

**Campbell County Schools**  
**Fourth Grade — Science**  
**2<sup>nd</sup> Nine Weeks-at-a-Glance**

The following skills should be the focus for this Nine Weeks:

<b>Ongoing</b>	
<b>Embedded Inquiry</b>	<p><b>GLE 0407.Inq.1</b> Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data.</p> <p><b>GLE 0407.Inq.2</b> Select and use appropriate tools and simple equipment to conduct an investigation.</p> <p><b>GLE 0407.Inq.3</b> Organize data into appropriate tables, graphs, drawings, or diagrams.</p> <p><b>GLE 0407.Inq.4</b> Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations.</p> <p><b>GLE 0407.Inq.5</b> Recognize that people may interpret the same results in different ways.</p> <p><b>GLE 0407.Inq.6</b> Compare the results of an investigation with what scientists already accept about this question.</p>
<b>Embedded Technology and Engineering</b>	<p><b>GLE 0407.T/E.1</b> Describe how tools, technology, and inventions help to answer questions and solve problems.</p> <p><b>GLE 0407.T/E.2</b> Recognize that new tools, technology, and inventions are always being developed.</p> <p><b>GLE 0407.T/E.3</b> Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.</p> <p><b>GLE 0407.T/E.4</b> Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies.</p> <p><b>GLE 0407.T/E.5</b> Apply a creative design strategy to solve a particular problem generated by societal needs and wants.</p>

<b>Standard 5: Biodiversity and Change</b>	
<b>Evidence of Change</b>	<b>GLE 0407.5.1</b> Analyze physical and behavioral adaptations that enable organisms to survive in their environment.
<b>Adaptation</b>	<ul style="list-style-type: none"> <li>• <b>SPI 0407.5.1</b> Determine how a physical or behavioral adaptation can enhance the chances of survival.</li> </ul> <p><b>GLE 0407.5.2</b> Describe how environmental changes caused the extinction of various plant and animal species.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.5.2</b> Infer the possible reasons why a species became endangered or extinct.</li> </ul>

<b>Standard 9: Matter</b>	
<b>Properties of Matter</b>	<p><b>GLE 0407.9.1</b> Collect data to illustrate that the physical properties of matter can be described with tools that measure weight, mass, length, and volume.</p> <p><b>GLE 0407.9.2</b> Explore different types of physical changes in matter.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.9.1</b> Choose an appropriate tool for measuring a specific physical property of matter.</li> <li>• <b>SPI 0407.9.2</b> Determine the mass, volume, and temperature of a substance or object using proper units of measurement.</li> <li>• <b>SPI 0407.9.3</b> Interpret the causes and effects of a physical change in matter.</li> </ul>

<b>Standard 10: Energy</b>	
<b>Heat and Light</b>	<p><b>GLE 0407.10.1</b> Distinguish among heat, radiant, and chemical forms of energy.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.10.1</b> Identify different forms of energy, such as heat, light, and chemical.</li> </ul> <p><b>GLE 0407.10.2</b> Explain how energy is transferred in a simple electrical circuit.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.10.2</b> Determine which surfaces reflect, refract, or absorb light.</li> <li>• <b>SPI 0407.10.3</b> Determine whether a material is transparent, translucent, or opaque.</li> </ul> <p><b>GLE 0407.10.3</b> Investigate how light travels and is influenced by different types of materials and surfaces.</p>

<b>Standard 11: Motion</b>	
<b>Motion</b>	<p><b>GLE 0407.11.1</b> Recognize that the position of an object can be described relative to other objects or a background.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.11.1</b> Describe the position of an object relative to fixed reference points.</li> </ul> <p><b>GLE 0407.11.2</b> Design a simple investigation to demonstrate how friction affects the movement of an object.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.11.2</b> Identify factors that influence the motion of an object.</li> </ul> <p><b>GLE 0407.11.3</b> Investigate the relationship between the speed of an object and the distance traveled during a certain time period.</p> <ul style="list-style-type: none"> <li>• <b>SPI 0407.11.3</b> Determine the relationship between speed and distance traveled over time.</li> </ul>

### **Embedded Inquiry - Checks for Understanding**

- ✓ **0407.Inq.1** Identify specific investigations that could be used to answer a particular question and identify reasons for this choice.
- ✓ **0407.Inq.2** Identify tools needed to investigate specific questions.
- ✓ **0407.Inq.3** Maintain a science notebook that includes observations, data, diagrams, and explanations.
- ✓ **0407.Inq.4** Analyze and communicate findings from multiple investigations of similar phenomena to reach a conclusion.

### **Embedded Technology Checks for Understanding**

- ✓ **0407.T/E.1** Explain how different inventions and technologies impact people and other living organisms.
- ✓ **0407.T/E.2** Design a tool or a process that addresses an identified problem caused by human activity.
- ✓ **0407.T/E.3** Determine criteria to evaluate the effectiveness of a solution to a specified problem.
- ✓ **0407.T/E.4** Evaluate an invention that solves a problem and determine ways to improve the design.

### **Standard 1 – Cells Checks for Understanding**

- ✓ **0407.1.1** Use illustrations or direct observations to compare and contrast the basic structures of plant and animal cells.
- ✓ **0407.1.2** Create a basic model of the cell that illustrates different cell structures and describes their functions.

### **Standard 2 – Interdependence Checks for Understanding**

- ✓ **0407.2.1** Analyze how an increase or decrease in competition or predation affects an ecosystem.
- ✓ **0407.2.2** Design a simple experiment to illustrate the effects of competition, predation, and interdependency among living things.

### **Standard 3 – Flow of Matter and Energy Checks for Understanding**

- ✓ **0407.3.1** Create a food web that illustrates the energy relationships between plants and animals and the key issues or assumptions found in the model.
- ✓ **0407.3.2** Classify organisms as carnivores, herbivores, or omnivores.
- ✓ **0407.3.3** Identify how a variety of organisms meet their energy needs.

### **Standard 4 – Heredity Checks for Understanding**

- ✓ **0407.4.1** Design a simple demonstration that illustrates the relationship between reproduction and survival of a species.
- ✓ **0407.4.2** Study the life cycles of a variety of organisms and determine whether these processes illustrate complete or incomplete metamorphosis.

### **Standard 5 – Biodiversity and Change Checks for Understanding**

- ✓ **0407.5.1** Classify animals according to their physical adaptations for obtaining food, oxygen, and surviving within a particular environment.
- ✓ **0407.5.2** Describe how animal behaviors such as migration, defense, means of locomotion, and hibernation enable them to survive in an environment.
- ✓ **0407.5.3** Investigate tropisms that plants exhibit in response to changes in their environment.
- ✓ **0407.5.4** Gather fossil information to draw conclusions about organisms that exist today.
- ✓ **0407.5.5** Analyze the common causes of extinction and explain how human actions sometimes result in the extinction of a species.

### **Standard 6 – The Universe Checks for Understanding**

- ✓ **0407.6.1** Chart the movements of the sun, moon, and earth to develop an explanation for the phases of the moon and solar and lunar eclipses.
- ✓ **0407.6.2** Sequence the major phases of the moon during a lunar cycle.

### **Standard 7 – The Earth Checks for Understanding**

- ✓ **0407.7.1** Prepare a demonstration to illustrate how wind and water affect the earth's surface features.
- ✓ **0407.7.2** Design an investigation to demonstrate how erosion and deposition change the earth's surface.
- ✓ **0407.7.3** List factors that determine the appropriate use of an earth material.
- ✓ **0407.7.4** Use data from a variety of informational texts to analyze and evaluate man's impact on non-renewable resources.

### **Standard 8 – The Atmosphere Checks for Understanding**

- ✓ **0407.8.1** Prepare a model that illustrates the basic features of the water cycle.
- ✓ **0407.8.2** Use long term weather data to distinguish between weather and climate.
- ✓ **0407.8.3** Use an illustration to predict and draw conclusions about how weather and climate affect the water cycle.

### **Standard 9 – Matter Checks for Understanding**

- ✓ **0407.9.1** Use appropriate tools to measure and compare the physical properties of various solids and liquids.
- ✓ **0407.9.2** Compare the causes and effects of various physical changes in matter.

### **Standard 10 – Energy Checks for Understanding**

- ✓ **0407.10.1** Design an investigation to demonstrate how different forms of energy release heat or light.
- ✓ **0407.10.2** Design an experiment to investigate how different surfaces determine if light is reflected, refracted, or absorbed
- ✓ **0407.10.3** Gather and organize information about a variety of materials to categorize them as translucent, transparent, or opaque.

### **Standard 11 – Motion Checks for Understanding**

- ✓ **0407.11.1** Identify the position of objects relative to fixed reference points.
- ✓ **0407.11.2** Design an investigation to identify factors that affect the speed and distance traveled by an object in motion.
- ✓ **0407.11.3** Complete a coordinate graph to describe the relative positions of objects.
- ✓ **0407.11.4** Plan and execute an investigation that demonstrates how friction affects the movement of an object.
- ✓ **0407.11.5** Design and implement an investigation to determine that the speed of an object is equal to the distance traveled over time.

### **Standard 12 – Forces in Nature**

- ✓ **0407.12.1** Explore the interactions between an electrically charged object and other materials.
- ✓ **0407.12.2** Design an experiment to investigate how a simple electromagnet affects common objects.
- ✓ **0407.12.3** Describe how electricity passes through a simple circuit that includes a battery, wire, switch, and bulb.