

Revised 2005

BILLINGS PUBLIC SCHOOLS
SCIENCE
Learning Objectives
Third Grade

Listed below by grade level are the Science Modules to be taught at each grade level. This will ensure that the Science curriculum (encompassing Life Science, Earth Science, Physical Science, and Scientific Inquiry) has not been fractured. After teaching these modules teachers have the flexibility to teach any of the other modules in their grade level.

Grade Level	Science Modules to be taught
K	Looking at the Sky Exploring with the Senses
1	Kinds of Living Things Weather and Seasons
2	Earth Through Time Light and Color
3	Life Cycle Earth's Water
4	Animals Weather and Climate Properties of Matter
5	Populations and Ecosystems The Solid Earth The Solar System and Beyond
6	The Changing Earth The Nature of Matter Forces and Motion

Introduce: Teacher (high support)
Modeling to children

Develop: Teacher / Student work together, interactive,
guided processing, developing strategies

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Inquiry Use methods and materials that are developmentally appropriate to individual grade process.

Scientific Process

- _____ 1. construct questions that can be answered by collecting and interpreting data in a scientific investigation. (I, D, E, A)
- _____ 2. use or make systematic observations, accurate measurement, and control variable to formulate and conduct investigations, and to draw conclusions based on specific scientific data. (I, D, E, A)
- _____ 3. use collected data to make inferences, explanations, models or predictions. (I, D, E, A)
- _____ 4. communicate scientific procedures and explanations. (I, D, E, A)

Technology

- _____ 1. select the appropriate technology, tools and/or techniques to gather, analyze and interpret data. (I, D, E, A)
- _____ 2. examine various topic specific programs which will enhance their global awareness in relation to scientific application and integration into other curriculum areas, taking advantage of current technology. (I, D, E, A)
- _____ 3. recognize that technology is essential to science because it provides tools for investigations, inquiry, and analysis. (I, D, E, A)

Lab Safety

- _____ 1. identify and demonstrate safe procedures in using scientific investigation. (I, D, E, A)
- _____ 2. identify and select tasks and responsibilities, and use materials in a safe manner. (I, D, E, A)
- _____ 3. have available and learn to properly use materials and equipment necessary in investigations. (I, D, E, A)

Historical Contributions & Careers

- _____ 1. use various resources to explore topics of personal interest and become aware of career opportunities in areas of science. (I, D, E, A)
- _____ 2. identify careers that are dependent on a knowledge of science. (I, D, E, A)
- _____ 3. use historical examples to understand scientific inquiry, the nature of scientific knowledge, and the interactions between science and society. (I, D, E, A)
- _____ 4. utilize the knowledge developed through discovery by women and men scientists. (I, D, E, A)
- _____ 5. engage in scientific activities and processes that rely on basic human qualities, such as reasoning, insight, energy, skill and creativity. (I, D, E, A)

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Ecology

- _____ 1. describe interactions and the complexity of all components in a local environment and community that distinguished it from others. (I, D, E, A)
- _____ 2. develop a more conceptual understanding of ecological concerns. (I, D, E, A)

Critical Thinking

- _____ 1. observe, explore, and experiment to promote his/her understanding of basic generalization, relationships and principles of science. (I, D, E, A)
- _____ 2. interpret, predict, modify and test scientific concepts using both oral and written forms. (I, D, E, A)
- _____ 3. use thinking and process skills to analyze, resolve, and apply scientific knowledge and technological solutions to relevant real-world problems. (I, D, E, A)

Life Science

Summary of Study: This unit is designed to provide students with opportunities for an in depth study to explore the food chain and the life cycles of plants and animals in the various forest habitats of our hemisphere. Children will use words, symbols, graphs, models and pictures to communicate their predictions, observations and conclusions.

Food Chain & Life Cycles

- _____ 1. place natural events in order and use sequencing to tell what comes next. (food chain and life cycle). (I, D, E, A)
- _____ 2. construct models that demonstrate an awareness and appreciation of the balance of nature. (I, D, E, A)
- _____ 3. describe the relationship between the organisms in a simple food chain in both aquatic and terrestrial forest environments. (I, D, E, A)

Animal Behavior

- _____ 1. observe and describe how animals behave in different ways to meet their life needs. (I, D, E, A)
- _____ 2. recognize the careers dealing with the care and preservation of animals. (I, D, E, A)

Forest Habitats (Rain and other)

- _____ 1. identify some characteristics of major groups of plants and animals. (I, D, E, A)
- _____ 2. compare populations of plants and animals found in different forest environments. (I, D, E, A)
- _____ 3. recognize that species of plants and animals may become endangered or extinct and illustrate the need for conservation and preservation within the forest habitats. (I, D, E, A)

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Earth Science

Summary of Study: This unit is designed to provide students with opportunities for an in depth study of the water cycle and pollution.

Pollution

- ___ 1. recognize the kinds of pollution and their sources. (I, D, E, A)

Water Cycle

- ___ 1. observe and experiment with water evaporation and condensation. (I, D, E, A)
___ 2. describe and illustrate the water cycle. (I, D, E, A)
___ 3. examine the careers dealing with the study and conservation of water. (I, D, E, A)
___ 4. describe examples of water pollution. (I, D, E, A)
___ 5. identify ways to use water wisely. (I, D, E, A)
___ 6. explain where water is found and that it changes form. (I, D, E, A)
___ 7. study how landfills can affect ground water. (I, D, E, A)
___ 8. demonstrate the water cycle and the impact it has on the earth. (I, D, E, A)

Solar System

Summary of Study: This unit is designed to provide students with opportunities for an indepth study of our nearest neighbors in the solar system – the moon and the sun. The focus will be the connection of the sun, moon, and earth and their affects on one another.

- ___ 1. observe and record the phases of the moon and formulate a model to explain why we see moon phases. (I, D, E, A)
___ 2. identify that the moon reflects the sun's light and its appearance changes as it orbits the

Earth. (I, D, E, A)

- ___ 3. compare the relative sizes and distances of the sun, Earth and moon. (I, D, E, A)
___ 4. describe the sun as a star that lights and heats the Earth. (I, D, E, A)
___ 5. model the movements of the sun and Earth, and hypothesize what the Earth and the sun do to cause day, night and seasons. (I, D, E, A)
___ 6. recognize the reason that stars are not seen during the day. (I, D, E, A)
___ 7. examine careers that apply the study of astronomy. (I, D, E, A)

Physical Science

Summary of Study: This unit is designed to provide students with opportunities for an indepth study of Heat and Energy.

Heat and Energy

- ___ 1. describe the relationship between temperature and the three states of matter. (I, D, E, A)
___ 2. recognize forms of energy. (I, D, E, A)

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- _____ 3. describe the benefits and drawbacks of different energy sources. (I, D, E, A)
- _____ 4. describe forms of energy and tell ways that energy is produced. (I, D, E, A)
- _____ 5. classify objects by the kind of energy produced. (I, D, E, A)

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