

**ESS - Earth and Space Systems**

**ER - Earth Resources**

<b>Kindergarten</b>	
<b>ESS</b>	<p>K.8 The student will investigate and understand that light influences temperature on Earth’s surfaces and can cause shadows. Key ideas include</p> <ul style="list-style-type: none"> <li>a) the sun provides light and warms Earth’s surface;</li> <li>b) shadows can be produced when sunlight or artificial light is blocked by an object; and</li> <li>c) objects in shadows and sunlight have different temperatures.</li> </ul>
	<p>K.9 The student will investigate and understand that there are patterns in nature. Key patterns include</p> <ul style="list-style-type: none"> <li>a) daily weather;</li> <li>b) seasonal changes; and</li> <li>c) day and night.</li> </ul>
	<p>K.10 The student will investigate and understand that change occurs over time. Key ideas include</p> <ul style="list-style-type: none"> <li>a) natural and human-made things change over time,</li> <li>b) living and nonliving things change over time;</li> <li>c) changes can be observed and measured; and</li> <li>d) changes may be fast or slow.</li> </ul>
<b>ER</b>	<p>K.11 The student will investigate and understand that humans use resources. Key ideas include</p> <ul style="list-style-type: none"> <li>a) some materials and objects can be used over and over again;</li> <li>b) materials can be recycled; and</li> <li>c) choices we make impact the air, water, land and living things.</li> </ul>
<b>Grade 1</b>	
<b>ESS</b>	<p>1.6 The student will investigate and understand that there is a relationship between the Sun and Earth. Key ideas include</p> <ul style="list-style-type: none"> <li>a) the Sun is the source of energy and light that warms the land, air, and water; and</li> <li>b) the Sun’s relative position changes in the Earth’s sky throughout the day.</li> </ul>
	<p>1.7 The student will investigate and understand that there are weather and seasonal changes. Key ideas include</p> <ul style="list-style-type: none"> <li>a) changes in temperature, light, and precipitation occur over time;</li> <li>b) there are relationships between daily weather and the season; and</li> <li>c) changes in temperature, light, and precipitation affect plants and animals, including humans.</li> </ul>
<b>ER</b>	<p>1.8 The student will investigate and understand that natural resources can be used responsibly. Key ideas include</p> <ul style="list-style-type: none"> <li>a) Most natural resources are limited;</li> <li>b) Human actions can impact the availability of natural resources; and</li> <li>c) Recycling, reusing, and reducing consumption are ways to conserve natural resources.</li> </ul>
<b>Grade 2</b>	
<b>ESS</b>	<p>2.6 The student will investigate and understand that there are different types of weather on Earth. Key ideas include</p> <ul style="list-style-type: none"> <li>a) different types of weather have specific characteristics;</li> <li>b) measuring, recording, and interpreting weather data allows for identification of weather patterns; and</li> <li>c) tracking weather allows us to prepare for the weather and storms.</li> </ul>
	<p>2.7 The student will investigate and understand that weather patterns and seasonal changes affect plants, animals, and their surroundings. Key ideas include</p> <ul style="list-style-type: none"> <li>a) weather and seasonal changes affect the growth and behavior of living things;</li> <li>b) wind and weather can change the land; and</li> <li>c) changes can happen quickly or slowly over time.</li> </ul>
<b>ER</b>	<p>2.8 The student will investigate and understand that plants are important natural resources. Key ideas include</p> <ul style="list-style-type: none"> <li>a) the availability of plant products affects the development of a geographic area;</li> <li>b) plants provide oxygen, homes, and food for many animals; and</li> <li>c) plants can help reduce the impact of wind and water.</li> </ul>

Grade 3	
<b>ESS</b>	3.6 The student will investigate and understand that soil is important in ecosystems. Key ideas include a) soil, with its different components, is important to plants and animals; and b) soil provides support and nutrients necessary for plant growth.
	3.7 The student will investigate and understand that there is a water cycle and water is important to life on Earth. Key ideas include a) there are many reservoirs of water on Earth; b) the energy from the Sun drives the water cycle; c) the water cycle involves specific processes; and d) water is essential for living things.
<b>ER</b>	3.8 The student will investigate and understand that natural events and humans impact ecosystems. Key ideas include a) human activity has an effect on the quality of air, water, and habitat; b) water is limited and needs to be conserved; c) fire, flood, disease, and erosion affect ecosystems; and d) soil is a natural resource and should be conserved.
Grade 4	
<b>ESS</b>	4.4 The student will investigate and understand that weather conditions and phenomena occur and can be predicted. Key ideas include a) weather measurements create a record that can be used to make weather predictions; and b) common and extreme weather events impact ecosystems.
	4.5 The student will investigate and understand that the planets have characteristics and a specific place in the solar system. Key ideas include a) planets revolve on their axes and rotate around the Sun; b) planets have characteristics and a specific order in the solar system; and c) the sizes of the Sun and planets can be compared to one another.
	4.6 The student will investigate and understand that there are relationships among Earth, the Moon, and the Sun. Key relationships include a) the motions of Earth, the Moon, and the Sun; b) the causes for Earth's seasons; c) the causes for the four major phases of the Moon and the relationship to the tide cycles; and d) the relative size, position, age and make-up of Earth, the Moon, and the Sun.
	4.7 The student will investigate and understand that the ocean environment has characteristics. Key characteristics include a) geology of the ocean floor; b) physical properties and movement of ocean water; and c) interaction of organisms in the ocean.
<b>ER</b>	4.8 The student will investigate and understand that Virginia has important natural resources. Key resources include a) watersheds and water; b) plants and animals; c) minerals, rocks, ores, and energy sources; and d) forests, soil, and land.
Grade 5	
<b>ESS</b>	5.8 The student will investigate and understand that Earth constantly changes. Key ideas include a) Earth's internal energy causes movement of material within the earth; b) plate tectonics describe movement of the crust; c) the rock cycle shows continuous transitions that rocks undergo through time; d) processes such as weathering, erosion, and deposition change the surface of the Earth; and e) fossils and geologic patterns provide evidence of Earth's change.
<b>ER</b>	5.9 The student will investigate and understand that energy and matter are conserved. Key ideas include a) there is a finite amount of energy and matter; b) some forms of energy and matter are considered renewable and others are not; c) varied sources of renewable and nonrenewable energy exist; and d) individuals and communities have means of conserving both energy and matter.