

MSAD 75 Teaching and Learning Framework

Science: Grade Five 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 Five Standards

What students are expected to do

Big Ideas: D3 Energy and Matter

Core Content: Students describe properties of objects and materials before and after they undergo a change or interaction.

- a. Describe how the weight of an object compares to the sum of the weight of its parts.
- b. Illustrate how many different substances can be made from a small number of basic ingredients.
- c. Describe properties of original materials, and the new material(s) formed, to demonstrate that a change has occurred.

Grade Five Standards**What students are expected to do****Big Ideas: D3 Energy and Matter (cont.)**

Core Content: Students describe properties of objects and materials before and after they undergo a change or interaction.

- d. Describe what happens to the temperatures of objects when a warmer object is near a cooler object.
- e. Describe how the heating and cooling of water and other materials can change the properties of the materials.
- f. Explain that the properties of a material may change but the total amount of material remains the same.
- g. Explain that materials can be composed of parts too small to be seen without magnification.

Big Ideas: D4 Force and Motion

Core Content: Students summarize how various forces affect the motion of objects.

- d. (3-5) Give examples of how gravity, magnets, and electrically charged materials push and pull objects.
- d. (6-8) Describe and apply an understanding of how electric currents and magnets can exert force on each other.