

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

SC.	5.	N.	1.	1
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

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

Access Points Key:

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

GRADE 2

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.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 or inferences (what you think).
SC.2.N.1.6	Explain how scientists alone or in groups are always investigating new ways to solve problems.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.N.1.In.a Ask questions and make observations about things in the natural world. SC.2.N.1.In.b Identify information about objects based on observation. SC.2.N.1.In.c Recognize that the results of a scientific activity should be the same when repeated. SC.2.N.1.In.d Recognize that scientists work to solve problems.	SC.2.N.1.Su.a Answer yes and no questions and make observations about common objects and actions in the natural world. SC.2.N.1.Su.b Identify characteristics of objects based on observation. SC.2.N.1.Su.c Recognize that science activities can be repeated. SC.2.N.1.Su.d Recognize that people work in science.	SC.2.N.1.Pa.a Request a change or help to solve a problem in the environment. SC.2.N.1.Pa.b Use senses to recognize objects. SC.2.N.1.Pa.c Recognize common objects in different environments.

GRADE 2

BIG IDEA 6: Earth Structures

Humans continue to explore the composition and structure of the surface of 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.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.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.E.6.In.a Sort rocks according to size and shape. SC.2.E.6.In.b Identify components of soil, such as dead plants and pieces of rock. SC.2.E.6.In.c Recognize soil types based on color (dark or light) and texture (size of particles).	SC.2.E.6.Su.a Sort rocks according to size. SC.2.E.6.Su.b Identify small pieces of rock in the soil. SC.2.E.6.Su.c Sort soil samples according to physical properties, such as color (dark or light) or texture (size of particles).	SC.2.E.6.Pa.a Recognize the ground in the environment. SC.2.E.6.Pa.b Distinguish examples of soil from other substances.

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.

BENCHMARK CODE	BENCHMARK
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.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.E.7.In.a Identify common weather patterns associated with each season. SC.2.E.7.In.b Identify that the Sun heats the outside air and water. SC.2.E.7.In.c Recognize that water in an open container will disappear (evaporate). SC.2.E.7.In.d Identify effects of wind. SC.2.E.7.In.e Identify harmful consequences of being outside in severe weather, such as lightning, hurricanes, or tornados.	SC.2.E.7.Su.a Recognize types of weather and match to the weather outdoors. SC.2.E.7.Su.b Recognize that items outside are heated by the Sun. SC.2.E.7.Su.c Recognize that wet things will dry when they are left in the air. SC.2.E.7.Su.d Recognize effects of wind. SC.2.E.7.Su.e Recognize reasons for staying inside during severe weather, such as hurricanes and thunderstorms.	SC.2.E.7.Pa.a Recognize daily outdoor temperature as hot or cold. SC.2.E.7.Pa.b Distinguish between items that are wet and items that are dry. SC.2.E.7.Pa.c Indicate awareness of air moving. SC.2.E.7.Pa.d Recognize where to go to avoid severe weather, such as thunder and lightning.

GRADE 2

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.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.8.5	Measure and compare temperatures taken every day at the same time.
SC.2.P.8.6	Measure and compare the volume of liquids using containers of various shapes and sizes.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.P.8.In.a Identify objects by observable properties, such as, size, shape, color, temperature (hot or cold), weight (heavy or light), and texture. SC.2.P.8.In.b Identify objects and materials as solid or liquid. SC.2.P.8.In.c Recognize that solids have a definite shape and liquids take the shape of their container. SC.2.P.8.In.d Describe and compare outside daily temperatures as warm or cold. SC.2.P.8.In.e Compare the volume of liquid in a variety of containers.	SC.2.P.8.Su.a Identify objects by observable properties, such as size, shape, and color. SC.2.P.8.Su.b Recognize water in solid or liquid states. SC.2.P.8.Su.c Recognize that solids have a definite shape. SC.2.P.8.Su.d Identify outside temperatures as warm or cold. SC.2.P.8.Su.e Recognize different volumes of liquids in identical containers.	SC.2.P.8.Pa.a Match objects by one observable property, such as size or color. SC.2.P.8.Pa.b Recognize water as a liquid. SC.2.P.8.Pa.c Recognize different containers that hold liquids. SC.2.P.8.Pa.d Recognize common objects or materials as warm or cold.

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.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.

Access Points for Students with Significant Cognitive Disabilities		
<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.P.9.In.a Explore and identify that observable properties of materials can be changed.	SC.2.P.9.Su.a Recognize changes in observable properties of materials.	SC.2.P.9.Pa.a Recognize that the appearance of an object or material has changed.

GRADE 2

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.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.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.P.10.In.a Identify ways people use electricity in their lives.	SC.2.P.10.Su.a Recognize a way people use electricity in their lives.	SC.2.P.10.Pa.a Activate a device that uses electricity.

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.2.P.13.1	Investigate the effect of applying various pushes and pulls on different objects.
SC.2.P.13.2	Demonstrate that magnets can be used to make some things move without touching them.
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.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.P.13.In.a Observe and identify that pushing or pulling an object can change the direction of movement of the object. SC.2.P.13.In.b Observe and recognize that magnets can move some objects. SC.2.P.13.In.c Identify and demonstrate that an object will fall to the ground when dropped. SC.2.P.13.In.d Identify that pushing or pulling an object with more force will make the object go faster or farther.	SC.2.P.13.Su.a Identify that pushing or pulling an object makes it move. SC.2.P.13.Su.b Use magnets to cause objects to move. SC.2.P.13.Su.c Recognize that an object will fall to the ground when dropped. SC.2.P.13.Su.d Recognize that pushing or pulling an object with more force will make the object go faster or farther.	SC.2.P.13.Pa.a Recognize that pushing and pulling an object makes it move. SC.2.P.13.Pa.b Indicate that an object has fallen.

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

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.L.14.In.a Identify major external body parts, such as hands and legs, and their uses.	SC.2.L.14.Su.a Match external body parts, such as a foot, to their uses.	SC.2.L.14.Pa.a Recognize one or more external body parts.

GRADE 2

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

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.L.16.In.a Observe and recognize the major stages in the life cycles of plants and animals.	SC.2.L.16.Su.a Observe and recognize the sequence of stages in the life cycles of common animals.	SC.2.L.16.Pa.a Recognize that offspring can be matched with their parents, such as a human baby with adult humans and a puppy with dogs.

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.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.

Access Points for Students with Significant Cognitive Disabilities

<i>Independent:</i>	<i>Supported:</i>	<i>Participatory:</i>
SC.2.L.17.In.a Identify the basic needs of living things, including water, food, and air. SC.2.L.17.In.b Recognize that many different kinds of living things are found in different habitats.	SC.2.L.17.Su.a Recognize that living things have basic needs, including water and food. SC.2.L.17.Su.b Recognize that many kinds of living things are found in the environment.	SC.2.L.17.Pa.a Recognize that animals need water. SC.2.L.17.Pa.b Recognize common living things in the immediate environment.