

# ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

## Standard 8.0: SUSTAINABILITY

The student will make decisions that demonstrate understanding of natural communities and the ecological, economic, political, and social systems of human communities, and examine how their personal and collective actions affect the sustainability of these interrelated systems.

A. INTERGENERATIONAL RESPONSIBILITY				
Indicator 1. Understand and apply the basic concept of sustainability to natural and human communities.				
PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>Describe why and how people protect the environment SS 3(1)D.1.b</li> <li>Describe how and why people protect or fail to protect the environment SS 3(2)D.1.b</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Describe why and how people make decisions about protecting the environment SS 3(3)D.1.b</li> <li>Describe how land use and urban growth are influenced by governmental decisions SS 3(4)D.1.d</li> <li><b>Recognize and describe that people in Maryland depend on, change, and are affected by the environment.</b> SCI 6(4)B1a</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> <li><b>Recognize and describe that consequences may occur when Earth's natural resources are used.</b> SCI 6(5)B2a-c</li> </ul>	<ul style="list-style-type: none"> <li>Analyze how people in early world history perceived and reacted to environmental concerns, such as flooding, drought, and depletion of natural resources and evaluate the consequences of those actions SS 3(6)D.1.b</li> <li>Explain how land use and environmental issues such as burning the rain forest and environmental preservation are addressed by government policy SS 3(7)D.1.d</li> <li>Identify and explain land use issues that illustrate the conflict between economic growth and using the environment SS 3(8)D.1.c</li> <li><b>Recognize and compare how different parts of the world have varying amounts and types of natural resources and how the use of those resources impacts environmental quality.</b> SCI 6(6)A1a-e</li> <li><b>Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times.</b> SCI 6(6)B1a-c</li> <li><b>Recognize and explain the impact of a changing human population on the use of</b></li> </ul>	<ul style="list-style-type: none"> <li>Analyze the role of the state executive branch in addressing land use and environmental issues, such as Smart Growth, deforestation, urban sprawl, pollution, natural disasters, water resources, wetland preservation and critical areas SS 3(G)D.1.c</li> <li>Evaluate the way national, state, and local governments develop policy to address land use and environmental issues, such as urban sprawl, Smart Growth and commercial use of public land SS 3(G)D.1.e</li> <li>The student will conclude that populations grow or decline due to a variety of factors. SCI CLG 6.2.3</li> <li>The student will evaluate the interrelationship between humans and air quality. SCI CLG 6.3.1</li> <li>The student will evaluate the interrelationship between humans and water quality and quantity. SCI CLG 6.3.2</li> <li>The student will evaluate the interrelationship between humans and land resources. SCI CLG 6.3.3</li> <li>The student will evaluate the interrelationship between</li> </ul>	<p><b>English Language Arts</b> RI.K.3,8,9,10 RI.1.3,8,9,10 RI.2.1,3,8,9,10 RI.3.1,2,3,8,9,10 RI.4.1,2,3,5,7,8,9,10 RI.5.1,2,3,5,7,8,9,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8 1,5,6,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12 1,5,6,7,8,9,10 <i>RI.11-12.5</i> W.9-12.1,2,7,8,9</p> <p><b>Career &amp; Technology Education</b> BI(IEHP)1-6</p>

Science: PK-8: 6(5)B2a-c = Standard,(Grade),Topic, Indicator, Objectives  
CLG: 1.1.1 = Goal, Expectation, Indicator  
Math: SMP3 = Standards for Mathematical Practice, Standard  
3.NBT = Grade, Content Domain, Standard  
CTE: GTT(3.1)2-3 = Course Lesson Concepts

Social Studies: 1(PK-2)A1a,b = Standard, (Grade), Topic, Indicator, Objectives  
Health: 3(5)D1a-c = Standard, (Grade), Topic, Indicator, Objectives  
English Language Arts: W.1.8 = Strand, Grade, Standard  
Fine Arts: PK-8: Standard, (Grade), Indicator, Objectives  
HS: Subject, Outcome, Expectation, Indicator

## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

		<p><b>natural resources and on environmental quality.</b> SCI 6(7)A1a,b</p> <ul style="list-style-type: none"> <li>• <b>Recognize and describe that environmental changes can have local, regional, and global consequences.</b> SCI 6(7)B1a,b</li> <li>• <b>Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.</b> SCI 6(8)B1a,b</li> </ul>	<p>humans and biological resources. SCI CLG 6.3.4</p> <ul style="list-style-type: none"> <li>• The student will evaluate the interrelationship between humans and energy resources. SCI CLG 6.3.5</li> </ul>	
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## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

### B. INTERCONNECTEDNESS OF SYSTEMS

**Indicator 1. Recognize the concept of sustainability as a dynamic condition characterized by the interdependency among ecological, economic, and social systems and how these interconnected systems affect individual and societal well-being.**

PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>Identify the reasons for classroom and school rules, such as maintaining order and keeping the community safe SS 1(K)A.1.a</li> <li>Explain how rules promote fairness, responsibility, and privacy in the school and community SS 1(1)A.1.a</li> <li>Explain how school and community rules promote orderliness, fairness, responsibility, privacy, and safety SS 1(2)A.1.a</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Identify local government leaders, such as the mayor, county council members or commissioners, and county executive and explain their role in protecting citizens and maintaining order SS 1(3)A.1.a</li> <li><b>Recognize and describe that people in Maryland depend on, change, and are affected by the environment.</b> SCI 6(4)B1a</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> <li><b>Recognize and describe that consequences may occur when Earth's natural resources are used.</b> SCI 6(5)B2a-c</li> </ul>	<ul style="list-style-type: none"> <li>Analyze the effects that different world issues have on shaping international responses, such as rainforest conservation, pollution, climate change, and energy sources (oil drilling, coal, nuclear) SS 1(7)A.3.b</li> <li>Explain how and why towns and cities grew from early human settlements, including the need for security and government SS 5(6)A.1.b</li> <li>Describe the characteristics of a civilization, such as a social hierarchy, government, writing system, specialization in the area of trade and the establishment of cities SS 5(6)B.1.a</li> <li><b>Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times.</b> SCI 6(6)B1a-c</li> <li><b>Recognize and describe that environmental changes can have local, regional, and global consequences.</b> SCI 6(7)B1a,b</li> <li><b>Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.</b> SCI 6(8)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate the way national, state, and local governments develop policy to address land use and environmental issues, such as urban sprawl, Smart Growth and commercial use of public land SS 3(G)D.1.e</li> <li>The student will analyze the relationships between biotic diversity and abiotic factors in environments and the resulting influence on ecosystems. SCI CLG 3.5.1</li> <li>The student will analyze the interrelationships and interdependencies among different organisms and explain how these relationships contribute to the stability of the ecosystem. SCI CLG 3.5.2</li> <li>The student will illustrate how all organisms are part of and depend on two major global food webs that are positively or negatively influenced by human activity and technology. SCI CLG 3.5.4</li> <li>The student will explain why interrelationships &amp; interdependencies of organisms contribute to the dynamics of ecosystems. SCI CLG 6.2.2</li> <li>The student will conclude that populations grow or decline due to a variety of factors. SIC CLG 6.2.3</li> </ul>	<p><b>English Language Arts</b>                      RI.K.3,8,9,10                      RI.1.3,8,9,10                      RI.2.1,3,8,9,10                      RI.3.1,2,3,8,9,10                      RI.4.1,2,3,5,7,8,9,10                      RI.5.1,2,3,5,7,8,9,10                      W.3.2,7                      W.4.2,7,9                      W.5.2,7,9                      RST.6-8 1,5,6,7,8,9,10                      W.6-8.1,2,7,8,9                      RST.9-12 1,5,6,7,8,9,10                      RI.11-12.5                      W.9-12.1,2,7,8,9</p> <p><b>Career &amp; Technology Education</b>                      BI(IEHP)1-6</p>

## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

			<ul style="list-style-type: none"> <li>• The student will evaluate the interrelationship between humans and biological resources. SCI CLG 6.3.4</li> </ul>	
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Science: PK-8: 6(5)B2a-c = Standard,(Grade),Topic, Indicator, Objectives  
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## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

### C. INFLUENCE OF ECONOMIC SYSTEMS ON SUSTAINABILITY

#### Indicator 1. Investigate and make decisions that demonstrate understanding of how the dynamics of economic systems affect the sustainability of ecological and social systems.

PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>Identify ways that people change their environment to meet their needs, such as planting crops or cutting forests SS 3(K)D.1.a</li> <li>Describe how people in a community modify their environment to meet changing needs for shelter, such as clearing land for a housing community SS 3(1)D.1.a</li> <li>Scarcity and Economic Decision making SS 4(Pk-2)A</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Describe how people in a community modify their environment to meet changing needs for transportation, shelter, and making a living SS 3(3)D.1.a</li> <li>Compare ways Native American societies in Maryland used the natural environment for food, clothing, and shelter SS 3(4)D.1.a</li> <li>Compare ways Native American societies used the natural environment for food, clothing, and shelter SS 3(5)D.1.a</li> <li>Scarcity and Economic Decision making SS 4(3-5)A</li> <li><b>Recognize and describe that people in Maryland depend on, change, and are affected by the environment.</b> SCI 6(4)B1a</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Describe ways people modified their environment to meet their needs, such as cultivating lands, building roads, dams, and aqueducts SS 3(6)D.1.a</li> <li>Identify the tradeoffs of using resources to pursue economic opportunities v. preserving the environment, such as water use, the burning of fossil fuels, deforestation, and strip mining SS 3(7)D.1.a</li> <li>Analyze the tradeoffs of using resources to pursue economic opportunities v. preserving the environment, such as westward movement SS 3(8)D.1.a</li> <li>Scarcity and Economic Decision making SS 4(6-8)A</li> <li>Evaluate the types of economic systems in countries throughout the contemporary world SS 4(7)B.1.a</li> <li>Examine the impact of regulatory agencies in different countries, such as air traffic management and environmental protection SS 4(7)B.2.d</li> <li>Explain how and why towns and cities grew from early human settlements, including the need for security and government SS 5(6)A.1.b</li> <li><b>Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times.</b></li> </ul>	<ul style="list-style-type: none"> <li>The student will evaluate the role of government in addressing land use and other environmental issues 3(G)D.1</li> <li>The student will evaluate how governments affect the answers to the basic economic questions of what to produce, how to produce, and for whom to produce 4(G)A.1</li> <li>The student will investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of populations. SCI CLG 3.5.3</li> <li>The student will analyze the consequences and/or trade-offs between technological changes and their effect on the individual, society, and the environment. They may select topics such as bioethics, genetic engineering, endangered species, or food supply. SCI CLG 3.6.1</li> <li>The student will investigate a biological issue and be able to defend their position on topics such as animal rights, drug and alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life. SCI CLG 3.6.2</li> <li>The student will evaluate the interrelationship between</li> </ul>	<p><b>English Language Arts</b>            RI.K.3,8,9,10            RI.1.3,8,9,10            RI.2.1,3,8,9,10            RI.3.1,2,3,8,9,10            RI.4.1,2,3,5,7,8,9,10            RI.5.1,2,3,5,7,8,9,10            W.3.2,7            W.4.2,7,9            W.5.2,7,9            RST.6-8 1,5,6,7,8,9,10            W.6-8.1,2,7,8,9            RST.9-12 1,5,6,7,8,9,10  <i>RI.11-12.5</i>            W.9-12.1,2,7,8,9</p> <p><b>Mathematics</b>            SMP1-8</p>

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

		<p>SCI 6(6)B1a-c</p> <ul style="list-style-type: none"> <li>Recognize and describe that environmental changes can have local, regional, and global consequences.</li> </ul> <p>SCI 6(7)B1a,b</p> <ul style="list-style-type: none"> <li>Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.</li> </ul> <p>SCI 6(8)B1a,b</p>	<p>humans and biological resources.</p> <p>SCI CLG 6.3.4</p> <ul style="list-style-type: none"> <li>The student will evaluate the interrelationship between humans and energy resources.</li> </ul> <p>SCI CLG 6.3.5</p>	
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**D. INFLUENCE OF SOCIAL AND CULTURAL SYSTEMS ON SUSTAINABILITY**

**Indicator 1. Investigate and make decisions that demonstrate understanding of how the dynamics of social and cultural systems affect the sustainability of ecological and economic systems.**

PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>Identify the importance of rules SS 1(Pk-K)1.A.1</li> <li>Explain the importance of rules SS 1(1)1.A.1</li> <li>Explain how rules and laws are made and necessary to maintain order and protect citizens SS 1(2)1.A.1</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize that caring about the environment is an important human activity.</b> SCI 6(1)B1a,b</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Explain the role of individuals and groups in creating rules and laws to maintain order, protect citizens, and provide services SS 1(3)A.1</li> <li>Analyze the role of Maryland government regarding public policy and issues SS 1(4)A.3</li> <li><b>Recognize and describe that people in Maryland depend on, change, and are affected by the environment.</b> SCI 6(4)B1a</li> <li><b>Recognize and explain how renewable and nonrenewable natural resources are used by humans in Maryland to meet basic needs</b> SCI 6(5)A1a-c</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> <li>Recognize and explain that decisions influencing the use of</li> </ul>	<ul style="list-style-type: none"> <li>Describe the characteristics of a civilization, such as a social hierarchy, government, writing system, specialization in the area of trade and the establishment of cities SS 5(6)B.1.a</li> <li>Compare major cultural, political, and economic achievements of river valley civilizations, such as the Tigris and Euphrates River Valley, the Huang River Valley, and Indus River Valley and the Nile River Valley, including Egypt, Nubia and Kush SS 5(6)B.1.b</li> <li>Evaluate the effectiveness of the various policies of governments in addressing issues, such as health, poverty, crime, security, and environmental concerns SS 1(7)A.3.a</li> <li><b>Recognize and compare how different parts of the world have varying amounts and types of natural resources and how the use of those resources impacts</b></li> </ul>	<ul style="list-style-type: none"> <li>Analyze significant issues in domestic policy and how they reflect the national interest, values, and principles, such as healthcare, high level of security awareness, environmental concerns SS 1(G)A.3.b</li> <li>Evaluate the effect that international, national, and regional interests have on shaping environmental policy, such as logging forested areas, oil drilling, pollution, nuclear power, or alternative energy sources SS 1(G)A.3.e</li> <li>The student will apply the skills, processes and concepts of biology, chemistry, physics, or earth science to societal issues. SCI CLG 1.7.1</li> <li>The student will investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of</li> </ul>	<p><b>English Language Arts</b> RI.K.3,8,9,10 RI.1.3,8,9,10 RI.2.1,3,8,9,10 RI.3.1,2,3,8,9,10 RI.4.1,2,3,5,7,8,9,10 RI.5.1,2,3,5,7,8,9,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8 1,5,6,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12 1,5,6,7,8,9,10 <i>RI.11-12.5</i> W.9-12.1,2,7,8,9</p> <p><b>Mathematics</b> SMP1-8 PK-2MD 3-5MD 6-8SP S-ID S-IC</p> <p><b>Health</b> 3(5)A1a-d 3(5)B1a 3(HS)A1d</p>

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

	<p>natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs SCI 6(5)B2a,b</p>	<p><b>environmental quality.</b> SCI 6(6)A1a-e</p> <ul style="list-style-type: none"> <li>• <b>Recognize and explain that human-caused changes have consequences for Maryland’s environment as well as for other places and future times.</b> SCI 6(6)B1a-c</li> <li>• <b>Recognize and explain the impact of a changing human population on the use of natural resources and on environmental quality.</b> SCI 6(7)A1a,b</li> <li>• <b>Recognize and describe that environmental changes can have local, regional, and global consequences.</b> SCI 6(7)B1a,b</li> <li>• <b>Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.</b> SCI 6(8)B1a,b</li> </ul>	<p>populations. SCI CLG 3.5.3</p> <ul style="list-style-type: none"> <li>• The student will investigate a biological issue and be able to defend their position on topics such as animal rights, drug and alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life. SCI CLG 3.6.2</li> <li>• The student will conclude that populations grow or decline due to a variety of factors. SIC CLG 6.2.3</li> <li>• The student will evaluate the interrelationship between humans and air quality. SCI CLG 6.3.1</li> <li>• The student will evaluate the interrelationship between humans and water quality and quantity. SCI CLG 6.3.2</li> <li>• The student will evaluate the interrelationship between humans and land resources. SCI CLG 6.3.3</li> <li>• The student will evaluate the interrelationship between humans and biological resources. SCI CLG 6.3.4</li> <li>• The student will evaluate the interrelationship between humans and energy resources. SCI CLG 6.3.5</li> </ul>	<p>3(HS)B1b</p>
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**E. LIMITS OF ECOLOGICAL SYSTEMS**

**Indicator 1. Investigate and make decisions that demonstrate understanding of how the dynamics of ecological systems affect the sustainability of social, cultural systems and economic systems.**

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>Recognize that places in the immediate environment have specific physical and human-made features SS 3(Pk)B.1</li> <li>Describe places in the immediate environment using natural/physical and human-made features SS 3(K)B.1</li> <li>Describe places in the environment using geographic characteristics SS 3(1)B.1</li> <li>Describe how geographic characteristics determine choices, such as climate guides, decisions about food, clothing, and shelter SS 3(2)B.1.d</li> <li><b>Recognize that caring about the environment is an important human activity.</b> SCI 6(1)B1a,b</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<ul style="list-style-type: none"> <li>Describe how geographic characteristics of places and regions change over time and influence the way people live and work SS 3(3)B.1.d</li> <li>Describe how geographic characteristics of a place or region change over time and affect the way people live and work SS 3(4)B.1.c</li> <li>Explain how geographic characteristics affect how people live and work, and the population distribution of a place or region SS 3(5)B.1.c</li> <li><b>Recognize and describe that people in Maryland depend on, change, and are affected by the environment.</b> SCI 6(4)B1a <b>Recognize and explain how renewable and nonrenewable natural resources are used by humans in Maryland to meet basic needs</b> SCI 6(5)A1a-c</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs SCI 6(5)B2a,b</li> </ul>	<ul style="list-style-type: none"> <li>Explain how physical characteristics of a place influenced human activities, such as agriculture, transportation, art and architecture and economic activity in the ancient world SS 3(6)B.1.b</li> <li>Explain how physical and human characteristics of a region such as vegetation, climate, minerals, population density and religion, affect its economic growth and they way people make a living SS 3(7)B.1.b</li> <li>Analyze how geographic characteristics influenced the location and development of economic activities, such as farming, lumbering, fur trading, whaling and the rise of the industry in the early national period SS 3(8)B.1.a</li> <li><b>Recognize and compare how different parts of the world have varying amounts and types of natural resources and how the use of those resources impacts environmental quality.</b> SCI 6(6)A1a-e</li> <li><b>Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times.</b> SCI 6(6)B1a-c</li> <li><b>Recognize and explain the impact of a changing human population on the use of natural resources and on environmental quality.</b> SCI 6(7)A1a,b</li> <li><b>Recognize and describe that</b></li> </ul>	<ul style="list-style-type: none"> <li>Analyze the role of the state executive branch in addressing land use and environmental issues, such as Smart Growth, deforestation, urban sprawl, pollution, natural disasters, water resources, wetland preservation and critical areas SS 3(G)D.1.c</li> <li>Evaluate the way national, state, and local governments develop policy to address land use and environmental issues, such as urban sprawl, Smart Growth and commercial use of public land SS 3(G)D.1.e</li> <li>The student will apply the skills, processes and concepts of biology, chemistry, physics, or earth science to societal issues. SCI CLG 1.7.1</li> <li>The student will analyze the relationships between biotic diversity and abiotic factors in environments and the resulting influence on ecosystems. SCI CLG 3.5.1</li> <li>The student will investigate a biological issue and be able to defend their position on topics such as animal rights, drug and alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life. SCI CLG 3.6.2</li> <li>The student will conclude that populations grow or decline due to a variety of factors.</li> </ul>	<p><b>English Language Arts</b> RI.K.3,8,9,10 RI.1.3,8,9,10 RI.2.1,3,8,9,10 RI.3.1,2,3,8,9,10 RI.4.1,2,3,5,7,8,9,10 RI.5.1,2,3,5,7,8,9,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8.1,5,6,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12.1,5,6,7,8,9,10 <i>RI.11-12.5</i> W.9-12.1,2,7,8,9</p> <p><b>Mathematics</b> SMP1-8 PK-2MD 3-5MD 6-8SP S-ID S-IC</p>

Science: PK-8: 6(5)B2a-c = Standard,(Grade),Topic, Indicator, Objectives  
CLG: 1.1.1 = Goal, Expectation, Indicator  
Math: SMP3 = Standards for Mathematical Practice, Standard  
3.NBT = Grade, Content Domain, Standard  
CTE: GTT(3.1)2-3 = Course Lesson Concepts

Social Studies: 1(PK-2)A1a,b = Standard, (Grade), Topic, Indicator, Objectives  
Health: 3(5)D1a-c = Standard, (Grade), Topic, Indicator, Objectives  
English Language Arts: W.1.8 = Strand, Grade, Standard  
Fine Arts: PK-8: Standard, (Grade), Indicator, Objectives  
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ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

		<p><b>environmental changes can have local, regional, and global consequences.</b> SCI 6(7)B1a,b</p> <ul style="list-style-type: none"> <li>• <b>Recognize and explain how human activities can accelerate or magnify many naturally occurring changes.</b> SCI 6(8)B1a,b</li> </ul>	<p>SIC CLG 6.2.3</p> <ul style="list-style-type: none"> <li>• The student will evaluate the interrelationship between humans and energy resources. SCI CLG 6.3.5</li> <li>• Identify an environmental issue and formulate related research questions. SCI CLG 6.4.1</li> <li>• Design and conduct the research. SCI CLG 6.4.2</li> <li>• Interpret the findings to draw conclusions and make recommendations to help resolve the issue. SCI CLG 6.4.3</li> </ul>	
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**F. ACTION COMPONENT**

**Indicator 1. Apply knowledge and skills to investigate and implement personal and collective decisions and actions on an individual, local community, national, and global levels in order to achieve sustainability.**

PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> <li>• Identify ways that people change their environment to meet their needs, such as planning crops or cutting forests SS 3(K)D.1.b</li> <li>• Describe how people in a community modify their environment to meet changing needs for shelter, such as clearing land for a housing community SS 3(1)D.1.a</li> <li>• Describe ways, such as clearing trees and farming land, that people modify their environment and the impact of those modifications SS 3(2)D.1.a</li> <li>• Describe why and how people protect the environment SS 3(1)D.1.b</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how people in a community modify their environment to meet changing needs for transportation, shelter, and making a living SS 3(3)D.1.a</li> <li>• Identify why and how people make decisions about protecting the environment SS 3(3)D.1.b</li> <li>• Identify local government leaders, such as the mayor, county council members or commissioners, and county executive and explain their role in protecting citizens and maintaining order SS 1(3).A.1.a</li> <li>• Explain the effect that regional interests have on shaping government policy in and around Maryland, such as</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze the effects that different world issues have on shaping international responses, such as rainforest conservation, pollution, climate change, and energy sources (oil drilling, coal, nuclear) SS 1(7)A.3.b</li> <li>• Evaluate the way citizens use, monitor and influence the formation and implementation of public policy SS 1(7)B.1.b</li> <li>• Evaluate how various groups provide opportunities for individuals to participate in the political process SS 1(8)B.2.c</li> <li>• <b>Review data from a simple experiment, summarize the data, and construct a logical argument about the cause-</b></li> </ul>	<ul style="list-style-type: none"> <li>• Analyze significant issues in domestic policy and how they reflect the national interest, values, and principles, such as healthcare, high level of security awareness, environmental concerns SS 1(8)A.3.b</li> <li>• The student will analyze the consequences and/or trade-offs between technological changes and their effect on the individual, society, and the environment. They may select topics such as bioethics, genetic engineering, endangered species, or food supply. SCI CLG 3.6.1</li> <li>• The student will investigate a biological issue and be able to defend their position on topics such as animal rights, drug and</li> </ul>	<p><b>English Language Arts</b> RI.K.3,8,9,10 RI.1.3,8,9,10 RI.2.1,3,8,9,10 RI.3.1,2,3,8,9,10 RI.4.1,2,3,5,7,8,9,10 RI.5.1,2,3,5,7,8,9,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8 1,5,6,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12 1,5,6,7,8,9,10 <i>RI.11-12.5</i> W.9-12.1,2,7,8,9</p> <p><b>Mathematics</b> SMP1-8 PK-2MD 3-5MD 6-8SP S-ID</p>

## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

<ul style="list-style-type: none"> <li>Describe why and how people protect or fail to protect the environment SS 3(2)D.1.b</li> <li>Develop reasonable explanations for observations made, investigations completed, and information gained by sharing ideas and listening to others' ideas. SCI (PK-2)B1b</li> <li><b>Recognize that caring about the environment is an important human activity.</b> SCI 6(1)B1a,b</li> <li><b>Recognize and explain how Earth's natural resources from the natural environment are used to meet human needs.</b> SCI 6(2)A1a-e</li> <li><b>Recognize and describe that the activities of individuals or groups of individuals can affect the environment.</b> SCI 6(2)B1a,b</li> </ul>	<p>Chesapeake Bay issues, availability of land for mining, land use SS 1(4)A.3.b</p> <p><b>Develop explanations using knowledge possessed and evidence from observations, reliable print resources, and investigations.</b> SCI 1(3-5)B1a</p> <ul style="list-style-type: none"> <li>Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1a,b</li> </ul>	<p><b>and-effect relationships in the experiment.</b> SCI 1(6-8)B1a-e</p> <ul style="list-style-type: none"> <li><b>Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times.</b> SCI 6(6)B1a-c</li> </ul>	<p>alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life. SCI CLG 3.6.2</p> <ul style="list-style-type: none"> <li>Identify an environmental issue and formulate related research questions. SCI CLG 6.4.1</li> <li>Design and conduct the research. SCI CLG 6.4.2</li> <li>Interpret the findings to draw conclusions and make recommendations to help resolve the issue. SCI CLG 6.4.3 Apply the conclusions to develop and implement an action project. SCI CLG 6.4.4</li> <li>Analyze the effectiveness of the action project in terms of achieving the desired outcomes. SCI CLG 6.4.5</li> </ul>	<p>S-IC</p> <p><b>Career &amp; Technology Education</b> BI(IEHP)1-6</p> <p><b>Health</b> 1(4)C1a,b 3(5)A1a-d 3(5)B1a 1(5)D1a 1(8)C1a-c 3(HS)A1d 3(HS)B1b</p>
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# ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

## KEYS

### English Language Arts

RST: Reading, Science & Technical Subjects

W: Writing

WHST: Writing in History, Science, & Technical Subjects

### CTE

GTT: Gateway To Technology, the middle school program

POE: Principles of Engineering, a foundation course in the high school engineering program

CEA: Civil Engineering and Architecture, a specialty course in the high school engineering program

MI: Medical Interventions, the third course in the biomedical sciences program

BI: Biomedical Innovation, the fourth and capstone course in the biomedical sciences program

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11

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## ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

### Mathematics

#### Standards for Mathematical Practices

- 1: Make sense of problems and persevere in solving them.
- 2: Reason abstractly and quantitatively.
- 3: Construct viable arguments and critique the reasoning of others.
- 4: Model with mathematics.
- 5: Use appropriate tools strategically.
- 6: Attend to precision.
- 7: Look for and make use of structure.
- 8: Look for and express regularity in repeated reasoning.

#### Content Standards

- OA: Operations and Algebraic Thinking (K-5)
- NBT: Number and Operations in Base Ten (PK-5)
- MD: Measurement and Data (PK-5)
- G: Geometry (PK-8)
- CC: Counting and Cardinality (PK-K)
- NF: Number and Operations-Fractions (3-5)
- RP: Ratio and Proportional Relationships (6-7)
- NS: The Number System (6-8)
- EE: Expressions and Equations (6-8)
- SP: Statistics and Probability (6-8)
- F: Functions (8)

#### High School

- N-RN: The Real Number System
- N-Q: Quantities
- N-CN: The Complex Number System
- N-VM: Vector and Matrix Quantities
- A-SSE: Seeing Structure in Expressions
- A-APR: Arithmetic with Polynomials and Rational Expressions
- A-CED: Creating Equations
- A-REI: Reasoning with Equations and Inequalities
- F-IF: Interpreting Functions
- F-BF: Building Functions
- F-LE: Linear, Quadratic and Exponential Models
- F-TF: Trigonometric Functions
- G-MG: Modeling with Geometry
- S-ID: Interpreting Categorical and Quantitative Data
- S-IC: Making Inferences and Justifying Conclusions

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12  
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