

Competition

Animals compete for:

- 1 food
- 2 water
- 3 space – to hunt and for shelter
- 4 mates – to reproduce.

Plants compete for:

- 1 light
- 2 water
- 3 space
- 4 minerals – plants do not compete for food, as they produce their own through photosynthesis.

Predators and prey

When a predator feeds on just one type of prey, there is an interdependence between the predator population and the prey population. This means that changes in the population of one animal directly affect the population of the other.

Populations and ecosystems

The number of organisms that live in the same area is called a **population**. Populations of organisms are constantly changing – this affects other populations in a food web.

Interdependence is when living organisms depend on each other to survive, grow, and reproduce.

Ecosystem: all the organisms found in a particular location, and the area they live in.

Community: the organisms in an ecosystem.

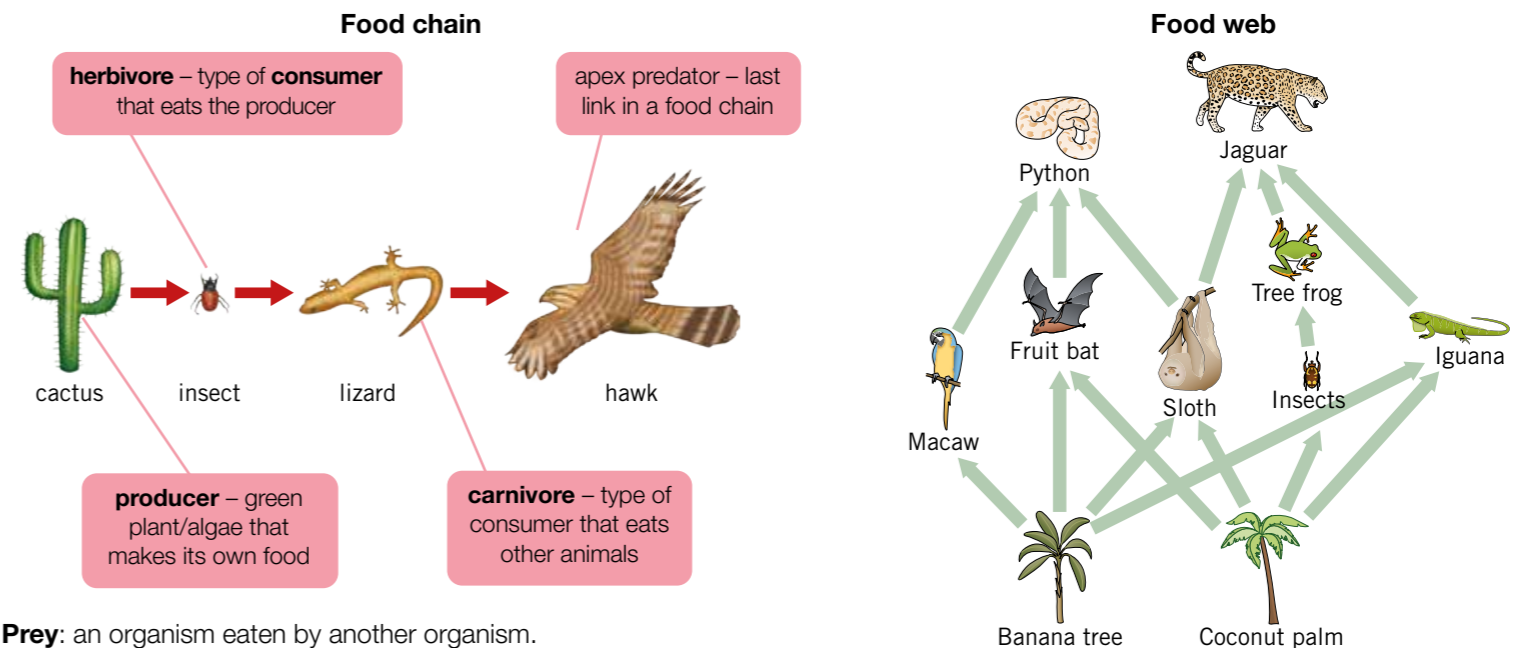
Habitat: the area a community lives in.

Niche: the particular place or role that an organism has within an ecosystem. This reduces competition for resources.

Food chains and webs

Food chains show the transfer of energy between organisms – the arrows represent the direction of energy transfer.

Food webs show how lots of food chains are connected in an ecosystem.



Prey: an organism eaten by another organism.

Predator: an organism that eats another organism.

Bioaccumulation is the build up of chemicals, like insecticides, passed along a food chain.

Adaption and change

Adaptation

- Adaptations are characteristics that help an organism to survive and reproduce.

For example, the cheetah is the fastest land animal. This speed makes it a very successful predator.

Environmental changes

- Plants and animals adapt to changes in their environments.
- Habitats can change through fire, climate change, or disease causing reduced food supplies.

For example, deciduous trees look different in each season, and bears hibernate somewhere warm in the winter.

Interdependence

- Predator and prey species are **interdependent**.

- This occurs when a change in the population of one animal directly affects the population of the other.

For example, Canadian lynx and the snowshoe hare are interdependent:

- When the prey (hare) population increases, the predators (lynx) have more to eat, the lynx survive longer and reproduce more, so the number of predators increases.
- The increase in predators means that more prey are eaten, so the prey population decreases.
- The predators then do not have enough food, so their numbers decrease, and the prey population increases again.

Key words

Make sure you can write definitions for these key terms.

adaptation bioaccumulation carnivore chemosynthesis competition continuous characteristic discontinuous ecosystem environmental variation evolution extinct food chain food web fossil record habitat herbivore inherited variation interdependence interdependent natural selection niche population predator prey species variation

