

SCIENCE

Science Grade 5

S.5.A Earth and Space

- A.1. Students will understand the features and basic processes of the Earth.
- a) Know that the sun is the principal energy source for phenomena on the Earth's surface (winds, ocean currents, the water cycle, and plant growth).
- A.2. Students will understand the essential ideas about the composition and structure of the universe and the Earth's place in it.
- a) Understand the general structure of the solar system (the planets and their moons that orbit the sun).

S.5.B Life Science

- B.1. Students will understand the characteristics of living things and the processes of life.
- a) Know that multi-cellular organisms have a variety of specialized cells, tissues, organs, organ systems that perform specialized functions (digestion, respiration, circulation, excretion, movement control and coordination, and protection from disease).

S.5.C. Physical Science

- C.1. Students will know the structure and properties of matter.
- a) Classify elements and other substances according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests.
 - b) Understand the differences between chemical and physical changes.
 - c) Know methods to separate mixtures into separate parts (boiling, filtering, chromatography, and screening).
- C.2. Students will understand different energy types, sources, and conversions.
- a) Know basic properties of various types of energy (light, heat, gravity, magnetic fields, electrical fields, and sound waves).
 - b) Know that heat can be transferred through conduction, convection, and radiation; heat flows from warmer objects to cooler ones until both objects reach the same temperature.

S.5.D Nature of Science and Inquiry

D.1. Students will understand the nature of scientific knowledge.

- a) Know that although people using scientific inquiry have learned much about the objects, events, and phenomena in nature, that science is an ongoing process.
- b) Know the unifying themes in science: systems, order, organization and interactions; evidence, models and explanations; constancy and change, measurement; evolution, equilibrium and energy; form and function among scientific disciplines.
- c) Know that an experiment must be repeated many times and yield consistent results before the results are accepted as correct.

D.2. Students will understand the nature of scientific inquiry.

- a) Know there is no fixed procedure called “The Scientific Method”, but that investigations involve systematic observations; carefully collected, relevant evidence; logical reasoning; and some imagination in developing hypothesis and explanations.
- b) Know that scientists use different kinds of investigations (observations of things or events, data collection, controlled experiments) depending on the questions they are trying to answer.

S.5.E Current Issues and Events in Science and Technology

E.1. Students will understand the relationship of science, technology, and society.

- a) Know the skills people need for a career in science or technology and the academic courses that a person pursuing such a career would need.
- b) Know various settings in which scientists and engineers may work (colleges, universities, businesses and industries, research institutes, and government agencies).
- c) Investigate how humans have used renewable and nonrenewable natural resources through history. Examples: water, rocks and minerals, fossil fuels, and solar energy.