



Elementary Science

The ISK Science program is designed to engage students' natural curiosity. Teachers begin by laying a foundation of knowledge, and then students' own interests and curiosity help guide the learning. Many units integrate social studies and science concepts as well as library skills, art, music and technology.

Science units are designed to provide opportunities for students to learn through inquiry and hands-on activities. Units are centered around five general strands:

1. *Nature of Science and Scientific Inquiry (integrated into all units)*
2. *Life Sciences*
3. *Physical Sciences*
4. *Earth and Beyond*
5. *Environmental Sciences (integrated into all units)*



Grade 3

1. NATURE OF SCIENCE

Standard 1.1: Understand the nature of scientific inquiry (*Understand and use the scientific method*)

- 1.1.1 Predict the outcome of a simple investigation and compare the result
- 1.1.2 Design and carry out a simple experiment
- 1.1.3 Collect data in an investigation and analyze it to develop a logical conclusion
- 1.1.4 Repeat observations to improve accuracy
- 1.1.5 Differentiate evidence from opinion

Standard 1.2: Communicate scientific ideas and activities clearly

- 1.2.1 Begin to use of quantitative data collection in describing and comparing objects, events and measurement
- 1.2.2 Write lab reports

Standard 1.3: Investigate using appropriate tools and instruments to conduct scientific activities

- 1.3.1 Use appropriate tools and simple equipment to gather scientific data

Standard 1.4: Understand the nature of scientific knowledge and enterprise (*Understand why science is important*)

- 1.4.1 Know that scientists do not rely on claims or conclusions unless they can be confirmed by observation
- 1.4.2 Explain that good scientific explanations are based on evidence and scientific knowledge
- 1.4.3 Understand that science is a way of explaining the world and that science knowledge changes over time

2. LIFE SCIENCES

Standard 2.1: Understand biological evolution and diversity (scientific comparisons)

- 2.1.1 Examine the interdependence of living things with their environment
- 2.1.2 Understand that plants and animals progress through life cycles of birth, growth and development, reproduction and death

Standard 2.2: Understand the structure and function of cells and organisms

- 2.2.1 Know that living organisms have distinct structures and body systems that serve specific functions in growth, survival and reproduction

Standard 2.3: Understand the relationships among organisms and their environment

- 2.3.1 Know the organization of simple food chains and food webs

Standard 2.4: Understand the cycling of matter and the flow of energy through ecosystems

- 2.4.1 Know the organization of simple food chains and food webs

Standard 2.5: Understand the principles of heredity and related concepts

- 2.5.1 Explain that many characteristics of plants and animals are inherited from its parents

3. PHYSICAL SCIENCES

Standard 3.1: Understand the structure and properties of matter

- 3.1.1 Know that matter has different states (i.e., solid, liquid, gas) and that each state has distinct physical properties
- 3.1.2 Know that some common materials such as water can be changed from one state to another by heating or cooling
- 3.1.3 Know that substances can be classified by their physical and chemical properties (e.g., magnetism, conductivity, density, solubility, boiling and melting points)
- 3.1.4 Knows that materials may be composed of parts that are too small to be seen without magnification



Grade 3

4. EARTH AND BEYOND

Standard 4.1: Understand the composition, structure and features of the geosphere, hydrosphere and atmosphere (Earth, Water and Air)

4.1.1 Understand the importance of the sun in maintaining life on earth

Standard 4.2: Understand the composition and structure of the universe and the Earth's place in it

4.2.1 Know that there are different bodies of objects in the universe (planets, moons, stars/constellations)

4.2.2 Know that the Earth is one of several planets that orbit the Sun and that the Moon orbits the Earth

4.2.3 Explain the interdependence with the solar system

5. ENVIRONMENTAL SCIENCES

Standard 5.2: Understand how society uses and conserves resources and energy

5.2.1 Explain how the human population uses and misuses energy (impact on food webs/chains)

Standard 5.3: Identify, investigate and evaluate environmental problems and issues

5.3.1 Explain that human overpopulation causes an imbalance in the food chain

Standard 4: Develop an understanding and commitment to environmental responsibility

PASSION | CREATIVITY | AMBITION