



# HENRY COUNTY SCHOOLS

Better Together.



## 6th GRADE

| SCIENCE |

 **HENRY**  
Teaching & Learning Standards







# Teaching & Learning Standards

**Science**

**6th Grade**



# HENRY LEARNING PROGRESSIONS

## 6<sup>th</sup> Grade Science

Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
5 weeks	4 weeks	4 weeks	5 weeks	4 weeks	5 weeks	6 weeks	3 weeks
<b>Universe and Solar System</b>	<b>Sun, Earth and Moon</b>	<b>Role of Water</b>	<b>Weather and Climate</b>	<b>Formation of Earth's Surface</b>	<b>Rocks and Minerals</b>	<b>Weathering, Erosion, and Soil</b>	<b>Conservation of Natural Resources</b>
<p><b>S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.</b></p> <p>a. Ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.</p> <p>b. Develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe.</p> <p>c. Analyze and interpret data to compare and contrast the planets in our solar system in terms of: size relative to Earth, surface and atmospheric features, relative distance from the sun, and ability to support life.</p> <p>d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system.</p> <p>e. Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.</p>	<p><b>S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.</b></p> <p>a. Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, Earth, and moon.</p> <p>b. Construct an explanation of the cause of solar and lunar eclipses.</p> <p>c. Analyze and interpret data to relate the tilt of the Earth to the distribution of sunlight throughout the year and its effect on seasons.</p>	<p><b>S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.</b></p> <p>a. Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.</p> <p>b. Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water.</p> <p>c. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans.</p> <p>d. Analyze and interpret data to create graphic representations of the causes and effects of waves, currents, and tides in Earth's systems.</p>	<p><b>S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.</b></p> <p>a. Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases.</p> <p>b. Plan and carry out an investigation to demonstrate how energy from the sun transfers heat to air, land and water at different rates.</p> <p>c. Develop a model demonstrating the interaction between unequal heating and the rotation of the Earth that causes local and global wind systems.</p> <p>d. Construct an explanation of the relationship between air pressure, weather fronts, and air masses and meteorological events such as tornados and thunderstorms.</p> <p>e. Analyze and interpret weather data to explain the effects of moisture evaporating from the ocean on weather patterns and weather events such as hurricanes.</p>	<p><b>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</b></p> <p>a. Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.</p> <p>f. Construct an explanation of how the movement of lithospheric plates, called plate tectonics, can cause major geologic events such as earthquakes and volcanic eruptions.</p> <p>g. Construct an argument using maps and data collected to support a claim of how fossils show evidence of the changing surface and climate of the Earth.</p>	<p><b>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</b></p> <p>b. Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.</p> <p>c. Construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle.</p>	<p><b>S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.</b></p> <p>d. Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.</p> <p>e. Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.</p> <p>h. Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rocks and decomposed organic material.</p>	<p><b>S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.</b></p> <p>a. Ask questions to determine the differences between renewable/sustainable energy resources (examples: hydro, solar, wind, geothermal, tidal, biomass) and nonrenewable energy resources (examples: nuclear: uranium, fossil fuels: oil, coal, and natural gas), and how they are used in our everyday lives.</p> <p>b. Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air.</p> <p>c. Construct an argument evaluating contributions to the rise in global temperatures over the past century.</p>



*Collaboration, Communication, Creativity, and Critical Thinking skills are embedded within the language of the Henry Teaching and Learning Standards*

HCS Graduate  
Learner Outcome

*As a Henry County graduate, I will understand and analyze the origins of the solar system and its position in the universe through scientific processes and practices.*

GA Standard Code

**S6E1 Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.**

- S6E1a Ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.
- S6E1b Develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe.
- S6E1c Analyze and interpret data to compare and contrast the planets in our solar system in terms of size relative to Earth, surface and atmospheric features, relative distance from the sun, and ability to support life.
- S6E1d Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system.
- S6E1e Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.

**S6E2 Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.**

- S6E2a Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, Earth, and moon.
- S6E2b Construct an explanation of the cause of solar and lunar eclipses.
- S6E2c Analyze and interpret data to relate the tilt of the Earth to the distribution of sunlight throughout the year and its effect on seasons.

HCS Graduate  
Learner Outcome

*As a Henry County graduate, I will understand and analyze the role of water in Earth processes, the dynamics and composition of the atmosphere, and global processes influencing weather and climate.*

GA Standard Code

**S6E3 Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.**

- S6E3a Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.

- S6E3b Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water.
- S6E3c Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans.
- S6E3d Analyze and interpret data to create graphic representations of the causes and effects of waves, currents, and tides in Earth's systems.

**S6E4 Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.**

- S6E4a Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases.
- S6E4b Plan and carry out an investigation to demonstrate how energy from the sun transfers heat to air, land, and water at different rates.
- S6E4c Develop a model demonstrating the interaction between unequal heating and the rotation of the Earth that causes local and global wind systems.
- S6E4d Construct an explanation of the relationship between air pressure, weather fronts, and air masses and meteorological events such as tornados and thunderstorms.
- S6E4e Analyze and interpret weather data to explain the effects of moisture evaporating from the ocean on weather patterns and weather events such as hurricanes.

HCS Graduate  
Learner Outcome

*As a Henry County graduate, I will apply science and engineering practices to understand and analyze lithospheric materials, tectonic processes, and the human and environmental impacts of natural and human-induced changes to Earth's surface.*

GA Standard Code

**S6E5 Obtain, evaluate, and communicate information to show how Earth's surface is formed.**

- S6E5a Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.
- S6E5b Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.
- S6E5c Construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle.
- S6E5d Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.



- S6E5e Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.
- S6E5f Construct an explanation of how the movement of lithospheric plates, called plate tectonics, can cause major geologic events such as earthquakes and volcanic eruptions.
- S6E5g Construct an argument using maps and data collected to support a claim of how fossils show evidence of the changing surface and climate of the Earth.
- S6E5h Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rocks and decomposed organic material.

**S6E6 Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.**

- S6E6a Ask questions to determine the differences between renewable/sustainable energy resources (examples: hydro, solar, wind, geothermal, tidal, biomass) and nonrenewable energy resources (examples: nuclear: uranium, fossil fuels: oil, coal, and natural gas), and how they are used in our everyday lives.
- S6E6b Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air.
- S6E6c Construct an argument evaluating contributions to the rise in global temperatures over the past century.