GRADE K: EMBEDDED INQUIRY

Conceptual Strand - Inquiry	Guiding Question - Inquiry
Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.	*What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.Inq.1 Observe the world of familiar objects using the senses and tools. **GLE 0007.Inq.2** Ask questions, make logical predictions, plan investigations, and represent data. **GLE 0007.Inq.3** Explain the data from an investigation.	**0007.Inq.1** Use senses and simple tools to make observations. **0007.Inq.2** Communicate interest in simple phenomena and plan for simple investigations. **0007.Inq.3** Communicate understanding of simple data using age-appropriate vocabulary. **0007.Inq.4** Collect, discuss, and communicate findings from a variety of investigations.	

EMBEDDED TECHNOLOGY & ENGINEERING

Conceptual Strand	Guiding
Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	*How do science concepts, engineering skills, and applications of technology improve the quality of life?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	
GLE 0007.T/E.K-2.1 Recognize that both natural materials and human-made tools have specific characteristics that determine their use. **GLE 0007.T/E.2** Apply engineering design and creative thinking to solve practical problems.	**0007.T/E.1** Explain how simple tools are used to extend the senses, make life easier, and solve everyday problems. **0007.T/E.2** Invent designs for simple products. **0007.T/E.3** Use tools to measure materials and construct simple products.	

LIFE SCIENCE

STANDARD 1 – CELL

Conceptual Strand 1	Guiding Question 1
All living things are made of cells that perform functions necessary for life.	*How are plant and animals cells organized to carry on the processes of life?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.1.1 Recognize that many things are made of parts.	**0007.1.1** Use puzzles to determine that there are many parts that make up a whole. **0007.1.2** Use building blocks to create a whole from the parts. **0007.1.3** Take apart an object and describe how the parts work together.	

STANDARD 2— INTERDEPENDENCE

Conceptual Strand 2	Guiding Question 2
All life is interdependent and interacts with the environment.	*How do living things interact with one another and with the non-living elements of their environment?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.2.1 Recognize that some things are living and some are not. **GLE 0007.2.2** Know that people interact with their environment through their senses.	**0007.2.1** Categorize objects or images of objects as living or non-living according to their characteristics. **0007.2.2** Use the senses to investigate and describe an object.	

STANDARD 3—FLOW OF MATTER AND ENERGY

Conceptual Strand 3	Guiding Question 3
Matter and energy flow through the biosphere.	*What scientific information explains how matter and energy flow through the biosphere?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.3.1 Recognize that living things require water, food, and air.	**0007.3.1** Observe plants and animals and make records of their similarities and differences. **0007.3.2** Record information about the care, feeding, and maintenance of a living thing.	

STANDARD 4—HEREDITY

Conceptual Strand 4	Guiding Question 4
Plants and animals reproduce and transmit hereditary information between generations.	*What are the principal mechanisms by which living things reproduce and transmit information between parents and offspring?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.4.1 Observe how plants and animals change as they grow. **GLE 0007.4.2** Observe that offspring resemble their parents.	**0007.4.1** Observe a plant to identify how it changes as it grows from a seed to the adult plant and record data using non-standard measurement devices. **0007.4.2** Match pictures of seedlings to adult plants and a juvenile to the adult animal.	

STANDARD 5—BIODIVERSITY AND CHANGE

Conceptual Strand 5	Guiding Question 5
A rich variety of complex organisms have developed in response to a continually changing environment.	*How does natural selection explain how organisms have changed over time?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.5.1 Compare the basic features of plants and animals.	**0007.5.1** Use a variety of representations to describe similarities and differences among plants and animals. **0007.5.2** Create a mural of an ecosystem and compare the characteristics of animals and plants within that environment. **0007.5.3** Match pictures of animal and plant characteristics needed for survival to appropriate environments.	

EARTH AND SPACE SCIENCE

STANDARD 6— THE UNIVERSE

Conceptual Strand 6	Guiding Question 6
The cosmos is vast and explored well enough to know its basic structure and operational principles.	*What big ideas guide human understanding about the origin and structure of the universe, Earth's place in the cosmos, and observable motions and patterns in the sky?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.6.1 Know the different objects that are visible in the day and night sky.	**0007.6.1** Create a Venn diagram to compare the objects that can be seen in the day and night sky. **0007.6.2** Observe, discuss, and draw objects found in the day and night sky.	

STANDARD 7—THE EARTH

Conceptual Strand 7	Guiding Question 7
Major geologic events that occur over eons or brief moments in time continually shape and reshape the surface of the Earth, resulting in continuous global change.	*How is the earth affected by long-term and short term geological cycles and the influence of man?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE0007.7.1 Identify non-living materials found on the surface of the earth. **GLE0007.7.2** Recognize that some objects are manmade and that some occur naturally.	**0007.7.1** Identify non-living materials found on the school site and discuss how these materials are similar and different. **0007.7.2** Investigate and compare a variety of non-living materials using simple tools. **0007.7.3** Observe familiar environments and make lists of natural and manmade objects.	

STANDARD 8—ATMOSPHERE

Conceptual Strand 8	Guiding Question 8
The earth is surrounded by an active atmosphere and an energy system that controls the distribution life, local weather, climate, and global temperature.	*How do the physical characteristics and the chemical makeup of the atmosphere influence surface processes and life on Earth?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.8.2 Collect daily weather data at different times of the year.	**0007.8.1** Collect, compare, and record daily weather data during different seasons. **0007.8.2** Infer the relationship between temperature and seasonal change by maintaining a paper chain on which dates are recorded and temperature described according to different colors.	

PHYSICAL SCIENCE

STANDARD 9— MATTER

Conceptual Strand 9	Guiding Question 9
The composition and structure of matter is known, and it behaves according to principles that are generally understood..	*How does the structure of matter influence its physical and chemical behavior?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.9.1 Describe an object by its observable properties. **GLE 0007.9.2** Identify objects and materials as solids or liquids.	**0007.9.1** Observe, identify, and compare the properties of various objects such as color, shape, and size. **0007.9.2** Observe, discuss, and compare characteristics of various solids and liquids.	

STANDARD 10—ENERGY

Conceptual Strand 10	Guiding Question 10
Various forms of energy are constantly being transformed into other types without any net loss of energy from the system.	*What basic energy related ideas are essential for understanding the dependency of the natural and man-made worlds on energy?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.10.1 Identify the sun as the source of heat and light. **GLE 0007.10.2** Investigate the effect of the sun on a variety of materials.	**0007.10.1** Place a thermometer in a sunny window and one in a shady area of the classroom and record the temperatures over time. Compare, discuss, and record any temperature differences. **0007.10.2** Investigate the temperature differences in various locations around the school. Discuss and record the results. **0007.10.3** Place a thermometer under pieces of different colored paper on a sunny window. Compare results and discuss possible causes.	

STANDARD 11—MOTION

Conceptual Strand 11	Guiding Question 11
Objects move in ways that can be observed, described, predicted, and measured.	*What causes objects to move differently under different circumstances?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
GLE 0007.11.1 Explore different ways that objects move.	**0007.11.1** Use a variety of objects to demonstrate different types of movement. (e.g., straight line/zigzag, backwards/ forward, side to side, in circles, fast/slow).	

STANDARD 12—FORCES IN NATURE

Conceptual Strand 12	Guiding Question 12
Everything in the universe exerts a gravitational force on everything else; there is an interplay between magnetic fields and electrical currents.	*What are the scientific principles that explain gravity and electromagnetism?*

Grade Level Expectations	Checks for Understanding (Formative/Summative Assessment)	State Performance Indicators
None for this Grade Level.	None for this Grade Level.	