

Grade Level Expectations for the Sunshine State Standards

Science Second Grade



FLORIDA DEPARTMENT OF EDUCATION

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**Sunshine State Standards
Grade Level Expectations
Science
Second Grade**

The second grade student:

The Nature of Matter

- knows ways objects can be grouped according to similarities or differences of their physical characteristics.
- knows examples of solids, liquids, and gases.
- knows the observable properties of solids, liquids, and gases.
- knows that not all objects or materials respond to change in the same way (for example, a plastic object in the freezer compared with water in a freezer).
- knows that common objects are composed of parts that are too small to be seen without magnification (for example, hair, cloth, paper).
- knows that a variety of tools can be used to examine objects at differing degrees of magnification (for example, a hand lens, layered hand lenses, a microscope).

Energy

- knows that a thermometer measures the amount of heat absorbed by an object.
- understands that some materials will allow light to pass and others will not.
- understands that models (for example, terrarium or aquarium) can be used to illustrate how energy flows through a system.
- knows how model energy systems change throughout the year (for example, collecting data and recording changes in a terrarium or aquarium that models an energy system).
- knows different heat sources (for example, friction, solar, nuclear, electric).
- uses graphic organizers to classify food groups.
- understands the relationship of food to the need for energy for daily activities.
- understands ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water).

Force and Motion

- knows that objects exhibit different kinds of motion (for example, straight, circular, back and forth).
- knows that the amount and direction of the force exerted on an object (for example, push, pull, friction, gravity) determines how much the object will move.
- knows that objects may be moved by being pushed and pulled with magnets.
- compares the amount of pushing and pulling required to move objects of various sizes across the floor.

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- demonstrates that some vibrations may be heard.
- understands that sound travels differently through different media (for example, wood, water, air).
- knows that properties of sound such as pitch and loudness can be altered by changing the properties of the sound source.

Processes that Shape the Earth

- extends and refines knowledge that the surface of the Earth is composed of different types of solid materials that come in all sizes.
- compares the characteristics of things that live on land, in the water, and in the air.
- knows that some organisms have adaptations that enable them to move from one medium to another (for example, dragonflies begin life in water, move to land, and then fly in the air).
- knows that weather conditions occur in patterns over time.
- knows ways that human activity affects the environment (for example, landfills for disposal of wastes, land development for homes and industry, dams to control rivers or generate electricity).

Earth and Space

- knows that the Moon moves around the Earth, the Earth moves around the Sun, and the Moon is visible when it reflects the light from the Sun.
- knows that each time the Earth completes one rotation, one day has passed and that this takes 24 hours.
- knows that stars and planets are always in the sky.

Processes of Life

- understands that the amount of food, water, space, and shelter needed is dependent on the size and kind of living things.
- understands that living things can reproduce, and nonliving things cannot reproduce.
- knows some factors that influence the growth of living things (for example, amount of water, amount of light, amount and type of food, type of soil).
- understands that structures of living things are adapted to their function in specific environments.
- knows some characteristics of the vertebrate groups (mammals, reptiles, birds, amphibians, fish).
- knows the main parts of plants (stems, leaves, roots, flowers).
- knows that the structural characteristics of plants and animals are used to group them.

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- understands that plants and animals produce offspring with similar characteristics, but individual differences (for example, kittens in a litter may be colored differently).
- knows that plants and animals are adapted to different ranges of temperature and moisture.

How Living Things Interact with Their Environments.

- understands that there is an interdependency of plants and animals that can be shown in a food web.
- understands that living organisms need to be adapted to their environment to survive.
- knows that animals and plants can be associated with their environment by an examination of their structural characteristics (for example, physical structures are adaptations that allow plants and animals to survive, such as gills in fish, lungs in mammals).
- knows selected resources used by people for water, food, and shelter are limited and necessary for their survival.
- knows that human beings cause changes in their environment, and these changes can be positive (for example, creating refuges, replanting deforested regions, creating laws to restrict burning) or negative (for example, introducing exotic organisms, deforestation, littering, contaminating water and air).

The Nature of Science

- knows the difference between verified observation and personal interpretation.
- knows that when tests are repeated under the same condition, similar results are usually obtained.
- participates in groups to conduct experiments and solve problems.
- understands that one can gain confidence in scientific methods by comparing and verifying scientific results with others.
- understands that, through the use of science processes, people can solve problems and make decisions.
- analyzes information to make predictions, makes sketches and diagrams to explain ideas, draws conclusions using information and prior knowledge.
- keeps science records.
- uses a variety of tools to observe, measure, analyze and predict changes in size, mass, temperature, color, position, quantity, sound, and movement.
- uses metric and standard English units to measure distance, volume, mass, and temperature.
- knows how to sort organisms, objects, and events based on patterns.
- knows ways in which tools are used by scientists (for example, to gather information, to analyze, to calculate).



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