

Cross-Curricular Lesson: Chesapeake Bay Crabs

Legacy SeaPerch Resource

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Grade Level: 5th – 9th grade

Length of Lesson: Two-three 45-minute class periods

Goals:

- Learn about the ecology of the Chesapeake Bay
- Learn about the Blue Crab, *Callinectes sapidus*
- Discuss the importance of an organism on an ecosystem
- Investigate the use of responsibly-sourced resources

National Science Standards:

- LS1.B: Growth and Development of Organisms
- LS2.A: Interdependent Relationships in Ecosystems
- LS2.B: Cycles of Matter and Energy Transfer in Ecosystems
- LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- LS2.D: Social Interaction and Group Behavior
- ESS3.A: Natural Resources
- ESS3.C: Human Impacts on Earth Systems
- ESS3.D: Global Climate Change
- ETS1.B: Developing Possible Solutions

Materials:

- Computer access (1 per student)
- [Photograph C1](#) (see attached documents)
- [Crab Webquest](#) (see attached documents)

Background:

In the Chesapeake Bay, one little species of crab runs the show. The famous Blue Crab (*Callinectes sapidus*) is found in abundance in the Chesapeake Bay, and features every year in giant crab harvests which are then sold around the world. Students will discover the importance of this crab in its ecosystem, discuss its growth and development, and learn about and discuss responsible techniques for harvesting organisms.

Lesson: LAUNCH

1. Show students [Photograph C1](#), the Blue Crab. Ask students if they know what species of crab this is or where it lives. Introduce, if no students bring it up on their own, the Chesapeake Bay (in Maryland).

2. Discuss the fact that the Chesapeake Bay is an extremely varied ecosystem, with many organisms that make their home there – including humans. Ask students to discuss how humans can affect an ecosystem both positively and negatively (you may want to make dual lists on the board).

Lesson: INVESTIGATE

Give students the [Crab WebQuest](#) . Allow them approximately 30-45 minutes to search for the answers to the WebQuest on the internet. If necessary, first discuss how to find reliable internet resources.

Lesson: PRACTICE

1. Once the students have completed the WebQuest, discuss what they have found, especially focusing on the importance of blue crabs in their native habitat, and the threats facing the ecosystem (both human-created and otherwise).
2. Balancing humans' need for resources with the need to protect key species in the environment, is a delicate and difficult task. Tell students that their job is to create a fishing plan for the blue crab that will satisfy both the human and crab populations!
3. In groups of 2-3, students should brainstorm and create their fishing plan. They should take several things into account:
 - a. How many crabs can be fished each year?
 - b. What fishing methods are the least intrusive? Most environmentally friendly?
 - c. How will we monitor the crab population?
4. Discuss pros and cons of each group's fishing plan. Discuss the necessity to find solutions that sustainably benefit humans and the environment.

Photograph C1



Image Credit: The Children's Museum of Indianapolis

A Crabby WebQuest



Crabs are great scavengers! Help Benny the Blue Crab as he goes on an Internet scavenger hunt to find answers about how his species lives!

1. The Chesapeake Bay is a huge estuary. Describe what an estuary is:
2. The Bay is an example of an ecosystem. What, exactly, is an ecosystem?
3. The Chesapeake Bay is also an important watershed. What is a watershed, and why is it so important?
4. About how many species of plants and animals can you find in the Chesapeake Bay?
5. The blue crab is also called the Atlantic blue crab or the Chesapeake blue crab. What is its scientific name? (*Hint: a scientific name contains two parts, called the "genus" and the "species."*)
6. What part of the crab is actually blue? Where does that blue color come from?
7. How are the crabs important to humans? How are they important to other species in the Chesapeake Bay area?
8. What threats face the blue crab? How can humans help protect the blue crab and other species in the Chesapeake Bay?