



**High School Science Virtual Learning**

**General Biology**

**Symbiotic Relationships**

**April 22, 2020**



# High School Environmental Science

## Lesson: April 22, 2020

### **Objective/Learning Target:**

Students will be able to identify and provide examples of the different types of symbiotic relationships.

1. What two cellular energy processes that organisms perform help with the cycling of carbon?
2. When living organisms die, what happens to the carbon stored in their body?



1. Cellular Respiration and Photosynthesis
2. It gets returned to the sediment and is stored there.



## Lesson Activity:

### Directions:

1. Watch the video linked below, then read the article.
2. While doing this, take detailed notes about the different types of symbiosis on a separate piece of paper.
3. Create a chart that details the different types of symbiotic relationships and provide an example of each.

### Link(s):

[Video](#)

[Article](#)



# Practice

You will use the information from the activity on slide 5 to answer the following questions.

# Practice Questions

1. What is symbiosis?
2. What are the 3 main types of symbiotic relationships?
3. Fill in the chart below indicating for each type of symbiotic relationship if the species is benefited, harmed, or not affected.

Type of Relationship	Not Affected	Benefited	Harmed
Mutualism			
Parasitism			
Commensalism			

# Answer Key

Once you have completed the practice questions check with the work.

1. Symbiosis is a close relationship between two organisms where at least one benefits.
2. Commensalism, mutualism, and parasitism.
- 3.

Type of Relationship	Not Affected	Benefited	Harmed
Mutualism		<b>X X</b>	
Parasitism		<b>X</b>	<b>X</b>
Commensalism	<b>X</b>	<b>X</b>	





# More Practice

You will use the information from the activity on slide 5 to answer the following questions.

## More Practice Questions

For each situation, identify if the situation is commensalism, mutualism, or parasitism. Also, identify for each animal if they are harmed, helped, or not affected.

1. Oxpeckers are a type of small bird that land on zebras and eat ticks and other parasites that live on the zebra's skin. The oxpeckers get food and the zebras get pest control.
2. Tapeworms are segmented flatworms that attach themselves to the insides of the intestines of animals such as cows, pigs, and humans. Tapeworms get food by eating the host's partly digested food, depriving the host of nutrients.

## More Practice Questions

3. Spider crabs live in shallow areas of the ocean floor, and greenish-brown algae lives on the crabs' backs, making the crabs blend in with their environment, and unnoticeable to predators. The algae get a good place to live and the crab gets camouflage.

4. Remora fish are small fish that make their niche by picking up the scraps that sharks leave behind while feeding. The shark makes no attempt to prey on the remora fish.

5. Bacteria live in the colon of humans and are able to feed off the indigestible food that the human body cannot break down.

## More Practice Questions

6. Ticks live on dogs and feed off the dog's blood, they may also infect the dog with a parasite that can cause the dog to become quite sick.
7. Barnacles create home sites by attaching themselves to whales.
8. The stork uses its saw-like bill to cut up dead animals it eats. As a result, the dead animals carcass is accessible to some bees for food and egg laying.
9. Ostriches and gazelles feed next to each other. They both watch for predators and alert each other to danger.

## More Practice Questions

10. Yucca flowers are pollinated by yucca moths. The moths lay their eggs in the flowers where the larvae hatch and eat some of the developing seeds. Both species benefit.
11. Hermit crabs live in shells made and then abandoned by snails.
12. A cuckoo may lay its eggs in a warbler's nest. The cuckoo's young will displace the warbler's young and will be raised by the warbler.
13. As buffalos walk through the grass, insects become active and are seen and eaten by cowbirds.



## More Practice Questions

14. Silverfish live and hunt with army ants. They share the prey.
15. Wrasse fish feed on the parasites found on the black sea's bass body.
16. Mistletoe extracts water and nutrients from the spruce to the spruce tree's detriment.

## Answer Key

1. Mutualism: Oxpecker benefited (food) and zebras benefited (pest control)
2. Parasitism: Tapeworm benefited (food) and animals harmed (deprived of food)
3. Mutualism: Spider crab benefited (camouflage) and algae benefited (place to live)
4. Commensalism: Remora benefited (food) and shark is not affected
5. Mutualism: Bacteria benefited (food) and human colon benefited (food broken down for nutrients)

## Answer Key

6. Parasitism: tick benefited (food) and dog harmed (infected by disease)
7. Commensalism: barnacle benefited (home) and whale is not affected
8. Commensalism: bee benefited (food and breeding ground) and stork is not affected
9. Mutualism: Ostrich benefited (gets food/is watched over) and gazelle benefited (gets food/is watched over)
10. Mutualism: yucca flowers benefited (pollinated) and yucca moths benefited (food).



## Answer Key.

11. Commensalism: snails is not affected and crabs benefited (place to live)
12. Parasitism: cuckoo benefits (displace warbler's young) and warbler harmed (loss young)
13. Commensalism: buffalo is not affected and cowbirds benefited (food)
14. Mutualism: silverfish benefited (food) and army ants benefited (food)
15. Mutualism: wrasse fish benefited (food) and black sea bass benefited (removal of parasites)
16. Parasitism: mistletoe benefits (food) and spruce tree harmed (lack of nutrients)



## Potential Misconceptions

A possible confusion you may have is that symbiosis means a mutually beneficial relationship between two organisms. There are actually 3 different kinds of symbiotic relationships. A symbiosis is simply a relationship between organisms when at least one species benefits.

Another confusion you may have is between commensalism and mutualism. **MUTUAL**ism is when both organisms benefits and commensalism is when one will benefit and the other is not affected.



## Extra Resources

Here is an excellent practice quiz to help you continue to review this information. The answers are provided after each question with an explanation for the answer:

[Review Quiz over Symbiosis](#)

Here is another video if you still have questions: [Video](#)