1st Grade Science

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1st Grade Science

Driving Questions:

- What is the life cycle of a pumpkin?
- What are solids, liquids, and gases and how are they measured?
- How does water change between a solid, liquid, and a gas?
- What are fossils, how do they form, and what can they tell us about the history of the earth?
- How can fossils be observed and classified?
- What are the properties of air?
- What is wind and how can it be described?
- Why is the sun important for life on earth?
- How do simple machines work?
- How do animals adapt in a rainforest habitat?
- How do plants adapt in a rainforest habitat?

Massachusetts Science and Technology Learning Standards

Science Learning Standards

Earth and Space Science

Earth's Materials

Recognize that water, rocks, soil, and living organisms are found on the earth's surface.

1. Understand that air is a mixture of gases that is all around us and that wind is moving air.

Weather

1. Describe the weather changes from day to day and over the seasons.

The Sun as a Source of Light and Heat

1. Recognize that the sun supplies heat and light to the earth and is necessary for life.

Life Science

Characteristics of Living Things

1. Recognize that animals (including humans) and plants are living things that grow, reproduce, and need food, air, and water.
2. Differentiate between living and nonliving things. Group both living and nonliving things according to the characteristics that they share.
3. Recognize that plants and animals have life cycles, and that life cycles vary for different living things.

Evolution and Biodiversity

1. Recognize that fossils provide us with information about living things that inhabited the earth years ago.

Living Things and Their Environment

1. Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

Physical Science

Observable Properties of Objects

1. Sort objects by observable properties such as size, shape, color, weight, and texture.

States of Matter

2. Identify objects and materials as solid, liquid, or gas. Recognize that solids have a definite shape and that liquids and gases take the shape of their container.

Position and Motion of Objects

3. Recognize that under some conditions, objects can be balanced.

Skills of Inquiry

- Ask questions about objects, organisms, and events in the environment.
- Tell about *why* and *what would happen if?*
- Make predictions based on observed patterns.
- Name and use simple equipment and tools (e.g., rulers, meter sticks, thermometers, hand lenses, and balances) to gather data and extend the senses.
- Record observations and data with pictures, numbers, or written statements.
- Discuss observations with others.

Technology/Engineering Learning Standards

Materials and Tools

1.3 Identify and describe the safe and proper use of tools and materials (e.g., glue, scissors, tape, ruler, paper, toothpicks, straws, spools) to construct simple structures.

Engineering Design

2.1 Identify tools and simple machines used for a specific purpose, e.g., ramp, wheel, pulley, lever.

Tips for Using the Science Lessons in this Binder

PLEASE READ!

- Develop a good working relationship with your classroom teacher. Communication is vital. Plan when you will meet to discuss the lessons and how you will let each other know about schedule conflicts.

- Read the lessons well ahead of time so that you are prepared when you get to the classroom. Some lessons require additional materials (such as dry ice or living organisms) so you will need to make arrangements in advance.

- The times given for each lesson are estimates. Some classes may go slower and some may go faster. As you get to know your class, pace the lessons accordingly. This may involve cutting some activities or making certain activities shorter or longer. Alternatively, some lessons may span 2-3 days instead of only 1 day.

- Written student work is often optional (especially in the lower grades). If students are keeping a science notebook, many of their predictions, observations, questions, and conclusions can be recorded there. For the lower grades (K, 1st, and 2nd) the worksheets provided are meant to teach them what sort of information is relevant. Some students may finish them and some may not. It is more important to focus on the concepts of the lesson.

- Asking good questions and getting the students to ask good questions is one of the most important parts of science education. Ask your students meaningful questions about the science activities they are doing. Encourage curiosity by giving your students the opportunity to ask their own questions. If you don't know the answer, work together to find more information.

- The lessons are meant as guides. They can be followed to the letter but your teaching experience will probably be more successful if you add your own ideas to the lessons. Within the conceptual framework provided, make changes as you see fit.