HENRY COUNTY SCHOOLS

Better Together.





4TH GRADE

| SCIENCE |

HENRY

Teaching & Learning Standards

Teaching & Learning Standards

Science

4th Grade

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

S4E1 **Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.**

- S4E1a Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.
- S4E1b Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others.
- S4E1c Construct an explanation of the differences between stars and planets.
- S4E1d Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun.

S4E2 **Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.**

- S4E2a Develop a model to support an explanation of why the length of day and night change throughout the year.
- S4E2b Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).
- S4E2c Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes.

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

S4E3 **Obtain, evaluate, and communicate information to demonstrate the water cycle.**

- S4E3a Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid.
- S4E3b Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation).

S4E4 **Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.**

S4E4a Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.

S4E4b Interpret data from weather maps, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather.

S4E4c Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.

S4E4d Construct an explanation based on research to communicate the difference between weather and climate.

HCS Graduate Learner Outcome	***As a Henry County graduate, I will apply scientific and engineering practices to understand and analyze the characteristics, functions, and behavioral interactions within an ecosystem.***

GA Standard Code

S4L1 **Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.**

S4L1a Develop a model to describe the roles of producers, consumers, and decomposers in a community.

S4L1b Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.

S4L1c Design a scenario to demonstrate the effect of a change on an ecosystem.

S4L1d Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.

HCS Graduate Learner Outcome	***As a Henry County graduate, I will understand and analyze energy and the characteristics of waves as demonstrated through the integration of scientific practices.***

GA Standard Code

S4P1 **Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.**

S4P1a Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.

S4P1b Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.

S4P1c Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted.

S4P2 **Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.**

S4P2a Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.

S4P2b Design and construct a device to communicate across a distance using light and/or sound.

HCS Graduate Learner Outcome	***As a Henry County graduate, I will understand and analyze forces, mass, motion, and interactions through scientific processes and practices.***

GA Standard Code

S4P3 **Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.**

S4P3a Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.

S4P3b Construct an argument to support the claim that gravitational force affects the motion of an object.

S4P3c Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks.