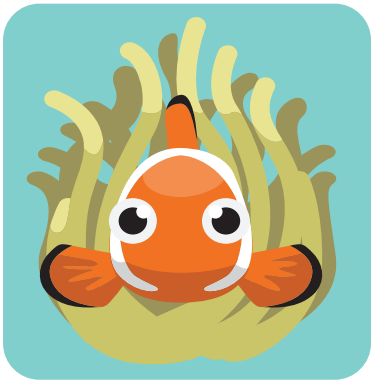
Symbiotic Relationships

The word *symbiosis* comes from a Greek word that means *living together*. It makes sense, then, that scientists use the term **symbiotic relationship** to describe an interaction between two organisms of different species that affects one or both organisms.



There are different types of symbiotic relationships:

- **Mutualism** is a relationship in which both organisms benefit.
- **Parasitism** is a relationship in which one organism benefits while the other is harmed.
- **Commensalism** is a relationship in which one organism benefits while the other is not significantly affected.

Read the following descriptions of symbiotic relationships. Determine whether each is an example of mutualism, parasitism, or commensalism. Then explain your reasoning.

1. On a coral reef, a sea anemone with stinging tentacles provides a clownfish with shelter and protection from predators. The clownfish, immune to the stinging tentacles, cleans the anemone of parasites and provides a source of nitrogen for the anemone's growth and regeneration.

   a. What type of symbiotic relationship is described between the sea anemone and the clownfish? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

2. A tapeworm attaches itself to the intestine of a pig. It gets food by eating the pig's partially digested food. This deprives the pig of nutrients.

   a. What type of symbiotic relationship is described between the tapeworm and the pig? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

3. In a field of chickpea plants, the bacteria rhizobia infect the roots of the chickpea plants and form root nodules. The bacteria get energy-containing carbohydrates from the chickpea plants and turn nitrogen gas from the atmosphere into a form of nitrogen that the plants can use for growth.

   a. What type of symbiotic relationship is described between the chickpea plants and rhizobia? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

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Keep going! Answer the questions below.

4. In a garden, aphids feast on sap from the leaves and fruit of a young tomato plant. This depletes nutrients from the tomato plant, stunting its growth and wilting its leaves.

   a. What type of symbiotic relationship is described between the aphids and the tomato plant? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

5. Believe it or not, there are lots of bacteria that live on your skin! One bacterium commonly found on human skin is *Staphylococcus aureus (S. aureus)*. A human can be a long-term carrier of *S. aureus* without realizing it. Skin provides an ideal environment for the bacterium to colonize, but *S. aureus* often does not bother its host.

   a. What type of symbiotic relationship is described between the human and *S. aureus*? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

6. In the savanna, a red-billed oxpecker eats ticks off the coat of an impala. The impala is cleaned of parasites, and the red-billed oxpecker gets a meal.

   a. What type of symbiotic relationship is described between the red-billed oxpecker and the impala? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

   _____

7. In the ocean, tiny barnacles attach themselves to the skin of whales. The whales transport the barnacles to plankton-rich waters, on which both species feed. The whale is neither helped nor hurt by the barnacles.

   a. What type of symbiotic relationship is described between the barnacles and the whale? Circle the correct answer.

   Mutualism **Parasitism** **Commensalism**

   b. Explain your reasoning.

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