Virtual Field Trips

National Parks West - Wyoming, Utah

Grade 4 - Adopted: 2010

**Theme**  
NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

**Definition**  
SOCIAL STUDIES PROGRAMS SHOULD INCLUDE EXPERIENCES THAT PROVIDE FOR THE STUDY OF PEOPLE, PLACES, AND ENVIRONMENTS.

**Category**  
3.1. KNOWLEDGE - Learners will understand:

**Learning Expectation**  
3.1.3. Physical and human characteristics of the school, community, state, and region, and the interactions of people in these places with the environment.

**Learning Expectation**  
3.1.5. Physical changes in community, state, and region, such as seasons, climate, and weather, and their effects on plants and animals.

Grade 5 - Adopted: 2010

**Theme**  
NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

**Definition**  
SOCIAL STUDIES PROGRAMS SHOULD INCLUDE EXPERIENCES THAT PROVIDE FOR THE STUDY OF PEOPLE, PLACES, AND ENVIRONMENTS.

**Category**  
3.1. KNOWLEDGE - Learners will understand:

**Learning Expectation**  
3.1.5. The concept of regions identifies links between people in different locations according to specific criteria (e.g., physical, economic, social, cultural, or religious).

Grade 6 - Adopted: 2010

**Theme**  
NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

**Definition**  
SOCIAL STUDIES PROGRAMS SHOULD INCLUDE EXPERIENCES THAT PROVIDE FOR THE STUDY OF PEOPLE, PLACES, AND ENVIRONMENTS.
The concept of regions identifies links between people in different locations according to specific criteria (e.g., physical, economic, social, cultural, or religious).

National Council for the Social Studies (NCSS)

Social Studies

Grade 7 - Adopted: 2010

THEME NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

CATEGORY 3.1. KNOWLEDGE - Learners will understand:

LEARNING EXPECTATION 3.1.5. The concept of regions identifies links between people in different locations according to specific criteria (e.g., physical, economic, social, cultural, or religious).

National Council for the Social Studies (NCSS)

Social Studies

Grade 8 - Adopted: 2010

THEME NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

CATEGORY 3.1. KNOWLEDGE - Learners will understand:

LEARNING EXPECTATION 3.1.5. The concept of regions identifies links between people in different locations according to specific criteria (e.g., physical, economic, social, cultural, or religious).

National Council for the Social Studies (NCSS)

Social Studies

Grade 9 - Adopted: 2010

THEME NCSS.3. PEOPLE, PLACES, AND ENVIRONMENTS

CATEGORY 3.1. KNOWLEDGE - Learners will understand:

LEARNING EXPECTATION 3.1.1. The theme of people, places, and environments involves the study of the relationships between human populations in different locations and regional and global geographic phenomena, such as landforms, soils, climate, vegetation, and natural resources.

LEARNING EXPECTATION 3.1.2. Concepts such as: location, physical and human characteristics of national and global regions in the past and present, and the interactions of humans with the environment.
National Geography Standards (NGS)

Science

Grade 4 - Adopted: 2012

ESSENTIAL ELEMENT NGS.PR. Places and Regions
STANDARD PR.4. The physical and human characteristics of places
STRAND PR.4.2. The Characteristics of Places: Places have physical and human characteristics
BENCHMARK PR.4.2.A. Describe and compare the physical characteristics of places at a variety of scales, local to global, as exemplified by being able to
EXPECTATION PR.4.2.A.2. Describe and compare the vegetation in different places in the world (e.g., deserts, mountains, rain forests, plains).
EXPECTATION PR.4.2.A.3. Describe and compare the physical environments and landforms of different places in the world (e.g., mountains, islands, valleys or canyons, mesas).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth's surface
STRAND PS.7.1. Earth's physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere)
BENCHMARK PS.7.1.A. Identify attributes of Earth's different physical systems, as exemplified by being able to
EXPECTATION PS.7.1.A.2. Identify examples of water features on Earth's surface that comprise the hydrosphere (e.g., oceans, rivers, lakes, water vapor, ground water, different types of precipitation).
EXPECTATION PS.7.1.A.3. Identify examples of landforms on Earth's surface (e.g., mountains, volcanoes, valleys, plains).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth's surface
STRAND PS.7.3. Physical Processes: Physical processes shape features on Earth’s surface
BENCHMARK PS.7.3.A. Identify examples of physical processes, as exemplified by being able to
EXPECTATION PS.7.3.A.2. Identify the components and relationships in the erosion cycle (e.g., water carving canyons, wind sculpting mesas, landslides, avalanches).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth's surface
STRAND PS.7.3. Physical Processes: Physical processes shape features on Earth’s surface
BENCHMARK PS.7.3.B. Describe how physical processes shape features on Earth’s surface, as exemplified by being able to
EXPECTATION PS.7.3.B.2. Describe the physical processes that shaped particular landform features using pictures of landforms such as canyons, mesas, and deltas.
EXPECTATION PS.7.3.B.3. Describe how freeze–thaw processes erode rock (e.g., potholes on local streets, rock slides in mountain regions).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on
Earth's surface

Components of Ecosystems: The components of ecosystems

Identify the components of different ecosystems, as exemplified by being able to

Identify examples of each ecosystem component (e.g., pine trees versus grasslands, low versus high rainfall, clay versus sandy soils).

Describe local ecosystems by surveying and recording the properties of their components.

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Identify and describe the characteristics of ecosystems, as exemplified by being able to

Identify and describe the characteristics of an ecosystem (specific types of plants, climate, and soil) in which a favorite or interesting creature lives.

Identify and draw pictures of different plants and animals in various local ecosystems (e.g., a pond, forest, city park).

Compare the characteristics of different ecosystems (e.g., pond, deciduous forest, coral reef).

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Identify and describe the characteristics of biomes, as exemplified by being able to

Describe the defining characteristics of a biome as a large region of ecosystems with similar climate and vegetation characteristics.

Describe the temperature, precipitation, and vegetation characteristics of various biomes, (e.g., deserts, grasslands, savannahs, temperate forests, tropical forests, arctic tundra).

Identify the characteristics in photographs of different types of vegetation and match them to the appropriate sections of a world climate map (e.g., cacti and succulents on a desert climate region, tropical forest trees on a tropical climate region, coral in shallow, tropical marine waters).

How human actions modify the physical environment

Identify and describe examples of how human activities impact the physical environment, as exemplified by being able to

Identify and describe the changes in local habitats that resulted from human activities.

The uses of Geography
How to apply geography to interpret the present and plan for the future

Using Geography to Interpret the Present and Plan for the Future:

Geographic contexts (the human and physical characteristics of places and environments) are the settings for current events

Analyze geographic contexts in which current events and issues occur, as exemplified by being able to

Analyze a current environmental issue in the region (e.g., building or demolishing a dam, building or expansion of freeway system, creation of parks and open spaces, regulatory legislation on industry to prevent further air, water, and land pollution) and describe ways in which people and the environment interact to affect the issue positively and negatively.

Describe current changes in places, regions, and environments and predict how these locations may be different in the future, as exemplified by being able to

Describe how to plan for the environmental future of a place by completing the following statements: “I will keep....” “I will change....” and “I will remove....”

The World in Spatial Terms

How to analyze the spatial organization of people, places, and environments on Earth's surface

Spatial Patterns and Processes: Processes shape the spatial patterns of people, places, and environments over time

Describe and compare the processes that influence the distribution of human and physical phenomena, as exemplified by being able to

Describe and compare changes in natural vegetation zones and land uses on the slopes of a mountain (e.g., vertical zonation, tree lines in middle latitudes).

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

Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to

Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).
ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD  PS.7.  The physical processes that shape the patterns of Earth's surface
STRAND  PS.7.1.  Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
BENCHMARK  PS.7.1.B.  Analyze and explain patterns of physical features resulting from the interactions of Earth’s physical processes, as exemplified by being able to
EXPECTATION  PS.7.1.B.1.  Analyze maps of tectonic plates to predict the location of physical features (e.g., mountain ranges, volcanoes, rift valleys).

ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD  PS.7.  The physical processes that shape the patterns of Earth's surface
STRAND  PS.7.3.  Physical Processes: Physical processes generate patterns of features across Earth’s surface
BENCHMARK  PS.7.3.A.  Analyze and explain the patterns that occur on Earth’s surface as a result of physical processes, as exemplified by being able to
EXPECTATION  PS.7.3.A.2.  Explain how physical processes related to plate tectonics form islands (e.g., Hawaiian Islands) or increase the elevation of mountains (e.g., Himalayan Mountains).
EXPECTATION  PS.7.3.A.3.  Explain the effects of erosion processes on landscape features over time (e.g., Chimney Rock, Devil’s Tower, Grand Canyon, Arches National Park).

ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD  PS.8.  The characteristics and spatial distribution of ecosystems and biomes on Earth's surface
STRAND  PS.8.2.  Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems
BENCHMARK  PS.8.2.A.  Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to
EXPECTATION  PS.8.2.A.2.  Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD  PS.8.  The characteristics and spatial distribution of ecosystems and biomes on Earth's surface
STRAND  PS.8.3.  Characteristics and Geographic Distribution of Biomes: Climate primarily determines the characteristics and geographic distribution of biomes
BENCHMARK  PS.8.3.A.  Describe and explain how climate (temperature and rainfall) primarily determines the characteristics and geographic distribution of biomes, as exemplified by being able to
EXPECTATION  PS.8.3.A.3.  Explain how biomes do not always follow lines of latitude by identifying the influences of oceans and mountain ranges on the distribution of climate and vegetation.

ESSENTIAL ELEMENT  NGS.ES.  Environment and Society
STANDARD  ES.14.  How human actions modify the physical environment
STRAND  ES.14.3.  Consequences for People and Environments: The physical environment can
both accommodate and be endangered by human activities

BENCHMARK ES.14.3.A. Analyze the positive and negative consequences of humans changing the physical environment, as exemplified by being able to

EXEMPLARY ES.14.3.A.3. Analyze the ways humans can have positive effects on the physical environment (e.g., open green space protection, wetland restoration, sustainable forestry).

ESSENTIAL ELEMENT NGS.ES. Environment and Society
STANDARD ES.15. How physical systems affect human systems
STRAND ES.15.2. Environmental Hazards: The types, causes, and characteristics of environmental hazards occur at a variety of scales from local to global

BENCHMARK ES.15.2.A. Describe and explain the types and characteristics of hazards, as exemplified by being able to

EXPECTATION ES.15.2.A.1. Identify and explain the types of threats posed to human settlement by different types of environmental hazards (e.g., wind destruction, fires, flooding, collapse of structures).

EXPECTATION ES.15.2.A.2. Construct a table of climate-related and tectonic-related hazards and explain the characteristics of each type of hazard.

National Geography Standards (NGS)

Science

Grade 6 - Adopted: 2012

ESSENTIAL ELEMENT NGS.WST. The World in Spatial Terms
STANDARD WST.3. How to analyze the spatial organization of people, places, and environments on Earth’s surface
STRAND WST.3.2. Spatial Patterns and Processes: Processes shape the spatial patterns of people, places, and environments over time

BENCHMARK WST.3.2.A. Describe and compare the processes that influence the distribution of human and physical phenomena, as exemplified by being able to

EXPECTATION WST.3.2.A.3. Describe and compare changes in natural vegetation zones and land uses on the slopes of a mountain (e.g., vertical zonation, tree lines in middle latitudes).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface
STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

BENCHMARK PS.7.1.A. Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to

EXPECTATION PS.7.1.A.2. Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface
STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s
physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

BENCHMARK PS.7.1.B. Analyze and explain patterns of physical features resulting from the interactions of Earth’s physical processes, as exemplified by being able to

EXPECTATION PS.7.1.B.1. Analyze maps of tectonic plates to predict the location of physical features (e.g., mountain ranges, volcanoes, rift valleys).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth's surface
STRAND PS.7.3. Physical Processes: Physical processes generate patterns of features across Earth’s surface

BENCHMARK PS.7.3.A. Analyze and explain the patterns that occur on Earth’s surface as a result of physical processes, as exemplified by being able to

EXPECTATION PS.7.3.A.2. Explain how physical processes related to plate tectonics form islands (e.g., Hawaiian Islands) or increase the elevation of mountains (e.g., Himalayan Mountains).

EXPECTATION PS.7.3.A.3. Explain the effects of erosion processes on landscape features over time (e.g., Chimney Rock, Devil’s Tower, Grand Canyon, Arches National Park).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth's surface
STRAND PS.8.2. Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

BENCHMARK PS.8.2.A. Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to

EXPECTATION PS.8.2.A.2. Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth's surface
STRAND PS.8.3. Characteristics and Geographic Distribution of Biomes: Climate primarily determines the characteristics and geographic distribution of biomes

BENCHMARK PS.8.3.A. Describe and explain how climate (temperature and rainfall) primarily determines the characteristics and geographic distribution of biomes, as exemplified by being able to

EXPECTATION PS.8.3.A.3. Explain how biomes do not always follow lines of latitude by identifying the influences of oceans and mountain ranges on the distribution of climate and vegetation.

ESSENTIAL ELEMENT NGS.ES. Environment and Society
STANDARD ES.14. How human actions modify the physical environment
STRAND ES.14.3. Consequences for People and Environments: The physical environment can both accommodate and be endangered by human activities

BENCHMARK ES.14.3.A. Analyze the positive and negative consequences of humans changing the physical environment, as exemplified by being able to

EXPECTATION ES.14.3.A.3. Analyze the ways humans can have positive effects on the physical
environment (e.g., open green space protection, wetland restoration, sustainable forestry).

ESSENTIAL ELEMENT  NGS.ES.  Environment and Society
STANDARD    ES.15.     How physical systems affect human systems
STRAND   ES.15.2.  Environmental Hazards: The types, causes, and characteristics of environmental hazards occur at a variety of scales from local to global
BENCHMARK  ES.15.2.A. Describe and explain the types and characteristics of hazards, as exemplified by being able to
Identify and explain the types of threats posed to human settlement by
EXEMPLARY  ES.15.2.A.1. different types of environmental hazards (e.g., wind destruction, fires, flooding, collapse of structures).
EXEMPLARY  ES.15.2.A.2. Construct a table of climate-related and tectonic-related hazards and explain the characteristics of each type of hazard.

National Geography Standards (NGS)

Science

Grade 7 - Adopted: 2012

ESSENTIAL ELEMENT  NGS.WST.  The World in Spatial Terms
STANDARD    WST.3.     How to analyze the spatial organization of people, places, and environments on Earth's surface
STRAND   WST.3.2.  Spatial Patterns and Processes: Processes shape the spatial patterns of people, places, and environments over time
BENCHMARK  WST.3.2.A. Describe and compare the processes that influence the distribution of human and physical phenomena, as exemplified by being able to
Describe and compare changes in natural vegetation zones and land uses
EXEMPLARY  WST.3.2.A.3. on the slopes of a mountain (e.g., vertical zonation, tree lines in middle latitudes).

ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD    PS.7.     The physical processes that shape the patterns of Earth's surface
Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
BENCHMARK  PS.7.1.A. Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to
Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).
EXEMPLARY  PS.7.1.A.2. on the slopes of a mountain (e.g., vertical zonation, tree lines in middle latitudes).

ESSENTIAL ELEMENT  NGS.PS.  Physical Systems
STANDARD    PS.7.     The physical processes that shape the patterns of Earth's surface
Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
BENCHMARK  PS.7.1.B. Analyze and explain patterns of physical features resulting from the
interactions of Earth’s physical processes, as exemplified by being able to
Analyze maps of tectonic plates to predict the location of physical features
(e.g., mountain ranges, volcanoes, rift valleys).

EXPECTATION PS.7.1.B.1.

ESSENTIAL
ELEMENT NGS.PS. Physical Systems

STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface

STRAND PS.7.3. Physical Processes: Physical processes generate patterns of features across Earth’s surface

BENCHMARK PS.7.3.A. Analyze and explain the patterns that occur on Earth’s surface as a result of physical processes, as exemplified by being able to
Explain how physical processes related to plate tectonics form islands (e.g.,
Hawaiian Islands) or increase the elevation of mountains (e.g., Himalayan
Mountains).

EXPECTATION PS.7.3.A.2. Explain the effects of erosion processes on landscape features over time
(e.g., Chimney Rock, Devil’s Tower, Grand Canyon, Arches National
Park).

EXPECTATION PS.7.3.A.3.

ESSENTIAL
ELEMENT NGS.PS. Physical Systems

STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

STRAND PS.8.2. Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

BENCHMARK PS.8.2.A. Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to
Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

EXPECTATION PS.8.2.A.2.

ESSENTIAL
ELEMENT NGS.PS. Physical Systems

STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

STRAND PS.8.3. Characteristics and Geographic Distribution of Biomes: Climate primarily determines the characteristics and geographic distribution of biomes

BENCHMARK PS.8.3.A. Describe and explain how climate (temperature and rainfall) primarily determines the characteristics and geographic distribution of biomes, as exemplified by being able to
Explain how biomes do not always follow lines of latitude by identifying the influences of oceans and mountain ranges on the distribution of climate and vegetation.

EXPECTATION PS.8.3.A.3.

ESSENTIAL
ELEMENT NGS.ES. Environment and Society

STANDARD ES.14. How human actions modify the physical environment

STRAND ES.14.3. Consequences for People and Environments: The physical environment can both accommodate and be endangered by human activities

BENCHMARK ES.14.3.A. Analyze the positive and negative consequences of humans changing the physical environment, as exemplified by being able to
Analyze the ways humans can have positive effects on the physical environment (e.g., open green space protection, wetland restoration, sustainable forestry).

EXPECTATION ES.14.3.A.3.
ESSENTIAL ELEMENT NGS.ES. Environment and Society
STANDARD ES.15. How physical systems affect human systems
STRAND ES.15.2. Environmental Hazards: The types, causes, and characteristics of environmental hazards occur at a variety of scales from local to global
BENCHMARK ES.15.2.A. Describe and explain the types and characteristics of hazards, as exemplified by being able to
EXPECTED ES.15.2.A.1. Identify and explain the types of threats posed to human settlement by different types of environmental hazards (e.g., wind destruction, fires, flooding, collapse of structures).
EXPECTED ES.15.2.A.2. Construct a table of climate-related and tectonic-related hazards and explain the characteristics of each type of hazard.

National Geography Standards (NGS)

Science

Grade 8 - Adopted: 2012
ESSENTIAL ELEMENT NGS.WST. The World in Spatial Terms
STANDARD WST.3. How to analyze the spatial organization of people, places, and environments on Earth's surface
STRAND WST.3.2. Spatial Patterns and Processes: Processes shape the spatial patterns of people, places, and environments over time
BENCHMARK WST.3.2.A. Describe and compare the processes that influence the distribution of human and physical phenomena, as exemplified by being able to
EXPECTED WST.3.2.A.3. Describe and compare changes in natural vegetation zones and land uses on the slopes of a mountain (e.g., vertical zonation, tree lines in middle latitudes).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface
STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
BENCHMARK PS.7.1.A. Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to
EXPECTED PS.7.1.A.2. Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface
STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
BENCHMARK PS.7.1.B. Analyze and explain patterns of physical features resulting from the interactions of Earth’s physical processes, as exemplified by being able to
EXPECTED PS.7.1.B.1. Analyze maps of tectonic plates to predict the location of physical features (e.g., mountain ranges, volcanoes, rift valleys).
The physical processes that shape the patterns of Earth’s surface

Physical Processes: Physical processes generate patterns of features across Earth’s surface

Analyze and explain the patterns that occur on Earth’s surface as a result of physical processes, as exemplified by being able to

Explain how physical processes related to plate tectonics form islands (e.g., Hawaiian Islands) or increase the elevation of mountains (e.g., Himalayan Mountains).

Explain the effects of erosion processes on landscape features over time

The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to

Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

Characteristics and Geographic Distribution of Biomes: Climate primarily determines the characteristics and geographic distribution of biomes

Describe and explain how climate (temperature and rainfall) primarily determines the characteristics and geographic distribution of biomes, as exemplified by being able to

Explain how biomes do not always follow lines of latitude by identifying the influences of oceans and mountain ranges on the distribution of climate and vegetation.

How human actions modify the physical environment

Consequences for People and Environments: The physical environment can both accommodate and be endangered by human activities

Analyze the positive and negative consequences of humans changing the physical environment, as exemplified by being able to

Analyze the ways humans can have positive effects on the physical environment (e.g., open green space protection, wetland restoration, sustainable forestry).

How physical systems affect human systems
Environmental Hazards: The types, causes, and characteristics of environmental hazards occur at a variety of scales from local to global.

Describe and explain the types and characteristics of hazards, as exemplified by being able to identify and explain the types of threats posed to human settlement by different types of environmental hazards (e.g., wind destruction, fires, flooding, collapse of structures).

Construct a table of climate-related and tectonic-related hazards and explain the characteristics of each type of hazard.

**National Geography Standards (NGS)**

**Science**

**Grade 9 - Adopted: 2012**

**ESSENTIAL ELEMENT**

**STANDARD**

**PS.7.** The physical processes that shape the patterns of Earth's surface

**PS.7.1.** Explain how the effects of physical processes vary across regions of the world and over time, as exemplified by being able to analyze and explain the relationships between physical processes and the location of land features (e.g., river valleys, canyons, deltas, glaciated lakes and moraines, limestone deposits, caves, alluvial fans, canyons).

**ESSENTIAL ELEMENT**

**STANDARD**

**PS.8.** The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

**PS.8.1.** Explain how there are short-term and long-term changes in ecosystems, as exemplified by being able to explain the response of ecosystems to stress caused by physical events in terms of their characteristics and capacity to respond (e.g., changes in mangroves by tsunamis, changes in forest flora and fauna after a fire).

**ESSENTIAL ELEMENT**

**STANDARD**

**ES.15.** How physical systems affect human systems

**ES.15.2.** Explain and compare how people in different environments think about and respond to environmental hazards, as exemplified by being able to construct a list of environmental hazards and compare and contrast how people in developed and developing world regions prepare for and cope with the aftermath of these disasters.

**ESSENTIAL ELEMENT**

**STANDARD**

**ES.16.** The changes that occur in the meaning, use, distribution, and importance
Sustainable Resource Use and Management: Policies and programs that promote the sustainable use and management of resources impact people and the environment.

Evaluate policy decisions regarding the sustainable use of resources in different regions and at different spatial scales in the world, as exemplified by being able to compare government policies and programs to promote sustainability (e.g., reducing fossil-fuel dependency, recycling, conserving water) in developed and developing countries.

The Uses of Geography

How to apply geography to interpret the present and plan for the future using Geography to Interpret the Present and Plan for the Future: Geographic contexts (the human and physical characteristics of places and environments) provide the basis for analyzing current events and making predictions about future issues.

Analyze and evaluate the connections between the geographic contexts of current events and possible future issues, as exemplified by being able to evaluate the feasibility and long-range impacts in a series of scenarios for dealing with social and environmental issues (e.g., absorbing and dispersing refugees, responding to threats from global warming, managing the future of Antarctica).

National Geography Standards (NGS)

Social Studies

Grade 4 - Adopted: 2012

ESSENTIAL ELEMENT NGS.PR. Places and Regions

STANDARD PR.4. The physical and human characteristics of places

STRAND PR.4.1. The Concept of Place: Places are locations having distinctive characteristics that give them meaning and distinguish them from other locations.

BENCHMARK PR.4.1.A. Describe the distinguishing characteristics and meanings of several different places, as exemplified by being able to describe how certain places may have meanings that distinguish them from other places (e.g., cemetery, historical park or battlefield, religious shrines or temples, state or national parks).

EXPECTATION PR.4.1.A.3. Describe and compare the physical characteristics of places at a variety of scales, local to global, as exemplified by being able to describe and compare the physical environments and landforms of different places in the world (e.g., mountains, islands, valleys or canyons, mesas).

ESSENTIAL ELEMENT NGS.PR. Places and Regions

STANDARD PR.4. The physical and human characteristics of places

STRAND PR.4.2. The Characteristics of Places: Places have physical and human characteristics

BENCHMARK PR.4.2.A. Describe and compare the physical characteristics of places at a variety of scales, local to global, as exemplified by being able to describe and compare the physical environments and landforms of different places in the world (e.g., mountains, islands, valleys or canyons, mesas).

EXPECTATION PR.4.2.A.3. Describe and compare the physical environments and landforms of different places in the world (e.g., mountains, islands, valleys or canyons, mesas).
That people create regions to interpret Earth's complexity

The Concept of Region: Regions are areas of Earth’s surface with unifying physical and/or human characteristics

Describe the distinguishing characteristics and meanings of several different regions, as exemplified by being able to

Describe the characteristics that define a physical region in the state (e.g., Front Range in Colorado, Sand Hills in Nebraska, Hill Country in Texas).

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

Components of Earth’s Physical Systems: There are four components of Earth's physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere)

Identify attributes of Earth's different physical systems, as exemplified by being able to

Identify different attributes of physical systems in photographs (e.g., sky, clouds, plants, soil, oceans, lakes, mountains).

Identify examples of landforms on Earth's surface (e.g., mountains, volcanoes, valleys, plains).

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Components of Ecosystems: The components of ecosystems

Identify the components of different ecosystems, as exemplified by being able to

Identify the three major components of an ecosystem (i.e., biomass, climate, and soil).

Identify examples of each ecosystem component (e.g., pine trees versus grasslands, low versus high rainfall, clay versus sandy soils).

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Characteristics and Geographic Distribution of Ecosystems: The characteristics of ecosystems

Identify and describe the characteristics of ecosystems, as exemplified by being able to

Identify and describe the characteristics of an ecosystem (specific types of plants, climate, and soil) in which a favorite or interesting creature lives.

Compare the characteristics of different ecosystems (e.g., pond, deciduous forest, coral reef).

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Characteristics and Geographic Distribution of Biomes: The characteristics

Compare the characteristics of different biomes (e.g., deciduous forest, coral reef).
of biomes

**BENCHMARK PS.8.3.A.** Describe the characteristics of biomes, as exemplified by being able to

**EXPECTATION PS.8.3.A.1.** Describe the defining characteristics of a biome as a large region of ecosystems with similar climate and vegetation characteristics.

**EXPECTATION PS.8.3.A.2.** Describe the temperature, precipitation, and vegetation characteristics of various biomes, (e.g., deserts, grasslands, savannahs, temperate forests, tropical forests, arctic tundra).

**EXPECTATION PS.8.3.A.3.** Identify the characteristics in photographs of different types of vegetation and match them to the appropriate sections of a world climate map (e.g., cacti and succulents on a desert climate region, tropical forest trees on a tropical climate region, coral in shallow, tropical marine waters).

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**National Geography Standards (NGS)**

**Social Studies**

**Grade 5 - Adopted: 2012**

**ESSENTIAL ELEMENT** NGS.WST. The World in Spatial Terms

**STANDARD WST.2.** How to use mental maps to organize information about people, places, and environments in a spatial context

**STRAND WST.2.3.** Using Mental Maps: Mental maps are used to answer geographic questions about locations, characteristics, and patterns of places and regions

**BENCHMARK WST.2.3.A.** Identify from memory and describe the locations, characteristics, and patterns of places and regions to answer geographic questions, as exemplified by being able to

**EXPECTATION WST.2.3.A.3.** Identify from memory the distribution, pattern, and characteristics of major world deserts and mountain ranges that can be barriers to travel or settlement.

**ESSENTIAL ELEMENT** NGS.PS. Physical Systems

**STANDARD PS.7.** The physical processes that shape the patterns of Earth’s surface

**STRAND PS.7.1.** Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

**BENCHMARK PS.7.1.A.** Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to

**EXPECTATION PS.7.1.A.2.** Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

**ESSENTIAL ELEMENT** NGS.PS. Physical Systems

**STANDARD PS.8.** The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

**STRAND PS.8.2.** Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

**BENCHMARK PS.8.2.A.** Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to

**EXPECTATION PS.8.2.A.2.** Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and
vegetation maps.

National Geography Standards (NGS)
Social Studies

Grade 6 - Adopted: 2012

ESSENTIAL ELEMENT NGS.WST. The World in Spatial Terms

STANDARD WST.2. How to use mental maps to organize information about people, places, and environments in a spatial context

Using Mental Maps: Mental maps are used to answer geographic questions about locations, characteristics, and patterns of places and regions

STRAND WST.2.3. Using Mental Maps: Mental maps are used to answer geographic questions about locations, characteristics, and patterns of places and regions

BENCHMARK WST.2.3.A. Identify from memory and describe the locations, characteristics, and patterns of places and regions to answer geographic questions, as exemplified by being able to

EXPECTATION WST.2.3.A.3. Identify from memory the distribution, pattern, and characteristics of major world deserts and mountain ranges that can be barriers to travel or settlement.

ESSENTIAL ELEMENT NGS.PS. Physical Systems

STANDARD PS.7. The physical processes that shape the patterns of Earth's surface

Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

STRAND PS.7.1. Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to

BENCHMARK PS.7.1.A. Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

EXPECTATION PS.7.1.A.2. Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

ESSENTIAL ELEMENT NGS.PS. Physical Systems

STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

STRAND PS.8.2. Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to

BENCHMARK PS.8.2.A. Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

EXPECTATION PS.8.2.A.2. Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

National Geography Standards (NGS)
Social Studies

Grade 7 - Adopted: 2012

ESSENTIAL ELEMENT NGS.WST. The World in Spatial Terms
STANDARD WST.2. How to use mental maps to organize information about people, places, and environments in a spatial context

STRAND WST.2.3. Using Mental Maps: Mental maps are used to answer geographic questions about locations, characteristics, and patterns of places and regions

BENCHMARK WST.2.3.A. Identify from memory and describe the locations, characteristics, and patterns of places and regions to answer geographic questions, as exemplified by being able to

EXPECTATION WST.2.3.A.3. Identify from memory the distribution, pattern, and characteristics of

ESSENTIAL ELEMENTS

NGS.WST. The World in Spatial Terms

HOW TO USE MENTAL MAPS TO ORGANIZE INFORMATION ABOUT PEOPLE, PLACES, AND ENVIRONMENTS IN A SPATIAL CONTEXT

NGS.PS. Physical Systems

STANDARD PS.7. The physical processes that shape the patterns of Earth’s surface

STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent

BENCHMARK PS.7.1.A. Identify and describe patterns in the environment that result from the interaction of Earth’s physical processes, as exemplified by being able to

EXPECTATION PS.7.1.A.2. Identify and describe the patterns that result from the connections between climate and vegetation (e.g., examples of patterns of ecosystems and biomes).

ESSENTIAL ELEMENTS

NGS.PS. Physical Systems

STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface

STRAND PS.8.2. Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems

BENCHMARK PS.8.2.A. Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to

EXPECTATION PS.8.2.A.2. Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

National Geography Standards (NGS)

Grade 8 - Adopted: 2012

Social Studies

ESSENTIAL ELEMENT NGS.WST. The World in Spatial Terms

STANDARD WST.2. How to use mental maps to organize information about people, places, and environments in a spatial context

STRAND WST.2.3. Using Mental Maps: Mental maps are used to answer geographic questions about locations, characteristics, and patterns of places and regions

BENCHMARK WST.2.3.A. Identify from memory and describe the locations, characteristics, and patterns of places and regions to answer geographic questions, as exemplified by being able to

EXPECTATION WST.2.3.A.3. Identify from memory the distribution, pattern, and characteristics of
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ESSENTIAL ELEMENT NGS.PS. Physical Systems
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STRAND PS.7.1. Components of Earth’s Physical Systems: The four components of Earth’s physical systems (the atmosphere, biosphere, hydrosphere, and lithosphere) are interdependent
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EXPECTATION PS.7.1.A.2. of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface
STRAND PS.8.2. Characteristics and Geographic Distribution of Ecosystems: Physical processes determine the characteristics of ecosystems
BENCHMARK PS.8.2.A. Describe and explain how physical processes determine the characteristics of ecosystems, as exemplified by being able to Explain how different locations can have similar ecosystems as a function of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.
EXPECTATION PS.8.2.A.2. of temperature, precipitation, elevation, and latitude by using climographs and vegetation maps.

National Geography Standards (NGS)
Social Studies

Grade 9 - Adopted: 2012
ESSENTIAL ELEMENT NGS.PS. Physical Systems
STANDARD PS.8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface
STRAND PS.8.1. Components of Ecosystems: Ecosystems are dynamic and respond to changes in environmental conditions
BENCHMARK PS.8.1.A. Explain how there are short-term and long-term changes in ecosystems, as exemplified by being able to Explain the response of ecosystems to stress caused by physical events in terms of their characteristics and capacity to respond (e.g., changes in mangroves by tsunamis, changes in forest flora and fauna after a fire). Explain how ecosystems respond to long-term changes in the physical
EXPECTATION PS.8.1.A.2. environment (e.g., glacial retreat, volcanic eruptions, sea-level rise, increases in sea temperatures).
EXPECTATION PS.8.1.A.3.

Next Generation Science Standards (NGSS)
Science

Grade 4 - Adopted: 2013
STRAND NGSS.4- EARTH AND SPACE SCIENCE
Earth’s Systems

Students who demonstrate understanding can:

PERFORMANCE EXPECTATION

PERFORMANCE

Students who demonstrate understanding can:

PERFORMANCE EXPECTATION

Students who demonstrate understanding can:

PERFORMANCE EXPECTATION

Students who demonstrate understanding can:

PERFORMANCE

EARTH AND SPACE SCIENCE

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PERFORMANCE

EARTH AND SPACE SCIENCE

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LIFE SCIENCE

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PERFORMANCE

EARTH AND SPACE SCIENCE

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EARTH AND SPACE SCIENCE

LIFE SCIENCE

Students who demonstrate understanding can:

PERFORMANCE

Students who demonstrate understanding can:

PERFORMANCE

Students who demonstrate understanding can:

PERFORMANCE
Next Generation Science Standards (NGSS)

Science

Grade 7 - Adopted: 2013

STRAND NGSS.MS-LS.
TITLE LS2.

LIFE SCIENCE

Ecosystems: Interactions, Energy, and Dynamics

Students who demonstrate understanding can:

PERFORMANCE EXPECTATION MS-LS2-4.
Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

PERFORMANCE EXPECTATION MS-LS2-5.
Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

EARTH AND SPACE SCIENCE

Earth’s Systems

Students who demonstrate understanding can:

PERFORMANCE EXPECTATION MS-ESS2-2.
Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.

PERFORMANCE EXPECTATION MS-ESS2-3.
Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

Next Generation Science Standards (NGSS)

Science

Grade 8 - Adopted: 2013

STRAND NGSS.MS-LS.
TITLE MS-LS2.

LIFE SCIENCE

Ecosystems: Interactions, Energy, and Dynamics

Students who demonstrate understanding can:

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PERFORMANCE EXPECTATION MS-LS2-5.
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EARTH AND SPACE SCIENCE

Earth’s Systems

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PERFORMANCE EXPECTATION MS-ESS2-2.
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PERFORMANCE EXPECTATION MS-ESS2-3.
Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

Next Generation Science Standards (NGSS)

Science

Grade 9 - Adopted: 2013
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<th>STRAND</th>
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<th>LIFE SCIENCE</th>
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<td>TITLE</td>
<td>HS-LS2.</td>
<td>Ecosystems: Interactions, Energy, and Dynamics</td>
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<td>Students who demonstrate understanding can:</td>
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<tr>
<td>PERFORMANCE</td>
<td>HS-LS2-2.</td>
<td>Use mathematical representations to support and</td>
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<td>EXPECTATION</td>
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<td>revise explanations based on evidence about</td>
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<td>PERFORMANCE</td>
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<td>Design, evaluate, and refine a solution for</td>
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<td>Evaluate the evidence for the role of group</td>
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<td>HS-LS4.</td>
<td>Biological Evolution: Unity and Diversity</td>
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<td>PERFORMANCE</td>
<td>HS-LS4-6.</td>
<td>Create or revise a simulation to test a solution</td>
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<td>EXPECTATION</td>
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<td>to mitigate adverse impacts of human activity on</td>
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<td>Earth’s Place in the Universe</td>
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<td>movements of continental and oceanic crust and</td>
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<td>the theory of plate tectonics to explain the</td>
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<td>ages of crustal rocks.</td>
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<td>different spatial and temporal scales to form</td>
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<td>continental and ocean-floor features.</td>
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<td>Plan and conduct an investigation of the</td>
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<td>EXPECTATION</td>
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<td>properties of water and its effects on Earth</td>
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<td>Create a computational simulation to illustrate</td>
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<td>the relationships among management of natural</td>
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