



Science  
Second Grade

**1.0 Understands and applies the skills of scientific inquiry.**

- 1.1 Asks questions about objects, organisms, and events in the environment.
- 1.2 Develops a growing curiosity and interest in the living world around them.
- 1.3 Plans and conducts simple investigations.
- 1.4 Makes a prediction based on prior knowledge.
- 1.5 Develops a hypothesis.
- 1.6 Collects scientific information from careful observation.
- 1.7 Uses tools to gather data and extend the senses.
- 1.8 Names and uses hand lenses, thermometers, anemometers, weather vane, rulers and rain gauge.
- 1.9 Use mathematics in scientific inquiry.
- 1.10 Uses ruler and other tools to collect data to show result.
- 1.11 Recognizes and analyzes alternative predictions, explanations, and models.
- 1.12 Uses data to construct reasonable explanations.
- 1.13 Draws conclusions based on simple investigations.
- 1.14 Understands what constitutes evidence.
- 1.15 Communicates and defends procedures explanations, and scientific arguments.
- 1.16 Communicates orally and/or through writing and drawings.
- 1.17 Critiques and analyzes their work.
- 1.18 Follows appropriate safety procedures when conducting investigations.
- 1.19 Handles animals with care.
- 1.20 Uses scientific tools correctly and safely.

**2.0 Understands and applies scientific concepts, principles, and theories pertaining to Earth and the Universe.**

- 2.1 Understands and applies knowledge of daily and seasonal weather conditions.
- 2.2 Understands that the sun provides the heat that causes a change in weather conditions.
- 2.3 Compares daily weather observations over a period of time.
- 2.4 Identifies cumulus, cirrus and stratus clouds.
- 2.5 Monitors and records daily outdoor temperature.
- 2.6 Uses different weather instruments.

- 2.7 Observes how air affects the movement of objects.
- 2.8 Discovers that air occupies space and can be compressed.
- 2.9 Explores properties of air.
- 2.10 Understands and applies knowledge of properties of earth materials.
- 2.11 Understands and applies knowledge of events that have repeating patterns.
- 2.12 Seasons of the year, day and night are events that are repeated in regular patterns.
- 2.13 Observes and describes the sun's position in the sky.
- 2.14 Knows that we are unable to see the sun at night because of the rotation of the Earth.

### **3.0 Understands and applies concepts, principles and theories pertaining to life and its interactions.**

- 3.1 Understands and applies knowledge of the characteristics of living things.
- 3.2 Understands that living things share some common characteristics that are both similar to and different from non-living things.
- 3.3 Different species of animals have different observable characteristics by which they can be classified.
- 3.4 Compares and contrasts the body structures of the Mealworms and the Painted Lady butterflies from larva to adult.
- 3.5 Understands that insects that go through an incomplete metamorphosis closely resemble their parents.
- 3.6 Understands that bugs are classified as one group of insects.
- 3.7 Classifies animals as invertebrate or vertebrate.
- 3.8 Names the three body parts of the insect: head, thorax, abdomen.
- 3.9 Understands and applies life cycles of plants and animals.
- 3.10 Compares the stages of incomplete and complete metamorphosis.
- 3.11 Compares the life cycles of mealworms, darkling beetles, milkweed bugs and Painted Lady butterflies.
- 3.12 Hypothesizes what a mealworm, caterpillar and milkweed nymph will change into.
- 3.13 Recognizes and compares the different characteristics of animals that serve different functions (mammals, reptiles, birds, insects, fish, amphibians).
- 3.14 Understands and applies basic needs of plants and animals and understands how environments are related to the needs of plants and animals.
- 3.15 Constructs a suitable habitat for mealworms, butterflies and milkweed bugs.
- 3.16 Describes the basic needs of insects, mammals, reptiles, amphibians, fish and birds.
- 3.17 Understands that animals can survive only in environments in which their needs can be met.

3.18 Observes and recognizes that animals interact with each other and their physical environment.

3.19 Understands the world has many different environments and distinct environments support the life of different types of organisms.

3.20 Understands and applies ways to help take care of the environment.

3.21 Understands that reducing, reusing, and recycling conserves the Earth's resources.

#### **4.0 Understands and applies concepts and theories pertaining to matter, its composition and the forces that govern it.**

4.1 Understands and applies knowledge of observable and measureable properties and objects.

4.2 Understands that everything is made of matter.

4.3 Observe, describe and record properties of solids and liquids.

4.4 Understands and applies knowledge of states of matter.

4.5 Names three states of matter (solid, liquids, gas)

4.6 Sorts solids and liquids by their properties.

4.7 Explores when solids and liquids are mixed.

4.8 Explores when two liquids are mixed together.

4.9 Investigates the appearance and behavior of liquids in containers.

4.10 Experiments with solids and liquids to see how some can be changed from one state to another by heating or cooling.

4.11 Understands types of energy.

4.12 Identifies that the sun produces one type of energy.

#### **5.0 Understands the nature of science.**

5.1 Understands how science develops and changes over time.

5.2 Knows that people are more likely to believe your ideas if you can give reasons for them.

5.3 Understands the dynamic relationship between science and society.

5.4 Understands that reducing, reusing, and recycling conserves the Earth's resources.