

# FLORIDA SCIENCE STANDARDS

## K-8 GRADE-LEVEL STANDARDS

### Big Ideas

The revised science standards include big ideas that flow throughout all grade levels and build in rigor as students move to higher grade levels. The eighteen big ideas used throughout this document are organized as follows:

#### Body of Knowledge: The Nature of Science

Big Idea 1: The Practice of Science

Big Idea 2: The Characteristics of Scientific Knowledge

Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

Big Idea 4: Science and Society

#### Body of Knowledge: Earth and Space Science

Big Idea 5: Earth in Space in Time

Big Idea 6: Earth Structures

Big Idea 7: Earth Systems and Patterns

#### Body of Knowledge: Physical Science

Big Idea 8: Properties of Matter

Big Idea 9: Changes in Matter

Big Idea 10: Forms of Energy

Big Idea 11: Energy Transfer and Transformations

Big Idea 12: Motion of Objects

Big Idea 13: Forces and Changes in Motion

#### Body of Knowledge: Life Science

Big Idea 14: Organization and Development of Living Organisms

Big Idea 15: Diversity and Evolution of Living Organisms

Big Idea 16: Heredity and Reproduction

Big Idea 17: Interdependence

Big Idea 18: Matter and Energy Transformations

The numbering for the big ideas is consistent throughout the document. Not all big ideas are addressed at each grade level, so the numbering scheme is not consecutive for each grade level.

## Benchmark Coding Scheme

<b>SC.</b>	<b>5.</b>	<b>N.</b>	<b>1.</b>	<b>1</b>
Subject	Grade Level	Body of Knowledge	Big Idea	Benchmark

Body of Knowledge Key:

- N ~ Nature of Science
- E ~ Earth and Space Science
- P ~ Physical Science
- L ~ Life Science

## Access Points Coding Scheme

<b>SC.</b>	<b>5.</b>	<b>P.</b>	<b>1.</b>	<b>In.a</b>
Subject	Grade Level	Body of Knowledge	Big Idea	Access Point

Access Points Key:

- In ~ Independent
- Su ~ Supported
- Pa ~ Participatory

## GRADE 1

### **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.**

BENCHMARK CODE	BENCHMARK
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.

### **Access Points for Students with Significant Cognitive Disabilities**

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.N.1.In.a Request information about the environment. SC.1.N.1.In.b Use careful observation to identify objects based on size, shape, color, or texture. SC.1.N.1.In.c Draw pictures about investigations conducted. SC.1.N.1.In.d Ask a question about a science investigation.	SC.1.N.1.Su.a Ask questions about common objects in the environment. SC.1.N.1.Su.b Recognize differences in objects through observation of size, shape, or color SC.1.N.1.Su.c Contribute to group recordings of observations.	SC.1.N.1.Pa.a Recognize common objects in the environment. SC.1.N.1.Pa.b Recognize common objects as the same.

## GRADE 1

### **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.*

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.E.5.In.a Identify that there are many stars in the sky. SC.1.E.5.In.b Observe and recognize that an object will fall when it is dropped. SC.1.E.5.In.c Identify that magnifiers enlarge the appearance of objects. SC.1.E.5.In.d Recognize positive and harmful effects of sunlight.	SC.1.E.5.Su.a Recognize that there are many stars in the sky. SC.1.E.5.Su.b Indicate the location of an object before and after it falls. SC.1.E.5.Su.c Match a magnified item to its original item. SC.1.E.5.Su.d Recognize a positive effect and a negative effect of sunlight.	SC.1.E.5.Pa.a Associate stars with the night sky. SC.1.E.5.Pa.b Track objects that fall to the ground. SC.1.E.5.Pa.c Recognize a familiar object enlarged by magnification. SC.1.E.5.Pa.d Recognize effects of sunlight, such as warming and giving light.

### **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.*

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.E.6.In.a Identify rocks, water, and living things in the environment. SC.1.E.6.In.b Identify reasons people need water and safe practices around water. SC.1.E.6.In.c Distinguish between events that happen slowly and those that happen fast.	SC.1.E.6.Su.a Recognize rocks and living things in the environment. SC.1.E.6.Su.b Identify reasons people need water. SC.1.E.6.Su.c Distinguish between actions that are fast or slow.	SC.1.E.6.Pa.a Recognize living things in the environment. SC.1.E.6.Pa.b Recognize one way people use water. SC.1.E.6.Pa.c Recognize an action as fast or slow.

## GRADE 1

### **BIG IDEA 8: Properties of Matter**

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

**The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.**

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.P.8.In.a Sort objects by observable properties, such as size, shape, color, or texture.	SC.1.P.8.Su.a Sort objects by an observable property, such as size, shape, or color.	SC.1.P.8.Pa.a Identify common classroom objects by one observable property, such as size or color.

### **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.**

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.P.12.In.a Demonstrate and identify that objects can move in different ways, such as up and down, in a straight line, and back and forth.	SC.1.P.12.Su.a Demonstrate that objects can move in different ways, such as up and down.	SC.1.P.12.Pa.a Track objects moving up and down.

### **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.**

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

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.P.13.In.a Identify the effect that a push or pull has on an object, such as changing the way an object moves.	SC.1.P.13.Su.a Demonstrate and recognize that pushing or pulling of an object makes it move.	SC.1.P.13.Pa.a Apply a push to move an object.

## GRADE 1

### **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.**

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.L.14.In.a Use sight, hearing, and smell to make observations. SC.1.L.14.In.b Identify the leaf, flower, and stem of a plant. SC.1.L.14.In.c Identify characteristics of living and nonliving things, including whether they need food or water.	SC.1.L.14.Su.a Use sight and hearing to make observations. SC.1.L.14.Su.b Recognize the leaf and flower of a plant. SC.1.L.14.Su.c Distinguish common living and nonliving things in the environment.	SC.1.L.14.Pa.a Recognize and respond to different types of sensory stimuli. SC.1.L.14.Pa.b Recognize that plants have leaves. SC.1.L.14.Pa.c Recognize self and others as living things.

### **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.**

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

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.L.16.In.a Match offspring of specific animals to adult animals.	SC.1.L.16.Su.a Recognize that baby plants and animals have parents.	SC.1.L.16.Pa.a Recognize one's own parents.

### **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.**

BENCHMARK CODE	BENCHMARK
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.

#### Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.1.L.17.In.a Observe and recognize that plants and animals need water and food.	SC.1.L.17.Su.a Observe and recognize that plants and animals need water.	SC.1.L.17.Pa.a Observe and recognize that people need water.