

**Bethlehem Lutheran School, Lakewood, CO
Science Curriculum Kindergarten (revised 6/11)**

God created, rules, and orders His universe. Science is the framework through which we discover, observe, analyze and synthesize the natural laws of God's creation. Understanding these laws and the systematic nature of the world assists and enhances the student's awareness and ability to be a better steward of God's earth and universe.

Science provides a conceptual framework for the understanding of natural phenomena and their causes and effects. Science study develops students to be scientifically literate, to be able to recognize that science is not value-free, and to be capable of making ethical and moral judgments regarding science, social and technological issues.

The science curriculum of Bethlehem Lutheran School will provide the students with an understanding of God's creation in the areas of Life Science, Physical Science, and Earth Science through facts, observation, and experimentation.

State Standard 1

Physical Science: Students know and understand common properties, forms and changes in matter and energy.

Classroom Objectives

- 1.1 The students will make observations, use rulers, balances, containers, thermometers, and various other tools to measure length, mass, volume/capacity, and temperature.
- 1.2 The students will be introduced to properties of matter, magnets and magnetism.
- 1.3 The students will sort objects based on their physical properties and characteristics. Students will know there are three different states of matter: solids, liquids, gases. Students will explore tearing, cutting, and molding using paper and cloth, wood and metal, clay, and water.

- 1.4 The students will explore position, motion, and forces. Students will observe, investigate, and describe how different objects move. Students will use simple machines, pulleys, wheel-and-axles to demonstrate how different objects move.
- 1.5 The students will be introduced to sound concepts: vibrations, pitch, and volume.
- 1.6 The students will learn to share observations, make predictions, ask questions, and be clear and precise.

State Standard 2

Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.

Classroom Objectives

- 2.1 The students will sort and describe organisms by their physical characteristics.
- 2.2 The students will explore living things: their habitats, life-cycles, and the needs for survival. Students will experiment and observe plant and butterfly life cycles. Students will learn about photosynthesis.
- 2.3 The students will be introduced to the concept of heredity. They will compare inherited traits and learned behavior. They will also explore the effect of the environment in plants and animals

State Standard 3

Earth Systems Science: Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.

Classroom Objectives

- 3.1 The students will know and explain how the sun provides heat and light to earth. They will also explore how the movement of the sun in our solar system affects the heat and light on earth. Students will analyze and record temperature
- 3.2 The students will explore the planets, moon phases, star properties, and constellations.
- 3.3 The students will explore our Earth's structure such as landforms.
- 3.4 The students will learn about the three Earth materials: rocks, soil, and water. The students will explore Earth materials to make observations and classify them by their properties.
- 3.5 The students will explore the water cycle. Students will identify the formation and classification of clouds and also precipitation forms.

- 3.6 The students will measure the weather variables, air temperature, and wind by using a thermometer and direction-vanes. Students will explore the causes and effects of severe weather such as thunderstorms and hurricanes.
- 3.7 The students will be proficient in their knowledge of the seasons.

School Standard 1

Students understand the processes of scientific investigation and design, conduct, communicate about and evaluate such investigations.

Classroom Objectives

- 1.1 Students will use inquiry skills, observe, infer, predict, communicate measure, put things in order, compare, classify, and draw conclusions. Students will use their five senses to explore the world around them.
- 1.2 Students will develop critical thinking skills and use mathematics and technology to solve problems.
- 1.3 Students will explore how different questions require different investigations and how explanations are based on observations, experiments, and evidence.

School Standard 2

Students know and understand interrelationships among science, technology and human activity, and how they can affect the world.

Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

Classroom Objectives:

- 2.1 The students will identify problems, design and implement solutions, and evaluate solutions.
- 2.2 The students will understand the contributions made by people in different cultures. They will also distinguish natural from manmade objects.
- 2.3 The students will practice healthful behaviors, injury preventions, hygiene, germ prevention, and nutrition.
- 2.4 The students will explore the cause and effect relationships between populations and resources, and environmental changes.
- 2.5 The students will explore natural hazards resulting from Earth processes.
- 2.6 The students will explore ways in which science and technology effect society.
- 2.7 The students will identify different careers in science.