HOME SWEET HOME:

The Benefits of Bay Grasses

In this investigation, we will explore the following driving and investigative questions: Do Bay grasses save the Bay? What are Bay grasses? What makes a suitable habitat for the fish and crabs that live in the Bay? How are Bay grasses similar to habitats in my own neighborhood?

Step 1: Watch the Video

Watch the Bay Grasses video.
cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-plants/bay-grasses.html

Step 2: Review Vocabulary

Food chain: a series of organisms in which one organism depends on the next organism in the "chain" as a source of food.

Habitat: the natural home or environment of an organism.

Photosynthesis: the process plants and other organisms use to convert light energy into energy to fuel their growth.

Submerged aquatic vegetation: plants that grow in the shallows of the Chesapeake Bay; also known known as SAV or underwater grasses.

Turbidity: the cloudiness of water caused by large numbers of individual particles that are generally invisible to the naked eye, similar to smoke in air.

Water clarity: describes the condition of the water, including its chemical, physical, and biological characteristics.

Water column: a description of the space from the surface of the water to the bottom.

Sediment: loose sand and other soil particles that settle at the bottom of a body of water.

Step 3: Engage

When you explore the Bay's underwater grasses, you quickly discover they provide a home, or habitat, to many fish, crabs, and other animals in the Bay. But what kind of home is it? When you think of a home, perhaps you think of a cozy bed in which to rest, a yummy meal to fuel your body, or family and friends with which to play games.

List three things a fish would need from the Bay grasses for it to make a good home:

1.

2.

3.

Step 4: Read All about Grasses

The presence of Bay grasses can tell us a lot about the health of the surrounding area. The Bay grasses, also known as submerged aquatic vegetation (SAV), provide several benefits for the Bay, including providing habitat for Bay animals, providing oxygen and reducing turbidity in the water column, and reducing erosion along the Bay's shorelines.

Underwater Bay grasses are plant communities that provide habitat vital to the health of the Bay itself, as well as to the many animals that live in the Bay. A habitat is any place where an organism makes its home. All habitats have the essential elements of food, shelter, water, and cover.

Many Bay organisms, such as the blue crab, juvenile fishes, and seahorses, use the grass beds as critical habitat for different life stages. The tall blades of the grasses help Bay critters hide from predators. They are even a great place to find a mate.

There are more than a dozen varieties of underwater grasses growing in the shallow regions of the Chesapeake Bay and its tributaries. These Bay grasses are just like the plants we see on land. They require sunlight for photosynthesis and a suitable place to grow. Bay grasses use photosynthesis to transfer energy from the sun into energy they can use. This energy is then transferred to organisms that eat the Bay grasses, starting the flow of energy in the Bay's food chain.

Bay grasses also help humans. Strong waves can crash into our shorelines and cause erosion or land loss. This is especially true during intense storms. Bay grasses in the shallow waters near shorelines offer some protection by slowing down the wave energy and preventing it from causing damage. Imagine this: If you're wearing just socks on a wooden floor, you can slide around easily. But if you hit carpet, you come to a stop. The grass beds act just like the carpet!

Bay grasses also improve water clarity. They filter excessive nutrients out of the water. Their roots hold extra sediment in place, keeping the water clear. And they produce lots of oxygen for Bay organisms to breathe. Scientists can tell which areas of the Bay are healthy and getting the right amount of nutrients and sunlight based on the presence of Bay grasses. If grasses are missing in areas that are suitable for their growth or where they have historically been observed, it may indicate that something else in the environment isn't quite right.

Bay grasses are a great example of how one habitat can provide many benefits to an entire ecosystem.

Step 5: Imagine a Healthy Underwater Habitat

Based on the reading, imagine what a healthy underwater habitat in the Bay might look like and draw it below. Be sure to include and label elements that are essential to making a good habitat. This list might be similar to things you like about your own home or neighborhood!

Step 6: Explore your Backyard or Neighborhood

Go for a walk around your neighborhood and identify different examples of habitats. You can think very specifically: A flower bed could be a habitat. So could a puddle or the edge of a forest. Think about the essential elements that are needed for it to be a habitat, such as food, water, space, and shelter.

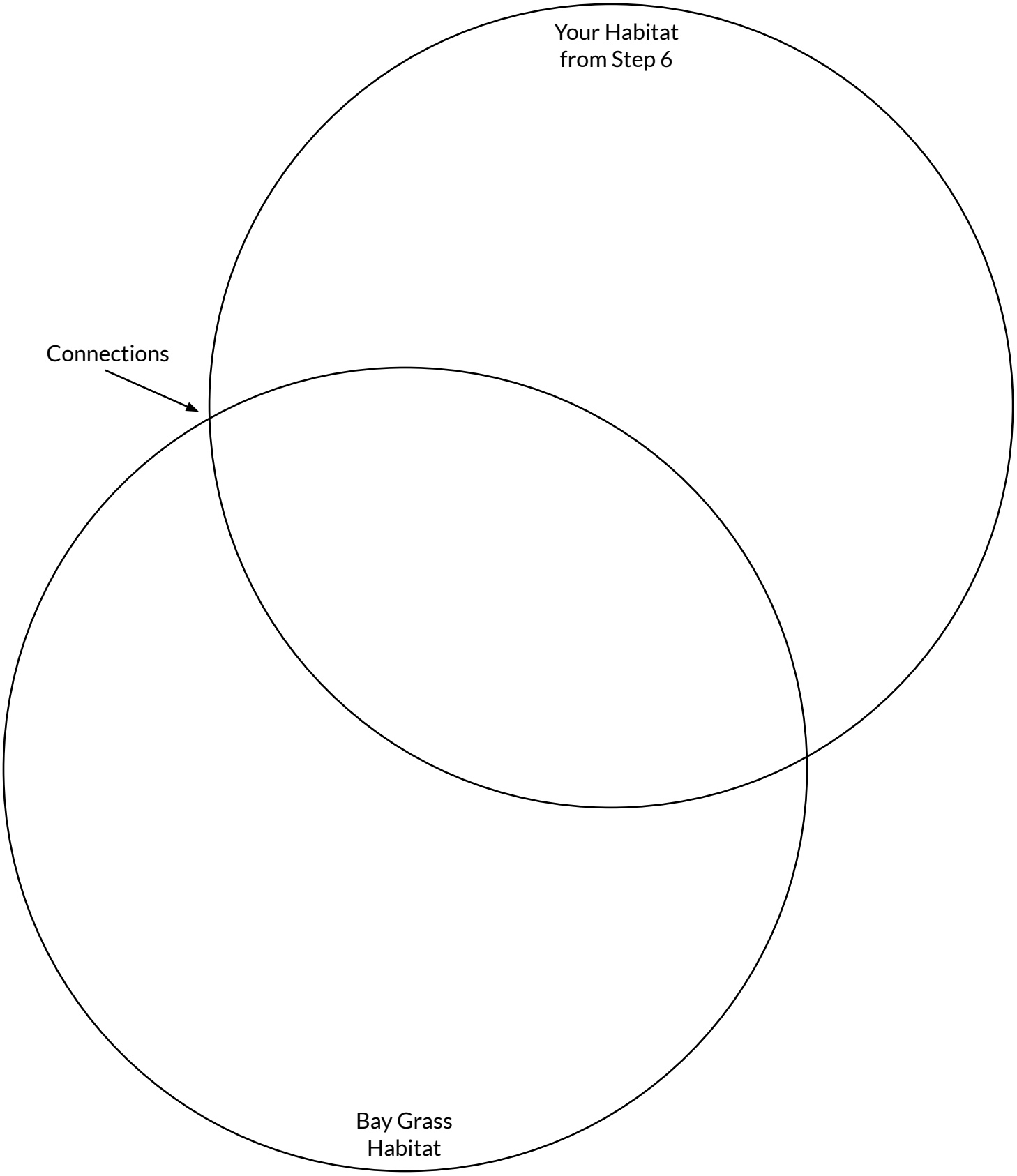
Write down which essential elements that habitat provides for the organisms that live there. Does it provide all the elements that were on your list? Does the habitat provide anything that you had not thought of or that surprised you? Note: There may be many more examples of habitats than you have space to list in this chart. Please pick the two you find most interesting.

Neighborhood Habitats	Describe who lives in the habitat and describe the essential elements of that habitat that you observe.	Name an interesting observation about your habitat or something about it that surprised you.
Habitat #1		
Habitat #2		

Step 7: Make Connections

Bay grasses are an underwater habitat. Can you make any connections between the habitats you observed in Step 6 and Bay grasses? What connections can you make?

Select just one of the habitats you observed in Step 6 and compare it to the habitat of Bay grasses using the Venn diagram below.



Step 8: Extend

Based on your understanding of what makes a good habitat, describe how the Bay grass habitat might help save the Bay. Imagine what the Chesapeake Bay might look like without the Bay grass habitat. What would be different?

Write a letter to a student in a different country explaining the importance of Bay grasses.

DIVE DEEPER:

❑ **CBF Grasses Fact Sheet**
CBF Document Library

❑ **Interactive Map**
Chesapeake Progess 2010-2019

❑ **How You Can Help**
cbf.org

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