



# What is symbiosis?

KS2

KS3

Ages 7-14 ⌚ 2 min read

In nature, most relationships are competitive — one creature trying to eat another, or fighting for the same food or territory. But some species have developed a completely different strategy: working together. When two different species live in a long-term, close relationship that affects both of them, that's called **symbiosis**.

## The three types

Symbiosis isn't always a friendly arrangement. There are three types, depending on who benefits:

- **Mutualism** — both species benefit. This is the one most people mean when they use the word "symbiosis."
- **Commensalism** — one species benefits, the other is unaffected.
- **Parasitism** — one species benefits at the direct expense of the other. Technically a form of symbiosis, even though it doesn't sound much like teamwork.

## Classic mutualism: the clownfish and the anemone

You know this one from a certain film. Clownfish live among the tentacles of sea anemones, which would sting and kill most other fish. The clownfish has a special mucus coating that protects it. In return, it chases away fish that would eat the anemone, and its waste provides the anemone with nutrients. Neither harms the other — both gain something useful.

Think of a good business partnership. One person is brilliant at making things, the other is brilliant at selling them. Neither could succeed nearly as well alone. They're not the same company, but they each do better because the other exists. That's mutualism — natural commerce between species.

## The most important symbiosis on Earth

The single most important symbiotic relationship is probably the one between plants and the fungi woven through soil, called **mycorrhizal fungi**. The fungi attach to plant roots and extend their thread-like hyphae much further through the soil than roots

can reach, gathering water and minerals. The plant provides the fungi with sugars it can't make itself (fungi can't photosynthesise). This relationship exists in over 80% of all plant species.

## **Symbiosis inside your own body**

You don't have to look far for symbiosis — it's happening right now inside you. Your gut contains trillions of bacteria that help you digest food, produce certain vitamins, and train your immune system. You provide them with warmth and food. They help you function. Without them, you'd be significantly less healthy. You are, in a very real sense, a walking symbiotic ecosystem.