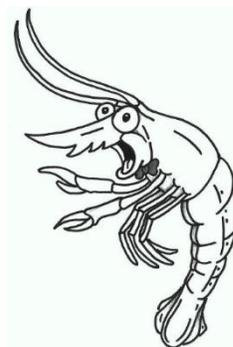




Smithsonian Environmental
Research Center



Exploring Nature Connections: Bay Animals (K-2nd Grade)

Garry Grass Shrimp Goes On an Adventure

Concept: This program is designed to introduce K-2nd grade students to Chesapeake Bay animals through the journey of a grass shrimp named Gary. The length of Gary's journey, and the number of animals he meets, will largely depend on how much time the visiting group has, and how many students. Each station in this journey is designed to be 30-40 minutes long. Content may be adapted based on the amount of time available and the maturity/experience of the group.

Key Goals: Regardless of how many stations that students go through, there are several key goals for this field trip, which are as follows:

1. Expose children to the natural world of the Chesapeake Bay.
2. Teach children how to be good stewards and respect the plants and animals that they are dealing with.
3. Help children understand the basic needs of animals, which are like our own, food, water, and shelter.
4. Demonstrate to children how different animals move: swimming, hopping, crawling, floating, and sitting/stuck.

Next Generation Science Standards: The NGSS standards that are met through this program are:

Grade	NGSS Standard	Seining	Blue Crabs	Jellyfish	Oysters	Sharks
K	Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live (K-ESS3-1)	✓	✓	✓	✓	✓
	Use observations to describe patterns of what plants and animals (including humans) need to survive (K-LS1-1)	✓	✓	✓	✓	✓
	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment (K-ESS3-3)			✓		✓
1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents (1-LS3-1)	✓	✓	✓	✓	✓
2	Make observations of plants and animals to compare diversity of life in different habitats (2-LS4-1)	✓	✓	✓	✓	
	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties (2-PS1-1)			✓		

STATIONS

The number of stations you can do depends on how much time you have, usually stations are 35-40 minutes long each with a 5 minute walk time between. This field trip is based on children following the journey of Gary the Grass Shrimp. The number of stations you choose will depend on how much time you have. These stations are fine in any combination.

- **Seining-** Students will journey with Gary to explore the types of creatures that live in the nearshore zone of the Bay. They will then help gather fish and invertebrates from a seine net and sort them based on their adaptations for moving (swimming, hopping, crawling, floating, and sitting). Students will then count their organisms and discuss what they found. (K-ESS3-1)(K-LS1-1)(2-LS4-1)(2-LS4-1)
- **Blue Crabs-** We'll journey with Gary to meet another invertebrate that is similar but not exactly like Gary himself. They will learn the parts of a blue crab, relate our five sense to a blue crab's five senses, and learn the life cycle of a blue crab to see how baby crabs are alike but not exactly like their parents. They will then meet a live blue crab and compare it to mud crabs (smaller crabs) that live in the Bay. Students will get to handle the mud crabs and afterwards play a relay game. (K-ESS3-1)(K-ESS3-3)(K-LS1-1)(1-LS1-2)(1-LS3-1)
- **Understanding Oysters-** Here we'll travel with Gary to meet his relatives Ginny and Gus Grass Shrimp that live on an oyster reef. He will explore the different types of creatures that rely on oysters (live oysters as well as their shells). Students will sort through a basket of oyster shells looking for fish and invertebrates that colonize a model reef. Children will sort and count their creatures and then try to explain what they found. (K-ESS3-1)(K-LS1-1) (1-LS1-2)(1-LS3-1)(K-ESS3-3) (2-LS4-1)
- **Jellyfish-** We'll explore jellyfish with Gary while he learns the parts of jellyfish, measure the world's largest jellyfish, and learn the different types of jellyfish that live in the Chesapeake Bay. If the season permits we'll look at live jellyfish in containers and even touch the non-stinging variety. Children will then learn how jellyfish look very much like marine debris, or plastic floating bags, and how this can make sea turtles or terrapins sick (because sea turtles eat jellyfish for fresh water). We'll then play a recycling game, either a relay or an activity about sinking and floating plastics. (K-ESS3-1)(K-LS1-1) (1-LS1-2)(1-LS3-1)(K-ESS3-3) (2-LS4-1)(2-PS1-1)
- **Sharks-**Gary bravely visits with his shark friends to learn more about the types of sharks that live in the Bay. Students will help Gary figure out how big the sharks really are by measuring shark silhouettes, including a great white shark. We'll learn what sharks eat and if they are really a threat to humans. Everyone will get to learn what shark skin feels like, see shark teeth and jaws, and even a preserved shark. Afterwards we'll play a shark radio tagging game to learn how our researchers find tagged sharks in the Bay. . (K-ESS3-1)(K-LS1-1) (1-LS1-2)(1-LS3-1)(K-ESS3-3) (2-LS4-1)

Vocabulary Word Bank for Students

Food	Water	Shelter
Seining	Vertebrate	Invertebrate
Habitat	Nearshore	Survive
Oyster	Oyster reef	Bivalve
Filter	Plankton	Float
Sink	Marine debris	Recycle
Jellyfish	Tides	Blue crab
Exoskeleton	Molt	Shark
Cartilage	Fish	Gill
Fin		

Pre-Field Trip Resources

SEINING

- **BOOK:** "B is for blue Crab, a Maryland Alphabet" by Shirley C. Menendez and Laura Stutzman
- **BOOK:** "Wish for a Fish, all About Sea Creatures" Dr. Seuss Book, Bernie Werth

- **LESSON PLANS:** Preschool fish themed activities <http://www.123child.com/lessonplans/animals/fish.php>

SHARKS

- **BOOK:** “Great White Shark: Ruler of the Sea” Smithsonian Oceanic Collection, by Courtney Granet Raff
- **BOOK:** “Survival in the Sea: The Story of a Hammerhead Shark” Smithsonian Oceanic Collection, by Linda Linger mann
- **BOOK:** “Sharks” Smithsonian, by Jane Walker
- **BOOK:** “Great Sharky Shark, a Tale of a Big Hunter” by Suzanne Tate
- **LESSON PLANS:** Preschool shark themed activities <http://www.first-school.ws/theme/animals/ocean/shark.htm>

JELLYFISH

- **BOOK:** “Peanut Butter and Jellyfish” by Jarrett Krosoczka
- **BOOK:** “Look, a Jellyfish” the “I See Ocean Animals series, by Tessa Kenan
- **VIDEO AND SONG:** “Jellyfish Song, Discovery Channel” <https://www.youtube.com/watch?v=GIBCAv4qCc0>
- **VIDEO:** “Octonauts, Creature Report” <https://www.youtube.com/watch?v=DLO -t5Dy6U>
- **LESSON PLANS:** Preschool jellyfish themed activities <http://www.first-school.ws/theme/animals/ocean/jellyfish.htm>

OYSTERS

- **BOOK:** “Pearlie Oyster, A Tale of an Amazing Oyster” by Suzanne Tate
- **VIDEO:** Timelapse of oysters feeding <https://www.youtube.com/watch?v=6p5VnFjV4q0>

BLUE CRABS

- **BOOK:** “Dancing on the Sand, a Story of an Atlantic Blue Crab” Smithsonian Oceanic Collection Book, by Kathleen M. Hollenbeck
- **BOOK:** “Crabby and Nabby, a Tale of Two Blue Crabs” Suzanne Tate
- **LESSON PLANS:** Preschool crab themed activities <http://www.first-school.ws/theme/animals/ocean/crab.htm>