Food Chains in the Chesapeake Bay

SLIDE NAVIGATION

1. Question & Research Task

All living things need energy to grow, develop and survive. For these life cycles to take place, there are a series of energy transformations that occur between the biotic and abiotic factors in an ecosystem. What organisms are considered producers, consumers, or decomposers in an ecosystem? What is the energy relationship between producers, consumers, and decomposers?

Diamond Terrapin

From US Fish and Wildlife Service

In this Slam Dunk, you will conduct brief, focused research to respond to the inquiry question:

How are the organisms of the Chesapeake Bay ecosystem interdependent upon each other and their environment?

2. Information Sources

Review the information sources linked here to complete the Student Activity on Slide 3.

- Read Another Link in the Food Chain
- View Producer, Consumers, and Decomposers
- View Food Chains and Food Webs
- View Food Chains Scholastic
- Read Chesapeake Bay Food Web
- View The Secret Ingredient in our Food Chain

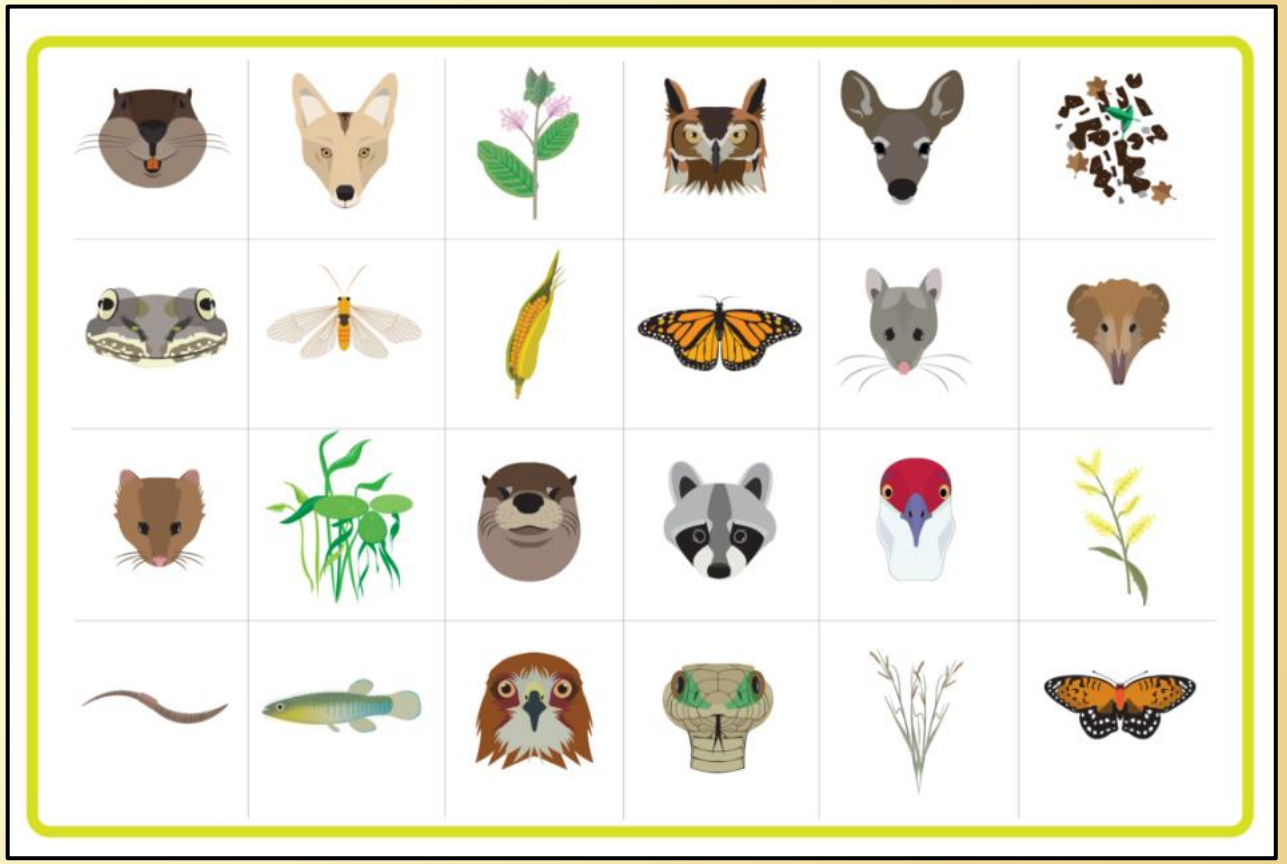
A great blue heron takes flight on the Anacostia River in Washington D.C. *Image from Will Parson/Chesapeake Bay Program*

How do the biotic and abiotic factors interact in this fragile ecosystem?

3. Student Activities

A. Complete Food Chains Activity A, assigned by your teacher, to review consumer, producer, and decomposer.

B. Use this interactive to build food chains and food webs. Watch the videos at follow each chain/web.



4. Assessment Activity

How are the organisms of the Chesapeake Bay ecosystem interdependent upon each other and their environment?

Apply your new learning regarding the interdependence of organisms in the Chesapeake Bay ecosystem by completing the assessment activity assigned by your teacher.

How are osprey, the sun, herring, zooplankton, bass, and algae interdependent?

Image from Student Assessment

5. Enrichment Activities

Real World Applications:

What would be the impact on the population of rock fish if the submerged aquatic vegetation (SAV) population decreased? Why?

Photographer: Steven Johnson via Wikimedia Commons

- Discovery Education: Food Webs
- World Book Student: Wetlands
- Kids InfoBits: Chesapeake Bay
- World Book Student: Food Chains

Widgeon Grass. USFWS photo

6. Teacher Resources

SLIDE NAVIGATION

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Learning Standards Alignment

Content Learning Standards

MS-LS2-3.Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

Common Core State Standards for English Language Arts & Literacy

Reading: 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Writing: 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

AASL Standards Framework for Learners Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.

Think: Learners display curiosity and initiative by:

I.A.2 Recalling prior and background knowledge as context for new meaning.

Create: Learners engage with new knowledge by following a process that includes:

I.B.1 Using evidence to investigate questions. I.B.3 Generating products that illustrate learning.

Share: Learners adapt, communicate, and exchange learning products with others in a cycle that includes:

I.C.1 Interacting with content presented by others.

Grow: Learners participate in an ongoing inquiry-based process by:

I.D.2 Engaging in sustained inquiry.

P21 Framework: 21st Century Student Outcomes

3. Information, Media & Technology Skills: Information Literacy: Access information efficiently and effectively; Use information accurately and creatively for the issue or problem at hand.

ICT Literacy: Use technology as a tool to research, organize, evaluate and communicate information.

Middle School Science

Objective: Students will be conduct brief, focused research in order to explain how the organisms of the Chesapeake Bay ecosystem interdependent upon each other and their environment.

Time Frame: Approximately 2 hours

Differentiation strategies for this lesson:

- Have students use learning supports provided in BCPS Digital Content found in the Apps Portal. Refer to Digital Content Snapshot/Support pages as needed.

Notes to the teacher:

- Collaborate with your school library media specialist to plan and implement this lesson.
- **The Student Activity Food Chains Activity A on Slide 3, and the Food Chain Assessment on Slide 4 are Google Drive assignments that can be assigned to students using the Schoology Assignment App**
- Provide students with login information as needed to authenticate BCPS Digital Content. Login information is available on the **BCPS Digital Content** page found via the Apps Portal