

Standards Met for American Shad Activities by State, District

Lesson	Virginia SOLs	Washington D.C.
Food Web Activity	6.7,6.9,LS.4,LS.7, LS.7,LS.8,LS.9,LS.11 LS.12	(4 th) 4.5, 4.7; (5 th) 5.9; (7 th) 7.8
Fish Passage Activity	6.7,6.9 ES.1,ES.3,ES.9	(6 th) 6.2, 6.6
Wishes of Fishes Art Activity		
Non fiction reading and Journaling Activity		(4 th) 4.7; (5 th) 5.9; (6 th) 6.6

Maryland Voluntary State Curriculum Outcomes For Middle School Covered in the Shad Activities, Food Web Activity and Fish Passage Activity:

Life Science

Grade 6

Evolution

1. Explain that in any particular environment , the growth and survival of organisms and species depends on physical conditions.
2. Describe ways in which changes in environmental conditions can affect the survival of individual organisms and entire species.

Ecology:

1. Give reasons supporting the fact that the number of organisms an environment can support depends on the physical conditions and resources available.
2. Explain that population increase or decrease is relative to the availability or resources and conditions of the environment.
3. Identify and describe factors that could limit populations within any environment (depletion of resources) .

Grade 8

Evolution:

1. Recognize and describe that gradual (climatic) or sudden (flood, fires) changes in environmental conditions affect the survival of organisms and populations.

Environmental Science

Grade 6

Natural Resources and Human Needs:

1. Identify and describe natural resources as land, fossil fuels, forests, water, wind, minerals and wildlife
2. Identify and describe problems associated with obtaining, using and distributing natural resources.

3. Identify possible solutions to problems associated with obtaining, using and distributing natural resources

Environmental Issues:

1. Recognize and explain that human - caused changes have consequences for Maryland's environment as well as for other places and future times

Grade 7

Natural Resources and Human Needs:

1. Based on data identify and describe the positive and negative impacts of an increasing human population on the use of natural resources.
2. Recognize and describe that environmental changes can have local, regional and global consequences.

Grade 8

Environmental Issues

1. Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.
2. Based on data from research identify and describe how natural processes change the environment (climate change, watershed changes).
3. Identify and describe how human activities produce changes in natural processes (climate change, loss of habitat).

General Reading Process

Grades 6-8

Vocabulary

1. Develop and apply vocabulary through exposure to a variety of text
2. Collect new words and discuss word meanings encountered in text
3. Develop a conceptual understanding of new words in specialized vocabulary
4. Understand, acquire and develop new vocabulary

Comprehension of Informational Text

1. Develop comprehension skills by reading a variety of selected texts to gain knowledge and information including but not limited to science investigations, journals and functional documents (maps, primary source materials)
2. Identify and use text features to facilitate understanding of informational texts including but not limited to illustrations, maps, graphs etc
3. Develop knowledge of organizational structures of informational text to understand what is read including but not limited to sequence, main idea development and vocabulary usage

Composition

1. Compose texts using prewriting and drafting strategies including but not limited to graphic organizers, journal writing, webbing, etc.
2. Plan and organize ideas for writing, but using appropriate organizational structure.
3. writing a persuasive essay

Geography

1. Using geographic tools to locate and describe physical places (map reading).
2. Using maps to compare geographic locations of places and regions.
3. Identifying water forms like bays and rivers.

Geographical Characteristics of Places and Regions

1. Explain how physical characteristics of a place or region influenced human activities

Economics

Scarcity and Economic Decisions

1. Explain that people made choices because of resources relative to economic wants and needs
2. Identify tradeoffs made in economic decisions by producers and consumers
3. Human impact on the environment to meet economic needs

Some other general concepts that were covered in the Shad activities:

1. migration
2. life cycle of shad
3. ecosystem of the Bay

Maryland VSC Outcomes for Grades 4-5

	Grade Level	Environmental Science Outcomes	Life Science Outcomes	Reading/Language Arts Outcomes	Social Studies Outcomes
Students will understand the complexity and connectivity within an estuarine ecosystem by learning the story of the American Shad, creating a food web, and identifying specific reasons for the species decline as well as restoration practices that can help return the species to a stable population	Grades 4 /5 Vocabulary Estuary Ecosystem Food chain Food web Restoration Organisms Producer Consumer Environment "shad fry" Hatchery Spawning	Recognize and explain how renewable and non-renewable natural resources are used by humans in Maryland to meet basic needs Describe how humans use renewable natural resources such as plants and animals. Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences and tradeoffs. Explain how human activities may have positive consequences on the environment like restoration projects	Explain the idea that in any particular environment, some kind of animals survive well, some less well and some not at all Research the kind of environment needed for the American shad Recognize that some source of energy is needed for all organisms to grow and survive Explain that changes in an organism's habitat are sometimes beneficial to it and sometimes harmful. Explain the importance of food chains and food webs And the relationship between producers and consumers(roles within the food chain)	Read grade level text with high accuracy and appropriate pacing intonation and expression. Develop and apply vocabulary through exposure to a variety of texts. Acquire new vocabulary through listening and discussing a variety of informational texts Develop and apply comprehension skills through exposure to a variety of texts Use graphic organizers to record important ideas and information	Identify and locate natural/physical features like bays, estuaries, rivers. Etc Explain why and how people adapt to and modify the natural environment and the impact of those modifications.