The food chain: One animal's food is another animal's worst nightmare

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Image 1. An American alligator chows down on a blue crab. Photo by: Gareth Rasberry/Wikimedia Commons

Living things cannot survive without food. Food gives living things energy.

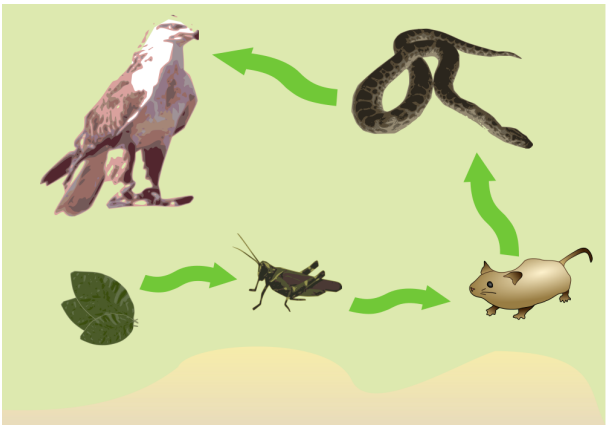
The food chain describes what eats what in the wild. It shows how animals are connected to one another in a particular ecosystem. This could be a forest, grassland, ocean or any other area in nature.

Producers And Consumers

Living things in food chains are grouped into categories. These are called trophic levels. These levels are roughly divided into three groups. There are producers. This is the first trophic level. Then there are consumers. They make up the second, third and fourth trophic levels. Finally, there are decomposers.

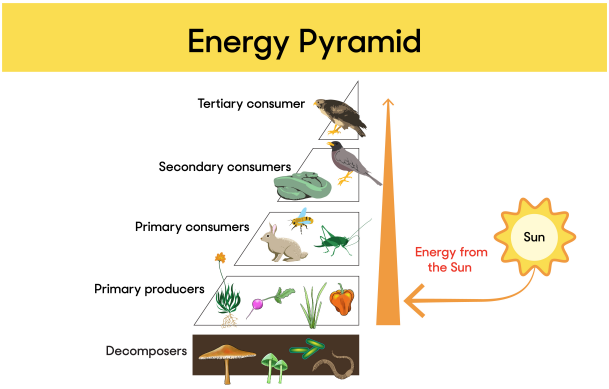
Producers are also known as autotrophs. These make their own food. They make up the first level of every food chain. Autotrophs are often plants.

Nearly all autotrophs use photosynthesis to make food. They must combine sunlight, air, soil and water. This creates glucose, a nutrient used as food.



Plants are the most common type of autotroph. Still, there are many other kinds. Algae is one. Larger algae are what we call seaweed. Phytoplankton are tiny organisms in the ocean. They are autotrophs, too.

The second trophic level features



organisms that eat the producers. These are called primary consumers, or herbivores. Deer, turtles and many types of birds are herbivores. Secondary consumers eat the herbivores. Tertiary consumers eat the secondary consumers. There may be more levels of consumers before a chain finally reaches its top, the apex predator. Apex predators eat other consumers.

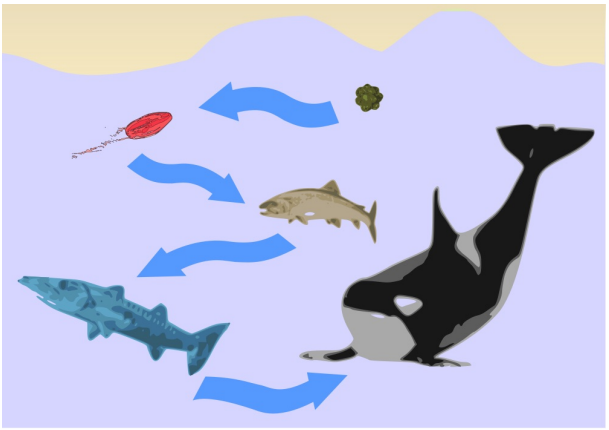
Consumers can be carnivores, meaning they eat other animals. They can also be omnivores, meaning they eat both plants and animals. Omnivores consume many types of foods. People are omnivores. We eat plants, such as vegetables and fruits. We also eat animals and animal products, such as meat, milk and eggs.

Decomposers

Finally, there are detritivores and decomposers. Detritivores are organisms that eat nonliving plant and animal remains. For example, vultures eat dead animals. Dung beetles eat animal poop.

Decomposers complete the food chain. Fungi and bacteria are examples. Bacteria are tiny living things. You can only see them through a microscope. Fungi are living things, too. Like bacteria, fungi are not plants or animals. Mushrooms are fungi.

These decomposers turn organic wastes into inorganic materials. For example, they turn decaying plants into soil. Decomposers complete the cycle of life. They return nutrients to the soil or oceans for use by autotrophs. This starts a whole new food chain.



Different Food Chains In Each Habitat

Different habitats and ecosystems provide many possible food chains. Altogether, these chains make up a food web.

In one underwater food chain, phytoplankton provide food for tiny shrimp called krill. Krill are the main food source for the blue whale. The whale is on the third trophic level.

In a grassland ecosystem, a grasshopper might eat grass, a producer. The grasshopper might get eaten by a rat. Then, the rat is swallowed by a snake. Finally, a hawk swoops down and snatches up the snake. The hawk is the top predator.

Quiz

1 What is an autotroph?

(A) An autotroph is a living thing that makes its own food, like plants.

(B) An autotroph is a living thing that eats krill in the ocean.

(C) An autotroph is the last link in a food chain.

(D) An autotroph breaks down dead animals.

2 Look at Image 1 and read the section "Producers And Consumers."

What is the alligator?

(A) a producer

(B) a herbivore

(C) a predator

(D) an omnivore

3 Why are deer called primary consumers or herbivores?

(A) They consume air.

(B) They eat plants.

(C) They are eaten by producers.

(D) They make their own food.

4 Look at Image 2 and read the section "Different Food Chains In Each Habitat."

What is the plant pictured in Image 2?

(A) a producer

(B) a top predator

(C) a herbivore

(D) phytoplankton

5 How are omnivores and carnivores different?

(A) Omnivores make their own food. Carnivores do not.

(B) Omnivores only eat dead or nonliving things. Carnivores eat live things.

(C) Omnivores eat plants or animals. Carnivores only eat animals.

(D) Omnivores only eat plants. Carnivores only eat other animals.

6 What happens in the FIRST trophic level?

(A) Primary consumers eat producers.

(B) Secondary consumers eat herbivores.

(C) Carnivores eat secondary consumers.

(D) Producers make food using photosynthesis.

7 What is a decomposer?

(A) They return nutrients to the soil or the ocean for producers to use again.

(B) They use photosynthesis to make their own food.

(C) They are producers that live in the ocean.

(D) They create the air for plants to make their own food.

8 Why do food chains need decomposers?

(A) Decomposers are able to eat both secondary and tertiary consumers.

(B) Decomposers make up the first level of the food chain since they make their own food.

(C) Decomposers give nutrients to the soil so that autotrophs can use the nutrients.

(D) Decomposers are able to eat both plant products and animal products.