

Name: _____

Date: _____

Notes: Symbiosis

Define **sym-**: _____

Define **bio-**: _____

Define **symbiosis**: _____

Define **mutualism**: _____

Define **parasitism**: _____

Define **commensalism**: _____

Define **predation**: _____

Examples of Mutualism

What do nitrogen-fixing bacteria give plants? _____

What do plants give nitrogen-fixing bacteria? _____

What do plants provide pollinators? _____

What do pollinators help plants to do? _____

What are some examples of pollinators? _____

What do bacteria help animals to do? _____

What do animals do for bacteria in return? _____

Examples of Parasitism

What do we call the organism that harbors a parasite? _____

How do fleas and ticks hurt their hosts? _____

How do many insects hurt trees? _____

How do tapeworms hurt animals? _____

Examples of Commensalism

What organisms did the term *commensalism* originally describe? _____

What part of a predator's meal do scavengers eat? _____

What makes a relationship *commensalism*? _____

How do mites rely on larger insects? _____

What do trees provide for epiphytes? _____

Do the epiphytes affect the tree? _____

How do gastropods help hermit crabs? _____

Why are gastropods NOT affected by crabs? _____

Examples of Predation

What is *predation* a relationship between? _____

What do predators do to organisms they get nutrition from? _____

In food chains and webs, how does the arrow showing a predatory relationship point?

What does this arrow show the flow of? _____

Draw an arrow from the prey to the predator in each of the relationships shown below.

- | | | | | | |
|-----------|----------|-----------|---------|------------|------------|
| 1. Cougar | Deer | 2. Human | Chicken | 3. Mouse | Snake |
| 4. Pig | Mushroom | 5. Fish | Shark | 6. Penguin | Polar Bear |
| 7. Lamb | Lion | 8. Worm | Bird | 9. Frog | Mosquito |
| 10. Cat | Squirrel | 11. Human | Turkey | 12. Mouse | Hawk |

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

- _____ Plants provide fungi with carbohydrates in return for phosphate compounds
- _____ Tapeworms live in the intestines animals lowering the nutrients available to the host
- _____ Carrion eaters devour the remains of a lion kill
- _____ Arthropods live inside the shell of a dead gastropod
- _____ Wolves devour a sheep that has been separated from the herd
- _____ Bacteria live in the intestines of a cow and gain nutrients by helping the cow break down cellulose
- _____ Orchids grow on the side of trees without affecting the trees on which they live
- _____ Eagles eat rabbits in order to gain energy and important nutrients
- _____ Mosquitoes bite an animal in order to gain nutrients from the blood of the animal
- _____ Humans use horses for transportation while providing food and shelter for the horse