

Bozeman Public Schools
Science Curriculum
Kindergarten



Essential Understandings: By the end of kindergarten, all students recognize that matter can be classified as magnetic or nonmagnetic and that magnets repel and attract certain materials, that objects are either living or non-living, and that changes in weather and times of day affect human behavior. Students will describe and explain multiple examples of Montana American Indian contributions to our scientific and technological knowledge of the natural world.

Essential Skills: Throughout kindergarten, students begin to learn about scientific inquiry through use of the five senses to explore their surroundings. Students use a variety of tools, including technology to measure, represent data and communicate with others.

Content Standards: Kindergarten content standards cover investigations in Physical Science, Life Science, and Earth and Space Science and incorporate an emphasis on natural cycles and human relationships with the environment. In Kindergarten, the unifying themes are explorations of Magnets, Living and Non-Living Objects, and the Effects of Weather on People.

Process Standards: Using the inquiry process, students conduct, evaluate, and communicate scientific investigations. Kindergarten process standards stress the use of the five senses to explore common materials, objects, and living things. Emphasis is placed upon gathering information, asking questions, measuring, sorting, classifying, and communicating information about the natural world. Students will use appropriate tools, including technology, to measure and represent data (e.g., graphs, charts, pictures.)

(P) Physical Sciences: As a result of inquiry based curricular activities, all students will investigate properties of matter.

(M) Essential Learning - Matter: Matter exists in a variety of forms and can be classified by physical properties. Matter can be classified as magnetic or nonmagnetic.

PM.1.0 Structure: This learning goal is not addressed at this grade level.

PM.2.0 Properties: Students observe and classify objects as magnetic or non-magnetic.

PM.2.1(Specific Proficiency):

Example: yes/no tubs

PM.3.0 Changes: This learning goal is not addressed at this grade level.

(F) Essential Learning – Force, Motion and Energy: Forces act upon objects and influence motion. Magnets repel and attract certain materials.

PF.1.0 Types of Force: Students will observe, classify, and record objects that are repelled or attracted by a magnetic force.

PF.1.1 (Specific Proficiency):
Example: pushing and pulling, magnet races,

PF.2.0 Forms of Energy: This learning goal is not addressed at this grade level.

PF.3.0 Mechanical Systems: This learning goal is not addressed at this grade level.

(L) Life Science: As a result of inquiry based curricular activities, all students will develop an understanding of the attributes of living and non-living objects.

(S) Essential Learning – Living Systems: Living systems encompass a variety of living and non-living objects.

LS1.0 Characteristics of Living Things: Students will identify living and non-living objects, grouping them based on specified characteristics.

LS.1.1 (Specific Proficiency):
Example: yes or no, fossil or fish, grown or mined

LS.2.0 Characteristics of Living Environments: This learning goal is not addressed at this grade level.

LS.3.0 Structure and Function: This learning goal is not addressed at this grade level.

LS.4.0 Diversity and Adaptation: This learning goal is not addressed at this grade level.

(P) Essential Learning - Life Process: All organisms have certain basic needs and life cycles.

LP.1.0 Growth: Students observe and record basic requirements that allow living things to grow.

LP.1.1 (Specific Proficiency): Students observe and record daily activities- eating, sleeping, drinking.
Example: growth chart (ht,wt)

LP2.0 Cycles: Students observe and recognize their own *physical* changes as part of their life cycle.

LP.2.1 (Specific Proficiency):
Example: baby to current age

LP.3.0 Reproduction: This learning goal is not addressed at this grade level.

(E) Earth and Space Science: As a result of the inquiry based curricular activities all students will develop an understanding of properties of earth materials, objects in the sky and changes in earth and sky.

(S) Essential Learning – Earth and Space Structures: Space objects include the Sun, Earth, Moon and stars.

ES.1.0 Earth and Planetary Materials: Students will be able to identify that the Earth is made up of soil, water, and surrounded by air (atmosphere).

ES.1.1 Students identify different forms of precipitation (rain, hail, snow, etc.)

Example: pictures or recess events –snowballs, moisture content

ES.2.0 Landforms (geomorphology): Students recognize and identify landforms such as mountains, lakes, valleys, rivers, and oceans.

ES.2.1 (Specific Proficiency):

Example: picture id, clay model

ES.2.2 (Specific Proficiency):

Example: schoolyard field trip of landforms...

ES.3.0 Planetary Systems: Students demonstrate understanding that the Earth and Sun are part of our Solar system.

ES.3.1 (Specific Proficiency): Students will draw...

Example: picture

ES.3.2 (Specific Proficiency):

Example: picture books

(I) Essential Learning – Earth and Space Interrelationships – Patterns, Cycles and Change: The sun and Earth work together to create night and day and changes in weather. Weather and time of day affect human behavior.

EI.1.0 Weather, Climate and Change: Students observe and record weather over time (phenology) to become aware of long term changes. Students will show how weather can affect our choice of clothing and activities.

EI.1.1 Students will chart precipitation in its various forms through daily observations.

Example: dress a bear, drawings, weather stations, graphs

EI.2.0 Living Organisms: Students recognize that human behavior is affected by night and day.

EI.2.1 (Specific Proficiency):

Example: technology darkness

EI.2.2 (Specific Proficiency):

Example:

Example:

EI.3.0 Earth's History: This learning goal is not addressed at this grade level.

EI.4.0 Catastrophic Events: This learning goal is not addressed at this grade level.

EI.5.0 Planetary Systems: Students will demonstrate the rotation of Earth as it revolves around the Sun to create night and day.

EI.6.1 (Specific Proficiency):

Example: students walk around each other while rotating

(H) Place Based Issues (Human Relationships with the Environment): As a result of inquiry based curricular activities, all students will develop an understanding of their school building and schoolyard environment.

(T) Essential Learning – Technology: Our lives and our community are shaped in many ways by the advances in science and technology.

HT.1.0 Technology: Students identify and demonstrate different uses of technology used in everyday life.

HT.1.1 (Specific Proficiency):

Example: tools, playground equipment, buttons, zippers, gears, levers

(R) Essential Learning – Resources: We use natural resources, some of which are renewable and some of which are not.

HR.1.0 Resources: Students classify natural resources as renewable or non-renewable.

HR1.1 (Specific Proficiency):

Example: magazine pictures on a poster, Scholastic news

(I) Essential Learning – Culture: A variety of different cultures make contributions to the diversity of our community.

HI.1.0 Culture: Students recognize that people come from many different places.

HI.1.1 (Specific Proficiency):

Example: map of birthplaces

HI.2.1 (Specific Proficiency):

Example: chart birthplaces of classmates