

Name: _____ Class: _____

Clownfish and Sea Anemone

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Clownfish and sea anemone have a special relationship—a “symbiotic relationship.” As you read this scientific article, think about the friendship between human beings. Do friendships and symbiotic relationships have similar characteristics? What’s the difference?

- [1] Clownfish are among the few species of fish that can avoid the potent poison of a sea anemone. These two species have a symbiotic, mutualistic relationship, each providing a number of benefits to the other. The sea anemone protects the clownfish from predators, as well as providing food through the scraps left from the anemone's meals and occasional dead anemone tentacles.



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In return, the clownfish defends the anemone from its predators, and parasites. The anemone also picks up nutrients from the clownfish's excrement, and functions as a safe nest site. The nitrogen excreted from clownfish increases the

amount of algae incorporated into the tissue of their hosts, which aids the anemone in tissue growth and regeneration. Marine biologists have theorized that clownfish use their bright coloring to lure small fish to the anemone, which the anemone kills and consumes.

Another theory is that the activity of the clownfish results in greater water circulation around the sea anemone. Studies on anemones have found that clownfish alter the flow of water around sea anemone tentacles by certain behaviors and movements such as "wedging" and "switching." More water circulation increases aeration of the host anemone tentacles and benefits the metabolism of both partners, mainly by increasing anemone body size and both clownfish and anemone respiration.

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Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. What is a symbiotic relationship? Support your answer with evidence from the text. [RI.2]

2. From the text, list the ways in which the clownfish and the anemone benefit from their relationship. [RI.3]

3. Do human friendships mimic symbiotic relationships? What are some similarities and differences? Explain your answer using evidence from the text. [RI.1]
