

DoDEA Grade 5 Science Standards

S1: Scientific Inquiry

The student demonstrates abilities necessary to do scientific inquiry and an understanding about scientific inquiry; that is, the student:

- S1a:** develops questions about objects, organisms and phenomena that can be answered through scientific investigations.
- S1b:** accesses, evaluates and uses information from a variety of sources.
- S1c:** designs and conducts scientific investigations based upon the nature of the questions asked.
- S1d:** employs appropriate tools and techniques to systematically collect, record, analyze, interpret, and present data.
- S1e:** uses evidence from reliable sources to develop logical descriptions, predictions, explanations, and models.
- S1f:** asks questions about scientific knowledge.
- S1g:** communicates findings and conclusions of investigations using scientific language, writing, and mathematics.

S2: History and Nature of Science

The student demonstrates an understanding and appreciation of science as a human endeavor, to include the nature and history of science; that is, the student:

- S2a:** knows that doing science requires varying human abilities, interest and habits of mind (such as: reasoning, insight, skill, creativity, intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas).
- S2b:** describes examples of scientists working in teams and alone to solve problems.
- S2c:** explains the variety of contributions and discoveries about objects, events, and phenomena in nature that were made by men and women who chose careers in science.
- S2d:** describes ways that scientists have used new evidence to make modifications to existing explanations.

S3: Science in Personal and Social Perspectives

The student demonstrates an understanding of safety, and the risks and benefits associated with natural and personal hazards; that is, the student:

- S3a:** demonstrates personal and group safety and resource conservation.
- S3b:** explores the personal and societal challenges caused by both natural hazards and hazards that result from human activities.
- S3c:** utilizes a systematic approach to analyze risks and benefits associated with natural and personal hazards.
- S3d:** compares the positive and negative impacts of technological advances on society.

S4: Science and Technology

The student demonstrates an understanding about science and technology and the nature of technological design; that is, the student:

S4a: demonstrates how tools and technology advance scientific investigations and knowledge.

S4b: uses technology to assist in the design of solutions to identified problems.

S4c: determines criteria to evaluate the effectiveness of a solution.

S4d: evaluates an invention that solves a problem and determines ways to improve the design.

S5: Physical Science

The student demonstrates a conceptual understanding of matter, motion and energy; that is, the student:

S5a: examines and describes properties of common elements.

S5b: measures, explains, and predicts the relationship between the strength of a force and its effect on the motion of an object.

S5c: demonstrates that energy occurs in different forms (heat, light, sound, electrical, and magnetic) and can change forms.

S6: Life Science

The student demonstrates a conceptual understanding of the structure and function of living systems, and ecosystems; that is, the student:

S6a: describes the cell as the basic structure of all organisms, and explains its organization into tissues, organs, and systems, including their structures and functions.

S6b: explains why reproduction is essential to the continuation of a species.

S6c: examines and describes the flow of matter and energy in ecosystems and develops examples of food chains and food webs that show the interdependence of organisms in an environment.

S7: Earth and Space Sciences

The student demonstrates a conceptual understanding of Earth's systems, history, and significance in the solar system; that is, the student:

S7a: investigates and describes the composition and structure of the lithosphere and classifies rocks/minerals and their associated fossils.

S7b: discusses how global weather patterns and climate relate to local weather.

S7c: describes the relationships among the Earth, sun, and moon (i.e., tilt of axis, revolution, rotation) as it relates to seasons, tides, and eclipses.