

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

Standard 6: Environment and Health

The student will use concepts from science, social studies and health to analyze and interpret both positive and negative impacts of natural events and human activities on human health.

A. NATURAL CHANGES AND HUMAN HEALTH				
1. Identify and describe natural changes in the environment that may affect the health of human populations and individuals.				
PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> Using examples from the immediate environment, describe that objects and materials on Earth's surface can change over time. SCI 2(K)A1 Use examples of observations from places around the school and neighborhood to describe ways Earth materials can change. SCI 2(2)A1 	<ul style="list-style-type: none"> Recognize and explain how physical weathering and erosion cause changes to Earth's surface. SCI 2(4)A2 Cite and describe the processes that cause rapid or slow changes in Earth's surface. SCI 2(5)A2 Explain how rock is formed from combinations of different minerals and that smaller rocks come from the breakage and weathering of bedrock (solid rock underlying soil components) and larger rocks; soil is made partly from weathered rock, partly from plant remains—and also contains many living organisms. SCI 2(5)A3 	<ul style="list-style-type: none"> Recognize and describe the various factors that affect climate. SCI 2(8)E2 Identify and describe the atmospheric and hydrospheric conditions related to weather systems. SCI 2(8)E3 	<ul style="list-style-type: none"> The student will apply the skills, processes and concepts of biology, chemistry, physics, or earth science to societal issues. CLG 1.7.1 The student will explain how global conditions are affected when natural and human-induced change alter the transfer of energy and matter. CLG 2.3.2 The student will explain how the transfer of energy drives the rock cycle. CLG 2.4.2 The student will investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of populations. CLG 3.5.3 	<p>English Language Arts RI.K-2.3,10 RI.3-5.3,7,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8. 4,5,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12 4,5,7,8,9,10 W.9-12 1,2,7,8,9</p> <p>Mathematics SMP1-8 PK-2MD 3-5MD 6-8SP S-ID S-IC</p> <p>Health 7(3)A2a,b 7(3)A3a-c</p> <p>Career & Technology Education 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

B. HUMAN-INDUCED CHANGES AND HUMAN HEALTH				
1. Describe and explain that many changes in the environment designed by humans bring benefits to society as well as cause risks.				
PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> Identify aspects of the environment that are made by humans and those that are not made by humans. SCI 6(K)B1 Recognize that caring about the environment is an important human activity. SCI 6(1)B1 Identify ways the people change their environment to meet their needs, such as planting crops or cutting forests SS 3(K)D.1.b 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 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 	<ul style="list-style-type: none"> Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B1 Recognize and describe that consequences may occur when Earth's natural resources are used. SCI 6(5)B2 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 Describe ways and reasons people in Maryland and the United States modify the natural environment and the consequences of modifications SS 3(4)D.1.b Explain how colonists adapted to and modified their environments and how these modifications sometimes created environmental problems SS 3(5)D.1.c 	<ul style="list-style-type: none"> Recognize and explain that human-caused changes have consequences for Maryland's environment as well as for other places and future times. SCI 6(6)B1 Recognize and describe that environmental changes can have local, regional, and global consequences. SCI 6(7)B1 Recognize and explain how human activities can accelerate or magnify many naturally occurring changes. SCI 6(8)B1 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 Analyze why and how people in contemporary world regions modify their natural environment and the impact of those modifications SS 3(7)D.1 Analyze why and how people in the United States modify their natural environment and the impact of those modifications SS 3(8)D.1 	<ul style="list-style-type: none"> The student will apply the skills, processes and concepts of biology, chemistry, physics, or earth science to societal issues. CLG 1.7.1 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. CLG 3.6.1 The student will evaluate the interrelationship between humans and air quality. CLG 6.3.1 The student will evaluate the interrelationship between humans and water quality and quantity. CLG 6.3.2 The student will evaluate the interrelationship between humans and land resources. CLG 6.3.3 The student will evaluate the interrelationship between humans and biological resources. CLG 6.3.4 The student will evaluate the interrelationship between humans and energy resources. CLG 6.3.5 The student will evaluate the role 	<p>English Language Arts RI.K-2.3,10 RI.3-5.3,7,10 W.3.2,7 W.4.2,7,9 W.5.2,7,9 RST.6-8. 4,5,7,8,9,10 W.6-8.1,2,7,8,9 RST.9-12 4,5,7,8,9,10 W.9-12 1,2,7,8,9</p> <p>Mathematics SMP1-8 PK-2MD 3-5MD 6-8SP S-ID S-IC</p> <p>Health 7(3)A2a,b 7(3)A3a-c</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>of government in addressing land use and other environmental issues SS 3(G)D.1</p> <ul style="list-style-type: none"> Evaluate how principles of economic costs, benefits, and opportunity cost are used to address public policy issues, such as environmental and healthcare concerns SS 4(G)A.1.e 	
<p>C. HAZARDS AND RISK ANALYSIS</p> <p>1. Analyze and explain that human activities, products, processes, technologies and inventions can involve some level of risk to human health.</p>				
PK-2	3-5	6-8	9-12	Supporting Curriculum
<ul style="list-style-type: none"> Identify ways the people change their environment to meet their needs, such as planting crops or cutting forests SS 3(K)D.1.b 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 Describe how and why people protect or fail to protect the environment SS 3(2)D.1.b 	<ul style="list-style-type: none"> Describe why and how people make decisions about protecting the environment SS 3(3)D.1.b Explain how the growth of communities and suburbs have had consequences on the environment, loss of farmland, and pollution SS 3(4)D.1.c Explain how colonists adapted to and modified their environments and how these modifications sometimes created environmental problems SS 3(5)D.1.c 	<ul style="list-style-type: none"> Analyze how people in early world history perceived and reacted to environmental concerns, such as flooding, draught, and depletion of natural resources and evaluate the consequences of those actions SS 3(6)D.1.b Analyze why and how people in contemporary world regions modify their natural environment and the impact of those modifications SS 3(7)D.1 Analyze why and how people in the United States modify their natural environment and the impact of those modifications SS 3(8)D.1 	<ul style="list-style-type: none"> Evaluate how principles of economic costs, benefits, and opportunity cost are used to address public policy issues, such as environmental and healthcare concerns SS 4(G)A.1.e 	<p>English Language Arts 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>Mathematics 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
HS: Subject, Outcome, Expectation, Indicator

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

				<p>Health 7(3)A2a,b 7(3)A3a-c 7(5)C1a-d 7(5)D1a,b 7(6)D1b 7(6)D2a-c 7(8)C1a-e 7(8)D1a,b 7(8)D2a-c 7(HS)A1a-d 7(HS)E1c-f</p> <p>Career & Technology Education 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

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

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

5

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

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

6

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