

ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

Standard 5: Humans and Natural Resources

The student will use concepts from chemistry, physics, biology, and ecology to analyze and interpret both positive and negative impacts of human activities on earth's natural systems and resources.

| A. HUMAN IMPACT ON NATURAL PROCESSES | | | | |
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| Indicator 1. Analyze the effects of human activities on earth's natural processes. | | | | |
| PK-2 | 3-5 | 6-8 | 9-12 | Supporting Curriculum |
| <ul style="list-style-type: none"> Recognize that caring about the environment is an important human activity. SCI 6(1)B1 Recognize and describe that the activities of individuals or groups of individuals can affect the environment. SCI 6(2)B1 Describe how people adapt to and modify their immediate environment SS 3(K)D.1 Explain how people modify, protect, and adapt to their environment SS 3(1-2)D.1 | <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 Explain how people modify, protect, and adapt to their environment SS 3(3)D.1 Describe how people adapt to, modify, and impact the natural environment SS 3(4)D.1 Explain why and how people adapt to and modify the natural environment and the impact of those modifications SS 3(5)D.1 | <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 Analyze why and how people modify their natural environment and the impact of those modifications SS 3(6)D.1 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 investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of populations. SCI CLG 3.5.3 The student will evaluate the role of government in addressing land use and other environmental issues SS 3(G)D.1 | <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 RI.11-12.5 W.9-12.1,2,7,8,9</p> <p>Mathematics SMP1-8 PK-2MD 3-5MD 6-8SP PK-2MD 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

| Indicator 2. Analyze the effects of human activities that deliberately or inadvertently alter the equilibrium of natural processes. | | | | |
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| 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(1)B1 Recognize that caring about the environment is an important human activity. SCI 6(2)A1 Recognize and describe that the activities of individuals or groups of individuals can affect the environment. SCI 6(2)B1 Explain how people modify, protect, and adapt to their environment SS 3(1-2)D.1 | <ul style="list-style-type: none"> Recognize and describe that people in Maryland depend on, change, and are affected by the environment. SCI 6(4)B1 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 Explain how people modify, protect, and adapt to their environment SS 3(3)D.1 Describe how people adapt to, modify, and impact the natural environment SS 3(4)D.1 Explain why and how people adapt to and modify the natural environment and the impact of those modifications SS 3(5)D.1 | <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 Analyze why and how people modify their natural environment and the impact of those modifications SS 3(6)D.1 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 investigate how natural and man-made changes in environmental conditions will affect individual organisms and the dynamics of populations. SCI CLG 3.5.3 The student will evaluate the interrelationship between humans and air quality. SCI CLG 6.3.1 The student will evaluate the interrelationship between humans and water quality and quantity. SCI CLG 6.3.2 The student will evaluate the interrelationship between humans and land resources. SCI CLG 6.3.3 The student will evaluate the interrelationship between humans and biological resources. SCI CLG 6.3.4 The student will evaluate the interrelationship between humans and energy resources. SCI CLG 6.3.5 The student will evaluate the role of government in addressing land use and other environmental issues SS 3(G)D.1 | <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 RI.11-12.5 W.9-12.1,2,7,8,9</p> <p>Mathematics SMP1-8 PK-2MD 3-5MD 6-8SP PK-2MD S-ID S-IC</p> <p>Career & Technology Education GTT(3.1)2,3</p> |
| B. HUMAN IMPACT ON NATURAL RESOURCES | | | | |
| Indicator 1. Analyze, from local to global levels, the relationship between human activities and the earth's resources. | | | | |
| PK-2 | 3-5 | 6-8 | 9-12 | Supporting Curriculum |

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ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

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| <ul style="list-style-type: none"> • Recognize and explain how Earth’s natural resources from the natural environment are used to meet human needs. SCI 6(2)A1 • Identify aspects of the environment that are made by humans and those that are not made by humans. SCI 6(2)B1 • Explain how people modify, protect, and adapt to their environment SS 3(1-2)D.1 • Explain that goods are things that people make or grow SS 4(K)A.1.a • Explain how getting something one wants may mean giving up something in return SS 4(1)A.1.c • Explain that choices have consequences, some of which are more important than others SS 4(2)A.1.c • Recognize that natural resources, such as water, trees, and plants, are used to make products SS 4(K)A.2.c • Give examples of natural and human resources used in production, such as making butter, making ice cream, and building houses SS 4(1)A.2.a • Identify the natural, capital, and human resources used in the production of a good or service SS 4(2)A.2.a | <ul style="list-style-type: none"> • Recognize and explain how renewable and nonrenewable natural resources are used by humans in Maryland to meet basic needs. SCI 6(5)B1 • Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. SCI 6(5)B2 • Explain how people modify, protect, and adapt to their environment SS 3(3)D.1 • Describe how people adapt to, modify, and impact the natural environment SS 3(4)D.1 • Explain why and how people adapt to and modify the natural environment and the impact of those modifications SS 3(5)D.1 • Give examples of when limited resources affect the decisions producers make SS 4(3)A.2.b • Explain that people must make choices because resources are limited relative to unlimited wants for goods and services SS 4(3-5)A.1 (indicator presents same concept in varying contexts according to grade level) | <ul style="list-style-type: none"> • 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. SCI 6(6)A1 • 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 explain the impact of a changing human population on the use of natural resources and on environmental quality. SCI 6(7)A1 • 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 • Analyze why and how people modify their natural environment and the impact of those modifications SS 3(6)D.1 • Analyze why and how people in contemporary world regions modify their natural environment and the impact of those modifications SS 3(7)D.1 | <ul style="list-style-type: none"> • The student will evaluate the interrelationship between humans and air quality. SCI CLG 6.3.1 • The student will evaluate the interrelationship between humans and water quality and quantity. SCI CLG 6.3.2 • The student will evaluate the interrelationship between humans and land resources. SCI CLG 6.3.3 • The student will evaluate the interrelationship between humans and biological resources. SCI CLG 6.3.4 • The student will evaluate the interrelationship between humans and energy resources. SCI CLG 6.3.5 • The student will evaluate the role of government in addressing land use and other environmental issues SS 3(G)D • Evaluate how the principles of economic costs, benefits, and opportunity cost are used to address public policy issues, such as environmental and health care 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 PK-2MD S-ID S-IC</p> <p>Health 6(3)I1a 6(6)I1a,b 6(7)I1a,b</p> <p>Career & Technology Education GTT(3.1)2,3</p> |
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ENVIRONMENTAL LITERACY INFUSION IN SCIENCE & SOCIAL STUDIES CURRICULA

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| | | <ul style="list-style-type: none"> Analyze why and how people in the United States modify their natural environment and the impact of those modifications SS 3(8)D.1 Analyze the decisions that people made because resources were limited relative to economic wants for goods and services in contemporary world regions SS 4(7)A.1 (same concept presented in other contexts in grades 6 and 8) Analyze how scarce economic resources were used to satisfy economic wants in early world history SS 4(6)A.2 (same concept presented in different contexts in grades 7-8) | | |
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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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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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