

**NATIONAL EDUCATION STANDARDS  
COVERED IN THE WATER QUALITY CURRICULUM**

1. National Geography Education Standards
2. National Health Education Standards
3. National Language Arts Education Standards
4. National Mathematics Education Standards
5. National Science Education Standards
6. National Social Studies Education Standards
7. National Technology Education Standards

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**NATIONAL GEOGRAPHY EDUCATION STANDARDS  
Covered in the Water Quality Module**

Source: *Curriculum Standards for Social Studies-Expectation of Excellence*. National Council for the Social Studies. 1994.

		Background Activities											ES Team Mtgs *	Presentation	
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11			
<b>A. The World in Spatial Terms</b>															
1.	How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.		X											A	X
2.	How to use mental maps to organize information about people, places, and environments in a spatial context.		X												
3.	How to analyze the spatial organization of people, places, and environments on earth's surface.		X										1		
<b>B. Places and Regions</b>															
1.	The physical and human characteristics of places.		X										1		
3.	How culture and experience influence people's perceptions of places and regions.												1		
<b>C. Physical Systems</b>															
1.	The physical processes that shape the patterns of earth's surface.							X							
2.	The characteristics and spatial distribution of ecosystems on earth's surface.	X													
<b>E. Environment and Society</b>															
1.	How human actions modify the physical environment.		X					X							
2.	How physical systems affect human systems.							X	X						
3.	The changes that occur in the meaning, use, distribution, and importance of resources.			X				X							
<b>E. The Uses of Geography</b>															
1.	How to apply geography to interpret the past.		X										1	X	
2.	How to apply geography to interpret the present and plan for the future.		X						X				1 2 5	X	

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**NATIONAL HEALTH EDUCATION STANDARDS  
Covered in the Water Quality Module**

Source: *National Health Education Standards-Achieving Health Literacy*. American Cancer Society, Inc. 1998.

		Background Activities											ES Team Mtgs *	Presentation	
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11			
<b>A. Students will comprehend concepts related to health promotion and disease prevention.</b>															
1.	Analyze how behavior can impact health maintenance and disease prevention.	X												2	
5.	Analyze how the environment influences the health of the community.				X	X									
7.	Analyze how public health policies and government regulations influence health promoting and disease prevention.					X								2	
<b>B. Students will demonstrate the ability to access valid health information and health-promoting products and services.</b>															
2.	Demonstrate the ability to evaluate resources from home, school, and community that provide valid health information.					X									
<b>C. Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.</b>															
4.	Develop strategies to improve or maintain personal, family, and community health.													5	X
<b>E. Students will demonstrate the ability to use interpersonal communication skills to enhance health.</b>															
4.	Demonstrate ways to communicate care, consideration, and respect of self and others.													A	X
5.	Demonstrate strategies for solving interpersonal conflicts without harming self or others.													A	X
6.	Demonstrate refusal, negotiation, and collaboration skills to avoid potentially harmful situations.													A	X
<b>F. Students will demonstrate the ability to use goal setting and decision-making skills to enhance health.</b>															
2.	Analyze health concerns that require collaborative decision making.													A	X
<b>G. Students will demonstrate the ability to advocate for personal, family and community health.</b>															
1.	Evaluate the effectiveness of communication methods for accurately expressing health information and ideas.														X
2.	Express information and opinions about health issues.													A	X
3.	Utilize strategies to overcome barriers when communicating information, ideas, feelings, and opinions about health issues.														X
5.	Demonstrate the ability to work cooperatively when advocating for healthy communities.													A	X
6.	Demonstrate the ability to adapt health messages and communication techniques to the characteristics of a particular audience.														X

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**NATIONAL LANGUAGE ARTS EDUCATION STANDARDS  
Covered in the Water Quality Module**

Source: *Standards for the English Language Arts*. National Council of Teachers of English International Reading Association. 1996.

		Background Activities											ES Team Mtgs *	Presentation	
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11			
4.	Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.													A	X
5.	Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.	X	X	X	X	X	X	X	X	X	X	X	X	A	X
7.	Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.													A	X
10.	Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.	X	X	X	X	X	X	X	X	X	X	X	X	A	X
12.	Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).	X	X	X	X	X	X	X	X	X	X	X	X	A	X

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**NATIONAL MATHEMATICS EDUCATION STANDARDS**  
**Covered in the Water Quality Module**

Source: *Principles and Standards for School Mathematics.*  
*National Council of Teachers of Mathematics. 2000..*

		Background Activities											ES Team Mtgs *	Presentation
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11		
<b>A. Number &amp; Operations</b>														
<b>3.</b>	<b>Compute fluently and make reasonable estimates.</b>													
a.	Develop fluency in operations with real numbers, vectors, and matrices, using mental computation or paper-and-pencil calculations for simple cases and technology for more-complicated cases.						X	X						5
b.	Judge the reasonableness of numerical computations and their results.						X	X						5
<b>C. Geometry</b>														
<b>4.</b>	<b>Use visualization, spatial reasoning, and geometric modeling to solve problems.</b>													
a.	Draw and construct representations of two- and three-dimensional geometric objects using a variety of tools.		X								X			4
b.	Visualize three-dimensional objects and spaces from different perspectives and analyze their cross sections.		X								X			4
e.	Use geometric ideas to solve problems in, and gain insight into, other disciplines and other areas of interest such as art and architecture.		X								X	X		1
<b>D. Measurement</b>														
<b>1.</b>	<b>Understand measurable attributes of objects and the units, systems, and processes of measurements.</b>													
a.	Make decisions about units and scales that are appropriate for problem situations involving measurements.						X							2 3 4
														X

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**NATIONAL SCIENCE EDUCATION STANDARDS  
Covered in the Water Quality Module**

Source: *National Science Education Standards*. National Research Council. National Research Council. 1996.

		Background Activities											ES Team Mtgs *	Presentation		
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11				
<b>A. Science as Inquiry</b>																
1.	Abilities necessary to do scientific inquiry.													A		
a.	Identify questions and concepts that guide scientific investigations.													A		
b.	Design and conduct scientific investigations.													A		
c.	Use technology and mathematics to improve investigations and communications.													A		
d.	Formulate and revise scientific explanations and models using logic and evidence.													A		
e.	Recognize and analyze alternative explanations and models.													A		
f.	Communicate and defend a scientific argument.													A	X	
g.	Understandings about scientific inquiry.													A	X	
<b>C. Life Science</b>																
4.	<b>The Interdependence of Organisms</b>															
e.	Human beings live within the world's ecosystems. Increasingly, humans modify ecosystems as a result of population growth, technology, and consumption. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems will be irreversibly affected.	X	X		X	X						X			1 2 3	
<b>E. Science and Technology</b>																
2.	<b>Propose designs and choose between alternative solutions</b>															
a.	Students should demonstrate thoughtful planning for a piece of technology or technique. Students should be introduced to the roles of models and simulations in these processes.									X		X			5	
4.	<b>Evaluate the solution and its consequences</b>															
a.	Students should test any solution against the needs and criteria it was designed to meet. At this stage, new criteria not originally considered may be reviewed.														5	
5.	<b>Communicate the problem, process, and solutions</b>															
a.	Students should present their results to students, teachers, and others in a variety of ways, such as orally, in writing, and in other forms--including models, diagrams, and demonstrations.														X	
6.	<b>Understandings about science and technology</b>															
a.	Scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations. Many scientific investigations require the contributions of individuals from different disciplines, including engineering. New disciplines of science, such as geophysics and biochemistry often emerge at the interface of two older disciplines.														A	
c.	Creativity, imagination, and a good knowledge base are all required in the work of science and engineering.														A	X

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F. Science in Personal and Social Perspectives													
<b>1. Personal and community health</b>													
a.	Hazards and the potential for accidents exist. Regardless of the environment, the possibility of injury, illness, disability, or death may be present. Humans have a variety of mechanisms--sensory, motor, emotional, social, and technological--that can reduce and modify hazards.										X	X	2 5
<b>3. Natural resources</b>													
a.	Human populations use resources in the environment in order to maintain and improve their existence. Natural resources have been and will continue to be used to maintain human populations.	X			X					X			1 3
b.	The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources, and it depletes those resources that cannot be renewed.		X							X			1 4
<b>4. Environmental quality</b>													
a.	Natural ecosystems provide an array of basic processes that affect humans. Those processes include maintenance of the quality of the atmosphere, generation of soils, control of the hydrologic cycle, disposal of wastes, and recycling of nutrients. Humans are changing many of these basic processes, and the changes may be detrimental to humans.	X	X		X	X	X			X			1 2 4
b.	Materials from human societies affect both physical and chemical cycles of the earth.	X				X	X			X			1 2 4
c.	Many factors influence environmental quality. Factors that students might investigate include population growth, resource use, population distribution, over-consumption, the capacity of technology to solve problems, poverty, the role of economic, political, and religious views, and different ways humans view the earth.	X									X		A X
<b>5. Natural and human-induced hazards</b>													
b.	Human activities can enhance potential for hazards. Acquisition of resources, urban growth, and waste disposal can accelerate rates of natural change.	X			X	X	X			X			1 2 4
c.	Some hazards, such as earthquakes, volcanic eruptions, and severe weather, are rapid and spectacular. But there are slow and progressive changes that also result in problems for individuals and societies. For example, change in stream channel position, erosion of bridge foundations, sedimentation in lakes and harbors, coastal erosion, and continuing erosion and wasting of soil and landscapes can all negatively affect society.	X	X										1
d.	Natural and human-induced hazards present the need for humans to assess potential danger and risk. Many changes in the environment designated by humans bring benefits to society, as well as cause risks. Students should understand the costs and trade-offs of various hazards--ranging from those with minor risk to a few people to major catastrophes with major risk to many people. The scale of events and the accuracy with which scientists and engineers can (and cannot) predict events are important considerations.												A

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**NATIONAL SOCIAL STUDIES EDUCATION  
STANDARDS  
Covered in the Water Quality Module**

Source: *Curriculum Standards for Social Studies-Expectation of Excellence*. National Council for the Social Studies. 1994.

		Background Activities										ES Team Mtgs *	Presentation	
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10			BA 11
<b>B. Time, Continuity, &amp; Change</b>														
<b>1.</b>	<b>Social studies programs should include experiences that provide for the study of the ways human being view themselves in and over time.</b>													
b.	Apply key concepts such as time, chronology, causality, change, conflict, and complexity to explain, analyze, and show connections among patterns of historical change and continuity.		X											1
d.	Systematically employ processes of critical historical inquiry to reconstruct and reinterpret the past, such as using a variety of sources and checking their credibility, validating and weighing evidence for claims, and searching for causality.													1
f.	Apply ideas, theories, and modes of historical inquiry to analyze historical and contemporary developments, and to inform and evaluate actions concerning public policy issues.												1	X
<b>C. People, Places, and Environments</b>														
<b>1.</b>	<b>Social studies programs should include experiences that provide for the study of people, places, and environments.</b>													
a.	Refine mental maps of locales, regions, and the world that demonstrate understanding of relative location, direction, size, and shape.		X											
b.	Create, interpret, use, and synthesize information from various representations of the earth, such as maps, globes, and photographs.		X					X	X				A	X
e.	Describe, differentiate, and explain the relationships among various regional and global patterns of geographic phenomena such as landforms, soils, climate, vegetation, natural resources, and population.							X						
f.	Use knowledge of physical system changes such as seasons, climate and weather, and the water cycle to explain geographic phenomena.	X												1
h.	Examine, interpret, and analyze physical and cultural patterns and their interactions, such as land use, settlement patterns, cultural transmission of customs and ideas, and ecosystem changes.		X						X					1
k.	Propose, compare, and evaluate alternative policies for the use of land and other resources in communities, regions, nations, and the world.													X
<b>D. Individual Development &amp; Identity</b>														
<b>1.</b>	<b>Social studies programs should include experiences that provide for the study of individual development and identity.</b>													
h.	Work independently and cooperatively within groups and institutions to accomplish goals.												A	X

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<b>G. Production, Distribution, &amp; Consumption</b>													
<b>1.</b>	<b>Social studies programs should include experiences that provide for the study of how people organize for the production, distribution, and consumption of goods and services.</b>												
c.	Consider the costs and benefits to society of allocating goods and services through private and public sectors.											5	X
j.	Apply knowledge of production, distribution, and consumption in the analysis of a public issue such as the allocation of health care or the consumption of energy, and devise and economic plan for accomplishing a socially desirable outcome related to that issue.											A	X
<b>J. Civics Ideals &amp; Practices</b>													
<b>1.</b>	<b>Social studies programs should include experiences that provide for the study of the ideals, principles, and practices of citizenship in a democratic republic.</b>												
c.	Locate, access, analyze, organize, synthesize, evaluate, and apply information about selected public issues - identifying, describing, and evaluating multiple points of view.	X									X	5	X
i.	Construct a policy statement and an action plan to achieve one or more goals related to an issue of public concern.											5	X

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**NATIONAL TECHNOLOGY EDUCATION STANDARDS**

**Covered in the Water Quality Module**

Source: *Technology Foundation Standards for Students*.  
National Educational Technology Standards for Students.  
2007.

		Background Activities											ES Team Mtgs *	Presentation	
		BA 1	BA 2	BA 3	BA 4	BA 5	BA 6	BA 7	BA 8	BA 9	BA 10	BA 11			
<b>2. Communication and Collaboration</b>															
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:															
a.	interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media.													A	X
b.	communicate information and ideas effectively to multiple audiences using a variety of media and formats.													A	X
d.	contribute to project teams to produce original works or solve problems.													A	X
<b>3. Research and Information Fluency</b>															
Students apply digital tools to gather, evaluate, and use information. Students:															
b.	locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	X													X
c.	evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	X													X
d.	process data and report results.													A	X
<b>4. Critical Thinking, Problem-Solving &amp; Decision-Making</b>															
Students use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources. Students:															
b.	plan and manage activities to develop a solution or complete a project.													A	
c.	collect and analyze data to identify solutions and/or make informed decisions.													A	
d.	use multiple processes and diverse perspectives to explore alternative solutions.											X		5	
<b>6. Technology Operations and Concepts</b>															
Students demonstrate a sound understanding of technology concepts, systems and operations. Students:															
b.	select and use applications effectively and productively.													A	X

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