What is the food chain?

KS2 KS3 Ages 7-14 ⏰ 3 min read

A food chain shows who eats whom in an ecosystem. It starts with producers — plants and other organisms that make their own food using sunlight — and moves through layers of consumers, each eating the layer below. A simple example: grass → rabbit → fox. The grass is eaten by the rabbit; the rabbit is eaten by the fox.

In reality, most ecosystems have food *webs* — overlapping, interlocking chains where most animals eat several things and are eaten by several things. The fox doesn't just eat rabbits; it also eats mice, voles, birds, and earthworms. The rabbit is eaten by foxes, hawks, stoats, and weasels. A web is a much more accurate picture than a simple chain.

Think of an ecosystem like a game of Jenga. Each species is a block in the tower. Removing one block (a species going extinct) might do nothing, or might destabilise the whole tower depending on how central that piece is. Removing a predator like wolves from Yellowstone Park, for example, caused elk populations to explode, which caused overgrazing of riverbanks, which caused river erosion, which reduced fish habitat. Everything is connected, even things that seem unrelated.

Producers, consumers, and decomposers

Producers (plants, algae, photosynthetic bacteria) make food from sunlight — they're the foundation. **Primary consumers** (herbivores) eat producers. **Secondary consumers** eat herbivores. **Tertiary consumers** (apex predators) eat secondary consumers. **Decomposers** (bacteria, fungi, worms) break down dead material at every level, returning nutrients to the soil. Without decomposers, dead bodies and fallen leaves would pile up indefinitely — and the nutrients locked inside them would be lost to the system.

Why are there usually more prey than predators?

Energy is lost at every level of the chain. Only about 10% of the energy in one level transfers to the next — the rest is used for movement, warmth, and biological processes. So to support one lion, you need roughly 10 times its body mass in prey animals, each of which needs 10 times its mass in plants. This is why grasslands full

of grass can support large herds of herbivores, but those herds support only a small number of lions.