the energy is transferred. For example, we can see that zebras eat trees and grasses, so arrows from trees and grasses are pointing to a zebra.

The arrows pointing from the zebra to cheetahs, hyenas, and lions tell us that the zebra is eaten by these animals.

The lions are at the top of the food web, which means they are not eaten by any other type of animal (except by decomposers when it dies). We call this *an apex predator*.

Decomposers break down dead organisms.

One group of consumers that are often not shown in food webs are *decomposers*.

Decomposers are organisms **(mostly bacteria and fungi)** that break down dead plants and animals, eventually turning them into nutrients that will be added to the soil.



These nutrients are very important to continue the cycle in the ecosystem. Slugs, earthworms, millipedes, and centipedes also help break down dead things. Without decomposers, nutrients would not get recycled and we would have dead material piled up everywhere.

FOOD WEB EXAMPLES



The great horned owl is an apex predator. They eat mice, rats, frogs, snakes, and rabbits. That keeps the prey populations from getting too high and overgrazing the ecosystem.



Overhunting can make an ecosystem out of balance. If wolf populations are reduced, the population of deer would increase dramatically. This causes areas to be overgrazed, meaning there is not enough grass for other animals. Everything needs to be in balance.



Common soil creatures, such as earthworms, are decomposers. They recycle nutrients in the ecosystem through decomposition.

FOOD CHAIN AND FOOD WEB VOCABULARY

Food Chain A sequence of living things in which each one feeds on the living thing below it.

Food Web A food web is a model made of intersecting food chains.

Photosynthesis A process by which plants use sunlight to make sugar from carbon dioxide and water.

Producer A living thing (almost always a plant) that takes energy from the sun and make its own food. They are found in the first level of a food web.

Apex Predator An animal found at the top of a food web and is not eaten by any other animals. Examples include sharks, owls and lions.

Decomposer Living things that break down dead and decaying organisms. The most common decomposers are bacteria and fungi.

DISCUSSION QUESTIONS ON FOOD CHAINS AND FOOD WEBS

Why do animals eat other animals?

Animals eat other animals to obtain energy and building blocks (nutrients) in order to grow and repair.

What are producers and consumers and how do they get their names?

Plants are producers because they produce their own food through photosynthesis. Animals are consumers because they consume plants or other animals.

What role in the food web does the eagle play?

An eagle is an apex predator, meaning it is at the top of the food web. Nothing else will attack and eat an eagle. Eagles will eat things like birds, snakes, mice and other animals.

What is an apex predator and why are they critical for the health of the ecosystem?

An apex predator is an animal that feeds on other animals but is at the top of the food web, meaning that it has no predators. Apex predators help control the balance of an ecosystem by keeping the populations of other animals in check.

What do zebras eat and what eats zebras?

Zebras eat grass and they are eaten by predators like hyenas and lions.

What is the role of worms, bacteria and fungi in a food web?

These living things are decomposers. They recycle matter, by breaking down dead and decaying matter. They turn it into nutrients in the soil, which plants use. If ecosystems didn't have decomposers, dead plants and animals would just pile up.
