CC Unit Science 4

THEME: Observations of the Environment			
STRAND	**EARTH AND SPACE SCIENCE**		**Report Card Language**
TOPIC: Earth's Surface			
POWER OBJECTIVE #1	**Explain how Earth's surface has specific characteristics and landforms that can be identified.**		**Explain how Earth's surface has specific characteristics and landforms that can be identified.**
SUPPORTING INDICATORS	***4.ESS.1.a*** *Explain that 70 percent of the Earth's surface is covered with water and most of that is the ocean. Describe that only a small portion of the Earth's water is freshwater, and that it is readily found in rivers, lakes, groundwater and glaciers.*		
	Complexity A *Explain how a surface process has changed an area of the Earth's surface.* *Using a visual or actual field observation, describe specific landform features.*	***Complexity B*** *Match a surface process to the landform that it creates (e.g., volcanic activity can create an island).* *Match the names of landforms to a picture or description.*	***Complexity C*** *Identify a characteristic of the Earth's surface.* *Identify Earth's landforms.*
	4.ESS.1.b *Recognize and Identify common landforms. (Common landforms and features include streams, deltas, floodplains, hills, mountains/mountain ranges, valleys, sinkholes, caves, canyons, glacial features, dunes, springs, volcanoes and islands).*		
	Complexity A *Explain how a surface process has changed an area of the Earth's surface.* *Using a visual or actual field observation, describe specific landform features.*	***Complexity B*** *Match a surface process to the landform that it creates (e.g., volcanic activity can create an island).* *Match the names of landforms to a picture or description.*	***Complexity C*** *Identify a characteristic of the Earth's surface.* *Identify Earth's landforms.*

	4.ESS.1.c *Make connections about how landforms are created, change and are destroyed over time through natural (slow and catastrophic) processes.*		
	Complexity A *Explain how a surface process has changed an area of the Earth's surface.* *Using a visual or actual field observation, describe specific landform features.*	***Complexity B*** *Match a surface process to the landform that it creates (e.g., volcanic activity can create an island).* *Match the names of landforms to a picture or description.*	***Complexity C*** *Identify a characteristic of the Earth's surface.* *Identify Earth's landforms.*
POWER OBJECTIVE #2	**Explain how the surface of the Earth changes due to weathering, erosion and deposition.**		**Explain how the surface of the Earth changes due to weathering, erosion and deposition.**
SUPPORTING INDICATORS	***4.ESS.2.a*** *Describe how rocks change shape, size and/or form due to water or glacial movement, freeze and thaw, wind, plant growth, acid rain, pollution and catastrophic events such as earthquakes, flooding and volcanic activity.*		
	Complexity A *Describe ways that weathering (e.g., freezing/thawing, plant growth, flooding, wind, acid rain, etc.) affects landforms.*	***Complexity B*** *Match a change in a landform caused by weathering to the type of weathering that occurred (e.g., a crack getting larger from water freezing).*	***Complexity C*** *Identify an effect of weathering.*
	4.ESS.3.a *Describe how the surface of Earth changes due to erosion and deposition. Erosion is a "destructive" process and deposition is a "constructive" process.*		
	Complexity A *Predict the effect on a landform when a natural force is introduced (e.g., erosion and deposition).*	***Complexity B*** *Identify a change in a landform that was caused by erosion or deposition (e.g., formation of valleys, sand dunes, etc.).*	***Complexity C*** *Identify natural forces that can move rock and soil (e.g., erosion and deposition).*
	4.EES.3.b *Understand liquid water, wind and ice physically remove and carry rock, soil and sediment (erosion) and deposit the material in a new location (deposition).*		
	Complexity A	***Complexity B***	***Complexity C***

	Predict the effect on a landform when a natural force is introduced (e.g., erosion and deposition).	*Identify a change in a landform that was caused by erosion or deposition (e.g., formation of valleys, sand dunes, etc.).*	*Identify natural forces that can move rock and soil (e.g., erosion and deposition).*
	4.ESS.3.c *Describe how gravitational force affects movements of water, rock and soil.*		
	Complexity A *Predict the effect on a landform when a natural force is introduced (e.g., erosion and deposition).*	***Complexity B*** *Identify a change in a landform that was caused by erosion or deposition (e.g., formation of valleys, sand dunes, etc.).*	***Complexity C*** *Identify natural forces that can move rock and soil (e.g., erosion and deposition).*
STRAND	**PHYSICAL SCIENCE**		**Report Card Language**
TOPIC: Electricity, Heat and Matter			
POWER OBJECTIVE #3	**Demonstrate that the total amount of matter is conserved when objects break into smaller pieces, dissolve, or change state.**		**Demonstrate the total amount of matter is conserved when undergoing change.**
SUPPORTING INDICATOR	***4.PS.1.a*** *Explain why when a solid is dissolved in a liquid or when matter changes state (solid, liquid, gas), the total amount of matter remains constant.*		
	Complexity A *Make a prediction about what will happen to the mass of an object after a change of state occurs.*	***Complexity B*** *When given multiple objects, make changes to their physical state and measure the mass before and after the changes are made to determine conservation of mass.*	***Complexity C*** *Recognize that the mass of a given object remains the same before and after a physical change is made to that object.*
POWER OBJECTIVE #4	**Demonstrate how energy can be transferred from one location to another or from one form to another.**		**Demonstrate how energy can be transferred.**
SUPPORTING INDICATORS	***4.PS.2.a*** *Identify that energy transfers from hot to cold objects as heat, resulting in a temperature change. Materials either act as conductors or insulators impacting the flow of energy.*		
	Complexity A	***Complexity B***	***Complexity C***

	Sort objects by whether or not they transfer energy. *Describe how one form of energy is transformed to another form.*	*Identify examples of how different types of energy may be transferred or how different types of energy may not be transferred.* *Demonstrate how energy can be transformed.*	*Identify an example of energy transfer (e.g., the handle of a pot on the stove may become hot to the touch, showing transfer of thermal energy from the pot to your hand).* *Identify an example of how a type of energy can transform to another type of energy (e.g., electricity transforms to light energy when a lamp is turned on).*
	4.PS.2.b *Create a working circuit that requires a continuous loop of electrical conductors.*		
	Complexity A *Sort objects by whether or not they transfer energy.* *Describe how one form of energy is transformed to another form.*	***Complexity B*** *Identify examples of how different types of energy may be transferred or how different types of energy may not be transferred.* *Demonstrate how energy can be transformed.*	***Complexity C*** *Identify an example of energy transfer (e.g., the handle of a pot on the stove may become hot to the touch, showing transfer of thermal energy from the pot to your hand).* *Identify an example of how a type of energy can transform to another type of energy (e.g., electricity transforms to light energy when a lamp is turned on).*
	4.PS.2.c *Design and construct a device that demonstrates energy transformation, including light, heat, sound or motion.*		
	Complexity A *Sort objects by whether or not they transfer energy.* *Describe how one form of energy is transformed to another form.*	***Complexity B*** *Identify examples of how different types of energy may be transferred or how different types of energy may not be transferred.*	***Complexity C*** *Identify an example of energy transfer (e.g., the handle of a pot on the stove may become hot to the touch, showing transfer of*

		Demonstrate how energy can be transformed.	*thermal energy from the pot to your hand).* *Identify an example of how a type of energy can transform to another type of energy (e.g., electricity transforms to light energy when a lamp is turned on).*
	4.PS.2.d *Experiment how electricity and magnetism are closely related.*		
	Complexity A *Sort objects by whether or not they transfer energy.* *Describe how one form of energy is transformed to another form.*	***Complexity B*** *Identify examples of how different types of energy may be transferred or how different types of energy may not be transferred.* *Demonstrate how energy can be transformed.*	***Complexity C*** *Identify an example of energy transfer (e.g., the handle of a pot on the stove may become hot to the touch, showing transfer of thermal energy from the pot to your hand).* *Identify an example of how a type of energy can transform to another type of energy (e.g., electricity transforms to light energy when a lamp is turned on).*
STRAND	**LIFE SCIENCE**		**Report Card Language**
TOPIC: Earth's Living History			
POWER OBJECTIVE #5	**Describe and investigate how changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.**		**Investigate how changes in an organism's environment can be both beneficial and harmful to its survival.**
SUPPORTING INDICATORS	***4.LS.1.a*** *Compare how ecosystems can change gradually or dramatically.*		
	Complexity A	***Complexity B*** *Within a given ecosystem, identify which organisms would benefit or*	***Complexity C*** *Identify that a given change in an ecosystem can be beneficial or*

	Given an ecosystem, describe changes that could be harmful or beneficial to an organism in that ecosystem. *Describe environmental changes that are sudden or gradual.*	*which organisms would be harmed after a change occurs.* *Match environmental changes as sudden or gradual.*	*harmful to a specific organism in that ecosystem.* *Identify environmental changes as sudden or gradual.*
	4.LS.1.b *Explain that when an environment changes, some plants and animals survive and reproduce and others die or move to new locations.*		
	Complexity A *Given an ecosystem, describe changes that could be harmful or beneficial to an organism in that ecosystem.* *Describe environmental changes that are sudden or gradual.*	***Complexity B*** *Within a given ecosystem, identify which organisms would benefit or which organisms would be harmed after a change occurs.* *Match environmental changes as sudden or gradual.*	***Complexity C*** *Identify that a given change in an ecosystem can be beneficial or harmful to a specific organism in that ecosystem.* *Identify environmental changes as sudden or gradual.*
	4.LS.1.c *Explain how ecosystems are based on the interrelationships among and between the biotic and abiotic factors. These include the diversity of other organisms present, the availability of food and other resources, and the physical attributes of the environment.*		
	Complexity A *Given an ecosystem, describe changes that could be harmful or beneficial to an organism in that ecosystem.* *Describe environmental changes that are sudden or gradual.*	***Complexity B*** *Within a given ecosystem, identify which organisms would benefit or which organisms would be harmed after a change occurs.* *Match environmental changes as sudden or gradual.*	***Complexity C*** *Identify that a given change in an ecosystem can be beneficial or harmful to a specific organism in that ecosystem.* *Identify environmental changes as sudden or gradual.*
POWER OBJECTIVE #6	**Compare fossils and present day organisms to one another according to their similarities and differences.**		**Compare fossils and present day organisms to one another.**
SUPPORTING INDICATORS	***4.LS.2.a*** *Classify organisms based on shared internal and external characteristics as a concept of biodiversity.*		
	Complexity A	***Complexity B***	***Complexity C***

	Explain the pre-historic environment that a fossil organism may have lived in and compare that to the present day environment where the fossil was found. *Given a set of fossils and present day organisms, explain why some fossil organisms do not have a present day representative.*	*Given a fossil organism, identify the pre-historic environment it would have lived in, and compare that to the present day environment where the fossil was found.* *Given a set of fossils and present day organisms, sort them by similar characteristics.*	*Match a fossil to an ecosystem that it would have lived in.* *Match a fossil with a representation of the organism.*
	4.LS.2.c *Use fossils to demonstrate how most types of organisms that have lived on Earth have changed over time or no longer exist.*		
	Complexity A *Explain the pre-historic environment that a fossil organism may have lived in and compare that to the present day environment where the fossil was found.* *Given a set of fossils and present day organisms, explain why some fossil organisms do not have a present day representative.*	***Complexity B*** *Given a fossil organism, identify the pre-historic environment it would have lived in, and compare that to the present day environment where the fossil was found.* *Given a set of fossils and present day organisms, sort them by similar characteristics.*	***Complexity C*** *Match a fossil to an ecosystem that it would have lived in.* *Match a fossil with a representation of the organism.*
STRAND	**SCIENCE INQUIRY AND APPLICATION**		**Report Card Language**
POWER OBJECTIVE #7	**Proficiently apply the scientific inquiry processes.**		**Proficiently apply the scientific inquiry processes.**
SUPPORTING INDICATORS	***4.SI.1.a*** *Observe and ask questions about the natural environment.*		
	4.SI.1.b *Plan and conduct simple investigations.*		
	4.SI.1.c *Employ simple equipment and tools to gather data and extend the senses.*		
	4.SI.1.d *Use appropriate mathematics with data to construct reasonable explanations.*		
	4.SI.1.e *Communicate about observations, investigations and explanations.*		
	4.SI.1.f *Review and ask questions about the observations and explanations of others.*		