Human Activity & Watersheds

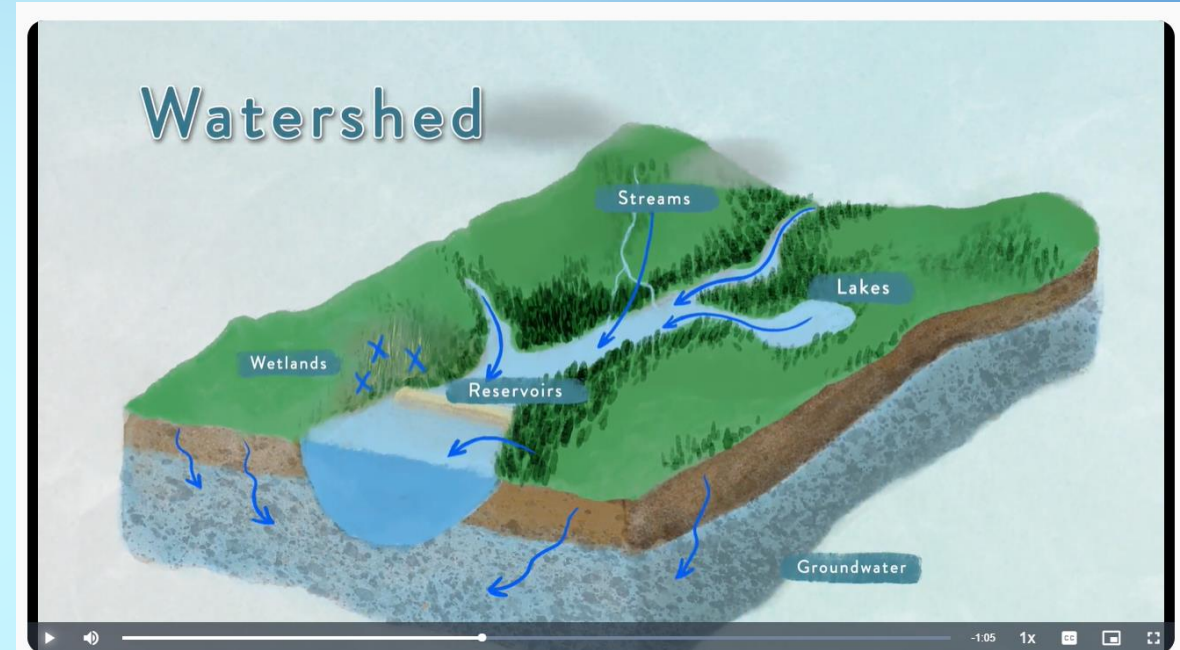## 1. Question & Research Task

A watershed is an area of land that drains to a particular river, lake, bay or other body of water. Watersheds are sometimes called "basins" or "drainage basins."

We all live in a watershed. Some watersheds, like that of your local stream or creek, are small. Others, like the Chesapeake Bay watershed, are very large.

Human activity can affect the quality of the water that drains into the bodies of water around them.

Select the image above to watch a Discovery Education video called Home Planet: Watersheds. *Image taken from Discovery Education.*

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

How do human activities in your neighborhood impact the water quality of the Chesapeake Bay, the watershed in which you live?

2. Information Sources

Choose several of the information sources linked below to complete the Student Activity on Slide 3.

- **Watershed**: discover the Chesapeake Bay watershed, from the Chesapeake Bay Program.

- **The Chesapeake Bay Watershed**: learn about the bay watershed, from the Chesapeake Bay Foundation.

- **The Importance of Watersheds**: watersheds in your community, from the Nature Conservancy

- **Five ways you might be hurting the Chesapeake Bay - without even knowing it**: a web article from the Chesapeake Bay Program

- **Polluted Runoff**: how polluted runoff affects the bay, from the Chesapeake Bay Program.

- **Water's Way: Thinking Like A Watershed**: a video that explore the environmental impacts on the Bay

Select the image above to view an infographic about conservation progress in the Chesapeake Bay.

Image taken from the Natural Resources Conservation Service.

3. Student Activity

Think about how human activity in your community can affect the quality of the water in your watershed.

Use this organizer or create an organizer that describes the effects that human activities may have on the quality of water in your watershed community (*Chesapeake Bay*).

- **What is the human activity?**
- **How does it affect the Chesapeake Bay?**
- **Include two suggestions to fix each problem, both in the short term and long term.**

Freshly Caught Blue Crabs.
Image from Discovery Education, through subscription.

Organizer ideas: Cornell notes, three column chart (table), sequence chain OR digital tools such as Google Docs/Slides, Jamboard, or another tool suggested by your teacher.

4. Assessment Activity

Think about what you've learned concerning watersheds. Pick ONE human action that you think may have the strongest impact on the quality of water in your watershed.

You may choose ONE of these options:

1) Write a brief constructed, informative response with an accompanying PSA poster to present your response. Your poster could be digital or made using poster paper and drawing materials.
2) Create a short video PSA explaining your choice.
- You could record the video and edit it on your device/smartphone.
- Use a recording video tool such Voice Thread found in the Apps Portal or another tool suggested by your teacher.

In your response, be sure to describe:
- The human action
- The effect of the action on the watershed
- Two suggestions to fix the problem, one that might have short-term effects and the other with expected long-term effects.

Storm water runoff puts pollutants in the waterways.
This Photo by Unknown Author is licensed under CC BY-SA

5. Enrichment Activities

Mr. Trash Wheel collects floating litter in the Inner Harbor in Baltimore on June 21, 2018.
Photo by Kaitlyn Dolin/Chesapeake Bay Program

The Inner Harbor Water Wheel, or "Mr. Trash Wheel" to locals, combines old and new technology to harness the power of water and sunlight to collect litter and debris flowing down the Jones Falls River.

Can you think of a simple trash collecting or pollution reducing idea that could help your neighborhood? If you could design a simple machine that could assist with pollution reduction in your neighborhood, what would it look like? How would it work?

Create a design for a pollution fighting simple machine. You can use drawing materials to create a 2D design, create a 3D sculptural design, or create a digital design. Write a BCR to accompany your design to explain what your machine does and how it works.

6. Teacher Resources
Learning Standards Alignment

Content Learning Standards

MS-ESS3-4.

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

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.

Grade 8 Science

- Objective: Students will be conduct brief, focused research in order to describe how human activities in your neighborhood impact the water quality of the Chesapeake Bay, the watershed in which you live.

Time Frame: Two or three 45-minute class periods

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.
- 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
- Example of an organizer: **Human Actions Organizer** from Slide 3.