

## MSAD 75 Teaching and Learning Framework

### Science: Grade Three Power Standards

Power Standards are a subset of the complete list of standards for each grade and for each subject. They represent the “safety net” of standards every teacher ensures all students have the opportunity to learn.

#### MLR A-C: The Process Skills of Science

The Science and Technology Standards outline the essential understandings of these disciplines. Standard A describes four themes that serve as a broad scaffold for understanding and organizing student understanding of the content and processes of science and technology. Standard B describes the processes of scientific inquiry and technological design. As a complement to the expectations of inquiry and design outlined in Standard B, Standard C describes the enterprises of science and technology and the connection to society. Standards D and E have what students are expected to do that encompass the subject matter conventionally referred to as life, physical, and earth and space science. It is essential that classroom instruction integrate the processes and ideas of Standards A, B, and C with the knowledge of Standards D and E, rather than teach them separately. Instruction should support students in asking questions and making inquiries to help them, understand and solve problems that require the integration of knowledge and processes in authentic contexts.

#### MLR D: The Physical Setting

Students understand the universal nature of matter, energy, force, and motion and identify how these relationships are exhibited in Earth Systems, in the solar system, and throughout the universe.

#### Grade 3 Standards

#### What students are expected to do

##### Big Ideas: D1 Universe and Solar System

**Core Content:** Students describe the positions and apparent motions of different objects in and beyond our solar system and how these objects can be viewed from Earth.

- a. Show the locations of the sun, Earth, moon, and planets and their orbits.
- b. Observe and report on observations that the sun appears to move across the sky in the same way every day, but its path changes slowly over the seasons.
- c. Recognize that the sun is a star and is similar to other stars in the universe.

**Grade 3 Standards****What students are expected to do****Big Ideas: D2 Earth**

**Core Content:** Students describe the properties of Earth's surface materials, the processes that change them, and cycles that affect the Earth.

- a. Explain the effects of the rotation of Earth on the day/night cycle, and how that cycle affects local temperature.
- b. Describe the various forms water takes in the air and how that relates to weather.
- c. Explain how wind, waves, water, and ice reshape the surface of Earth.
- d. Describe the kinds of materials that form rocks and soil.
- e. Recognize that the sun is the source of Earth's surface heat and light energy.
- f. Explain how the substance called air surrounds things, takes up space, and its movement can be felt as wind.

**MLR E: The Living Environment**

Students understand that cells are the basic unit of life, that all life as we know it has evolved through genetic transfer and natural selection to create a great diversity of organisms, and that these organisms create interdependent webs through which matter and energy flow. Students understand similarities and differences between humans and other organisms and the interconnections of these interdependent webs.

**Grade 3 Standards****What students are expected to do****Big Ideas: E1 Biodiversity**

**Core Content:** Students compare living things based on their behaviors, external features, and environmental needs.

- a. Describe how living things can be sorted in many ways, depending on which features or behaviors are used to sort them, and apply this understanding to sort living things.
- b. Describe the changes in external features and behaviors of an organism during its life cycle.

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**Grade 3 Standards****What students are expected to do****Big Ideas: E4 Heredity and Reproduction**

**Core Content:** Students describe characteristics of organisms, and the reasons why organisms differ from or are similar to their parents.

- a. Name some likenesses between children and parents that are inherited, and some that are not.
- b. Explain that in order for offspring to look like their parents, information related to inherited likenesses must be handed from parents to offspring in a reliable manner.

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**Big Ideas: E5 Evolution**

**Core Content:** Students describe the fossil evidence and present explanations that help us understand why there are differences among and between present and past organisms.

- a. Explain advantages and disadvantages gained when some individuals of the same kind are different in their characteristics and behavior.
- b. Compare fossils to one another and to living organisms according to their similarities and differences.

This document uses text adapted from the 2007 Maine Learning Results: Chapter 131

<http://www.maine.gov/education/lres/pei/index.html>