Full Option Science System (FOSS™)

Correlation to

WISCONSIN

STANDARDS FOR ENVIRONMENTAL EDUCATION

GRADES FOUR AND EIGHT

Delta Education
...because children learn by doing.®

April, 2002

GRADE FOUR

QUESTIONING AND ANALYSIS
CONTENT STANDARD

Students in Wisconsin will use credible research methods to investigate environmental questions, revise their personal understanding to accommodate new knowledge and perspectives, and be able to communicate this understanding to others.

The Full Option Science System program is inquiry-based. The fundamentals of scientific inquiry are imbedded in all modules. Examples of activities and investigations are listed. A citation does not reflect all of the investigations or activities from the program that might apply.

Students will:

PERFORMANCE STANDARD	*FOSS*
A.4.1 Make observations, ask questions and plan environmental investigations (see Science [SC] Inquiry; English/Language Arts [LA] Research)	**New Plants** Investigation 2, Part 1 **Pebbles, Sand, and Silt** Investigation 1, Parts 1-3 **Structures of Life** Investigation 1, Parts 1-3 **Earth Materials** Investigation 3, Part 1
A.4.2 Collect information, make predictions, and offer explanations about questions asked (see SC Inquiry)	**New Plants** Investigation 2, Part 1 **Pebbles, Sand, and Silt** Investigation 1, Parts 1-3 **Structures of Life** Investigation 1, Parts 2 and 3 **Earth Materials** Investigation 3, Part 1
A.4.3 Develop answers, draw conclusions, and revise their personal understanding as needed based on their investigations (see SC Inquiry)	**New Plants** Investigation 2, Part 1 **Pebbles, Sand, and Silt** Investigation 1, Parts 1-3 **Structures of Life** Investigation 1, Parts 2 and 3 **Earth Materials** Investigation 3, Part 1
A.4.4 Communicate their understanding to others in simple terms (see LA Writing)	**New Plants** Investigation 2, Part 1 **Pebbles, Sand, and Silt** Investigation 1, Parts 1-3 **Structures of Life** Investigation 1, Parts 1-3 **Earth Materials** Investigation 3, Part 1

GRADE FOUR

KNOWLEDGE OF ENVIRONMENTAL PROCESSES AND SYSTEMS CONTENT STANDARD

Students in Wisconsin will demonstrate an understanding of the natural environment and the interrelationships among natural systems.

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Students will:

PERFORMANCE STANDARD	*FOSS*
B.4.1 Describe the flow of energy in natural systems, citing the sun as the source of energy on the earth; e.g., a food chain (see SC Physical Science)	**New Plants** Science Stories, pp. 6, 12-17 **Water** Science Stories, pp. 5-7, 14-16 **Structures of Life** Science Stories, p. 28
B.4.2 Illustrate how they use energy in their daily lives	**Solids and Liquids** Science Stories, pp. 14-17 **New Plants** Science Stories, pp. 6, 12-17 **Water** Science Stories, p. 23 FOSS Web, Movie: Grist Mill **Magnetism and Electricity** Investigation 4, Part 1 Science Stories, pp. 12-15, 24-25
B.4.3 List sources of energy, distinguishing between renewable and nonrenewable sources	**Water** Science Stories, pp. 14-16, 22-23 FOSS Web, Activity: Match the Resource **Magnetism and Electricity** Investigation 2, Parts 1 and 2 Science Stories, pp. 3-4, 8-9, 17-19 **Physics of Sound** Investigation 3, Parts 1 and 2 Science Stories, pp. 11-14
B.4.4 List the components of an ecosystem, including the qualities of a healthy habitat (see SC Life and Environmental Science)	**Water** Science Stories, pp. 5-7 **Structures of Life** Science Stories, p. 28
B.4.5 Describe natural and human-built ecosystems in Wisconsin	Local Activity
B.4.6 Cite examples of how different organisms adapt to their habitat	**Animals Two by Two** Activity 1, Parts 1-3 **New Plants** Science Stories, pp. 18-23 **Insects** Science Stories, pp. 8-11 **Structures of Life** Investigation 3, Parts 3 and 4 Science Stories, pp. 17-19
B.4.7 Draw a simple hydrologic cycle	**Water** Science Stories, pp. 14-16 FOSS Web, Picture: Water Cycle

B.4.8 Describe and give examples of natural resources; e.g., water, minerals, soils, air (see SC Nature of Science)	**Pebbles, Sand, and Silt** Investigation 4, Parts 1-3 Science Stories, pp. 14-21 **Air and Weather** Investigation 1, Parts 1-6 **Earth Materials** Investigation 2, Parts 1 and 2 Science Stories, pp. 14-21 **Water** Investigation 1, Part 1 Science Stories, pp. 17-23 FOSS Web, Activity: Match the Resource
B.4.9 Distinguish between renewable and nonrenewable resources	**Water** FOSS Web, Activity: Match the Resource
B.4.10 Describe how they use natural resources in their daily lives	**Pebbles, Sand, and Silt** Investigation 3, Parts 1-5 Science Stories, pp. 14-17 **Earth Materials** Science Stories, pp. 24-29 Investigation 3, Research Uses of Portland Cement, p. 24 **Water** Science Stories, pp. 17-21, 23
B.4.11 List jobs in the community that result from or are influenced by processing and using natural resources	**Pebbles, Sand, and Silt** Science stories, pp. 14-17 **Water** Investigation 4, Investigating Local Water, p. 29 FOSS Web, Careers **Earth Materials** FOSS Web, Careers
B.4.12 Determine the cause of different types of pollution	**Water** Science Stories, pp. 17-20 **Physics of Sound** Science Stories, p. 28

GRADE FOUR

ENVIRONMENTAL ISSUE INVESTIGATION SKILLS CONTENT STANDARD

Students in Wisconsin will be able to identify, investigate, and evaluate environmental problems and issues.

The Full Option Science System program is inquiry-based. The fundamentals of scientific inquiry are imbedded in all modules. Examples of activities and investigations are listed. A citation does not reflect all of the investigations or activities from the program that might apply.

Students will:

PERFORMANCE STANDARD	*FOSS*
C.4.1 Identify environmental problems and issues (see SS Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	**Water** Science Stories, pp. 19-21 Investigation 1, Discuss Using Water, p. 24 Investigation 3, Research Recycling Water, p. 27 **Measurement** Science Stories, pp. 16-17
C.4.2 Apply ideas of past, present, and future to specific environmental issues (see SC Connections)	**Water** Science Stories, p. 19 Investigation 3, Research Recycling Water, p. 27
C.4.3 Identify people and groups of people that are involved in the issue	**Water** Investigation 1, Discuss Using Water, P. 24 Investigation 3, Research Recycling Water, P. 27
C.4.4 Identify some of the decisions and actions related to the issue	**Water** Science Stories, p. 21 Investigation 3, Research Recycling Water, p. 27
C.4.5 Identify proposed solutions to the issue and discuss arguments for and against the issue	**Water** Science Stories, p. 21 Investigation 3, Research Recycling Water, P. 27

GRADE FOUR

DECISION AND ACTION SKILLS CONTENT STANDARD

Students in Wisconsin will use findings from environmental issue investigations to develop decision-making skills, and to gain experience in citizen action skills.

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Students will:

PERFORMANCE STANDARD	*FOSS*
D.4.1 Demonstrate knowledge of a decision-making process that includes selecting and using data, suggesting possible alternatives, predicting consequences, and being aware of available resources (see SC Inquiry; LA Inquiry)	**Water** Investigation 3, Part 3 Investigation 4, Part 3 **Human Body** Investigation 4, Part 2
D.4.2 Identify and give examples of short-term and long-term solutions to a problem	
D.4.3 Identify two or more ways to take positive environmental action; e.g., poster, letters, and speeches (see LA Oral Language)	
D.4.4 Communicate with local, state, or national officials regarding an environmental topic (see LA Writing)	**Water** Investigation 1, Discuss Using Water, p.24
D.4.5 Explain how they can influence an environmental issue	**Water** Science Stories, p. 21 **Measurement** Science Stories, pp. 16-17
D.4.6 Develop a plan, either individually or in a group, to preserve the local environment	**Water** Science Stories, p. 21 **Measurement** Science Stories, pp. 16-17

GRADE FOUR

PERSONAL AND CIVIC RESPONSIBILITY CONTENT STANDARD

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Students will:

PERFORMANCE STANDARD	*FOSS*
E.4.1 Identify and describe examples of their environmental or civic responsibilities and the actions they take to meet them	**Water** Science Stories, p. 21 **Measurement** Science Stories, pp. 16-17
E.4.2 Understand how their personal actions impact their civic responsibilities toward environment (see SS Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	**Water** Science Stories, p. 21 **Measurement** Science Stories, pp. 16-17

GRADE EIGHT

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NOTE: This correlation contains references to the FOSS Middle School Courses for grades 6-8. Of the courses, Human Brain and Senses, Earth History, Planetary Science, Diversity of Life, and Electronics are completed and included fully in the correlation. The other Middle School Courses, Weather and Water, Force and Motion, Chemistry, and Populations and Ecosystems are in various stages of development and are included where their correlation is anticipated.

Students will:

PERFORMANCE STANDARD	*FOSS*
A.8.1 Identify environmental issue questions that can be investigated using resources and equipment available (see SC Inquiry; LA Research)	**Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 Investigation 5, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3 **Landforms** Investigation 3, Parts 1 and 2
A.8.2 Collect information from a variety of resources, conduct experiments, and develop possible solutions to their investigations	**Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 Investigation 5, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3 **Landforms** Investigation 3, Parts 1 and 2
A.8.3 Use techniques such as modeling and simulating to organize information gathered in their investigations (see Mathematics [MA] Process)	**Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3 **Landforms** Investigation 3, Parts 1 and 2
A.8.4 Use critical-thinking strategies to interpret and analyze gathered information (see SC Inquiry)	**Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3 **Landforms** Investigation 3, Parts 1 and 2
A.8.5 Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding	**Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3

A.8.6 Communicate the results of investigations by using a variety of media and logically defend their answers (see LA Writing; Math [MA] Process)	**Landforms** Investigation 3, Parts 1 and 2 **Populations and Ecosystems** **Environments** Investigation 3, Parts 1-3 **Solar Energy** Investigation 4, Parts 1-3 **Landforms** Investigation 3, Parts 1 and 2

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Students will:

PERFORMANCE STANDARD	*FOSS*
B.8.1 Describe the flow of energy in a natural and a human-built ecosystem using the laws of thermodynamics (see SC Physical Science)	**Populations and Ecosystems** **Environments** Science Stories, pp. 39-41
B.8.2 Explain how change is a natural process, citing examples of succession, evolution, and extinction	**Populations and Ecosystems** **Environments** Investigation 1, Parts 1 and 2 **Earth History** Investigation 4, Parts 3 and 4 Resources, pp. 85-86 **Landforms** Investigation 2, Parts 1 and 2 Science Stories, pp. 27-34
B.8.3 Explain the importance of biodiversity	**Populations and Ecosystems**
B.8.4 Map the levels of organization of matter; e.g., subatomic particles through biomes (see SC Physical Science)	**Diversity of Life** Investigation 4, Part 2 CD, Cells and the Ribbon of Life
B.8.5 Give examples of human impact on various ecosystems	**Populations and Ecosystems** **Earth History** Resources, pp. 64-67 **Environments** Science Stories, pp. 30, 35, 39-42 **Landforms** Science Stories, pp. 13-14, 19-21
B.8.6 Describe major ecosystems of Wisconsin (see SC Life and Environmental Science)	Local Activity
B.8.7 Illustrate the conservation of matter using	**Populations and Ecosystems**

biogeochemical cycles; e.g., carbon, nitrogen, phosphorus	**Environments** FOSS Web, Pictures: Oxygen Cycle, Carbon Cycle, Nitrogen Cycle
B.8.8 Explain interactions among organisms or populations of organisms	**Populations and Ecosystems** **Diversity of Life** Resources, pp. 41-42, 48-49 **Environments** Science Stories, pp. 4-6, 27-28, 33-35, 39-41
B.8.9 Explain how the environment is perceived differently by various cultures (see SC Nature of Science)	**Solar Energy** Investigation 3, Research Solar Energy Use in Different Cultures, p. 26
B.8.10 Explain and cite examples of how humans shape the environment	**Populations and Ecosystems** **Earth History** Resources, pp. 64-67 **Environments** Science Stories, pp. 30, 35-36, 39-42
B.8.11 Describe our society as an ecosystem	
B.8.12 Provide examples of how different cultures use natural resources reflecting the economic, aesthetic, and other values of that culture	**Solar Energy** Investigation 3, Research Solar Energy Use in Different Cultures, p. 26 Science Stories, pp. 22-32
B.8.13 Diagram how resources are distributed around the world (see SC Nature of Science; Social Studies [SS] Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	
B.8.14 Identify the natural resources that are found in Wisconsin and those that are imported	Local Activity
B.8.15 Analyze how people impact their environment through resource use	**Environments** Science Stories, pp. 39-42 Investigation 4, Research Acid Lakes, p. 23 **Landforms** Science Stories, pp. 13-14, 19-21
B.8.16 Recognize the economic, environmental, and other factors that impact resource availability and explain why certain resources are becoming depleted	**Landforms** Investigation 2, Research the Water System in Your Community, p. 24
B.8.17 Explain how human resource use can impact the environment; e.g., erosion, burning fossil fuels	**Landforms** Science Stories, pp. 13-14, 43-44 **Environments** Science Stories, pp. 39-40, 42 Investigation 4, Research Acid Lakes, p. 23
B.8.18 Identify major air, water, or land pollutants and their sources	**Environments** Science Stories, pp. 35-37 Investigation 4, Research Acid Lakes, p. 23
B.8.19 Distinguish between point and non-point source pollution	
B.8.20 Identify types of waste and methods for waste reduction (see SC Earth and Space Science)	**Environments** Science Stories, p. 37
B.8.21 Identify and analyze individual, local, regional, national, and global effects of pollution on	**Environments** Science Stories, pp. 30, 35-36, 39-42

plant, animal, and human health	Investigation 4, Research Acid Lakes, p. 23 Investigation 6, Simulate Acids Rain, p. 24
B.8.22 Identify careers related to natural resources and environmental concerns (see SC Application)	**Landforms** FOSS Web, Careers **Environments** FOSS Web, Careers
B.8.23 Identify governmental and private agencies responsible for environmental protection and natural resources management	**Landforms** Investigation 3, Find a Local Erosion-Control Expert, p. 27
B.8.24 Create a timeline of Wisconsin history in resource management (see SC Nature of Science)	Local Activity

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Students will:

PERFORMANCE STANDARD	*FOSS*
C.8.1 Define and provide examples of environmental issues, explaining the role of beliefs, attitudes, and values (see SS Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	**Populations and Ecosystems** **Earth History** Resources, pp. 64-67 **Environments** Science Stories, pp. 30, 35-36, 39-40 **Landforms** Science Stories, pp. 13-14, 39, 43-44
C.8.2 Use environmental monitoring techniques; such as, observations, chemical analysis, and computer mapping software to collect data about environmental problems (see LA Media and Technology; MA Measurement)	**Environments** Investigation 4, Test Acid Content of Water, p. 24
C.8.3 Use questioning and analysis skills to determine beliefs, attitudes, and values held by people involved in an environmental issue	**Landforms** Investigation 3, Find a Local Erosion-Control Expert, p. 27
C.8.4 Evaluate the credibility of information, recognizing social, economic, political, environmental, technological, and educational influence (see LA Writing)	

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Students will:

PERFORMANCE STANDARD	*FOSS*
D.8.1 Identify options for addressing an environmental issue and evaluate the consequences of each option	**Environments** Science Stories, p. 42 **Landforms** Science Stories, pp. 43-44
D.8.2 List the advantages and disadvantages of short-term and long -term solutions to an environmental issue or problem	**Environments** Science Stories, p. 42 **Landforms** Science Stories, pp. 43-44
D.8.3 List reasons why an individual or group chooses to participate or not participate in an environmental activity in the home, school, or community	
D.8.4 Explain the political, legal, and budgetary options for resolving local, state, and national environmental issues (see SS Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	
D.8.5 Explain how personal actions can impact an environmental issue, e.g., doing volunteer work in conservation	**Landforms** Science Stories, pp. 43-44
D.8.6 Develop a plan for improving or maintaining some part of the local environment and identify their role in accomplishing this plan	
D.8.7 Identify examples of how personal beliefs	

can influence environmental decisions D.8.8 Give examples of education, economic, and governmental institutions' influence on an environmental issue, and the role of citizens in policy formation (see Political Science and Citizenship: Power, Authority, Governance, and Responsibility)	

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Students will:

PERFORMANCE STANDARD	*FOSS*
E.8.1 Formulate a personal plan for environmental stewardship E.8.2 Explain the importance of characteristics (such as, trust, patience, self-discipline, respect, and open-mindedness) that enable people to function together to resolve environmental issues	