

<p><b>South Carolina State Standards Science      Fourth Grade</b></p>	<p><b>Stickybear Science Fair: Light</b></p>
<p><b>INQUIRY</b></p>	<p>✓</p>
<p><b>Observe</b> - use the senses and simple tools to gather information about objects or events such as size, shape, color, texture, sound, position, and change (qualitative observations).</p>	<p>✓</p>
<p><b>Classify</b> - compare, sort and group concrete objects according to observable properties and arrange objects in sequential order</p>	<p>✓</p>
<p><b>Measure</b> - use standard (US Customary and Metric) and nonstandard whole units to estimate and measure mass, length, volume, and temperature (quantitative observations)</p>	
<p><b>Communicate</b> - use drawings, tables, graphs, written and oral language to describe objects and explain ideas and actions</p>	<p>✓</p>
<p><b>Infer</b> - explain or interpret an observation based on data and prior knowledge</p>	<p>✓</p>
<p><b>Predict</b> - use prior knowledge and observations to identify and explain in advance what will happen</p>	<p>✓</p>
<p><b>Plan and conduct a simple investigation</b> - ask a question about objects, organisms and events in the environment; plan and conduct a simple investigation - a fair test; use simple equipment and tools to gather data and extend the senses, use data to construct a reasonable explanation communicate investigations and explanations</p>	<p>✓</p>
<p><b>LIFE SCIENCE</b></p>	
<p>Unit of Study: Organisms and Their Environment</p>	<p>✓</p>
<p><b>Characteristics of Organisms</b></p>	<p>✓</p>
<p><b>Organisms have basic needs and can survive only in environments in which their needs can be met. The world has many different environments, and distinct environments support the life of different types of organisms</b> - identify the characteristics of different environments, such as wetlands, grasslands, deserts, and in polar temperate and tropical regions; describe the diversity of life forms (vertebrate animals and plants) supported by each environment; investigate the relationship between the basic needs of different organisms and whether or not a particular environment meets those needs</p>	

<p><b>Organisms have senses that help them detect internal and external cues</b> - analyze s specific behaviors influenced by internal cues (e.g. hunger and thirst); analyze specific behaviors influenced by external cues in the environment (e.g. temperature, light, and precipitation)' describe how animal sensory organs (including human eye and ear) detect external cues</p>	✓
<p><b>Life Cycles of Organisms</b></p>	
<p><b>Many characteristics of an organism are inherited from the parents of organism, but other characteristics result from an individual's interactions with the environment</b> - identify and describe characteristics and behavior that are inherited (color of flowers, and animal instincts; identify and describe characteristics and learned behaviors that enable organisms to survive in the environment (bear learning to fish); distinguish major groups of organisms based on significant characteristics (body covering, number of legs, body parts, type of skeleton)</p>	
<p><b>Organisms and Their Environments</b></p>	
<p><b>An organism's patterns of behavior are related to the nature of that organism's environment, including the kinds and the numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment</b> - describe how animals behave and interact within groups (e.g. school, flocks, packs, hives, and herds)) describe how animals behave and interact within their environment (living and nonliving)</p>	
<p><b>All organisms cause changes in the environment where they live</b> - describe how organisms may benefit their environment (earthworms improve the quality of soil, birds disperse seeds); describe how organisms may harm their environment (locusts destroy crops, red tides reduce oxygen levels in the ocean)</p>	
<p><b>Humans change environments in ways that can be either beneficial or detrimental for themselves and other organisms</b> - describe changes in the environment caused by humans; infer the impact of agricultural technology (air/land/water pollution) on society and the environment; infer the impact of industrial technologies (air/land/water pollution) on society and the environment; relate how human population growth changes the environment</p>	
<p><b>EARTH SCIENCE</b></p>	
<p>Unit of Study: Sky Patterns Weather and Climate</p>	✓
<p><b>Objects in the sky</b></p>	✓

<p><b>The sun, moon, and stars and planets, asteroids and comets all have properties, locations and movements that can be observed and described</b> - state that the sun produces its own light, while the moon reflects light from the sun; describe the positional relationship between the Earth and the moon and their positional relationship to the sun; observe and record phase changes of the moon over time; observe and recognize the location and apparent movement of constellations throughout the seasons; compare the properties, locations, and movements of the Earth and other planets; research and describe the historical/cultural significance of astronomy, such as navigation and explorations; explore and identify careers in space science</p>	<p>✓</p>
<p><b>Objects in the sky have patterns of movement. The sun, appears to move across the sky in the same way every day, but its path changes slowly over the seasons</b> - model and describe how the Earth's rotation on its axis produces day and night; model and describe how the tilt of the Earth on its axis and its revolution around the sun produce seasonal changes; describe how sunrise/sunset patterns change over time; investigate and describe the sun's apparent movement related to the shadows of objects throughout the day; identify safe ways to observe the sun; research and compare the technology humans have used to measure time throughout history</p>	<p>✓</p>
<p><b>Changes in the Earth and Sky</b></p>	
<p><b>Weather changes from day to day and over the seasons</b> - observe daily and seasonal weather patterns; describe how clouds form; record and identify various cloud formations (cirrus, stratus and cumulus; predict weather based on observations; research and describe severe weather phenomena, technological advances and related safety concerns</p>	
<p><b>Weather can be described by measurable quantities, such as temperature, wind direction, speed, and precipitation</b> - measure and collect daily weather data using meteorological tools (Fahrenheit/Celsius thermometer, weather vane, anemometer, and rain gauge); interpret weather data from a variety of sources</p>	
<p><b>PHYSICAL SCIENCE</b></p>	
<p>Unit of Study: Electricity and Magnetism - Light and Sound</p>	<p>✓</p>
<p><b>Light and Sound</b></p>	
<p><b>Sound is produced by vibrating objects</b> - observe and describe sounds (a form of energy) produced by vibrating objects; investigate and examine how various media (solids, liquids, and gases) transmit sound; research and describe the development and use of communication tools (Morse code, telephone, sonar, and musical instruments)</p>	<p>✓</p>

<p><b>The pitch of the sound can be varied by changing the rate of vibration</b> - investigate and compare the different pitches of sound produced by changing the size, tension, or amount of the vibrating material; compare different types of sounds based on characteristics such as pitch and volume; describe how the human ear receives and transmits sound from the environment</p>	
<p><b>Light travels in a straight line until it strikes an object</b> - observe and demonstrate that light waves are a form of energy and travel in a straight line; investigate and examine how light waves travel through various media (solids, liquids, and gases); investigate and describe ways that light can be reflected, refracted, or absorbed by an object; describe how the human eye receives and transmits light from the environment; research, investigate and describe the development and use of optical tools, such as glasses, magnifying lens, prisms, and mirrors</p>	<p>✓</p>
<p><b>Electricity and Magnetism</b></p>	
<p><b>Electricity in circuits can produce light, heat, sound, and magnetic effect</b> - Recognize that electricity is a form of energy and can produce light and heat; demonstrate and distinguish between static and current electricity; describe and illustrate the parts of an electric circuit with symbols; predict and test various materials to identify conductors and insulators; distinguish between open and closed circuits;; distinguish between parallel/series circuits and their everyday uses; describe how humans use electricity; discuss the safe use of electricity</p>	
<p><b>Magnets attract and repel each other and certain kinds of other materials</b> - distinguish and describe objects that are magnetic and nonmagnetic; investigate and describe the properties of different magnets; observe and describe the magnetic fields of various types of magnets; distinguish the lines of force between like and unlike poles; define electromagnetism; analyze the factors that influence the strength of an electromagnet' apply electromagnetism to real world situations</p>	