INDEPENDENT SCHOOL DISTRICT OF BOISE CITY
IDAHO ACHIEVEMENT STANDARDS
GRADE 6
SCIENCE

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students gather evidence to differentiate between predictions, observations, and inferences. Students read, give, and execute technical instructions.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 6, the student will be able to:
- 6.S.1.1.1 Analyze different systems.

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Grade 6, the student will be able to:
- 6.S.1.2.1 Explain how observations and data are used as evidence on which to base scientific explanations and predictions.
- 6.S.1.2.2 Use observations to make inferences.
- 6.S.1.2.3 Use models to explain or demonstrate a concept.

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 6, the student will be able to:
- 6.S.1.3.1 Analyze changes that occur in and among systems.
- 6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system.

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 6, the student will be able to:
- 6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 6, the student will be able to:
- 6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments.
- 6.S.1.6.2 Conduct scientific investigations using a control and variables. Repeat same experiment using alternate variables.
- 6.S.1.6.3 Select and use appropriate tools and techniques to gather and display data.
- 6.S.1.6.4 Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models.
- 6.S.1.6.5 Test a hypothesis based on observations.
- 6.S.1.6.6 Communicate scientific procedures and explanations.

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 6, the student will be able to:

6.S.1.8.1 Read, give, and execute technical instructions.

<u>Standard 2</u>: Physical Science

Students compare and contrast elements, compounds and mixtures. Students explore the effects of force and energy on objects.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 6, the student will be able to:

6.S.2.1.1 Compare and contrast the differences among elements, compounds and mixtures.
6.S.2.1.2 Define the properties of matter.
6.S.2.1.3 Compare densities of equal volumes of a solid, a liquid, or a gas.
6.S.2.1.4 Describe the effect of temperature on density.
6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor).

Goal 2.2: Understand Concepts of Motion and Forces

Objective(s): By the end of Grade 6, the student will be able to:

6.S.2.2.1 Describe the effects of different forces (gravity and friction) on the movement, speed, and direction of an object.

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students understand the building blocks of organisms.

Goal 3.1: Understand the Theory of Biological Evolution

No objectives at this grade level.

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

No objectives at this grade level.

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

Objective(s): By the end of Grade 6, the student will be able to:

6.S.3.3.1 Identify the different structural levels of which an organism is comprised (cells, tissues, organs, organ systems, and organisms).
6.S.3.3.2 Analyze the structural differences between plant and animal cells.
6.S.3.3.3 Describe how traits are passed from parents to offspring.

Standard 4: Earth and Space Systems

Students understand and explain the relationship among the systems on Earth, such as solid earth, oceans, atmosphere, and organisms.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 6, the student will be able to:

6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms.
6.S.4.1.2 Explain the water cycle and its relationship to weather and climate.
6.S.4.1.3 Identify cumulus, cirrus, and stratus clouds and how they relate to weather changes.

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

<u>Standard 5</u>: Personal and Social Perspectives; Technology

Students identify issues for environmental studies and understand the difference between renewable and nonrenewable resources.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 6, the student will be able to:

6.S.5.1.1 Identify issues for environmental studies.

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 6, the student will be able to:

6.S.5.2.1 Describe how science and technology are part of our society.

6.S.5.2.2 Describe how science and technology are interrelated.

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Grade 6, the student will be able to:

6.S.5.3.1 Explain the difference between renewable and nonrenewable resources.