

Oxbow Phenomena: Sea Anemone Observation

Sea anemones are marine invertebrates that prey on zooplankton. Sea anemone larva will float around the water column as plankton until settling on the sea floor and developing a polyp, but have also been known to reproduce asexually splitting off to regenerate polyps. The anemone attaches to a hard surface such as a rock, shell, or coral with its pedal disc or "foot." Its tentacles will move with the current to collect food and push it toward a cavity that serves as both its mouth and where it expels waste. Some sea anemone will produce a venom or toxin that paralyzes prey, however, some fish species are immune to the stings and hide in their tentacles for protection from predation.

Grade	Standard	Guiding Question(s)	How to include in lesson?
K	SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.	What in the video is living or alive? What is non-living?	<p>-Observe different items in the video and decide if they are living or non-living</p> <ul style="list-style-type: none"> Sea anemone are surprisingly animals are alive! What observations can you make that tells you it is living? How does the living thing use the non-living elements?
1st	S1L1.Students will investigate the characteristics and basic needs of plants and animals.	What does an anemone need to survive?	<p>-Use to discuss what an anemone may eat</p> <ul style="list-style-type: none"> Practice eating like an anemone. "Plant" your feet and sway your arms. Only prey that comes close to your tentacles can be caught to eat! <p>-Discuss how an anemone may survive in the ocean</p> <ul style="list-style-type: none"> Draw a picture of the anemone's environment and what it needs to survive (water, food, cover, air). Make a hypothesis for how this animal can breathe air underwater. Imagine what your body would be like without bones. How would you move? How would you keep your shape?
2nd	S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.	How does an anemone have its young?	<p>-Introduce egg laying as a type of reproduction</p> <ul style="list-style-type: none"> Some animals can reproduce without a mate and can make a "copy" of

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	(continued)	(continued)	<p>themselves. Imagine “regenerating” or re-growing an arm or body part that you lost and grew back. Draw a picture.</p> <ul style="list-style-type: none"> Anemone release eggs to float around the water column until they are fertilized. Make a prediction for how many eggs different animals produce per clutch or mating season. (use to make predictions and comparisons, actual breeding rates not necessary).
3rd	<p>S3L1. Obtain, evaluate, and communicate information about the similarities and differences between plants, animals, and habitats found within geographic regions (Blue Ridge Mountains, Piedmont, Coastal Plains, Valley and Ridge, and Appalachian Plateau) of Georgia.</p>	<p>What types of wildlife resides near the Coast of Georgia in the Atlantic Ocean?</p>	<p>-Discuss the variety of biodiversity you may observe in or near the Coastal Region of Georgia.</p> <ul style="list-style-type: none"> How do animals that live in the ocean differ from animals that live in the Chattahoochee River? What is similar? Draw one animal that you may find in both aquatic habitats and compare their fresh and saltwater conditions.
	<p>S3L1b Students will identify factors that affect the survival or extinction of organisms such as adaptation, variation of behaviors (hibernation) and external features (camouflage and protection).</p>	<p>How does this anemone’s adaptations help with survival? How would you describe the locomotion or movement of the animal? How can an anemone shelter, protect, or defend themselves? How could other animals use anemones for protection?</p>	<p>-Discuss behavioral adaptations that affect behaviors such as mating, evasion of predators, and alerting of weather conditions, etc.</p> <ul style="list-style-type: none"> How could this animal evade predators? Write a short story using your imagination and prior knowledge of how your anemone was able to protect itself from a danger (predator, human, pollution, habitat loss, etc)

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	(continued)	(continued)	<p>-Can use to analyze how the structure of the anemone's body helps it to survive.</p> <ul style="list-style-type: none"> • Draw a picture of an anemone's adaptations and write how they help it survive.
4th	S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.	Where does this animal fit in the food chain? What does this animal eat? What eats this animal?	<p>-Use to discuss marine food chain</p> <ul style="list-style-type: none"> • Create your own ocean food chain, including the sea anemone. Students may choose to draw and cut out plants and animals and attach them in order to a string tied to a small branch or popsicle stick.
5th	S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.	How would you classify a sea anemone? What do you know about this type of animal?	<p>-Use to differentiate between vertebrates and invertebrates.</p> <ul style="list-style-type: none"> • Draw or write what you think the internal structure of the animal looks like. Where is its mouth? How does it move? How does it get rid of waste products? <p>-Discuss additional marine invertebrates.</p> <ul style="list-style-type: none"> • Make a list or draw pictures of at least 2 other animals that live in the ocean and do not have bones inside of their bodies. (Hint: one creature lives at Oxbow with the sea anemones in our Touch Tank!)