

SYMBIOSIS



What Is Symbiosis?

Symbiosis is a close relationship between two or more organisms of a different species. There are three main types of symbiosis: mutualism, commensalism, and parasitism.



What Is Mutualism?

Mutualism is a symbiotic relationship in which both species benefit.



ORGANISM 1



ORGANISM 2

Example of Mutualism

The anemone has stinging cells that keep predators away from the clownfish's home. The clownfish has a layer of mucus that blocks the anemone's sting. Sea anemones benefit from the relationship because clownfish clean the anemone and ward off predators.



What Is Commensalism?

In commensalism, one organism benefits
and the other organism is neither
helped nor harmed.



ORGANISM 1



ORGANISM 2

Example of Commensalism?

An example of commensalism is the relationship between epiphytes and trees. Epiphytes are plants that grow on other plants. The epiphytes benefit from being higher off the ground because they get more sunlight. Also, the epiphytes are less likely to be stepped on or eaten. Epiphytes get their nutrients from the air so the trees are not affected by their presence.



What Is Parasitism?

In parasitism, one organism benefits (the parasite) and the other organism is harmed (the host).



ORGANISM 1



ORGANISM 2

Example of Parasitism

Fleas live on dogs and feed off of their **blood**. The dog is the **host** and the flea is the **parasite**.

Parasites **cannot** live without a host.



Photo Credit: [National Library of Whales](#)

LET'S PRACTICE!

Read each passage and identify the organisms involved in the relationship. Color the emoji that matches (helped, harmed, or neither). Label the type of symbiosis depicted in each passage.

1) Barnacles attach themselves to whales. Not only do the barnacles get protection from predators, but they also get a free meal. As the whales swim and consume plankton, the barnacles pull plankton into their mouths with feather-like appendages. The average adult humpback whale weighs between 30-40 tons. The whales do not notice the freeloaders.



What Type of Symbiosis?

ORGANISM 1	ORGANISM 2	TYPE OF SYMBIOSIS
Barnacle	Whale	Commensalism
Helped	Neither	

2)

Warthogs lie down when mongoose are near. The mongoose crawl on top of the warthogs and inspect the fur for ticks. The mongoose devour any tick they find. The warthogs enjoy this spa treatment as they get relief from the pesky insects.



What Type of Symbiosis?

ORGANISM 1	ORGANISM 2	TYPE OF SYMBIOSIS
Warthog	Mongoose	Mutualism
Helped	Helped	

3) The Rafflesia plant is native to the rainforests of Southeast Asia. This plant is unique because it produces the world's largest flower. The flower emits a smell of rotten meat that attracts neighboring carrion flies. The rotten meat smell lures the flies into the flower. Finding no actual meat, the flies leave. Pollen that stuck to the flies is later deposited onto a different Rafflesia flower. Rafflesia plants have no leaves, roots, or stems of their own and must steal their nutrients from the Tetrastigma vine.

*Note: There are two different types of symbiosis in the passage.



Photo Credit: [Lentera Merah](#)

What Type of Symbiosis?

ORGANISM 1	ORGANISM 2	TYPE OF SYMBIOSIS
Rafflesia	Fly	Commensalism
Helped	Neither	

What Type of Symbiosis?

ORGANISM 1	ORGANISM 2	TYPE OF SYMBIOSIS
Rafflesia	Tetrastigma Vine	Parasitism
Helped	Harmed	

THE END