

Homework: Symbiosis

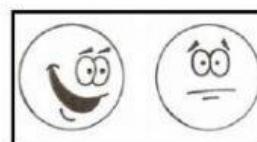
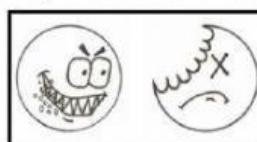
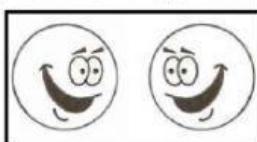
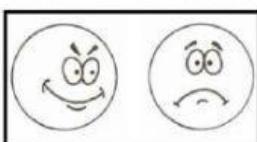
Match each of the vocabulary words to its definition on the right.

<input type="checkbox"/> mutualism	a. one species helps itself by hurting another species
<input type="checkbox"/> parasitism	b. one species is helped by another without helping or hurting that species
<input type="checkbox"/> commensalism	c. one species kills and eats another species
<input type="checkbox"/> predation	d. one species gets helped by another species while helping it in return

1. Decide whether the following relationships represent mutualism (M), commensalism (C), parasitism (P) or predation (X).

- Geckos eat various insects as a part of their diet
- Egrets are helped by water buffalo which stir up the grass for the birds
- Honey bees pollinate a flower while collecting its pollen
- Orchids grow on a tree to help themselves without affecting the tree
- A horse is provided shelter by a human while providing transportation in return
- Some arthropods use the shells of dead snails to protect themselves
- A clownfish finds shelter in a sea anemone while chasing away predators of the anemone
- A cougar attacks and kills a deer to obtain food
- Moss grows on a tree without hurting or bringing aid to the tree.
- A tick feeds on a dog's blood creating a wound which can lead to infection
- A swallow builds a nest in a oak tree without affecting the tree
- A tree provides food and shelter for an ant that protects the tree from invaders
- A pollen collecting wasp gains nutrition while spreading the plants pollen
- Leaf-cutter ants cut out large portions of leaves from trees to eat
- Pseudoscorpions ride on larger insects without significantly affecting them
- A mantis devours a smaller insect
- Bacteria grows inside of someone's mouth leading to a cavity
- Bacteria live in root nodules of legumes and fix nitrogen in return for sugars
- Bacteria live inside the intestines of termites and help them break down cellulose
- A hawk swoops down and catches a small rabbit to eat
- Fleas draw blood from a host to acquire nutrients and energy

Decide which vocabulary word is being illustrated by the cartoons below:



Not every description will have the key words you may be searching for. Answer the following questions below based on the description of the interaction.

1. A small housefly can become tangled in the web of an orb-weaver spider. As the housefly tries to free itself, it can damage the web. When the orb-weaver reaches the fly, it proceeds to consume it. The relationship between these species would be classified as –
A parasitism **B** mutualism **C** commensalism **D** predation

2. Krill are small crustaceans that live in marine environments. Blue whales are the largest known living animals, and they live in the oceans and consume large numbers of krill. The relationship between these two species should be classified as –
A parasitism **B** mutualism **C** commensalism **D** predation

3. California condors (*Gymnogyps californianus*) are a type of vulture that feeds on carrion. These large birds may eat the remains of a deer or elk that was previously killed by a cougar. The relationship between the condor and the cougar would best be described as –
A parasitism **B** mutualism **C** commensalism **D** predation

4. The Ocellaris clownfish (*Amphiprion ocellaris*) dwells among the tentacles of the sea anemone without being hurt. Other fish are forced to avoid clownfish for fear of being stung by the sea anemone. The clownfish are very territorial and chase away other small fish that might otherwise feed on the sea anemones. What type relationship does this demonstrate?
A parasitism **B** mutualism **C** commensalism **D** predation

5. The beef tapeworm is a type of flatworm that can live in the intestines of humans. At first, the presence of the tapeworm causes very few symptoms for the human, but the ingestion of nutrients by the tapeworm will eventually result in the human feeling weak. The relationship between these species is best defined as –
A parasitism **B** mutualism **C** commensalism **D** predation

6. The red-billed oxpecker is a bird that feeds on tiny insects called ticks. These ticks are found drinking blood through the skin of mammals like the impala. The red-billed oxpecker will perch itself on the back of the impala and eat the ticks from its skin. The relationship between the red-billed oxpecker and the impala would best be described as –
A parasitism **B** mutualism **C** commensalism **D** predation

7. Certain species of wasp collect pollen grains from flowers. This pollen serves as food for the wasps. As the wasps travel from flower to flower, some of this pollen collected by the wasp is deposited into other flowers. This relationship is best described as –
A parasitism **B** mutualism **C** commensalism **D** predation