Campbell County Schools
Seventh Grade- Science
3rd Nine Weeks-at-a-Glance

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

Ongoing	
Embedded Inquiry	**GLE 0707.Inq.1** Design and conduct open-ended scientific investigations. • **SPI 0707.Inq.1** Design a simple experimental procedure with an identified control and appropriate variables. **GLE 0707.Inq.2** Use appropriate tools and techniques to gather, organize, analyze, and interpret data. • **SPI 0707.Inq.2** Select tools and procedures needed to conduct a moderately complex experiment. **GLE 0707.Inq.3** Synthesize information to determine cause and effect relationships between evidence and explanations. • **SPI 0707.Inq.3** Interpret and translate data in a table, graph, or diagram. **GLE 0707.Inq.4** Recognize possible sources of bias and error, alternative explanations, and questions for further exploration. • **SPI 0707.Inq.4** Draw a conclusion that establishes a cause and effect relationship supported by evidence. **GLE 0707.Inq.5** Communicate scientific understanding using descriptions, explanations, and models. • **SPI 0707.Inq.5** Identify a faulty interpretation of data that is due to bias or experimental error.
Embedded Technology and Engineering	**GLE 0707.T/E.1** Explore how technology responds to social, political, and economic needs. • **SPI 0707.T/E.1** Identify the tools and procedures needed to test the design features of a prototype. **GLE 0707.T/E.2** Know that the engineering design process involves an ongoing series of events that incorporate design constraints, model building, testing, evaluating, modifying, and retesting. • **SPI 0707.T/E.2** Evaluate a protocol to determine if the engineering design process was successfully applied. **GLE 0707.T/E.3** Compare the intended benefits with the unintended consequences of a new technology. • **SPI 0707.T/E.3** Distinguish between the intended benefits and the unintended consequences of a new technology. **GLE 0707.T/E.4** Describe and explain adaptive and assistive bioengineered products. • **SPI 0707.T/E.4** Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).

Standard 1: Cells	
Cell Structure and Function	**GLE 0707.1.1** Make observations and describe the structure and function of organelles found in plant and animal cells. • **SPI 0707.1.1** Identify and describe the function of the major plant and animal cell organelles. **GLE 0707.1.2** Summarize how the different levels of organization are integrated within living systems. • **SPI 0707.1.2** Interpret a chart to explain the integrated relationships that exist among cells, tissues, organs, and organ systems. **GLE 0707.1.3** Describe the function of different organ systems and how collectively they enable complex multicellular organisms to survive. • **SPI 0707.1.3** Explain the basic functions of a major organ system.
Cell Processes	**GLE 0707.1.4** Illustrate how cell division occurs in sequential stages to maintain the chromosome number of species. • **SPI 0707.1.4** Sequence a series of diagrams that depict chromosome movement during plant cell division. **GLE 0707.1.5** Observe and explain how materials move through simple diffusion. • **SPI 0707.1.5** Explain how materials move through simple diffusion.

Standard 3: Flow of Matter and Energy	
Energy	**GLE 0707.3.1** Distinguish between the basic features of photosynthesis and respiration. • **SPI 0707.3.1** Compare the chemical compounds that make up the reactants and products of photosynthesis and respiration.

Embedded Inquiry Checks for Understanding

- ✓ **0707.Inq.1** Design and conduct an open-ended scientific investigation to answer a question that includes a control and appropriate variables.
- ✓ **0707.Inq.2** Identify tools and techniques needed to gather, organize, analyze, and interpret data collected from a moderately complex scientific investigation.
- ✓ **0707.Inq.3** Use evidence from a dataset to determine cause and effect relationships that explain a phenomenon.
- ✓ **0707.Inq.4** Review an experimental design to determine possible sources of bias or error, state alternative explanations, and identify questions for further investigation.
- ✓ **0707.Inq.5** Design a method to explain the results of an investigation using descriptions, explanations, or models.

Embedded Technology & Engineering Checks for Understanding

- ✓ **0707.T/E.1** Use appropriate tools to test for strength, hardness, and flexibility of materials.
- ✓ **0707.T/E.2** Apply the engineering design process to construct a prototype that meets certain specifications.
- ✓ **0707.T/E.3** Explore how the unintended consequences of new technologies can impact society.
- ✓ **0707.T/E.4** Research bioengineering technologies that advance health and contribute to improvements in our daily lives.
- ✓ **0707.T/E.5** Develop an adaptive design and test its effectiveness.

Standard 1 – Cells Checks for Understanding

- ✓ **0707.1.1** Examine and describe plant and animal cells using compound microscopes.
- ✓ **0707.1.2** Identify the function of the major plant and animal cellular organelles.
- ✓ **0707.1.3** Make a Venn diagram to compare the structures and functions of an animal cell with a city or school.
- ✓ 0707.1.4 Build a 3-D model of a cell.
- ✓ 0707.1.5 Construct a poster that illustrates the hierarchy among cells, tissues, organs, organ systems, and organisms.
- ✓ 0707.1.6 Describe the function of different organ systems.
- ✓ 0707.1.7 Explain how different organ systems interact to enable complex multicellular organisms to survive.
- ✓ 0707.1.8 Apply the idea of the division of labor to explain why living things are organized into cells, tissues, organs, and organ systems.
- ✓ 0707.1.9 Model the movement of chromosomes during plant cell division.
- ✓ 0707.1.10 Design a demonstration that illustrates how materials move across a semi-permeable membrane by simple diffusion.

Standard 3 – Flow of Matter and Energy Checks for Understanding

- ✓ 0707.3.1 Associate the fundamental processes of photosynthesis and respiration with appropriate cell structures.
- ✓ 0707.3.2 Examine and identify the chloroplasts in a leaf cell.
- ✓ 0707.3.3 Identify the materials used by plants to make food.
- ✓ 0707.3.4 Create a chart that compares the reactants and products of photosynthesis and respiration.
- ✓ 0707.3.5 Model the pathways of water, oxygen, and carbon dioxide through a plant.
- ✓ 0707.3.6 Describe the movement of oxygen and carbon dioxide between living things and the environment.
- ✓ 0707.3.7 Describe structures that animals use to obtain oxygen.

Standard 4 - Heredity Checks for Understanding

- ✓ **0707.4.1** Classify organisms according to whether they reproduce sexually or asexually.
- ✓ **0707.4.2** Label and explain the function of the reproductive parts of a flower.
- ✓ **0707.4.3** Describe various methods of plant pollination.
- ✓ **0707.4.4** Investigate the relationship among DNA, genes, and chromosomes.
- ✓ **0707.4.5** Explain the differences between dominant and recessive traits.
- ✓ **0707.4.6** Use a Punnett square to predict the genotypes of offspring resulting from a monohybrid cross.
- ✓ **0707.4.7** Draw a phenotypically accurate picture of an individual whose traits are modeled by the role of a die.

Standard 7 – The Earth Checks for Understanding

- ✓ **0707.7.1** Organize and explain information about the properties of minerals and their uses.
- ✓ **0707.7.2** Label a diagram that depicts the major processes of the rock cycle.
- ✓ **0707.7.3** Distinguish among sedimentary, igneous, and metamorphic rocks and relate these to a simple diagram of the rock cycle.
- ✓ **0707.7.4** Recognize that the earth's layers have different thickness, states of matter, densities, and chemical makeup.
- ✓ **0707.7.5** Analyze the relationship between plate movements and areas of earthquake activity.
- ✓ **0707.7.6** Analyze the relationship between plate movements and mountain building.
- ✓ **0707.7.7** Analyze the relationship between plate movements, volcanoes, and sea floor spreading.
- ✓ **0707.7.8** Determine the impact of man's use of renewable and nonrenewable resources on future supplies.
- ✓ **0707.7.9** Evaluate how human activities affect the condition of the earth's land, water, and atmosphere.

Standard 11 – Motion Checks for Understanding

- ✓ **0707.11.1** Compare the six types of simple machines.
- ✓ **0707.11.2** Compete an investigation to determine how machines reduce the amount of force needed to do work.
- ✓ **0707.11.3** Summarize the difference between the speed and velocity based on the distance and amount of time traveled.
- ✓ **0707.11.4** Recognize how a net force impacts an object's motion.
- ✓ **0707.11.5** Create a graphic organizer to illustrate and describe the basic parts of a wave.
- ✓ **0707.11.6** Compare how transverse and longitudinal waves are produced and transmitted.