

# 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

## K-8 SCIENCE STANDARDS GRADE K

### **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.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.   |

### Access Points for Students with Significant Cognitive Disabilities

| <i>Independent:</i>  | <i>Supported:</i>  | <i>Participatory:</i>   |
|--|--|---|
| SC.K.N.1.In.a Identify a partner to obtain information.<br>SC.K.N.1.In.b Identify information about objects and actions in the natural world through observation.<br>SC.K.N.1.In.c Observe, explore, and create a visual representation of real objects. | SC.K.N.1.Su.a Collect a designated item with a partner.<br>SC.K.N.1.Su.b Identify information about objects in the natural world through observation.<br>SC.K.N.1.Su.c Observe, explore, and match pictures to real objects. | SC.K.N.1.Pa.a Share objects with a partner.<br>SC.K.N.1.Pa.b Recognize common objects in the natural world through observation. |

## GRADE K

### **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.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 daytime.  |
| 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.                                       |

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

| <i>Independent:</i>   | <i>Supported:</i>  | <i>Participatory:</i>   |
|---|--|---|
| <p>SC.K.E.5.In.a Identify that objects can fall to the ground unless something stops them.</p> <p>SC.K.E.5.In.b Identify daily activities in a 24-hour period, such as eating breakfast and going to bed, and associate activities with morning and night.</p> <p>SC.K.E.5.In.c Identify the Sun in the daytime.</p> <p>SC.K.E.5.In.d Identify the Moon in the sky at night.</p> <p>SC.K.E.5.In.e Observe big and small things in the sky.</p> <p>SC.K.E.5.In.f Identify an item that is far away and an item that is nearby.</p> | <p>SC.K.E.5.Su.a Recognize that objects fall to the ground.</p> <p>SC.K.E.5.Su.b Identify one common activity that occurs in the day and one that occurs in the night.</p> <p>SC.K.E.5.Su.c Recognize the Sun in the daytime.</p> <p>SC.K.E.5.Su.d Recognize the Moon in the sky at night.</p> <p>SC.K.E.5.Su.e Recognize the size of items as either big or small.</p> <p>SC.K.E.5.Su.f Recognize familiar objects that are far away or nearby.</p> | <p>SC.K.E.5.Pa.a Track a falling object.</p> <p>SC.K.E.5.Pa.b Recognize one common activity that occurs during the day.</p> <p>SC.K.E.5.Pa.c Associate the Sun with daytime.</p> <p>SC.K.E.5.Pa.d Associate the Moon with night.</p> <p>SC.K.E.5.Pa.e Recognize items that are big.</p> <p>SC.K.E.5.Pa.f Recognize items as nearby.</p> |

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

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

| <i>Independent:</i>   | <i>Supported:</i>   | <i>Participatory:</i>  |
|---|---|--|
| SC.K.P.8.In.a Sort objects by observable properties, such as size, shape, or color. | SC.K.P.8.Su.a Match objects by an observable property, such as size or color. | SC.K.P.8.Pa.a Recognize two common objects that are identical to each other. |

## GRADE K

### **BIG IDEA 9: Changes in Matter**

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

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

| BENCHMARK CODE   | BENCHMARK   |  |
|--|---|--|
| SC.K.P.9.1   | Recognize that the shape of materials such as paper and clay can be changed by cutting, tearing, crumpling, smashing, or rolling. |  |
| Access Points for Students with Significant Cognitive Disabilities                                     |   |  |
| Independent:   | Supported:  | Participatory:                                 |
| SC.K.P.9.In.a Recognize that the shape of objects, such as paper, changes when cut, torn, or crumpled. | SC.K.P.9.Su.a Recognize that the shape of objects, such as paper, changes when cut or torn.                                       | SC.K.P.9.Pa.a Recognize a change in an object. |

### **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.**

| BENCHMARK CODE   | BENCHMARK  |  |
|--|--|--|
| SC.K.P.10.1  | Observe that things that make sound vibrate.     |  |
| Access Points for Students with Significant Cognitive Disabilities |  |  |
| Independent:   | Supported:                                       | Participatory:   |
| SC.K.P.10.In.a Identify objects that create specific sounds.       | SC.K.P.10.Su.a Match sounds to specific objects. | SC.K.P.10.Pa.a Recognize and respond to common sounds. |

### **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.K.P.12.1  | Investigate that things move in different ways, such as fast, slow, etc. |   |
| Access Points for Students with Significant Cognitive Disabilities   |  |   |
| Independent:   | Supported:   | Participatory:                          |
| SC.K.P.12.In.a Identify ways that things move, such as fast or slow. | SC.K.P.12.Su.a Recognize that things move.                               | SC.K.P.12.Pa.a Track objects in motion. |

### **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.K.P.13.1   | Observe that a push or a pull can change the way an object is moving.     |   |
| Access Points for Students with Significant Cognitive Disabilities          |   |   |
| Independent:  | Supported:  | Participatory:  |
| SC.K.P.13.In.a Demonstrate pushing or pulling of an object to make it move. | SC.K.P.13.Su.a Recognize that pushing or pulling an object makes it move. | SC.K.P.13.Pa.a Track the movement of objects that are pushed or pulled. |

## GRADE K

### **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.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.     |

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

| <i>Independent:</i>  | <i>Supported:</i>  | <i>Participatory:</i>  |
|--|--|--|
| SC.K.L.14.In.a Recognize the senses of sight, hearing, and smell and related body parts.<br>SC.K.L.14.In.b Identify a behavior of an animal or plant in a book or other media that is not real.<br>SC.K.L.14.In.c Identify differences in characteristics of plants and animals. | SC.K.L.14.Su.a Recognize the senses of sight and hearing and related body parts.<br>SC.K.L.14.Su.b Distinguish a real animal and an animal that is not a living thing, such as a toy animal.<br>SC.K.L.14.Su.c Match identical animals and plants. | SC.K.L.14.Pa.a Recognize and respond to one type of sensory stimuli.<br>SC.K.L.14.Pa.b Distinguish between a plant and animal. |