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ABSTRACT

This booklet offers a succinct and comprehensive structure for making geography an integral part of student experience across the grade levels. Emphasis is placed on the knowledge and understanding of geography principles. The scope and sequence presented in the booklet shows that, as a result of national standards, geographic education is moving and shifting in new ways. The booklet lays out a grade-by-grade scope and sequence of the basic geography concepts presented in, "Geography for Life: National Geography Standards" (1994), which emphasize what students should know and understand about geography, rather than what they should be able to accomplish with such knowledge and understanding. The booklet is divided into 10 sections: (1) "Foreword" (Richard G. Boehm); (2) "Introduction" (JoAnn Vender); (3) "Using the K-12 Scope and Sequence in Geography: Some Suggestions and Caveats" (James Marran); (4) "Essential Elements and the National Geography Standards"; (5) "K-12 Scope and Sequence in Geography Essential Element 1: The World in Spatial Terms" (Standards 1-3); (6) "Essential Element 2: Places and Regions" (Standards 4-6); (7) "Essential Element 3: Physical Systems" (Standards 7-8); (8) "Essential Element 4: Human Systems" (Standards 9-13); (9) "Essential Element 5: Environment and Society" (Standards 14-16); and (10) "Essential Element 6: The Uses of Geography" (Standards 17-18). (BT)

TEACHING TO THE STANDARDS:

A K-12 SCOPE AND SEQUENCE

IN GEOGRAPHY

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(GENIP)

The Geographic Education National Implementation Project (GENIP)

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and
The National Geographic Society

dedicates this scope and sequence to the thousands of geography teachers whose life's work is devoted to providing their students with an informed world view through a commitment to standards-directed education

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Teaching to the Standards:

A K-12 Scope and Sequence in Geography

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2003

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Foreward

Geography is a unique way of thinking and reasoning about the world and its inhabitants.

Reginald Golledge, The Nature of Geographic Knowledge.
Annals of the Association of American Geographers. 92:1-14.

Recently, the National Center for Educational Statistics has released the 2001 results of National Assessment of Educational Progress in geography. Compared with 1994, several groups of students have demonstrated substantial gains in geographic knowledge and understanding. The gains were particularly impressive among lower performing students. The tests required not only knowledge but the ability to think geographically and to solve everyday problems with spatial dimensions. The clear message is that the systematic study of geography in grades K-12 enriches young lives and gives them the opportunity to become better global citizens.

The national reform movement in geographic education began with two related events. The first was the publication of Guidelines in Geographic Education, K-12, published by the Association of American Geographers and the National Council for Geographic Education in 1984. This was followed by the creation of the Geographic Education National Implementation Project (GENIP), designed to help integrate geography back into the school curriculum. The second event was the establishment in 1985 of the Geography Education Program within the National Geographic Society (NGS). NGS President and CEO Gilbert M. Grosvenor initiated a national program to strengthen geography in the schools through teacher training, public awareness, and political action. The backbone of this program was the state geographic alliance program that continues in existence today.

National Geographic Society support and dedicated work by hundreds of geographic educators and teachers has led to a variety of innovative programs designed to improve geography teaching and learning in the schools of America. Crucial to these tasks was a nationwide effort to integrate geography into state social studies curriculum frameworks.

This process of significant reform was heavily influenced by the publication of Geography for Life: National Geography Standards (1994). The standards are eighteen statements benchmarked at grades four, eight, and twelve identifying what students should know and be able to do. In order to provide a frame of reference, the standards are clustered under six essential elements (i.e., the World in Spatial Terms, Places and Regions, Physical Systems, Human Systems, Environment and Society, and the Uses of Geography). In addition, each standard at each benchmarked grade includes a set of precise knowledge statements as well as some suggested learning opportunities that teachers can use to implement the meaning and purpose of each standard. As richly creative as these opportunities are, they lack the cohesive strength providing the shape

and continuity necessary for an on-going K-12 geography experience. Indeed, they were never meant to be a curriculum, but merely guidelines for crafting units and lessons in geography.

Teaching to the Standards: A K-12 Scope and Sequence in Geography offers a succinct yet comprehensive structure for making geography an integral part of student experience across the grade levels. The emphasis is on knowing and understanding the principles of geography. The "doing" of geography is left to the teacher through the development of units and lessons at the school, district, or state level.

Because there are so many different approaches to the teaching of geography, and because inclusion of the discipline in the curriculum varies so widely, the power of this scope and sequence is in its adaptability and flexibility. It provides a point-of-departure response to different approaches to content emphasis, topic selection, learning styles, and instructional techniques. It also makes the use of technology an option, not a requirement. Even though the computer is becoming an increasingly important tool in American classrooms, there is no national norm determining computer usage.

This scope and sequence is a timely addition to work already published in 2001 by the Gilbert M. Grosvenor Center for Geographic Education at Southwest Texas State University in San Marcos, Texas. Its Path Toward World Literacy program offers a K-12 scope and sequence brochure plus a series of standards-based learning activities illustrating in a summary format the critical content in geography.

It is refreshing to know that geographic education now has two complementary scope and sequence formats demonstrating how the national standards can become the core of geographic learning in the schools in the United States. Both offer school options. Each is a valuable resources that when used in concert, can only advance the achievements in geographic education that have marked the last several decades.

Teaching to the Standards shows both the unity and complexity of geography by breaking it into crisp, kaleidoscopic segments. Even though it may seem like the same old subject, new approaches to content quicken the trends making school geography both more visible and more viable. The scope and sequence presented here shows that, as a result of national standards, geographic education is moving and shifting in interesting new ways. Indeed, the shape of the discipline's future in the nation's classrooms has never been more evident.

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October, 2002

Introduction

This document lays out a grade-by-grade scope and sequence of the basic geography concepts presented in Geography for Life: National Geography Standards (1994). The goal of Geography for Life is to create a "geographically informed person"—someone who "sees meaning in the arrangement of things in space; who sees relations between people, places, and environments; who uses geographic skills; and who applies spatial and ecological perspectives to life situations" (GESP 1994, 34).

This scope and sequence emphasizes what students should *know and understand* about geography, rather than what they should *be able to do* with such knowledge and understanding—recognizing that content knowledge is a necessary first step, but not sufficient without the complementary performance skills and understanding of geographic perspectives, to becoming a "geographically informed person." It is also important to recognize that geography may not be part of the curriculum at each grade level; therefore, grade-level designations serve as a guide to the order in which concepts should be mastered. In general, the document follows the "expanding horizons" model common to many social studies curricula, beginning in the primary grades with a focus on personal/school/neighborhood and expanding to local, state, national and global scales; concepts presented at a lower grade can and should be expanded to the appropriate scale for topics taught at a higher grade. In some cases, particularly at the high school level, the sequence of topics is somewhat arbitrary and should be selected to reflect course content (e.g., World Cultures, American History, Environmental Studies, etc.). Because the discipline of geography spans both social and natural sciences, many of the physical/environmental topics may not be covered in a typical social studies-based geography class or lesson, but they can contribute to and/or complement the science curriculum.

Because of space limitations, this document does not attempt to define many of the concepts presented; educators with a more limited background in geography should refer to Geography for Life or other geography reference texts for further information. The citation for Geography for Life is as follows:

> Geography Education Standards Project. 1994. Geography for Life: National Geography Standards *1994.* Washington, D.C.: National Geographic Research and Exploration. Distributed through the National Council for Geographic Education, 206A Martin Hall, Jacksonville State University. Jacksonville, AL 36265-529, Phone: (724) 357-6290 Fax: 256-782-5336

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Using the K-12 Scope and Sequence in Geography

Some Suggestions and Caveats

• The scope and sequence document is best used as a complement to Geography for Life: National Geography Standards (1994). As companion pieces, they are resources designed to inform curriculum development in geography.

• The document is a resource designed to help teachers and curriculum specialists structure a curriculum built on the eighteen national geography standards. The scope and sequence is not a curriculum but a set of suggested content guidelines from which a curriculum can be developed.

• Unlike the typical geography in most American schools, this scope and sequences is topically organized. It is a significant departure from the world regions approach where the emphasis is on the geography of places sharing common physical and cultural features (e.g., Western Europe, Africa South of the Sahara, Australia and Oceania, etc.). The model presented here is a systems-based world geography from a spatial and environmental perspective. Rather than study the people and conditions of specific regions, this scope and sequence challenges teachers and students to be problem-solvers by examining the issues presented in the national geography standards. What will result is a worldview that presents Earth in its totality rather than as the sum of its parts.

• The emphasis is on geographic content, not instructional methodology. How the content is delivered is the responsibility of each teacher using the scope and sequence document. The suggestions are about what to teach, not how to teach.

• Using the document will ensure that a student's knowledge of geography will be cumulative and spiraling, and thus will help teachers avoid the frequent repetition of map skills that has for too long defined much of geography instruction, especially in the elementary grades where place location has typically been the core of the curriculum.

• The document provides a standards-based and grade-level appropriate set of topics that can be developed through the use of atlases, textbooks, case studies, videos, photographs, tables and graphs, computer software programs, the internet, and a variety of other resources available in geography education.

• The scope and sequence consistently reinforces the two geographic perspectives that are integral to each of the national geography standards. They are the spatial perspective and the environmental perspective.

• The document encourages curriculum designers to incorporate the five skills detailed in Geography for Life: National Geography Standards (1994). The five skills are:

• The document encourages curriculum designers to incorporate the five skills detailed in Geography for Life: National Geography Standards (1994). The five skills are:

- asking geographic questions
- acquiring geographic information
- organizing geographic information
- analyzing geographic information
- answering geographic questions.

• The document can serve as a catalyst for promoting professional conversations on issues in geographic education among teachers at the same grade level or at different grade levels within the same school. Thus, it can be used for in-service opportunities in geography education.

• The document must be viewed as a map of the appropriate content that can be taught in geography across the grade levels K-12. As is the case with any map, it identifies direction, proportion, and scale. The detail and the nuances of the meaning is a challenge left to the teacher.

• The document can serve as a model in pre-service methods classes so that aspiring teachers can learn the value of a hands-on, standards-directed scope and sequence in geography. In their classes and in their pre-service teaching experiences, student teachers can use it as both a tool and resource in structuring curriculum and preparing lessons.

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Essential Elements and the National Geography Standards

The eighteen national geography standards are grouped into six "essential elements," the "central and necessary ... building blocks" for the subject matter of geography (GESP 1994, 32). The essential elements and standards include:

Essential Element 1: The World in Spatial Terms

Standard 1: How to use maps and geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

Standard 2: How to use mental maps to organize information about people, places, and environments in a spatial context

Standard 3: How to analyze the spatial organization of people, places, and environments

Essential Element 2: Places and Regions

Standard 4: The physical and human characteristics of places

Standard 5: That people create regions to interpret Earth's complexity

Standard 6: How culture and experience influence people's perceptions of places and regions

Essential Element 3: Physical Systems

Standard 7: The physical processes that shape the patterns of Earth's surface

Standard 8: The characteristics and spatial distribution of ecosystems on Earth's surface

Essential Element 4: Human Systems

Standard 9: The characteristics, distribution, and migration of human populations on Earth

Standard 10: The characteristics, distribution, and complexity of Earth's cultural mosaics

Standard 11: The patterns and networks of economic interdependence on Earth's surface

Standard 12: The processes, patterns, and functions of human settlement

Standard 13: How the forces of cooperation and conflict among people influence the division and control of Earth's surface

Essential Element 5: Environment and Society

Standard 14: How human actions modify the physical environment

Standard 15: How physical systems affect human systems

Standard 16: The changes that occur in the meaning, use, distribution, and importance of resources

Essential Element 6: The Uses of Geography

Standard 17: How to apply geography to interpret the past

Standard 18: How to apply geography to interpret the present and plan for the future

Note: The following scope and sequence presents concepts grouped Under Essential Elements and Standards, as if completing the statement, "The geographically informed person knows and understands...."

Essential Element 1: The World in Spatial Terms

Standard 1: How to use maps and geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

	About geographic representations	About geographic tools and technologies	How to use geographic representations, tools, and technologies
K-1	• Types: pictures/photos, diagrams/drawings from different perspectives, simple maps (e.g., of school, home), globes • Map elements: symbols, title, legend/key	• That geographic tools/technologies show spatial information on various geographic representations • Globe as a model of Earth • Maps as representations of nearby/far-away places	• Pre-mapping skills (spatial prepositions, direction, orientation) • How to identify physical and human features on drawings and photos • How to locate/identify physical and human features on maps and globes
2	• Types: local and state maps, simple thematic maps, 3-D models of physical/ human features • Map elements: title, symbols, cardinal directions, grid	• Types: atlases • Characteristics of globe (hemispheres, poles, equator)	• How to use local and state maps and atlases to locate places and process information • How to identify human and physical distributions on thematic maps • How to use map grid (alphanumeric) to describe location • How to use symbols to create a basic map
3	• Types: aerial photos, graphs • Map elements: intermediate directions, principal parallels and meridians	• Types: almanacs, manual GIS (layers of information)	• How to create a map based on a narrative description • How to locate/identify physical and human features on aerial photos • How to draw/place proportional symbols on a map

	About geographic representations	About geographic tools and technologies	How to use geographic representations, tools, and technologies
4	• Types: state and U.S. maps, remotely-sensed/satellite images • Map elements: concept of scale (linear, fraction, word)	• Types: gazetteers, geographical dictionaries	• How to locate/identify physical and human features on remotely-sensed/satellite images • How to use map grid (latitude/longitude) to describe location • How to use map scale to measure distance (basics) • How to display spatial info on diagrams, charts, graphs (including climagraphs) • How to use a globe or model of Earth/Sun relationships to demonstrate effects of rotation (day/night) and revolution (seasons)
5	• U.S. and world maps • Map elements: DOGSTAILs (a.k.a. TODALSIGs): Date, Orientation, Grid, Scale, Title, Author, Index, Legend, source) • Kinds of geographic data	• Types: statistical abstracts, electronic databases • Characteristics/purposes of geographic databases	• How to use a globe or model of Earth/Sun relationships to demonstrate effects of rotation (time zones) and revolution (energy balance, tides)
6	• Types: topographic, navigational, thematic • characteristics/purposes of map projections and other geog. reps.	• Electronic Geographic Information Systems (GIS)	• How to create/use thematic maps of human and physical patterns
7	• Types: cartograms • Which maps and graphics are most appropriate to answer specific geographic questions		• How to create/use maps and flowcharts showing patterns of movement
8	• Which map projections are best suited to different purposes	• Geographic Positioning Systems (GPS)	• How to ask and answer questions about spatial distributions and patterns
9			• How to use geographic representations to depict geographic problems
10			• How to use technologies to represent and interpret Earth's physical and human systems
11			• How to use geographic representations and tools to analyze, explain, and solve geographic problems (including locational analysis)
12			• How to evaluate the applications of geographic tools and technologies used for particular purposes

Standard 2: How to use mental maps to organize information about people, places, and environments in a spatial context

	Locations of physical and human features	How to translate mental maps into sketch maps and graphics; use mental maps to answer questions	Relationships between mental maps and perceptions about places, spatial/environmental decision-making
K-1	• Concept of physical vs. human features • Concept of directions/relative location (up/down, left/right, here/there, near/far, etc.) • Location of places in the home or classroom shown in a picture • In which community, state, country one lives • Location of places in the local community • Concept and names of continents and oceans	• How to use a mental map to identify locations of places in the home/school/community • How to use a mental map to answer questions about the locations of places • How to put historical events in a spatial context	
2	• Concept of cardinal directions • Concepts of relative and absolute location • Locations of major physical and human features in local area	• How to describe in sketch maps and words the locations and characteristics of features in the community and region	
3	• Concept of hemispheres • Location of continents and oceans in relation to each other and principal parallels and meridians • Location of major physical and human features in home state	• How to describe in sketch maps and words the routes between places of interest or the physical and human characteristics of the state • How to put places from books or stories in a spatial context	
4	• Location of major physical and human features on Earth • Concept of scale as a "mental yardstick"	• How to describe in sketch maps and words the approximate locations of places featured in current events or that illustrate geographic ideas • How to describe in words and sketch maps the distribution of physical and human features of Earth's regions	
5	• Concept of time zones	• How to compare sketch and atlas maps to determine the accuracy of place location and knowledge	• Criteria people use for rating places
6	• Distribution of major human and physical features at local to global scales		• Factors that influence people's perceptions of places
7		• How to depict through sketch maps the relative location of, size of, and distances between places	• Why places are included/excluded, emphasized/de-emphasized on sketch maps by different people
8		• How current and historical events relate to their physical and human geographic contexts	• How perception influences people's mental maps and attitudes about places
9		• How to use mental maps and sketch maps of physical and human characteristics to answer complex geographic questions	• How different map projections and perceptions of space influence mental maps
10		• Relationships between cultural traits and spatial behavior	• How differences in experiences influence people's mental maps
11		• Spatial dynamics of historical and contemporary events	• How mental maps reflect human perception of places

	Locations of physical and human features	How to translate mental maps into sketch maps and graphics; use mental maps to answer questions	Relationships between mental maps and perceptions about places, spatial/environmental decision-making
12		• Patterns of diffusion and spatial interactions	• How decisions concerning location, settlement, and public policy reflect values, attitudes, and perceptions

Standard 3: How to analyze the spatial organization of people, places, and environments

	Spatial elements[1] and patterns [1] *point, line, area, volume*	Spatial concepts[2] and structure [2] *location, distance, scale direction, , movement, region, density, arrangement*	Spatial processes and interactions	Models of spatial organization; spatial behavior of people
K-1	• Concepts of point (e.g., school building) and line (e.g., road)	• Concepts of location, direction, distance, movement • How to describe spat. org. of places in terms of location, direction, distance, movement	• Concept of spatial interaction: patterns of movement in space	
2	• Concepts of area (e.g., playground) and volume (e.g., water in a lake) • How to identify physical and human features on a map in terms of the 4 spatial elements • That places and features are distributed spatially across Earth's surface	• Concept of region • How to describe spat. org. of places in terms of region • Concept of arrangement (linear, grid-like, random)	• Concepts of linkage/ connections and accessibility	
3	• How to use spatial elements to prepare simple diagrams of places	• Different ways of measuring distance (miles, kilometers)		
4	• How to identify spatial patterns and associations on maps and images	• Concept of density; how to calculate density of features within a grid placed over a map	• Why features are located where they are • Why some locations are better than others	
5	• How to use spatial elements to describe spatial patterns	• Different ways of measuring distance (time, cost, perception) • How to compare patterns and densities of places	• Concept of hierarchy • How spatial processes shape patterns of spatial organization	• Migration patterns of plants and animals
6	• Relationships between locations of physical/ human phenomena and distribution of people	• How to use spatial concepts to explain spatial structure	• Concept of cost of distance • How connections between places demonstrate interdependence and accessibility	• Patterns and processes of migration and diffusion
7	• Patterns of linkages among places of different sizes	• Land-use patterns in terms of distance, accessibility, connections, core-periphery	• Relationships among distance, accessibility, and frequency of interaction	• Spread of contagious diseases
8	• Distributions of physical and human phenomena with respect to spatial patterns, arrangements, and associations		• How changing transportation and communication technologies have affected relationships between places	• Spread of culture traits between and among populations
9			• Generalizations that describe and explain spatial interaction	• Threshold population/demand • Central place theory

	Spatial elements[1] and patterns [1] *point, line, area, volume*	Spatial concepts[2] and structure [2] *location, distance, scale direction, , movement, region, density, arrangement*	Spatial processes and interactions	Models of spatial organization; spatial behavior of people
10			• Concepts of friction of distance and distance decay	• Gravity model • How people perceive and use space; factors affecting such behaviors
11-12			• Concepts of intervening opportunity and complementarity	• How to apply concepts and models of spatial organization to make decisions

Essential Element 2: Places and Regions

Standard 4: The physical and human characteristics of places

	Physical characteristics and processes	Human characteristics and processes	Relationships between human and physical processes; sense of place
K-1	• Concept of physical feature/ characteristic • Types of physical features (landforms, bodies of water, soil, vegetation, weather and climate)	• Concept of human feature/ characteristic • Types of human features (kinds of and structures for housing, economic activities, services, transportation, recreation, spirituality, cultural activities and traits)	
2	• Physical characteristics of the local community	• Human characteristics of the local community	• How physical and human characteristics of the local community are similar to/different from characteristics of other communities.
3	• Physical characteristics of a region	• Human characteristics of a region	• Factors that affect weather in the local community
4	• Distribution of physical features within and across region	• Patterns of population distribution, settlement, land use within and across regions	• Factors that affect settlement patterns (landforms, climate, resources, vegetation, historic events, etc.)
5	• How topography influences the character of place	• How different human groups alter places in distinctive ways • concept of cultural landscape	• How physical and human processes work together to shape places
6	• How natural hazards affect places	• Role of technology in shaping the characteristics of places	• Concept of sense of place: why certain places are important to people
7	• Causes and effects of changes over time in physical landscapes	• Causes and effects of human-induced changes in a place over time	
8	• How physical processes shape places	• How variations in technology and perspective affect human landscapes across time and space	• The locational advantages and disadvantages of using places for various human activities based on their physical characteristics
9	• How tectonic processes influence the character of place • How erosional processes influence the character of place • How climate influences the character of place	• How culture affects the characteristics of places	• Concepts of site and situation
10		• How social and economic processes shape the features of places	• How places are made distinctive and meaningful by human activities that alter physical features • How a place changes over time
11		• Ways in which the character of a place relates to its economic, political, and population characteristics	• The effects of population growth and urbanization on places • Why places have specific physical and human characteristics in different parts of the world
12			• The meaning and significance of place

Standard 5: That people create regions to interpret Earth's complexity

	Definition and elements of regions; influences of regional labels and images	Types and structure of regions/regional systems	Changes in regions	Connections among regions; using regions to analyze geographic issues
K-1			• Description of past and present places	
2	• Concept of region as an area of Earth's surface with unifying geographic characteristics (formal/uniform region) • How to identify areas that are alike and form regions from these areas	• How student's neighborhood is similar to or different from another		
3	• How to identify and describe regions of the physical environment	• How student's region is similar to a region on another continent	• How life in a region was different in the past than it is in the present	
4	• How to identify and describe regions that result from spatial patterns or human characteristics	• The geographic characteristics of regions of the world at similar latitudes	• How a region's structure or function has changed over time	
5	• Examples of regions at different scales	• Ways in which the concept of a region can be used to simplify the complexity of Earth's space	• How regional change over time has affected the characteristics of places	• Physical and human connections between regions
6	• Criteria that identify the central focus of a region • Regional events that contribute to the region's image	• Criteria for and examples of formal regions	• Factors that contribute to changing regional characteristics	• How migration creates cultural ties between regions
7	• Relationships between the physical and human characteristics of a region • The meaning and impact of regional labels	• Criteria for and examples of functional regions	• Impact of regional transportation changes on people's daily lives	• Importance of trade in connecting regions
8	• The significance of a region's being known as developing rather than less developed	• Criteria for and examples of perceptual regions	• How and why regions change over space and time	
9	• How multiple criteria can be used to define a region	• Types and organization of regional systems • Differences among formal, functional, and perceptual regions • How functional regions are held together	• How changing conditions can result in a region's taking on a new structure (e.g., how political boundaries are established or changed)	• Relationships between and within regions • Advantages/disadvantages of participating in regional alliances (past and present)
10	• Why regions characterized by one set of criteria in the past may be defined by a different set of criteria today	• Different ways in which regional systems are structured • How cities are organized into regional systems	• Factors that contribute to the dynamic nature of regions • How regional boundaries (physical/human) change	• Ways in which regional systems are connected • Historic reasons for conflict within specific world regions

	Definition and elements of regions; influences of regional labels and images	Types and structure of regions/regional systems	Changes in regions	Connections among regions; using regions to analyze geographic issues
11-12	• Criteria that gave regions their identities in different periods of history	• Political systems and governments as regional systems (hierarchy) • Ways governments and businesses establish regional systems	• Reasons for changes in the world's political boundaries	• How physical and human environments form webs of interacting systems within and among regions • How to use regions to analyze geographic issues and answer geographic questions

Standard 6: How culture and experience influence people's perceptions of places and regions

	Describing places and regions from different perspectives; places and regions as symbols for culture and society	Influence of personal characteristics on people's perceptions of places and regions	Relationships between culture and perceptions of places and regions
K-1	• How to express student's own perception of a place in words or images	• How to infer people's feelings about places and regions from songs, poems, stories, and visual arts	
2	• How to express student's own perception of a region in words or images		
3	• How to compare and contrast classmates' perceptions of the same place	• How different people perceive places and regions	
4	• How the student's views and values about the local community have changed over time	• How people of different age, sex, or ethnicity view the same place	
5	• Examples of buildings, structures, or statues that have come to represent or symbolize a city		• What students in other cultures perceive to be beautiful or valuable in their country's landscapes
6	• Landmarks that are associated with the cultural identity of places at local to global scales	• How people of different cultural origins define, build, and name places and regions	• How advertisements are designed to influence cultural attitudes towards places and regions
7	• Kinds of images that are suggested by songs associated with specific regions	• How people with different roles in the community have different points of view about a place or region	• How technology has changed culture groups' perceptions of their physical environments
8	• How places and regions serve as cultural symbols	• How personal characteristics affect our perception of places and regions	• How religion and belief systems influence traditional attitudes toward land use in different world regions • Why immigrants to the U.S. try to maintain the customs of their home countries
9	• How people express attachment to places and regions (e.g., literature, art, music)	• Factors that affect people's perceptions of places and regions (stage of life, sex, social class, ethnicity, values, belief systems)	• How people's changing perceptions of places and regions reflect cultural change
10	• How point of view influences a person's perception of place	• Differences in personal geographies of men and women	• How increases in income, longer life expectancy, and attitudes toward aging influence where people choose to live
11	• How places take on symbolic meaning	• How people's socioeconomic backgrounds influence their points of view about a place/region	• How shifts from a predominantly rural to a predominantly urban society influence the ways in which people perceive the environment
12	• Why places and regions are important to individual human identity and as symbols for unifying or fragmenting society	• How places and regions are stereotyped • Why different groups of people within a society view places and regions differently	• How the sequential occupance of a specific habitat demonstrates changing perceptions of place

Essential Element 3: Physical Systems

Standard 7: The physical processes that shape the patterns of Earth's surface

	Physical systems and processes	Consequences of physical processes	Relationships between physical processes and resources; relationships among physical systems	Earth-Sun relationships
K-1	• Concept of weather			• Concept of seasons
2	• Components of Earth's physical systems: air (atmosphere), land (lithosphere), water (hydrosphere), life (biosphere) • Types of features belonging to each system • Physical environment of student's region and phys. processes that act on it	• That physical processes shape features and patterns		• That Earth-Sun relationships affect conditions on Earth • Concepts of day/night, length of day
3	• Basic model of the hydrologic cycle			• How length of day affects human activities in different regions
4	• Characteristics of different climates, plants and animals living there • Factors affecting climatic conditions in different regions of the world	• Effects of weather and climate on vegetation		• Concepts of rotation, axis, revolution to explain day/night, length of day, seasons
5	• Hydrologic cycle: precipitation, evaporation, condensation • How erosional agents produce landforms	• Effects of weathering, erosion, and deposition on landforms • Effects of heavy rainfall on hill slopes under different conditions	• Processes that produce fertile soils, distribution of these soils, and how they relate to patterns of world agriculture	• Concept of revolution to explain energy balance, tides
6	• Patterns of features associated with margins of tectonic plates • Reasons for similarities in physical features among different world regions	• Potential outcome of continued movement of Earth's tectonic plates	• Processes that produce fossil fuels and how they relate to specific location	• How Sun's position re: Earth affects the vertical and horizontal distribution of energy on Earth
7	• Types of precipitation (orographic, cyclonic, convectional) • Ocean circulation system and how it affects climate • Reasons for similarities and differences in climate	• Effects of an extreme weather phenomenon on the physical environment	• How topography and climate influence the hydrologic power potential of different regions	• How occurrences of weather phenomena relate to annual changes in Earth-Sun relationships
8	• How physical processes shape patterns in the physical environment • Relationships between different physical processes	• How to predict the consequences of physical processes on Earth's surface	• How physical processes influence the formation and distribution of resources	• How Earth-Sun relationships affect Earth's physical processes and create phys. patterns

	Physical systems and processes	Consequences of physical processes	Relationships between physical processes and resources; relationships among physical systems	Earth-Sun relationships
9	• The physical processes that produce landforms	• How natural disasters can alter landscapes	• Dynamics and interaction of Earth's physical systems	
10	• Distribution of climate types produced by air mass circulation, temperature, and moisture	• How extreme physical events affect human settlements in different regions	• Why features of the ocean floor are evidence of the dynamic forces that shape continents and ocean basins	• Effects of the tilt of Earth's axis on seasonal cycles in Northern and Southern Hemispheres
11	• Effects of different physical cycles on Earth's physical environment	• Physical processes that occur in different kinds of environments	• Relationships between changes in landforms and the effects of climate	• Difference between solstices and equinoxes and reasons why they occur
12	• Concepts of physical geography that explain Earth's physical processes, patterns, and cycles	• The spatial variation in the consequences of physical processes across Earth's surface	• Conditions causing climate changes and effects on ocean levels, agriculture, and population distribution	• Possible scenarios of future world climates should the greenhouse effect increase • Climate variation caused by El Niño/ Southern Oscillation (ENSO)

Standard 8: The characteristics and spatial distribution of ecosystems on Earth's surface

	Characteristics and functioning of ecosystems	Distribution and patterns of ecosystems	Human interactions with ecosystems
K-2	• Concept of ecosystem: groups of interdependent plants and animals in specific environments		• That humans interact with and depend upon ecosystems
3	• How to identify and compare communities of plants and animals and their physical environments • Concept of a food chain/food web	• Locations of different associations of plants and animals in the student's region and state	• Ways in which humans can change ecosystems
4	• Components of ecosystems at a variety of scales	• Examples of plant and animal communities associated with world vegetation and climate regions	• How vegetation and soil can affect human settlement and how humans can affect vegetation and soil
5	• How the plants and animals of an ecosystem are linked and interdependent	• Changes in the local ecosystem resulting from human interventions	• Changes over time in an ecosystem in/near the student's community resulting from human intervention
6	• The feeding levels and location of elements of the food chain	• Concept of biomes (major ecological communities) • Differences between ecosystems/biomes at various scales	• Ways that humans interact differently with ecosystems/biomes in different regions of the world
7	• The flow of energy and cycling of matter through an ecosystem (e.g., food chain, hydrologic cycle)	• How and why ecosystems differ from place to place as a consequence of differences in soils, climate, and human and natural disturbances	• Potential impact of human activities within an ecosystem on the carbon, nitrogen, and oxygen cycles
8	• How ecosystems work • How physical processes produce changes in ecosystems		
9	• Levels of biodiversity and productivity of various ecosystems and their potential value to living things	• World patterns of biodiversity	• The effects of both physical and human changes on ecosystems
10	• How the carrying capacity of different ecosystems relates to land-use policies	• How solar energy and water supply influence the distribution of plant communities	• The effects of biological magnification on ecosystems
11		• How physical characteristics such as climate and soil affect the number, kinds, and distribution of plants and animals in an ecosystem	• The long-term effects of human modification of ecosystems
12		• The factors and processes involved in the formation of soils in different ecosystems	• The importance of ecosystems in people's understanding of environmental issues

Essential Element 4: Human Systems

Standard 9: The characteristics, distribution, and migration of human populations on Earth

	Population characteristics	Population patterns	Human migration
K-1	• Population characteristics of the class		
2	• Population characteristics of the school		• That people move from place to place, either voluntarily or involuntarily
3	• Population characteristics of the community	• Population distribution of the local community	• Why students' classmates, families, or neighbors have moved to or from the community
4	• Population characteristics of the region and state	• Population distributions of the region and state • Concept of population density	• Reasons that people throughout the world are involved in voluntary or involuntary migrations • How physical geography affects the routes, flows, and destinations of migrants • How migration affects the people involved
5	• Population characteristics of the country and world • How to compare population characteristics of different places • Concept of growth rate	• Population distributions of the U.S. and world • How differences in population density are related to location	• Concepts of push/pull factors and diffusion (causes and effects of migration patterns) • How the movement of people can alter the character of a place
6	• Population structure of different societies using pop. pyramids	• How population structures of different countries compare	• Past and current patterns of rural-to-urban migration in the U.S. • How places change over time due to the migration of people
7	• Concepts of rate of natural increase, crude birth and death rates, infant mortality	• How and why population characteristics vary from country to country	• How physical and other barriers can impede the flow of people; how people have overcome such barriers
8	• Demographic transition and how it affects a population's structure • Differences in rate of population growth in developed and developing countries	• Factors affecting the spatial distribution of population: environmental changes, socio-cultural changes, social and economic conditions	• Historical patterns of migration in the U.S. and world • Ways in which human migration patterns are currently evident in the urban service industries of the U.S.
9	• Population characteristics of countries in different stages of the demographic transition	• Trends in world population numbers and patterns	• Economic, political, and social factors that contribute to human migration • How international migrations are shaped by push and pull factors
10			• Socioeconomic changes that occur in regions that gain population and in regions that lose population • How large-scale rural-urban migration affects cities

	Population characteristics	Population patterns	Human migration
11-12		• Past and present government policies designed to change a country's population characteristics • How government population policies are linked to economic and cultural considerations • Why a government's population policy might be opposed by the people	• Why countries develop emigration and immigration policies • How mass migrations have affected ecosystems • How human mobility and city/region interdependence can be increased and regional integration can be facilitated by improved transportation systems • The impact of human migration on physical and human systems

Standard 10: The characteristics, distribution, and complexity of Earth's cultural mosaics

	Cultural characteristics	Cultural patterns	Cultural change and processes
K-1	• How to describe student's own culture • Components of culture	• The visible cultural elements of the local community or another community	• That cultures change over time
2	• How different people living in the same region have different ways of life	• That patterns of culture vary across Earth's surface	• How various cultural characteristics have changed over time
3	• Cultural characteristics of people in different regions	• How people in different regions of the world earn a living or support themselves	• How cultural change over time has affected ways of life
4	• How the characteristics of culture affect the ways in which people live	• How cultures differ in their use of similar environments	
5	• Ways in which communities reflect the cultural background of their inhabitants	• Distribution and characteristics of culture regions in the U.S. • Examples in the community or other communities of immigration from different regions of the world	
6		• Distribution and characteristics of the world's culture regions	• The processes and patterns of cultural diffusion • How the diffusion of a technology has affected various cultures
7	• Distinctive cultural landscapes associated with migrant populations	• How voluntary or forced migration create ethnic enclaves in cities	• How the diffusion of the English language relates to political and economic changes during selected periods in history
8	• How to read elements of landscape as a mirror of culture	• The spatial distribution of culture at local to global scales	• Current and former types of work done by women in developed and developing countries; reasons for changes
9	• Cultural characteristics that link regions	• How cultures influence the characteristics of regions • How cultural features often define regions	
10	• How people have to adjust to living and working in countries with cultural traditions significantly different from their own	• How culture can explain differences in economic opportunities for women in different regions of the world • Why great differences can exist among culture regions within a single country	• Examples of the spread of culture traits that contribute to cultural convergence • The spatial characteristics of the processes of cultural convergence and divergence • How communications and transportation technologies can both contribute to cultural convergence and stimulate cultural divergence
11	• Cultural factors that have promoted political conflict	• Relationships between patterns of immigration and cultural changes in large urban and manufacturing centers, esp. those near international borders	• How evolving political and economic alliances affect the traditional cohesiveness of world culture regions

	Cultural characteristics	Cultural patterns	Cultural change and processes
12	• The impact of culture on ways of life in different regions	• How cultures shape the character of a region	• How and why international partnerships and alliances change over time • How transregional alliances and multinational organizations can alter cultural solidarity • How and why non-governmental organizations (NGOs) adapt to different cultural contexts

Standard 11: The patterns and networks of economic interdependence on Earth's surface

	Classification and spatial distribution of economic activities	Reasons for spatial patterns of economic activities	Relationships between transportation, communication, and econ. activities	Global interdependence of economic activities
K-1	• Different ways of earning a living (where people work)		• Modes of transport. used to move people and products from place to place	
2	• How people in different places earn a living • Classification of land use in the community by economic activity		• Modes of communication used to carry ideas from place to place	
3	• How people satisfy basic needs and wants through production of goods and services in diff. regions • Reasons for patterns of econ. act. in an urban area	• That some products are produced/processed close to sources of raw materials and others close to consumers buying them • Why clusters of related businesses or other economic activities are located where they are	• Advantages and disadvantages of different modes of transportation for different purposes	
4	• How trade between two regions affects the way people earn their living in each region • Location and importance of economic activities using natural resources	• Where agricultural products from the region are processed and how they are distributed • Factors important in the location of economic activities • Location of economic activities in local area and impacts on nearby areas	• How transportation and communication have changed and have affected trade and econ. activities • Movement of a product from manufacture to use	
5	• Factors of production (land, labor, capital) • Historical rise and persistence of the U.S. manufacturing belt	• Reasons for trading patterns of goods imported to/exported from the U.S.	• How the quality, efficiency, and speed of present transportation and communication systems compare with those of the past	• Examples and patterns of international trade flows • National and global patterns of migrant workers
6	• Major types of economic activity: primary, secondary, tertiary • How geography and the factors of prod. helped determine locations of manufacturing plants	• Effects of the gradual disappearance of small-scale retail facilities	• How and why the types of cargo handled by major world ports have changed over time	• The primary geographic causes for world trade • How triangular trade networks of the 16th-17th centuries influenced the histories of the countries involved
7	• Geographic contexts of types of economic activities • The changing spatial patterns of major industries	• Impact of interruptions in world trade on people in various parts of the world • Economic and social impact on a community when a large industry moves to another place	• How transportation and communications innovations affect patterns of economic interaction	• Reasons and consequences for countries that export mostly raw materials and import mostly fuels and manufactured goods • Economic relationships under imperialism

	Classification and spatial distribution of economic activities	Reasons for spatial patterns of economic activities	Relationships between transportation, communication, and econ. activities	Global interdependence of economic activities
8	• Factors influencing industrial location	• Spatial aspects of systems designed to deliver goods and services • Issues related to the spatial distribution of economic activities	• How changes in technology, transportation, and communication affect the location of economic activities	• How the theory of competitive advantage explains why and how countries trade • Historical and contemporary economic trade networks • The basis for global interdependence
9	• Characteristics of traditional, command, and market economies; how they operate in various countries	• Market areas around major business establishments • Spatial relationships between land values and prominent urban features	• Spatial patterns of early trade routes in the era of sailing ships	• How land values in an area may change due to the investment of foreign capital
10	• Advantages and disadvantages of different economic systems	• How market areas are examples of functional regions • Spatial relationships between the zoned uses of land and the value of that land	• Global trade routes before and after the development of major canals	• Advantages and disadvantages of allowing foreign-owned businesses to purchase land, open factories, or conduct other business in a country
11	• Geographic problems that arise in the transition period as a country shifts from one economic system to another	• Why some places have locational advantages as assembly and/or parts distribution centers • How economic factors relate to the location of particular types of industries and businesses	• Land-use patterns that resulted in a system of monoculture	• Causes and consequences of an international debt crisis • The increasing inter-dependence of the world's countries
12	• The spatial distribution of major economic systems and their relative merits in terms of productivity and the social welfare of workers	• Reasons for the spatial aspects of economic systems • Relationships between settlement patterns, their associated economic activities, and relative land values	• Historical movement patterns of people and goods and their relation-ships to economic activities	• How to analyze and evaluate international economic issues from a spatial point of view

Standard 12: The processes, patterns, and functions of human settlement

	Types and patterns of settlement	Development and functions of cities	Spatial characteristics and structure of cities	Changes in settlement patterns and urban structure
K-1	• Types of housing and land use in the local community			• That spatial patterns of human settlements change over time
2	• Similarities and differences in housing and land use among urban, suburban, and rural areas • Reasons people choose to settle and live where they do		• Types of features and services found in cities	• The settlement patterns that characterize the development of the local community or state
3	• Similarities and differences in past and present types of settlements in the U.S. and other countries • How clusters of dense settlement relate to reasons for settlement			• Reasons for the growth and decline of settlements
4	• Probable reasons for similarities and differences in population size and density among two or more regions • The types and spatial patterns of settlement • Factors affecting where people settle		• Differences between settlements of different sizes (towns, small cities, large cities)	• The development of early transport systems linking a city with the surrounding area • How spatial patterns of human settlements change
5	• Types and distribution of settlement patterns similar to and different from the local community	• Kinds of settlements that existed before cities emerged • Cultural activities that attract people to cities • Why people find cities economically attractive	• Locations of major cities in North America and the processes that have caused them to grow • The spatial characteristics of cities	• The structural landscape changes that would have to occur if a village were to grow into a city • Changes that have occurred in U.S. cities over time
6	• Characteristics and settlement pattern of the students' hypothetical 'ideal city'	• Why people choose to change from dispersed rural to concentrated urban forms of settlement	• That cities exhibit an internal spatial structure • The impact of different transportation systems on the spatial arrangement of business, industry, and residences in a city	• Concept of culture hearth • Similarities and differences among the world's culture hearths, why humans settled in those places, and why such settlements remain today
7	• Types and distribution of major urban settlements • Types and distribution of major agricultural settlements	• Geographic reasons for the location of the world's first cities • Links between industrial development and rural to urban migration	• Concentric zone model of a city and how it is reflected in a nearby city • Sector model of a city and how it is reflected in a nearby city	• The changes that would have to occur in farming patterns if a village were to grow into a city
8	• Spatial patterns of settlement in different regions of the world	• What human events led to the development of cities • Causes and consequences of urbanization	• The internal spatial structures of cities	• Changes to landscape and society caused by shifting from dispersed to concentrated settlement

	Types and patterns of settlement	Development and functions of cities	Spatial characteristics and structure of cities	Changes in settlement patterns and urban structure
9	• Differing characteristics of settlement in developed and developing countries	• The functions of cities • Concepts of site and situation	• Ways in which a city has remained the same and how it has changed	• The likely effects on an urban area's internal structure of the arrival or departure of a major industry or business • Urban forms that characterize recent changes in urban structure
10	• The residential and transportation patterns of urban settlements in developing and developed countries	• How the functions of cities differ from those of towns and villages	• How the shapes of cities provide evidence of factors that influence urban morphology (e.g., physical barriers, transportation routes, zoning policies)	• How population growth or decline in an urban area are impacted by: stress on infrastructure, problems with public safety and fire protection, availability of jobs, demands placed on the tax base • Relationships between changing transport technologies and changing urban forms
11	• The efficiency of alternative urban structures in providing basic services in developing and developed countries	• How the functions of cities have changed over time	• How land-use patterns of a city provide evidence of the city's primary function within its region	• How the settlement patterns of immigrant groups relate to: proximity to the central business district, location in marginal housing areas, lack of access to areas with job opportunities • The cultural imprints of increasing urbanization
12	• How the physical features, site, situation, function, and internal structure of cities in developing countries compare with cities in developed countries	• The site and situation of cities in different regions of the world	• The sizes and spatial arrangements (internal structure and shape) of urban areas	• The processes that change the internal structure of urban areas • The evolving forms of present-day urban areas

Standard 13: How the forces of cooperation and conflict among people influence the division and control of Earth's surface

	Territorial divisions	Issues of scale	Causes and effects of territorial divisions
K-1	• Territorial units that exist within the school and home	• Comparisons of classroom, school, home	
2	• Territorial units that exist within the community • How to identify service, social and economic units (e.g., community helpers)	• Concept of political units and hierarchies (community, city, county, state, country)	• How people divide Earth's surface • Events in the local community or other communities in which people solve problems by cooperating
3	• How to identify political units	• The common characteristics of political regions • How the functions of territorial units differ on the basis of scale	• How the U.S. expanded its territory to reach its present shape and size • Current events as examples of cooperation, conflict, or both
4	• The types of territorial units	• The extent and characteristics of political, social, and economic units at different scales (local to global)	• Reasons for changes in the political or economic system of a country • How and why people compete for control of Earth's surface • How cooperation and conflict affect places in the local community
5	• The different service, political, social, and economic divisions of the world in which the student functions	• Examples of similar uses of political space at local, state, national, and international levels	• How the shape of a country may affect political divisions • Reasons for conflict of the use of land, possible strategies for a cooperative solution
6	• The multiple territorial divisions of student's own world	• The social, political, and economic impacts of organizations that transcend national boundaries	• The symbolic importance of capital cities • Factors that contribute to political conflict within and between countries
7	• The student's functional relationship to different spatial divisions	• The role of various factors in the development of nation-states on different continents	• How regional differences or similarities in religion, resources, language, political beliefs, or other factors may lead to cooperation or conflict
8	• The need for multiple and overlapping spatial divisions of society	• Divisions on Earth's surface at different scales	• Factors that affect the cohesiveness and integration of countries • How coop. and conflict among people contribute to political, economic, and social divisions of Earth's surface
9	• The spatial extent and organizational structure of various imperial powers throughout history	• How cooperation and/or conflict can lead to the allocation and control of earth's surface	• How religious conflict or expansion can cause political and cultural changes in a region
10	• Why some countries are landlocked	• The causes of boundary conflicts and internal disputes between culture groups	• How new technologies, markets, and revised perceptions of resources act as agents of change in a region
11	• The functions of the United Nations and its specialized agencies in dealing with various global issues	• Why boundaries of congressional districts change in the U.S.	• How a country's ambition to obtain markets and resources can cause fractures and disruptions in the target areas of the ambition
12	• Changes that occur in the extent and organization of social, political, and economic entities on Earth's surface • The impact of multiple spatial divisions on people's daily lives	• Why and how cooperation and conflict shape the distribution of social, political, and economic spaces on Earth at different scales	• How differing points of view and self-interests play a role in conflict over territory and resources

Essential Element 5: Environment and Society

Standard 14: How human actions modify the physical environment

	Human dependence on, connections among, understanding and responding to changes in the physical environment	Modifications of the physical environment	Consequences of human-induced changes
K-1	• Things that people need, want, and obtain from the physical environment • How weather affects the student's life	• Examples of changes people make to the physical environment (e.g., in school, neighborhood)	• Examples of plants and animals that used to live in the local community; why they are no longer there
2	• How air, life, land, and water (atmosphere, biosphere, lithosphere, and hydrosphere) contribute to the student's daily life	• How land use changes in the local community	• Examples in the local community of ways in which the physical environment is stressed by human activities
3	• How people depend on the physical environment	• Changes in the physical environment of the local community or region brought about by processes such as urban growth, the development of transportation and agriculture, and the introduction of new species of plants and animals	• How human activities have increased the ability of the physical environment to support human life in the local community, state, U.S., and other countries
4	• Similarities and differences in how people in the community and people elsewhere depend on the physical environment	• How and why people modify the physical environment	• That the physical environment can both accommodate and be endangered by human activities
5	• How pollution from a source affects the air or water quality and ecosystems of places downwind/ downstream	• The role of technology in changing the physical environment of agricultural activities and the environ-mental consequences of such actions	• The environmental effects of human actions on the atmosphere, biosphere, lithosphere, and hydrosphere
6	• How the construction of dams and levees on a river system affects places downstream	• The significance of major techno-logical innovations that have been used to modify the physical environment	• The environmental consequences of a major long-lasting energy crisis
7	• How environmental change in one part of the world can affect places in other parts of the world	• The environmental consequences of both the unintended and intended outcomes of major technological changes in human history	• The environmental impact of plans to use wetlands for recreational and housing development in coastal areas
8	• How human modifications of the physical environment in one place often lead to changes in other places	• The role of technology in human modification of the environment	• The consequences of human modification of the physical environment
9	• Possible responses to the changes that take place in a river system as adjacent farmland is fertilized more intensively and as settlement expands into the floodplain	• How the ways in which the student's local community modified the physical environment in the past compare with the community's current impact on the same environment	• The deliberate and inadvertent spatial consequences of human activities that have global implications
10	• How the physical environment's ability to accommodate human modifications has changed from the 19th to the 20th century	• The role of people in decreasing the diversity of flora and fauna in a region	• Whether major global environmental changes result from human action, natural causes, or a combination of both

	Human dependence on, connections among, understanding and responding to changes in the physical environment	Modifications of the physical environment	Consequences of human-induced changes
11	• The potential global effects to the environment of human changes currently in progress and strategies that could lessen the impact in each case	• How the concepts of synergy, feedback loops, carrying capacity, and thresholds explain the limitations of the physical environment's capacity to absorb the impacts of human activity	• The significance of global impacts of human modification of the physical environment
12	• How to apply appropriate models and information to understand environmental problems	• How technology has expanded human capability to modify the physical environment	• The positive and negative attitudes of landscape changes in the local community and region relating to people's changing attitudes about the environment

Standard 15: How physical systems affect human systems

	Human responses to changes in the physical environment	Opportunities and constraints by physical environment on humans	Natural hazards
K -1	• Ways in which people adapt to the physical environment	• How the student's community benefits from the local environment	
2	• How the physical environment can influence the choice of building materials and style of construction	• The effects of weather and climate on agriculture, housing types, fuel consumption, in the community and state	• Definition of natural hazard • Types of natural hazards that affect the local area
3	• How people adapt building styles to the availability of building materials • How different groups of Native Americans in the local community, region, or state adapted to the natural resources available	• How the phys. envt. constrains activities in the local community, region, and state on a daily, seasonal, and permanent basis • How landforms can limit human activities	• Types of natural hazards that occur in other regions • How natural hazards affect people
4	• How variations within the physical environment produce spatial patterns that affect human adaptation	• How climate affects people's lives • How people's views of the environment can change with changes in technology and culture • The way in which the physical environment provides opportunities for and constrains human activities	• Where and when different types of natural hazards occur in the state and U.S.
5	• How patterns of land use, economic livelihoods, architectural styles, building material, traffic flows, and recreational activities in the student's own community and communities in other regions reflect conditions of the physical environment	• How people adapt to living in different physical regions throughout the world	• The definition, types, and spatial distribution of natural hazards in the physical environment • How the location, magnitude, frequency, and effect on people of natural hazards occurring locally compare with those occurring in similar environments
6	• Types of agricultural production systems in different kinds of environmental regions	• Ways people take aspects of the environment into account when deciding on locations for human activities	• How natural hazards rank in terms of severity of impact on humans
7	• The effects of an undesirable change in the physical environment on human activities and how people might mitigate such affects	• Associations between population density and environmental quality	• The relationship between humans and natural hazards in different regions of the U.S. and world
8	• Human responses to variations in physical systems	• How the characteristics of different physical environments provide opportunities for or place constraints on human activities	• The ways in which humans prepare for natural hazards
9	• The carrying capacity of selected regions and likely consequences of exceeding their environmental limits	• Physical environments in which limits to growth are significant and conditions that may threaten humans in these environments	• How natural hazards affect human activities
10	• Contemporary and historical examples of the limited ability of physical systems to withstand human pressure	• The limits to growth found in physical environments. and ways technology and human adaptation enable people to expand the capacity of such environments	• Patterns that exist in people's attitudes, perceptions, and responses toward natural hazards in the local community

	Human responses to changes in the physical environment	Opportunities and constraints by physical environment on humans	Natural hazards
11	• How the concepts of synergy, feed-back loops, carrying capacity, and thresholds describe the limits of physical systems in different physical environments to absorb human impacts	• The conditions and locations of soil types that place limits on plant growth and therefore on expansion of human settlement; alternative uses for areas of those soil types	• How individuals and societies perceive and react to natural hazards • The varying perceptions of natural hazards in different regions of the world
12	• How changes in the physical environment can diminish its capacity to support human activity	• Strategies to respond to constraints placed on human systems by the physical environment	• The effectiveness of human attempts to limit damage from natural hazards • how people who live in naturally hazardous regions adapt to their environments

Standard 16: The changes that occur in the meaning, use, distribution, and importance of resources

	Characteristics and spatial distribution of resources	Meaning and roles of resources	Resource use	Resource management
K-1	• Definition of a resource		• That resources can be depleted	
2	• Examples of renewable, nonrenewable, and flow resources • Where different types of resources come from	• The meaning and role of resources in daily life (student, family, school)	• Ways to conserve natural resources	
3	• Relationships between economic activities and resource source locations • Major transportation routes that link resources with consumers; modes of transportation used	• The source locations of resources for the manufacture of items commonly used in the school and local community • How and where electricity is generated for the local community	• Advantages and disadvantages of recycling and reusing different types of materials	
4	• The characteristics of renewable, nonrenewable, and flow resources • The spatial distribution of resources	• Differences in the ways resources are used and valued in the student's region vs. other regions	• Critical present-day issues related to the use of resources	
5	• Locations of major deposits of petroleum, coal, copper, and iron ore	• How people's attitudes toward the use and misuse of resources differ • The importance of energy resources (wood, wind, charcoal, water) to people settling new lands	• How rates of resource consumption are associated with levels of techno-logical development • Links between sources of key resources and countries that consume them	• How and why a personal plan to conserve water and recycle materials might change within the next ten years
6	• Locations of major deposits of diamonds, silver, gold, and tungsten	• How various methods of extracting and using resources impact the environment • Ways in which coal, petroleum, natural gas, and nuclear power contribute to the functioning of societies	• How higher levels of resource extraction are associated with advanced technology • The relationship between a country's standard of living and its accessibility to resources	• Possible plans for the management of energy resources such as coal, petroleum, and natural gas
7	• How the distribution of various resources has changed over time	• Examples of resources that are misused based on EPA standards and how such misuse might be corrected • How the development and widespread use of alternative energy sources might impact societies	• The economic importance of using satellite imagery technology to search for petroleum and other resources • How competition for resources relates to conflicts between regions and countries	• How long the world's known supply of fossil fuels might last, given varying rates of consumption and estimates of the amounts of such resources left, and possible plans for switching to alternative energy sources when today's fossil fuels run out

	Characteristics and spatial distribution of resources	Meaning and roles of resources	Resource use	Resource management
8	• The worldwide patterns of resource distribution and use	• Why people have differing viewpoints regarding resource use • The fundamental role of energy resources in society	• How technology affects the definitions of, access to, and use of resources • The consequences of the use of resources ion the contemporary world	• How to identify and develop plans for the management and use of renewable, nonrenewable, and flow resources
9	• How settlement patterns are associated with the location of resources	• Examples of resources that have been highly valued in one period but less valued in another	• The changing relocation strategies of industries seeking access to recyclable material	• How and why some countries use greater than average amounts of resources • Different points of view regarding resource degradation and depletion in less developed countries
10	• How the discovery and development of resources in a region attract settlement	• Historic examples of exploration and colonization of the world in a quest for resources	• The geographic issues involved in dealing with toxic and hazardous waste at local and global levels	• The geographic consequences of the development and use of various forms of energy • The geographic impacts of policy decisions related to the use of resources
11	• How settlement patterns are altered as a result of a resource's depletion	• The geographic consequences of the develop-ment of mercantilism and imperialism	• How recycling laws in U.S. states and other countries explain people's attitudes toward resource management	• The short and long-term economic prospects of countries that rely on exporting nonrenewable resources • Resource management policies of U.S. presidential administrations
12	• How the spatial distribution of resources affects human settlement patterns	• How resource development and use change over time • Relationships between resources and the exploration, colonization, and settlement of different regions of the world	• Ways in which resources can be reused and recycled	• The geographic results of policies and programs for resource use and management

Essential Element 6: The Uses of Geography

Standard 17: How to apply geography to interpret the past

	Changes in place and space	Changes in perception	Changes in geographic contexts
K	• How older members of the community say life was different in the past	• That people's perceptions of places and geographic contexts change over time	
1	• Changes in the vegetation and animal population in a region	• How attitudes of children in the past toward the physical environment compare with the attitudes of children today	• How to use maps and narratives to trace historic events in a spatial context
2	• Factors that have contributed to changing land use in the community • Groups of people who have affected the growth, development, culture, and land use of the community	• How people's perception of an environment has changed with length of settlement and familiarity with the area	• How the physical and human characteristics of places help to answer the question, What was it like to live in place X in time Y?
3	• Why the size and style of houses built in the student's region have changed over time	• How the discovery or depletion of a resource or technology may influence human perceptions of environments and migration patterns	• That geographic contexts influence people and events over time
4	• Changes that have occurred in how people have earned a living in the student's state • How places and geographic contexts change over time	• How changes in people's perceptions of environments. have influenced human migration and settlement	• How trade routes related to wind patterns and ocean currents in previous centuries
5	• The locations of U.S. cities over time and how differences in their site characteristics, situations, and functions demonstrate urban growth	• How the attitudes of people in the past affected settlement patterns in the United States • The role of advertisements and promotional literature in the development of perceptions of the western U.S.	• The human and physical conditions that led to the enslavement and forced transport of Africans to North and South America • Major water features that have been significant in U.S. history
6	• Population settlement patterns during different periods and in different regions	• How differing perceptions of local, regional, national, and global resources have stimulated competition for natural resources	• The role that different land-survey systems used in the U.S. have played in establishing contemporary landscape patterns
7	• Changes in the internal structure, form, and function of urban areas in different regions of the world at different times	• How people's differing perceptions of places, peoples, and resources have affected past events and conditions	• How levels of technology and physical geographic features relate to the course and outcome of battles and wars • The locations of several mountain passes that have been significant in military campaigns in world history
8	• The development of the national transportation systems that led to regional integration in the U.S.	• How increased control over nature due to technology has changed land-use patterns	• Effects of physical and human geographic features on major historic events • Significant physical features that have influenced historical events
9	• How the spatial organization of a society changes over time	• How the attitudes of different religions toward the environment and resource use have affected world economic development patterns and caused cultural conflict or encouraged social integration	• The historical and geographic forces responsible for the industrial revolution in England in the late 18th and early 19th centuries

	Changes in place and space	Changes in perception	Changes in geographic contexts
10	• The spatial diffusion of a phenomenon and the effects it has had on regions of contact	• The Russian perception of encirclement by enemies and how this perception influenced the development of Russian foreign policy	• The physical and human factors that have led to famines and large-scale refugee movements
11	• The geographic effects of migration streams and counter-streams of rural African Americans from the South to urban centers in the North and West throughout the 20th century	• how changing perceptions of places and environments affect the spatial behavior of people	• The role and general effects of imperialism, colonization, and decolonization on the economic and political developments of the 19th and 20th centuries
12	• How processes of spatial change affect events and conditions	• How changing perceptions of geographic features have led to changes in human societies	• The fundamental role that geographical context has played in affecting events in history

Standard 18: How to apply geography to interpret the present and plan for the future

	Change and interaction	Perceptions and points of view	Using geography to solve problems
K-1	• That geographic conditions change		
2	• Ways in which resources can be managed and why it is important to do so	• How different groups of people perceive the same place, environment, or event	• That social and environmental problems have spatial dimensions • How to use maps to analyze the spatial aspects of a social problem
3	• The relationship between population growth and resource use	• The attitudes and feelings of children in different societies of the world about personal life, education, aspirations, and the differences between boys and girls	• Alternative solutions to an environmental problem and the likely consequences of each solution • Human-induced changes that are taking place in different parts of the United States and speculate on their future impacts
4	• The projected increase in world population • The dynamic character of geographic contexts	• Possible answers to the question: Is there a global environmental crisis? If so, what caused it? • How people's perceptions affect their interpretation of the world	• How to make informed decisions regarding nature-society issues
5	• How conditions in various cities in the developing world demonstrate the relationships involved in economic, political, social, and environmental changes	• The perspectives two people with different points of view on the same geographic issue	• How to analyze a geographic issue and then develop sound arguments in favor of recommendations for specific actions on the issue
6	• How differences in rural and urban access to healthcare, water, and sanitation facilities relate to levels of infant mortality and rural poverty and the availability of medical care	• The significance of people's beliefs, attitudes, and values in adaptation to new human and physical environments	• Possible plans, including specific recommendations illustrated by maps, to improve the quality of environments in large cities
7	• The geographic impact of using petroleum, coal, nuclear power, and solar power as major energy sources in the 21st century	• How student's own point of view compares with other people's perceptions of a controversial social, economic, political, or environmental issue that has a geographic dimension	• What the future spatial organization of Earth might be: If present conditions and patterns of consumption, production, and population growth continue; If humans continue their present consumption patterns but engage in extensive recycling and research on new mining technologies; if the student's own preferences or predictions could be implemented
8	• How the interaction of physical and human systems may shape present and future conditions on Earth	• How varying points of view on geographic context influence plans for change	• How to apply the geographic point of view to solve social and environmental problems by making geographically informed decisions
9	• Plans to safeguard people and property in the event of a major natural disaster • The processes of land degradation and desertification as the interaction of physical systems	• Different points of view on sustainable development to explain the effects of such a concept	• How to prepare a mock State Department-style briefing on a specific world region

	Change and interaction	Perceptions and points of view	Using geography to solve problem
10	• How to use information on soil, hydrology and drainage, sources of water, and other factors to choose the best site for a sanitary landfill in an urban region • The consequences of population growth or decline in a developed economy for hum. and phys. systems	• The extent and geographic impact of changes in the global economy on the lives of affluent and poor people	• Possible strategies to substitute alternative sustainable activities for present economic activities in regions of significant resource depletion
11	• How to use information on where people live, present transportation facilities, and carrying capacities to design a mass-transit system • Plans to solve local and regional problems having spatial dimensions	• The impact of a natural disaster on a developed country vs. a developing country, the private and public reactions to the disaster, and the policies formulated to cope with a recurrence of the disaster	• How tourism in a developed or a developing country can cause conflicts over resource use, the relative advantages and disadvantages of tourism to local residents, and the costs and benefits of tourism
12	• The likely consequences of a world temperature increase of 3 degrees (F) on humans and other living things • Contemporary issues in terms of Earth's physical and human systems	• How different points of view influence the development of policies designed to use and manage Earth's resources	• How to use geographic knowledge, skills, and perspectives to analyze problems and make decisions within a spatial context

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GEOGRAPHIC EDUCATION NATIONAL IMPLEMENTATION PROJECT

(GENIP)

The Geographic Education National Implementation Project (GENIP) is a consortium of geographic associations committed to improving the status and quality of geography education in the United States. It was organized in 1985 by the American Geographical Society (AGS), the Association of American Geographers (AAG), the National Council for Geographic Education (NCGE), and the National Geographic Society (NGS).

GENIP is a clearinghouse that coordinates the geographic education initiatives of its member associations. Its mission is to outreach on behalf of geography educators and policy makers across the United States. GENIP is active in providing expertise and leadership in the development of policies related to geographic education. Since the publication of *Geography for Life: National Geography Standards* 1994, GENIP's primary focus has been the promotion of standards-directed geographic instruction as an integral part of every student's educational experience.

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