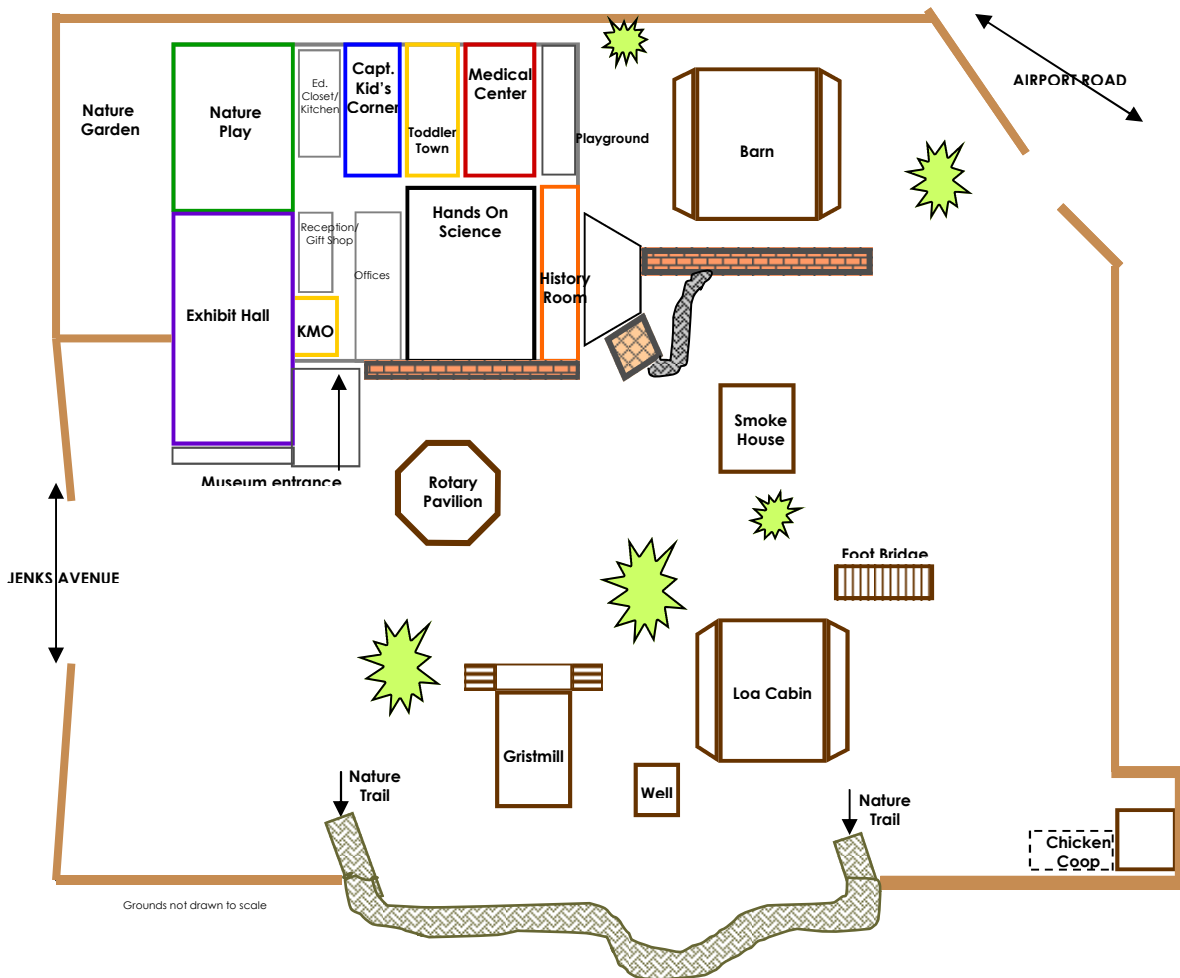


# Correlation of the World Class Sunshine State Standards to the Permanent Exhibits of Junior Museum of Bay County



# Junior Museum of Bay County

*The 12-acre Junior Museum of Bay County was created in 1987 to inspire and educate children through interactive exhibits and programs focusing on science, history, cultural studies, and the environment. From the indoor scientific, imagination, and nature exhibits to the outdoor 1,500-foot nature trail to the authentic pioneer homestead, countless hours of learning and fun are possible, closely geared to meet the World Class Sunshine State Standards and complement classroom instruction in Bay District Schools. All exhibits in the Junior Museum of Bay County adhere to the following Body of Knowledge and its accompanying Big Ideas and Benchmarks.*

## **BODY OF KNOWLEDGE: THE NATURE OF SCIENCE**

### **BIG IDEA 1: THE PRACTICE OF SCIENCE**

- A. Scientific inquiry is a multifaceted activity; the processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.**
- B. The processes of science frequently do not correspond to the traditional portrayal of “the scientific method.”**
- C. Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.**
- D. Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.**

### **KINDERGARTEN**

- SC.K.N.1.1 Collaborate with a partner to collect information.
- SC.K.N.1.2 Make observations of the natural world and know that they are descriptors collected using the five senses.
- SC.K.N.1.3 Keep records as appropriate — such as pictorial records — of investigations conducted.
- SC.K.N.1.4 Observe and create a visual representation of an object which includes its major features.
- SC.K.N.1.5 Recognize that learning can come from careful observation.

### **GRADE 1**

- SC.1.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration, and generate appropriate explanations based on those explorations.
- SC.1.N.1.2 Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.
- SC.1.N.1.3 Keep records as appropriate — such as pictorial and written records — of investigations conducted.
- SC.1.N.1.4 Ask “how do you know?” in appropriate situations.

### **GRADE 2**

- SC.2.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.
- SC.2.N.1.2 Compare the observations made by different groups using the same tools.
- SC.2.N.1.3 Ask “how do you know?” in appropriate situations and attempt reasonable answers when asked the same question by others.
- SC.2.N.1.4 Explain how particular scientific investigations should yield similar conclusions when repeated.
- SC.2.N.1.5 Distinguish between empirical observation (what you see, hear, feel, smell, or taste) and ideas of inferences (what you think).
- SC.2.N.1.6 Explain how scientists alone or in groups are always investigating new ways to solve problems.

### **GRADE 3**

- SC.3.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
- SC.3.N.1.2 Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.
- SC.3.N.1.3 Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.
- SC.3.N.1.4 Recognize the importance of communication among scientists.
- SC.3.N.1.5 Recognize that scientists question, discuss, and check each others' evidence and explanations.
- SC.3.N.1.6 Infer based on observation.
- SC.3.N.1.7 Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.

### **GRADE 4**

- SC.4.N.1.1 Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
- SC.4.N.1.2 Compare the observations made by different groups using multiple tools and seek reasons to explain the differences across groups.
- SC.4.N.1.3 Explain that science does not always follow a rigidly defined method ("the scientific method") but that science does involve the use of observations and empirical evidence.
- SC.4.N.1.4 Attempt reasonable answers to scientific questions and cite evidence in support.
- SC.4.N.1.5 Compare the methods and results of investigations done by other classmates.
- SC.4.N.1.6 Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations.
- SC.4.N.1.7 Recognize and explain that scientists base their explanations of evidence.
- SC.4.N.1.8 Recognize that science involves creativity in designing experiments.

### **GRADE 5**

- SC.5.N.1.1 Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.
- SC.5.N.1.2 Explain the difference between an experiment and other types of scientific investigation.
- SC.5.N.1.3 Recognize and explain the need for repeated experimental trials.
- SC.5.N.1.4 Identify a control group and explain its importance in an experiment.
- SC.5.N.1.5 Recognize and explain that authentic scientific investigation frequently does not parallel the steps of "the scientific method."
- SC.5.N.1.6 Recognize and explain the difference between personal opinion/interpretation and verified observation.

# Nature Play

**Nature Play** exhibits include: Econfina Creek animal habitat, seabird nesting area, live cold blooded animals, bird watching area, nature drawers (featuring animals tracks, echinoderms, seashells, mammal skulls, flora and fauna, minerals, vertebrates and invertebrates), puppet play with native Florida creature puppets, and sand table.

## **BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE**

### **BIG IDEA 6: EARTH STRUCTURES**

**Humans continue to explore the composition and structure of the surface of the Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.**

#### **GRADE 1**

SC.1.E.6.1 Recognize that water, rocks, soil, and living organisms are found on Earth's surface.

#### **GRADE 2**

SC.2.E.6.1 Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes.

SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed.

SC.2.E.6.3 Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants.

#### **GRADE 4**

SC.4.E.6.1 Identify the three categories of rocks: igneous (formed from molten rock); sedimentary (pieces of other rocks and fossilized organisms); and metamorphic (formed from heat and pressure).

SC.4.E.6.2 Identify the physical properties of common earth-forming minerals, including hardness, color, luster, cleavage, and streak color, and recognize the role of minerals in the formation of rocks.

## **BODY OF KNOWLEDGE: LIFE SCIENCE**

### **BIG IDEA 14: ORGANIZATION AND DEVELOPMENT OF LIVING ORGANISMS**

**A. All plants and animals, including humans, are alike in some ways and different in others**

**B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.**

**C. Humans can better understand the natural world through careful observation.**

#### **KINDERGARTEN**

SC.K.L.14.2 Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life.

SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.

#### **GRADE 1**

SC.1.L.14.1 Make observations of living things and their environment using the five senses.

SC.1.L.14.3 Differentiate between living and nonliving things.

#### **GRADE 3**

SC.3.L.14.1 Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

SC.3.L.14.2 Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward lights and their roots grow downward in response to gravity.

### **GRADE 5**

SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support — some with internal skeletons other with exoskeletons — while some plants have stems for support.

### **BIG IDEA 15: DIVERSITY AND EVOLUTION OF LIVING ORGANISMS**

**A. Earth is home to a great diversity of living things, but changes in the environment can affect survival.**

**B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.**

### **GRADE 3**

SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

SC.3.L.15.2 Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.

### **GRADE 5**

SC.5.L.15.1 Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

### **BIG IDEA 16: HEREDITY AND REPRODUCTION**

**A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.**

**B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.**

### **GRADE 1**

SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.

### **GRADE 2**

SC.2.L.16.1 Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies.

### **GRADE 3**

SC.3.L.17.1 Describe how animals and plants respond to changing seasons.

### **GRADE 4**

SC.4.L.16.1 Identify processes of sexual reproduction in flowering plants, including pollination, fertilization (seed production), seed dispersal, and germination.

SC.4.L.16.2 Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.

SC.4.L.16.3 Recognize that animal behaviors may be shaped by heredity and learning.

SC.4.L.16.4 Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants.

### **BIG IDEA 17: INTERDEPENDENCE**

**A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.**

**B. Both human activities and natural events can have major impacts on the environment.**

**C. Energy flows from the sun through producers to consumers**

### **GRADE 1**

SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.

**GRADE 2**

SC.2.L.17.1 Compare and contrast the basic needs that all living things, including humans, have for survival.

SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

**GRADE 4**

SC.4.L.17.1 Compare the seasonal changes in Florida plants and animals to those in other regions of the country.

SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.

SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.

**GRADE 5**

SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

# Captain Kid's Corner

**Captain Kid's Corner** exhibits include: Fishing in St. Andrews Bay, where children can “fish” from a boat or dockside while learning boating safety and identifying their catch and other inhabitants of our local waters, and Captain Kid's Grocery Store, with shopping carts, a working checkout aisle with cash register, play money, and fully stocked shelves and food bins.

## **BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE**

### **BIG IDEA 6: EARTH STRUCTURES**

**Humans continue to explore the composition and structure of the surface of the Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.**

#### **GRADE 1**

SC.1.E.6.1 Recognize that water, rocks, soil, and living organisms are found on Earth's surface.

SC.1.E.6.2 Describe the need for water and how to be safe around water.

SC.1.E.6.3 Recognize that some things in the world around us happen fast and some happen slowly.

### **BIG IDEA 8: PROPERTIES OF MATTER**

**A. All objects and substances in the world are made of matter. Matter has two fundamental properties: makes takes up space and matter has mass.**

**B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or “stuff”) in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.**

#### **KINDERGARTEN**

SC.K.P.8.1 Sort object by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light) and texture.

#### **GRADE 1**

SC.1.P.8.1 Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), texture, and whether objects sink or float.

#### **GRADE 2**

SC.2.P.8.1 Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of magnets.

SC.2.P.8.2 Identify objects and materials as solid, liquid, or gas.

SC.2.P.8.3 Recognize that solids have a definite shape and that liquids and gases take the shape of their container.

SC.2.P.8.4 Observe and describe water in its solid, liquid, and gaseous states.

SC.2.P.8.6 Measure and compare the volume of liquids using containers of various shapes and sizes.

#### **GRADE 3**

SC.3.P.8.2 Measure and compare the mass and volume of solids and liquids.

SC.3.P.8.3 Compare materials and objects according to properties such as size, shape, color, texture, and hardness.

#### **GRADE 4**

SC.4.P.8.1 Measure and compare objects and materials based on their physical properties including: mass, shape, volume, color, hardness, texture, odor, taste, attraction to magnets.

SC.4.P.8.2 Identify properties and common uses of water in each of its states.

## **BODY OF KNOWLEDGE: PHYSICAL SCIENCE**

### **BIG IDEA 10: FORMS OF ENERGY**

- A. Energy is involved in all physical processes and is a unifying concept in many areas of science.**
- B. Energy exists in many forms and has the ability to do work or cause a change.**

#### **KINDERGARTEN**

SC.K.P.10.1 Observe that things that make sound vibrate.

#### **GRADE 2**

SC.2.P.10.1 Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars (vehicles).

#### **GRADE 3**

SC.3.P.10.2 Recognize that energy has the ability to cause motion or create change.

#### **GRADE 4**

SC.4.P.10.2 Investigate and describe that energy has the ability to cause motion or create change.

SC.4.P.10.3 Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.

SC.4.P.10.4 Describe how moving water and air are sources of energy and can be used to move things.

#### **GRADE 5**

SC.5.P.10.1 Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical.

SC.5.P.10.2 Investigate and explain that energy has the ability to cause motion or create change

### **BIG IDEA 12: MOTION OF OBJECTS**

- A. Motion is a key characteristic of all matter that can be observed, described, and measured.**
- B. The motion of objects can be changed by forces.**

#### **KINDERGARTEN**

SC.K.P.12.1 Investigate that things move in different ways, such as fast, slow, etc.

#### **GRADE 1**

SC.1.P.12.1 Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow.

#### **GRADE 4**

SC.4.P.12.1 Recognize that an object in motion always changes its position and may change its direction.

SC.4.P.12.2 Investigate and describe that the speed of an object is determined by the distance it travels in a unit of time and that objects can move at different speeds.

### **BIG IDEA 13: FORCES AND CHANGES IN MOTION**

- A. It takes energy to change the motion of objects.**
- B. Energy change is understood in terms of forces — pushes or pulls.**
- C. Some forces act through physical contact, while others act at a distance.**

#### **KINDERGARTEN**

SC.K.P.13.1 Observe that a push or a pull can change the way an object is moving.

#### **GRADE 1**

SC.1.P.13.1 Demonstrate that the way to change the motion of an object is by applying a push or a pull.

#### **GRADE 2**

SC.2.P.13.1 Investigate the effect of applying various pushes and pulls on different objects.

SC.2.P.13.3 Recognize that objects are pulled toward the ground unless something holds them up.

SC.2.P.13.4 Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object.

## **BODY OF KNOWLEDGE: LIFE SCIENCE**

### **BIG IDEA 14: ORGANIZATION AND DEVELOPMENT OF LIVING ORGANISMS**

- A. All plants and animals, including humans, are alike in some ways and different in others**
- B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.**
- C. Humans can better understand the natural world through careful observation.**

#### **KINDERGARTEN**

SC.K.L.14.2 Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life.

SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.

#### **GRADE 1**

SC.1.L.14.3 Differentiate between living and nonliving things.

#### **GRADE 5**

SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support — some with internal skeletons other with exoskeletons — while some plants have stems for support.

### **BIG IDEA 15: DIVERSITY AND EVOLUTION OF LIVING ORGANISMS**

- A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.**
- B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.**

#### **GRADE 3**

SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

#### **GRADE 5**

SC.5.L.15.1 Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

### **BIG IDEA 16: HEREDITY AND REPRODUCTION**

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#### **GRADE 1**

SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.

#### **GRADE 3**

SC.3.L.17.1 Describe how animals and plants respond to changing seasons.

#### **GRADE 4**

SC.4.L.16.2 Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.

SC.4.L.16.3 Recognize that animal behaviors may be shaped by heredity and learning.

SC.4.L.16.4 Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants.

### **BIG IDEA 17: INTERDEPENDENCE**

- A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.**
- B. Both human activities and natural events can have major impacts on the environment.**
- C. Energy flows from the sun through producers to consumers**

### **GRADE 1**

SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.

### **GRADE 2**

SC.2.L.17.1 Compare and contrast the basic needs that all living things, including humans, have for survival.

SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

### **GRADE 4**

SC.4.L.17.1 Compare the seasonal changes in Florida plants and animals to those in other regions of the country.

SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.

SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.

### **GRADE 5**

SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

## **BODY OF KNOWLEDGE: ALGEBRA**

### **SUPPORTING IDEAS: ALGEBRA**

#### **KINDERGARTEN**

MA.K.A.1.1 Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

MA.K.A.1.2 Solve problems including those involving sets by counting, by using cardinal and ordinal numbers, by comparing, by ordering, and by creating sets up to 20.

MA.K.A.4.1 Identify and duplicate simple number and non-numeric repeating and growing patterns.

#### **GRADE 1**

MA.1.A.1.4 Use counting strategies, number patterns, and models as a means for solving basic addition and subtraction fact problems.

MA.1.A.2.2 Represent two digit numbers in terms of tens and ones.

MA.1.A.2.1 Compare and order whole numbers at least to 100.

MA.1.A.4.1 Extend repeating and growing patterns, fill in missing terms, and justify reasoning.

MA.1.A.6.1 Use mathematical reasoning and beginning understanding of tens and ones, including the use of invented strategies, to solve two-digit addition and subtraction problems.

MA.1.A.6.2 Solve routine and non-routine problems by acting them out, using manipulatives, and drawing diagrams.

#### **GRADE 2**

MA.2.A.2.1 Recall basic addition and related subtraction facts.

MA.2.A.2.4 Solve addition and subtraction problems that involve measurement and geometry.

MA.2.A.4.4 Describe and apply equality to solve problems, such as in balancing situations

#### **GRADE 3**

MA.3.A.4.1 Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs.

#### **GRADE 5**

MA.5.A.4.2 Construct and describe a graph showing continuous data, such as a graph of a quantity that changes over time.

### **SUPPORTING IDEAS: NUMBER AND OPERATIONS**

#### **GRADE 1**

MA.1.A.6.1 Use mathematical reasoning and beginning understanding of tens and ones, including the

use of invented strategies, to solve two-digit addition and subtraction problems.

MA.1.A.6.2 Solve routine and non-routine problems by acting them out, using manipulatives, and drawing diagrams.

#### **GRADE 2**

MA.2.A.2.4 Solve addition and subtraction problems that involve measurement and geometry.

MA.2.A.6.1 Solve problems that involve repeated addition.

### **BODY OF KNOWLEDGE: GEOMETRY**

#### **SUPPORTING IDEAS: GEOMETRY AND MEASUREMENT**

##### **KINDERGARTEN**

MA.K.G.2.1 Describe, sort and re-sort objects using a variety of attributes such as shape, size, and position.

MA.K.G.2.3 Identify, name, describe, and sort three-dimensional shapes such as spheres, cubes, and cylinders.

MA.K.G.2.4 Interpret the physical world with geometric shapes and describe it with corresponding vocabulary.

MA.K.G.3.1 Compare and order objects indirectly or directly using measurable attributes such as length, height, and weight.

##### **GRADE 1**

MA.1.G.5.1 Measure by using iterations of a unit and count the unit measures by grouping units.

MA.1.G.5.2 Compare and order objects according to descriptors of length, weight, and capacity.

##### **GRADE 2**

MA.2.G.3.1 Estimate and use standard units, including inches and centimeters, to partition and measure lengths of objects

MA.2.G.3.3 Apply the Transitive Property when comparing lengths of objects.

MA.2.G.3.4 Estimate, select an appropriate tool, measure, and/or compute lengths to solve problems.

MA.2.G.5.3 Identify, combine, and compare values of money in cents up to \$1 and in dollars up to \$100, working with a single unit of currency.

MA.2.G.5.4 Measure weight/mass and capacity/volume of objects. Include the use of the appropriate unit of measure and their abbreviations including cups, pints, quarts, gallons, ounces (oz), pounds (lbs), grams (g), kilograms (kg), milliliters (mL), and liters (L).

##### **GRADE 5**

MA.5.G.5.3 Solve problems requiring attention to approximation, selection of appropriate measuring tools, and precision of measurement.

### **BODY OF KNOWLEDGE: TIME, CONTINUITY, AND CHANGE (HISTORY)**

#### **STANDARD 1: HISTORICAL CHRONOLOGY AND THE HISTORICAL PERSPECTIVE**

##### **GRADES K-2**

SS.A.1.1.1 Compares everyday life in different places and times and understands that people, places, and things change over time.

SS.A.1.1.2 Understands that history tells the story of people and events of other times and places.

SS.A.1.1.4 Understands broad categories of time (e.g., past, present, and future: yesterday, today, and tomorrow) and calendar time (days, weeks, months, and years).

##### **GRADES 3-5**

SS.A.1.2.1 Understands how individuals, ideas, decisions, and events can influence history.

SS.A.1.2.3 Understands broad categories of time in years, decades, and centuries.

### **BODY OF KNOWLEDGE: PEOPLE, PLACES, AND ENVIRONMENTS (GEOGRAPHY)**

#### **STANDARD 2: THE INTERACTIONS OF PEOPLE AND THE PHYSICAL ENVIRONMENT**

##### **GRADES K-2**

SS.B.2.1.1 Identifies some physical and human characteristics of places.

SS.B.2.1.3 Knows basic needs and how families in the U.S. and other countries meet them.

SS.B.2.1.4 Knows the role that resources play in our daily lives.

SS.B.2.1.5 Knows the modes of transportation used to move people, products, and ideas from place to place, their importance, and their advantages and disadvantages.

**GRADES 3-5**

SS.B.2.2.2 Understands how the physical environment supports and constrains human activities.

SS.B.2.2.3 Understands how human activity affects the physical environment.

**BODY OF KNOWLEDGE: GOVERNMENT AND THE CITIZEN (CIVICS AND GOVERNMENT)**

**STANDARD 1: THE STRUCTURE, FUNCTIONS, AND PURPOSES OF GOVERNMENT AND HOW THE PRINCIPLES AND VALUES OF AMERICAN DEMOCRACY ARE REFLECTED IN AMERICAN CONSTITUTIONAL GOVERNMENT**

**GRADES K-2**

SS.C.1.1.3 Understands how and why rules are made and knows that a good rule or law solves a specific problem, is fair, and “does not go too far.”

**BODY OF KNOWLEDGE: ECONOMICS**

**STANDARD 1: HOW SCARCITY REQUIRES INDIVIDUALS AND INSTITUTIONS TO MAKE CHOICES ABOUT HOW TO USE RESOURCES**

**GRADES K-2**

SS.D.1.1.1 Understands how scarcity affects the choices people make in everyday situations.

SS.D.1.1.2 Knows the differences among human resources, natural resources, and capital resources and how these resources are used to produce goods and services.

SS.D.1.1.3 Knows the difference between goods and services and between consumers and producers.

# Toddler Town & KMO

**Toddler Town** area includes: toddler-sized fencing enclosing a reading treehouse, ball pool, balance and activity mats, puzzles, sensory exploration, and shape/color sorting manipulatives. This area is primarily for infants and toddlers through age three. Toddler Town and the KMO (Kids Morning Out) program prepare these emergent learning children for the prekindergarten education standards such as:

## Physical Health

- A. Physical Health
- B. Knowledge of Wellness

## Approaches to Learning

- A. Eagerness and Curiosity
- B. Persistence
- C. Creativity and Inventiveness
- D. Planning and Reflection

## Social and Emotional Development

- A. Self-concept
- B. Self-control
- C. Relationships with Adults
- D. Relationships with Peers
- E. Social Problem Solving

## IV. Language and Communication

- A. Listening
- B. Speaking
- C. Vocabulary
- D. Sentences and Structure
- E. Conversation

## Emergent Literacy

- A. Emergent Reading
- B. Emergent Writing

## VI. Cognitive Development and General Knowledge

- A. Mathematical Thinking
- B. Scientific Thinking
- C. Social Studies
- D. The Arts

## VII. Motor Development

- A. Gross Motor Development
- B. Fine Motor Development

# Medical Center

**Medical Center** exhibits include: Mr. Bones, the skeleton who rides a bicycle, the operation table, a virtual x-ray showing your internal skeletal structure, a scale to measure height and weight, and a full sized mirror to view and record your growth.

## **BODY OF KNOWLEDGE: PHYSICAL SCIENCE**

### **BIG IDEA 12: MOTION OF OBJECTS**

**Motion is a key characteristic of all matter that can be observed, described, and measured.  
The motion of objects can be changed by forces.**

#### **KINDERGARTEN**

SC.K.P.12.1 Investigate that things move in different ways, such as fast, slow, etc.

#### **GRADE 4**

SC.4.P.12.1 Recognize that an object in motion always changes its position and may change its direction.

### **BIG IDEA 13: FORCES AND CHANGES IN MOTION**

**It takes energy to change the motion of objects.  
Energy change is understood in terms of forces — pushes or pulls.  
Some forces act through physical contact, while others act at a distance.**

#### **KINDERGARTEN**

SC.K.P.13.1 Observe that a push or a pull can change the way an object is moving.

#### **GRADE 1**

SC.1.P.13.1 Demonstrate that the way to change the motion of an object is by applying a push or a pull.

#### **GRADE 2**

SC.2.P.13.1 Investigate the effect of applying various pushes and pulls on different objects.

SC.2.P.13.4 Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object.

#### **GRADE 5**

SC.5.P.13.1 Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects.

SC.5.P.13.2 Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object.

## **BODY OF KNOWLEDGE: LIFE SCIENCE**

### **BIG IDEA 14: ORGANIZATION AND DEVELOPMENT OF LIVING ORGANISMS**

**All plants and animals, including humans, are alike in some ways and different in others**

**B. All plants and animals, including humans, have internal parts and external structures that function that keep them alive and help them grow and reproduce.**

**Humans can better understand the natural world through careful observation.**

#### **KINDERGARTEN**

SC.K.L.14.1 Recognize the five senses and related body parts.

SC.K.L.14.2 Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life.

SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.

### **GRADE 1**

SC.1.L.14.3 Differentiate between living and nonliving things.

### **GRADE 2**

SC.2.L.14.1 Distinguish human body parts (brain, heart, lungs, stomach, muscles, and skeleton) and their basic functions.

### **GRADE 5**

SC.5.L.14.1 Identify the organs in the human body and describe their functions, including the skin, brain, heart, lungs, stomach, liver, intestines, pancreas, muscles and skeleton, reproductive organs, kidneys, bladder, and sensory organs.

SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support — some with internal skeletons other with exoskeletons — while some plants have stems for support.

## **BIG IDEA 16: HEREDITY AND REPRODUCTION**

**A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.**

**B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.**

### **GRADE 1**

SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.

### **GRADE 3**

SC.3.L.17.1 Describe how animals and plants respond to changing seasons.

### **GRADE 4**

SC.4.L.16.2 Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.

SC.4.L.16.3 Recognize that animal behaviors may be shaped by heredity and learning.

SC.4.L.16.4 Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants.

## **BIG IDEA 17: INTERDEPENDENCE**

**A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.**

**B. Both human activities and natural events can have major impacts on the environment.**

**C. Energy flows from the sun through producers to consumers**

### **GRADE 1**

SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.

### **GRADE 2**

SC.2.L.17.1 Compare and contrast the basic needs that all living things, including humans, have for survival.

SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

### **GRADE 4**

SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.

## **BODY OF KNOWLEDGE: ALGEBRA**

### **SUPPORTING IDEAS: ALGEBRA**

### **GRADE 1**

MA.1.A.2.1 Compare and order whole numbers at least to 100.

**GRADE 2**

MA.2.A.4.4 Describe and apply equality to solve problems, such as in balancing situations.

**GRADE 3**

MA.3.A.4.1 Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs.

**GRADE 5**

MA.5.A.4.2 Construct and describe a graph showing continuous data, such as a graph of a quantity that changes over time.

**SUPPORTING IDEAS: NUMBER AND OPERATIONS**

**GRADE 1**

MA.1.A.6.1 Use mathematical reasoning and beginning understanding of tens and ones, including the use of invented strategies, to solve two-digit addition and subtraction problems.

MA.1.A.6.2 Solve routine and non-routine problems by acting them out, using manipulatives, and drawing diagrams

**GRADE 2**

MA.2.A.2.4 Solve addition and subtraction problems that involve measurement and geometry.

MA.2.A.6.1 Solve problems that involve repeated addition.

**GRADE 4**

MA.4.A.6.6 Estimate and describe reasonableness of estimates; determine the appropriateness of an estimate versus an exact answer.

**BODY OF KNOWLEDGE: GEOMETRY**

**SUPPORTING IDEAS: GEOMETRY AND MEASUREMENT**

**KINDERGARTEN**

MA.K.G.3.1 Compare and order objects indirectly or directly using measurable attributes such as length, height, and weight.

**GRADE 1**

MA.1.G.5.1 Measure by using iterations of a unit and count the unit measures by grouping units.

MA.1.G.5.2 Compare and order objects according to descriptors of length, weight, and capacity.

**GRADE 2**

MA.2.G.3.1 Estimate and use standard units, including inches and centimeters, to partition and measure lengths of objects.

MA.2.G.3.3 Apply the Transitive Property when comparing lengths of objects

MA.2.G.3.4 Estimate, select an appropriate tool, measure, and/or compute lengths to solve problems.

MA.2.G.5.4 Measure weight/mass and capacity/volume of objects. Include the use of the appropriate unit of measure and their abbreviations including cups, pints, quarts, gallons, ounces (oz), pounds (lbs), grams (g), kilograms (kg), milliliters (mL), and liters (L).

**GRADE 4**

MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

**GRADE 5**

MA.5.G.5.3 Solve problems requiring attention to approximation, selection of appropriate measuring tools, and precision of measurement.

# Hands On Science

**Hands On Science** exhibits include examples of many science concepts: Solar System, holograms, laser lights, 3-dimensional reflection, Bernoulli Blower, pipe organ, sound waves, color perception, mirror images, black light vortex, refracted light, incline plan, frequency, pendulum, color filters, fluorescent and incandescent lights, and world music instruments.

## **BODY OF KNOWLEDGE: THE NATURE OF SCIENCE**

### **BIG IDEA 3: THE ROLE OF THEORIES, LAWS, HYPOTHESES, AND MODELS**

**The terms that describe examples of scientific knowledge, for example; “theory,” “law,” “hypothesis,” and “model” have very specific meanings and functions within science.**

#### **GRADE 3**

SC.3.N.3.1 Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence.

SC.3.N.3.2 Recognize that scientists use models to help understand and explain how things work.

SC.3.N.3.3 Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations.

#### **GRADE 4**

SC.4.N.3.1 Explain that models can be three dimensional, two dimensional, an explanation in your mind, or a computer model.

## **BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE**

### **BIG IDEA 5: EARTH IN SPACE AND TIME**

**Humans continue to explore Earth’s place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind’s need to explore continues to lead to the development of knowledge and understanding of our Solar System.**

#### **KINDERGARTEN**

SC.K.E.5.1 Explore the Law of Gravity by investigating how objects are pulled toward the ground unless something holds them up.

SC.K.E.5.2 Recognize the repeating pattern of day and night.

SC.K.E.5.3 Recognize that the Sun can only be seen in the day time.

SC.K.E.5.4 Observe that sometimes the Moon can be seen at night and sometimes during the day.

SC.K.E.5.5 Observe that things can be big and things can be small as seen from Earth.

SC.K.E.5.6 Observe that some objects are far away and some are nearby as seen from Earth.

#### **GRADE 1**

SC.1.E.5.1 Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky.

SC.1.E.5.2 Explore the Law of Gravity by demonstrating that Earth’s gravity pulls any object on or near Earth toward it even though nothing is touching the object.

SC.1.E.5.3 Investigate how magnifiers make things appear bigger and help people see things they could not see without them.

SC.1.E.5.4 Identify the beneficial and harmful properties of the Sun.

#### **GRADE 3**

SC.3.E.5.1 Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.

SC.3.E.5.2 Identify the Sun as a star that emits energy; some of it in the form of light.

SC.3.E.5.3 Recognize that the Sun appears large and bright because it is the closest star to Earth.

SC.3.E.5.4 Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.  
SC.3.E.5.5 Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.

#### **GRADE 4**

SC.4.E.5.1 Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly, and different stars can be seen in different seasons.  
SC.4.E.5.2 Describe the changes in the observable shape of the moon over the course of about a month.  
SC.4.E.5.3 Recognize that Earth revolves around the Sun in a year and rotates on its axis in a 24-hour day.  
SC.4.E.5.4 Relate that the rotation of Earth (day and night) and apparent movements of the Sun, Moon, and stars are connected.

#### **GRADE 5**

SC.5.E.5.1 Recognize that a galaxy consists of gas, dust, and many stars, including any objects orbiting the stars. Identify our home galaxy as the Milky Way.  
SC.5.E.5.2 Recognize the major common characteristics of all planets and compare/contrast the properties of inner and outer planets.  
SC.5.E.5.3 Distinguish among the following objects of the Solar System — sun, planets, moons, asteroids, comets — and identify Earth's position in it.

### **BODY OF KNOWLEDGE: PHYSICAL SCIENCE**

#### **BIG IDEA 10: FORMS OF ENERGY**

**A. Energy is involved in all physical processes and is a unifying concept in many areas of science.**  
**B. Energy exists in many forms and has the ability to do work or cause a change.**

#### **KINDERGARTEN**

SC.K.P.10.1 Observe that things that make sound vibrate.

#### **GRADE 2**

SC.2.P.10.1 Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars (vehicles).

#### **GRADE 3**

SC.3.P.10.1 Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.  
SC.3.P.10.2 Recognize that energy has the ability to cause motion or create change.  
SC.3.P.10.3 Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.  
SC.3.P.10.4 Demonstrate that light can be reflected, refracted, and absorbed.

#### **GRADE 4**

SC.4.P.10.2 Investigate and describe that energy has the ability to cause motion or create change.  
SC.4.P.10.3 Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.  
SC.4.P.10.4 Describe how moving water and air are sources of energy and can be used to move things.

#### **GRADE 5**

SC.5.P.10.1 Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical.  
SC.5.P.10.2 Investigate and explain that energy has the ability to cause motion or create change.

#### **BIG IDEA 12: MOTION OF OBJECTS**

**A. Motion is a key characteristic of all matter that can be observed, described, and measured.**  
**B. The motion of objects can be changed by forces.**

#### **KINDERGARTEN**

SC.K.P.12.1 Investigate that things move in different ways, such as fast, slow, etc.

### GRADE 1

SC.1.P.12.1 Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow.

### GRADE 4

SC.4.P.12.1 Recognize that an object in motion always changes its position and may change its direction.

SC.4.P.12.2 Investigate and describe that the speed of an object is determined by the distance it travels in a unit of time and that objects can move at different speeds.

## **BIG IDEA 13: FORCES AND CHANGES IN MOTION**

**A. It takes energy to change the motion of objects.**

**B. Energy change is understood in terms of forces — pushes or pulls.**

**C. Some forces act through physical contact, while others act at a distance.**

### KINDERGARTEN

SC.K.P.13.1 Observe that a push or a pull can change the way an object is moving.

### GRADE 1

SC.1.P.13.1 Demonstrate that the way to change the motion of an object is by applying a push or a pull.

### GRADE 2

SC.2.P.13.1 Investigate the effect of applying various pushes and pulls on different objects.

SC.2.P.13.3 Recognize that objects are pulled toward the ground unless something holds them up.

SC.2.P.13.4 Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object.

### GRADE 5

SC.5.P.13.1 Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects.

SC.5.P.13.2 Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object.

SC.5.P.13.4 Investigate and explain that when a force is applied to an object but it does not move, it is because another opposing force is being applied by something in the environment so that the forces are balanced.

# Pioneer Homestead

The **Pioneer Homestead** is a collection of authentic buildings from the late 1800's, donated from area counties in the early 1980's and include: log cabin and furnishings (Holmes County, 1893); barn and smokehouse with displays (Jackson County, circa 1900); and gristmill (Bay County, circa 1900). Each building contains furnishing and tools to teach visitors about Northwest Florida's pioneer history.

## **BODY OF KNOWLEDGE: TIME, CONTINUITY, AND CHANGE (HISTORY)**

### **STANDARD 1: HISTORICAL CHRONOLOGY AND THE HISTORICAL PERSPECTIVE**

#### **GRADES K-2**

SS.A.1.1.1 Compares everyday life in different places and times and understands that people, places, and things change over time.

SS.A.1.1.2 Understands that history tells the story of people and events of other times and places.

SS.A.1.1.3 Knows a family history through two or three generation (e.g., customs, beliefs, and traditions of ancestors and their homelands).

SS.A.1.1.4 Understands broad categories of time (e.g., past, present, and future: yesterday, today, and tomorrow) and calendar time (days, weeks, months, and years).

#### **GRADES 3-5**

SS.A.1.2.1 Understands how individuals, ideas, decisions, and events can influence history.

SS.A.1.2.2 Uses a variety of methods and sources to understand history (such as interpreting diaries, letters, newspapers; and reading maps and graphs) and knows the difference between primary and secondary sources.

SS.A.1.2.3 Understands broad categories of time in years, decades, and centuries.

### **STANDARD 4: U.S. HISTORY TO 1880**

#### **GRADES K-2**

SS.A.4.1.1 Knows significant individuals in United States history to 1880 (e.g., revolutionary leaders, individuals important to American democracy, and individuals who fought for human rights, equality, and the common good).

SS.A.4.1.4 Understands the changes that occurred in people's lives when they moved from faraway places to the United States.

#### **GRADES 3-5**

SS.A.4.2.1 Understands the geographic, economic, political, and cultural factors that characterized early exploration of the Americas.

SS.A.4.2.2 Understands why colonial America was settled in regions.

SS.A.4.2.4 Knows significant historical documents and the principal ideas expressed in them (e.g., Declaration of Independence, the United States Constitution, and the Bill of Rights).

SS.A.4.2.5 Understands geographic, economic, and technological features of the growth and change that occurred in America from 1801 to 1861.

SS.A.4.2.6 Knows the causes, key events, and effects of the Civil War and Reconstruction.

### **STANDARD 5: U.S. HISTORY FROM 1880 TO THE PRESENT DAY**

#### **GRADES K-2**

SS.A.5.1.4 Understands changes in community life over time (e.g., changes in architecture and landscape; and changes in jobs, schooling, transportation, communication, religion, and recreation).

#### **GRADES 3-5**

SS.A.5.2.1 Knows that after the Civil War, massive immigration, big business, and mechanized farming

transformed American life.

**STANDARD 6: THE HISTORY OF FLORIDA AND ITS PEOPLE**

**GRADES 3-5**

SS.A.6.2.1 Understands reasons that immigrants came to Florida and the contributions of immigrants to the state's history.

SS.A.6.2.2 Understands the influence of geography on the history of Florida.

SS.A.6.2.4 Understands the perspectives of diverse cultural, ethnic, and economic groups with regard to past and current events in Florida's history.

SS.A.6.2.6 Understands the cultural, social, and political features of Native American tribes in Florida's history.

**BODY OF KNOWLEDGE: PEOPLE, PLACES, AND ENVIRONMENTS (GEOGRAPHY)**

**STANDARD 2: THE INTERACTIONS OF PEOPLE AND THE PHYSICAL ENVIRONMENT**

**GRADES K-2**

SS.B.2.1.1 Identifies some physical and human characteristics of places.

SS.B.2.1.2 Knows how different communities have changed physically and demographically.

SS.B.2.1.3 Knows basic needs and how families in the U.S. and other countries meet them.

SS.B.2.1.4 Knows the role that resources play in our daily lives.

SS.B.2.1.5 Knows the modes of transportation used to move people, products, and ideas from place to place, their importance, and their advantages and disadvantages.

**GRADES 3-5**

SS.B.2.2.2 Understands how the physical environment supports and constrains human activities.

SS.B.2.2.3 Understands how human activity affects the physical environment.

SS.B.2.2.4 Understands how factors such as population growth, human migration, improved methods of transportation and communication, and economic development affect the use and conservation of natural resources.

**BODY OF KNOWLEDGE: GOVERNMENT AND THE CITIZEN (CIVICS AND GOVERNMENT)**

**STANDARD 1: THE STRUCTURE, FUNCTIONS, AND PURPOSES OF GOVERNMENT AND HOW THE PRINCIPLES AND VALUES OF AMERICAN DEMOCRACY ARE REFLECTED IN AMERICAN CONSTITUTIONAL GOVERNMENT**

**GRADES K-2**

SS.C.1.1.3 Understands how and why rules are made and knows that a good rule or law solves a specific problem, is fair, and "does not go too far."

SS.C.1.1.6 Understands that the Constitution is a written document that states that the fundamental purposes of American government are to protect individual rights and promote the common good.

**GRADES 3-5**

SS.C.1.2.4 Knows possible consequences of the absence of government, rules, and laws.

**STANDARD 2: THE ROLE OF THE CITIZEN IN AMERICAN DEMOCRACY**

**GRADES K-2**

SS.C.2.1.1 Knows the qualities of a good citizen (e.g., honesty, courage, and patriotism).

SS.C.2.1.2 Knows that a responsibility is a duty to do something or not to do something.

**GRADES 3-5**

SS.C.2.2.2 Understands why personal responsibility (e.g., taking advantage of the opportunity to be educated) and civic responsibility (e.g., obeying the law and respecting the rights of others) are important.

SS.C.2.2.4 Knows examples of the extension of the privileges and responsibilities of citizenship.

**BODY OF KNOWLEDGE: ECONOMICS**

**STANDARD 1: HOW SCARCITY REQUIRES INDIVIDUALS AND INSTITUTIONS TO MAKE CHOICES ABOUT HOW TO USE RESOURCES**

**GRADES K-2**

SS.D.1.1.1 Understands how scarcity affects the choices people make in everyday situations.

SS.D.1.1.2 Knows the differences among human resources, natural resources, and capital resources and how these resources are used to produce goods and services.

SS.D.1.1.3 Knows the difference between goods and services and between consumers and producers.

**STANDARD 2: THE CHARACTERISTICS OF DIFFERENT ECONOMIC SYSTEMS AND INSTITUTIONS.**

**GRADES K-2**

SS.D.2.1.1 Understands that most people work in jobs in which they produce a few special goods or services.

SS.D.2.1.1 Understands that people in different places around the world depend on each other for the exchange of goods and services.

**GRADES 3-5**

SS.D.1.2.3 Understands the basic concept of credit.

# Nature Trail

The **Nature Trail** is a 1,500 ft. combination of boardwalks over wetlands and a path through the uplands pine hammock. Built in 1972 and reconstructed in 1998, the trail winds through a hardwood swamp and provides numerous teaching opportunities concerning local environments. A 1920's dumpsite, located on the trail, is utilized by local archaeologists to teach archaeological procedures and techniques.

## **BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE**

### **BIG IDEA 6: EARTH STRUCTURES**

**Humans continue to explore the composition and structure of the surface of the Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.**

#### **GRADE 1**

SC.1.E.6.1 Recognize that water, rocks, soil, and living organisms are found on Earth's surface.

SC.1.E.6.2 Describe the need for water and how to be safe around water.

SC.1.E.6.3 Recognize that some things in the world around us happen fast and some happen slowly.

#### **GRADE 2**

SC.2.E.6.1 Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes.

SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed.

SC.2.E.6.3 Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants.

#### **GRADE 3**

SC.3.E.6.1 Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost.

#### **GRADE 4**

SC.4.E.6.1 Identify the three categories of rocks: igneous (formed from molten rock); sedimentary (pieces of other rocks and fossilized organisms); and metamorphic (formed from heat and pressure).

SC.4.E.6.2 Identify the physical properties of common earth-forming minerals, including hardness, color, luster, cleavage, and streak color, and recognize the role of minerals in the formation of rocks.

SC.4.E.6.3 Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable.

SC.4.E.6.4 Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature, change, and plants) and erosion (movement of rock by gravity, wind, water, and ice).

SC.4.E.6.5 Investigate how technology and tools help to extend the ability of humans to observe very small things and very large things.

SC.4.E.6.6 Identify resources available in Florida (water, phosphate, oil, limestone, silicon, wind, and solar energy).

### **BIG IDEA 7: EARTH SYSTEMS AND PATTERNS**

**Humans continue to explore the interactions among water, air, and land. Air and water are in constant motion that results in changing conditions that can be observed over time.**

#### **GRADE 2**

SC.2.E.7.1 Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season.

SC.2.E.7.2 Investigate by observing and measuring, that the Sun's energy directly and indirectly warms the water, land, and air.

SC.2.E.7.3 Investigate, observe and describe how water left in an open container disappears (evaporates), but water in a closed container does not disappear (evaporate).

SC.2.E.7.4 Investigate that air is all around us and that moving air is wind.

SC.2.E.7.5 State the importance of preparing for severe weather, lightning, and other weather related events.

#### **GRADE 5**

SC.5.E.7.3 Recognize how air temperature, barometric pressure, humidity, wind speed and direction, and precipitation determine the weather in a particular place and time.

SC.5.E.7.5 Recognize that some of the weather-related differences, such as temperature and humidity, are found among different environments, such as swamps, deserts, and mountains.

SC.5.E.7.6 Describe characteristics (temperature and precipitation) of different climate zones as they relate to latitude, elevation, and proximity to bodies of water.

### **BODY OF KNOWLEDGE: PHYSICAL SCIENCE**

#### **BIG IDEA 9: CHANGES IN MATTER**

**A. Matter can undergo a variety of changes.**

**B. Matter can be changed physically or chemically.**

#### **GRADE 2**

SC.2.P.9.1 Investigate that materials can be altered to change some of their properties, but not all materials respond the same way to any one alteration.

#### **GRADE 4**

SC.4.P.9.1 Identify some familiar changes in materials that result in other materials with different characteristics, such as decaying animal or plant matter, burning, rusting, and cooking.

#### **GRADE 5**

SC.5.P.9.1 Investigate and describe that many physical and chemical changes are affected by temperature.

### **BODY OF KNOWLEDGE: LIFE SCIENCE**

#### **BIG IDEA 14: ORGANIZATION AND DEVELOPMENT OF LIVING ORGANISMS**

**A. All plants and animals, including humans, are alike in some ways and different in others**

**B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.**

**C. Humans can better understand the natural world through careful observation.**

#### **KINDERGARTEN**

SC.K.L.14.1 Recognize the five senses and related body parts.

SC.K.L.14.2 Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life.

SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.

#### **GRADE 1**

SC.1.L.14.1 Make observations of living things and their environment using the five senses.

SC.1.L.14.2 Identify the major parts of plants, including stem, roots, leaves, and flowers.

SC.1.L.14.3 Differentiate between living and nonliving things.

#### **GRADE 3**

SC.3.L.14.1 Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

SC.3.L.14.2 Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity.

#### **GRADE 5**

SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and

animals, including humans, for example: some animals have skeletons for support — some with internal skeletons other with exoskeletons — while some plants have stems for support.

### **BIG IDEA 15: DIVERSITY AND EVOLUTION OF LIVING ORGANISMS**

**A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.**

**B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.**

#### **GRADE 3**

SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

SC.3.L.15.2 Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.

#### **GRADE 5**

SC.5.L.15.1 Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

### **BIG IDEA 16: HEREDITY AND REPRODUCTION**

**A. Offspring of plants and animals are similar to, but not exactly like, their parents or each other.**

**B. Life cycles vary among organisms, but reproduction is a major stage in the life cycle of all organisms.**

#### **GRADE 1**

SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.

#### **GRADE 2**

SC.2.L.16.1 Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies.

#### **GRADE 3**

SC.3.L.17.1 Describe how animals and plants respond to changing seasons.

#### **GRADE 4**

SC.4.L.16.1 Identify processes of sexual reproduction in flowering plants, including pollination, fertilization (seed production), seed dispersal, and germination.

SC.4.L.16.2 Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.

SC.4.L.16.3 Recognize that animal behaviors may be shaped by heredity and learning.

SC.4.L.16.4 Compare and contrast the major stages in the life cycles of Florida plants and animals, such as those that undergo incomplete and complete metamorphosis, and flowering and nonflowering seed-bearing plants.

### **BIG IDEA 17: INTERDEPENDENCE**

**A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.**

**B. Both human activities and natural events can have major impacts on the environment.**

**C. Energy flows from the sun through producers to consumers**

#### **GRADE 1**

SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.

#### **GRADE 2**

SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

SC.2.L.17.1 Compare and contrast the basic needs that all living things, including humans, have for survival.

SC.2.L.17.2 Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

**GRADE 3**

SC.3.L.17.1 Describe how animals and plants respond to changing seasons.

SC.3.L.17.2 Recognize that plants use energy from the Sun, air, and water to make their own food.

**GRADE 4**

SC.4.L.17.1 Compare the seasonal changes in Florida plants and animals to those in other regions of the country.

SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.

SC.4.L.17.3 Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers.

SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.

**GRADE 5**

SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

