Build an Invertebrate

UGA Marine Extension and Georgia Sea Grant

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July 2020

Horseshoe crabs have lived on Earth for a long time with few changes to their body plan over the years. They have physical features and behaviors, called adaptations, that help them survive in their habitat. Can you build an invertebrate with as many amazing adaptations as the horseshoe crab?

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Materials:

- Writing utensil
- Paper
- Craft materials to build or color (optional)
- Your imagination!

Part 1: Plan your Invertebrate

For this activity, we will use horseshoe crabs as an example to create your own animal. Horseshoe crabs are sometimes referred to as a living fossil, because the species has been around for millions of years. Throughout this time, there have been minimal changes to the shape of their bodies, partly because their body structure is well adapted to survive and thrive in the ocean.

Invertebrates are animals that do not have a skeleton. There are more species of invertebrates on land than in the ocean, but marine invertebrates have a wider variety of body shapes and structure. To help you with this activity, you can search for images of marine invertebrates online. What is the coolest one you can find?

Choose your Setting

Before making your animal, imagine the setting and environment for your animal. Where does your animal live? What it their ecosystem and climate? What do they eat? What eats them?

Example:

- Horseshoe crabs live along the East coast of the United States, in a marine environment. They live along the bottom in the benthic zone as opposed to in the water column. Most of the water along the east coast is turbid or muddy. Horseshoe crabs will come up onto land to reproduce. Horseshoe crabs are scavengers and will eat small organisms on the bottom, such as worms and small fish. Shorebirds and other migratory animals will eat horseshoe crab eggs and alligators will eat the adults.

Creating the Animal

You know basic information about your animal. Now you can start creating it. Make a simple sketch of your animal. Once you have this sketch, go through your list of answers from above.

What adaptations does your vertebrate have for

- Ecosystem and climate?
- Movement?
- Eating?
- Defense?
- Communicating?
- Anything else?

And just for fun, create a cool fact about your animal and name it!

Example:

- Horseshoe crabs are invertebrates, which means they do not have a backbone. Instead, they have an exoskeleton that molts (or sheds) as the horseshoe crabs grow. This happens about 18 times.
- Horseshoe crabs have gills underneath to help the organism breathe underwater.
- When they come up onto land to spawn, horseshoe crabs must keep their gills wet. Their tail, or telson, is an adaptation that helps with this challenge as they can use the telson to turn itself right side up if it is flipped over onto its back by waves.
- They have 12 legs for movement along the bottom of the ocean and to help them eat. Their mouth is located in the middle of their body on the underside.
- Horseshoe crabs have two compound eyes allowing it to see its surroundings, like a fly and other insects. The horseshoe crab also has eight other simple eyes located around its body, which help them to see light and dark.
- Finally, horseshoe crabs have blue, copper-based blood. A special compound can be taken from the blood and used in the medical field to test for gram-negative bacteria on hospital equipment and in pharmaceuticals. . This characteristic of horseshoe crab blood is an adaptation that helps this species live in a bacteria-prone environment.

Building the Animal

Once you have created your animal, it is time to build your animal. Using supplies such as markers, scissors, cardboard, or anything you can find, build a model of your animal!

If you would rather, you can also sketch or draw your animal!