Standard 1: Life Science

As a basis for understanding Life Science, Grade 2 students will develop the following knowledge, skills and understandings:

1.1 Plants and animals have predictable life cycles.
   1.1.1 Know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.
   1.1.2 Observe and identify variation among individuals of one kind within a population - e.g., a group of insects.
   1.1.3 Know different animals, such as butterflies, frogs, and mice, might have different sequential stages of their life cycles.
   1.1.4 Observe and describe similarities and differences of the life sequences that different types of insects exhibit (simple and complete metamorphosis).
   1.1.5 Identify ways light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
   1.1.6 Know flowers and fruits are associated with reproduction in plants.
   1.1.7 Provide for the needs of insects and plants and observe them over time.
   1.1.8 Use vocabulary associated with the structures and life cycles of animals and flowering plants - e.g., stage, life cycle, pupa, antenna...

Standard 2: Physical Science

As a basis for understanding Physical Science, Grade 2 students will develop the following knowledge, skills and understandings:

2.1 Materials come in different forms (states), including solids and liquids.
   2.1.1 Sort materials according to properties.
   2.1.2 Observe and describe the properties of solids and liquids.
   2.1.3 Recognize that there are differences in the properties of solids, liquids, and gases.
   2.1.4 Identify properties of a solid used for specific purposes in construction.
2.1.5 Know the properties of substances can change when the substances are mixed, cooled, or heated.
2.1.6 Apply knowledge about the properties of solids and liquids to investigate and determine the state of an unknown material.
2.1.7 Use vocabulary associated with solids and liquids - e.g., solid, liquid, properties, shape...

**Standard 3: Earth and Space Science**

As a basis for understanding Earth and Space Science, Grade 2 students will develop the following knowledge, skills and understandings:

### 3.1 Earth is made of materials that have distinct properties and provide resources for human activities.

- **3.1.1** Know that rock is composed of different combinations of minerals.
- **3.1.2** Know that smaller rocks come from the breakage and weathering of larger rocks.
- **3.1.3** Know that soil is made partly from weathered rock and partly from organic materials.
- **3.1.4** Compare the physical properties of different kinds of rocks based on observations.
- **3.1.5** Compare the properties of soil samples - color, texture, capacity to retain water, ability to support the growth of many kinds of plants.
- **3.1.6** Know that fossils provide evidence about the plants and animals that lived long ago; scientists learn about the past history of Earth by studying fossils.
- **3.1.7** Recognize ways rocks, water, plants, and soils provide many resources that humans use, including food, fuel, and building material.
- **3.1.8** Use vocabulary associated with earth materials - e.g., minerals, silt, soil...

**Standard 4: Nature of Science**

As a basis for understanding the nature of science as it relates to scientific knowledge, scientific inquiry, and scientific enterprise and to address content in the other standards, Grade 2 students will develop the following skills, knowledge and understandings:

### 4.1 Scientific progress is made by asking meaningful questions and conducting careful investigations.

- **4.1.1** Make predictions based on observed patterns and not random guessing.
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| 4.1.2 | Measure length, weight, temperature, and liquid volume with appropriate tools and express in standard metric system units. |
| 4.1.3 | Compare and sort common objects according to two or more physical attributes - e.g., color, shape, texture, size, weight. |
| 4.1.4 | Write or draw descriptions of a sequence of steps, events, and observations. |
| 4.1.5 | Organize and communicate observations through drawing and writing and use bar graphs to record data. |
| 4.1.6 | Construct bar graphs to record data, using appropriately labeled axes. |
| 4.1.7 | Use magnifiers or microscopes to observe and draw descriptions of organisms, small objects or small features of objects. |
| 4.1.8 | Ask further questions and begin to develop their own investigations to inquire into them |
| 4.1.9 | Follow oral directions and use materials and tools safely during a scientific investigation. |

#### 4.2 Students understand the connections between science, global issues and sustainable solutions.

| 4.2.1 | Know the importance of soil for maintaining plant life and understand how natural processes and human activity can affect soil quality. |
| 4.2.2 | Suggest ways to minimize the impact of human activity on soil. |