

# National Council for the Social Studies (NCSS), National Geography Standards (NGS), Next Generation Science Standards (NGSS)

Subjects: Science, Social Studies

Grades: 2, 3, 4, 5, 6

## Virtual Field Trips

### Who Lives On a Coral Reef?

#### National Geography Standards (NGS)

##### Science

#### Grade 2 - 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.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.	Components of Earth's Physical Systems: There are four components of 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.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.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.
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: The components of ecosystems
BENCHMARK	PS.8.1.A.	Identify the components of different ecosystems, as exemplified by being able to
EXPECTATION	PS.8.1.A.3.	Describe local ecosystems by surveying and recording the properties of their components.
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: The characteristics of ecosystems
BENCHMARK	PS.8.2.A.	Identify and describe the characteristics of ecosystems, as exemplified by being able to
EXPECTATION	PS.8.2.A.1.	Identify and describe the characteristics of an ecosystem (specific types of plants, climate, and soil) in which a favorite or interesting creature lives.
EXPECTATION	PS.8.2.A.2.	Identify and draw pictures of different plants and animals in various local ecosystems (e.g., a pond, forest, city park).
EXPECTATION	PS.8.2.A.3.	Compare the characteristics of different ecosystems (e.g., pond, deciduous forest, coral reef).
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 consequences of human modifications of the physical environment
BENCHMARK	ES.14.3.A.	Identify and describe examples of how human activities impact the physical environment, as exemplified by being able to
EXPECTATION	ES.14.3.A.1.	Identify and describe the changes in local habitats that resulted from human activities.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.1.	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
BENCHMARK	UG.18.1.A.	Analyze geographic contexts in which current events and issues occur, as exemplified by being able to
EXPECTATION	UG.18.1.A.3.	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.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.2.	Changes in Geographic Contexts: Places, regions, and environments will continue to change
BENCHMARK	UG.18.2.A.	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  
 EXPECTATION UG.18.2.A.1. completing the following statements: “I will keep....” “I will change....”  
 and “I will remove....”

### National Geography Standards (NGS)

#### Science

#### Grade 3 - 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.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.	Components of Earth’s Physical Systems: There are four components of 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.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.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.
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: The components of ecosystems
BENCHMARK	PS.8.1.A.	Identify the components of different ecosystems, as exemplified by being able to
EXPECTATION	PS.8.1.A.3.	Describe local ecosystems by surveying and recording the properties of their components.
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: The characteristics of ecosystems
BENCHMARK	PS.8.2.A.	Identify and describe the characteristics of ecosystems, as exemplified by being able to
EXPECTATION	PS.8.2.A.1.	Identify and describe the characteristics of an ecosystem (specific types of plants, climate, and soil) in which a favorite or interesting creature lives.
EXPECTATION	PS.8.2.A.2.	Identify and draw pictures of different plants and animals in various local ecosystems (e.g., a pond, forest, city park).
EXPECTATION	PS.8.2.A.3.	Compare the characteristics of different ecosystems (e.g., pond, deciduous forest, coral reef).
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 consequences of human modifications of the physical environment
BENCHMARK	ES.14.3.A.	Identify and describe examples of how human activities impact the physical environment, as exemplified by being able to
EXPECTATION	ES.14.3.A.1.	Identify and describe the changes in local habitats that resulted from human activities.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.1.	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
BENCHMARK	UG.18.1.A.	Analyze geographic contexts in which current events and issues occur, as exemplified by being able to
EXPECTATION	UG.18.1.A.3.	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.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.2.	Changes in Geographic Contexts: Places, regions, and environments will continue to change
BENCHMARK	UG.18.2.A.	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
EXPECTATION	UG.18.2.A.1.	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...."

### 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.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.	Components of Earth's Physical Systems: There are four components of 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.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.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.
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: The components of ecosystems
BENCHMARK	PS.8.1.A.	Identify the components of different ecosystems, as exemplified by being able to
EXPECTATION	PS.8.1.A.3.	Describe local ecosystems by surveying and recording the properties of their components.
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: The characteristics of ecosystems
BENCHMARK	PS.8.2.A.	Identify and describe the characteristics of ecosystems, as exemplified by being able to
EXPECTATION	PS.8.2.A.1.	Identify and describe the characteristics of an ecosystem (specific types of plants, climate, and soil) in which a favorite or interesting creature lives.
EXPECTATION	PS.8.2.A.2.	Identify and draw pictures of different plants and animals in various local

		ecosystems (e.g., a pond, forest, city park).
EXPECTATION	PS.8.2.A.3.	Compare the characteristics of different ecosystems (e.g., pond, deciduous forest, coral reef).
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 consequences of human modifications of the physical environment
BENCHMARK	ES.14.3.A.	Identify and describe examples of how human activities impact the physical environment, as exemplified by being able to
EXPECTATION	ES.14.3.A.1.	Identify and describe the changes in local habitats that resulted from human activities.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.1.	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
BENCHMARK	UG.18.1.A.	Analyze geographic contexts in which current events and issues occur, as exemplified by being able to
EXPECTATION	UG.18.1.A.3.	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.
ESSENTIAL ELEMENT	NGS.UG.	The Uses of Geography
STANDARD	UG.18.	How to apply geography to interpret the present and plan for the future
STRAND	UG.18.2.	Changes in Geographic Contexts: Places, regions, and environments will continue to change
BENCHMARK	UG.18.2.A.	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
EXPECTATION	UG.18.2.A.1.	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...."

### **National Geography Standards (NGS)**

#### **Science**

#### **Grade 5** - 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 Place: Physical and human characteristics of places change
BENCHMARK	PR.4.2.A.	Explain the ways that physical processes change places, as exemplified by being able to

EXPECTATION	PR.4.2.A.3.	Explain how changes in climate may result in changes to places (e.g., drought and stressed vegetation, more precipitation and increased vegetation, warmer temperatures and longer growing seasons at higher latitudes).
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: Components of ecosystems are interdependent
BENCHMARK	PS.8.1.A.	Describe how the components of ecosystems are connected and contribute to the energy of their own cycles, as exemplified by being able to
EXPECTATION	PS.8.1.A.3.	Identify and describe the variable components in an ocean ecosystem that influence the interdependencies in an ecosystem (e.g., water temperature, depth, salinity, acidity, plants, fish, and marine mammals in an aquatic ecosystem).
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: Components of ecosystems are interdependent
BENCHMARK	PS.8.1.B.	Construct a model to explain how an ecosystem works, as exemplified by being able to
EXPECTATION	PS.8.1.B.1.	Construct a food chain or web of food chains by sequentially arranging pictures or samples of a variety of living things (e.g., fungi, insects, plants, animals) to identify interactions within ecosystems.

### National Geography Standards (NGS)

#### Science

#### **Grade 6** - 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 Place: Physical and human characteristics of places change
BENCHMARK	PR.4.2.A.	Explain the ways that physical processes change places, as exemplified by being able to
EXPECTATION	PR.4.2.A.3.	Explain how changes in climate may result in changes to places (e.g., drought and stressed vegetation, more precipitation and increased vegetation, warmer temperatures and longer growing seasons at higher latitudes).
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: Components of ecosystems are interdependent
BENCHMARK	PS.8.1.A.	Describe how the components of ecosystems are connected and contribute to the energy of their own cycles, as exemplified by being able to
EXPECTATION	PS.8.1.A.3.	Identify and describe the variable components in an ocean ecosystem that

		influence the interdependencies in an ecosystem (e.g., water temperature, depth, salinity, acidity, plants, fish, and marine mammals in an aquatic ecosystem).
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: Components of ecosystems are interdependent
BENCHMARK	PS.8.1.B.	Construct a model to explain how an ecosystem works, as exemplified by being able to
EXPECTATION	PS.8.1.B.1.	Construct a food chain or web of food chains by sequentially arranging pictures or samples of a variety of living things (e.g., fungi, insects, plants, animals) to identify interactions within ecosystems.

### Next Generation Science Standards (NGSS)

#### Science

#### Grade 2 - Adopted: 2013

STRAND	NGSS.2-LS.	LIFE SCIENCE
TITLE	2-LS4.	Biological Evolution: Unity and Diversity Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	2-LS4-1.	Make observations of plants and animals to compare the diversity of life in different habitats.
STRAND	NGSS.2-ESS.	EARTH AND SPACE SCIENCE
TITLE	2-ESS2.	Earth's Systems Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	2-ESS2-2.	Develop a model to represent the shapes and kinds of land and bodies of water in an area.

### Next Generation Science Standards (NGSS)

#### Science

#### Grade 3 - Adopted: 2013

STRAND	NGSS.3-LS.	LIFE SCIENCE
TITLE	3-LS2.	Ecosystems: Interactions, Energy, and Dynamics Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	3-LS2-1.	Construct an argument that some animals form groups that help members survive.
STRAND	NGSS.3-LS.	LIFE SCIENCE
TITLE	3-LS4.	Biological Evolution: Unity and Diversity Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	3-LS4-2.	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide

advantages in surviving, finding mates, and reproducing.  
 PERFORMANCE EXPECTATION 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

**Next Generation Science Standards (NGSS)**

**Science**

**Grade 4** - Adopted: 2013

STRAND	NGSS.4-LS.	LIFE SCIENCE
TITLE	4-LS1.	From Molecules to Organisms: Structures and Processes Students who demonstrate understanding can: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
PERFORMANCE EXPECTATION	4-LS1-1.	
PERFORMANCE EXPECTATION	4-LS1-2.	Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

**Next Generation Science Standards (NGSS)**

**Science**

**Grade 5** - Adopted: 2013

STRAND	NGSS.5-PS.	PHYSICAL SCIENCE
TITLE	5-PS3.	Energy Students who demonstrate understanding can: Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
PERFORMANCE EXPECTATION	5-PS3-1.	
STRAND	NGSS.5-LS.	LIFE SCIENCE
TITLE	5-LS2.	Ecosystems: Interactions, Energy, and Dynamics Students who demonstrate understanding can: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
PERFORMANCE EXPECTATION	5-LS2-1.	
STRAND	NGSS.5-ESS.	EARTH AND SPACE SCIENCE
TITLE	5-ESS3.	Earth and Human Activity Students who demonstrate understanding can: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
PERFORMANCE EXPECTATION	5-ESS3-1.	

**Next Generation Science Standards (NGSS)**

**Science**

**Grade 6** - Adopted: 2013

STRAND	NGSS.MS-LS.	LIFE SCIENCE
TITLE	MS-LS1.	From Molecules to Organisms: Structures and Processes Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	MS-LS1-8.	Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
STRAND	NGSS.MS-LS.	LIFE SCIENCE
TITLE	MS-LS2.	Ecosystems: Interactions, Energy, and Dynamics Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	MS-LS2-2.	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
PERFORMANCE EXPECTATION	MS-LS2-3.	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
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.
STRAND	NGSS.MS-ESS.	EARTH AND SPACE SCIENCE
TITLE	MS-ESS3.	Earth and Human Activity Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
PERFORMANCE EXPECTATION	MS-ESS3-5.	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

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