



# Food chains and how energy moves through nature

KS3 Ages 11-14 ⌚ 3 min read

## What is a food chain?

A **food chain** is the path that energy takes as it moves from one living thing to another in nature. It starts with the **Sun** and follows a simple pattern: plants eat sunlight, animals eat plants, and bigger animals eat smaller animals. Every food chain begins with a **producer** (usually a plant) and ends with a **consumer** (an animal that eats other things).

For example, grass → rabbit → fox is a simple food chain. The grass captures energy from the Sun, the rabbit eats the grass and gets that energy, and the fox eats the rabbit and gets the energy too. Without this chain, none of these creatures could survive.

Think of it like a bucket brigade passing water from one person to the next. The Sun is like the water source, plants are the first person catching it, and each animal that eats another is the next person in line passing it along.

## How does energy move through the food chain?

The **Sun** is the ultimate source of all energy in a food chain. Plants use sunlight to make their own food through a process called **photosynthesis**. This means plants are **producers** because they produce their own energy.

When an animal eats a plant, it takes in that stored energy. This makes the animal a **primary consumer**. If another animal eats that animal, it becomes a **secondary consumer**, and so on. Each step in the chain is called a **trophic level**.

Here's the important part: with each step up the food chain, energy is lost. A rabbit might get only about **10%** of the energy from the grass it eats (the rest is used for moving, staying warm, and other body functions). When the fox eats the rabbit, it only gets about **10%** of that energy. This is why there are always fewer top predators than plants in nature—there simply isn't enough energy to support many of them.

Think of it like money being passed around. If you get £100 and keep £10 while spending the rest, the next person only gets £10. When they pass along what they have, there's even less for the next person.

## **Why food chains matter**

Food chains show us that all living things are connected. Break one link in the chain—say, poison all the rabbits—and the foxes starve. Kill all the plants, and everything that depends on them disappears too. Understanding food chains helps us see why protecting nature is so important for keeping the whole system balanced.