

Campbell County School District # 1
Gillette, Wyoming

Science - Kindergarten

Campbell County School District #1 uses hands-on science kits in their K-2 curriculum. The four kits used in kindergarten include Life Science, in which students study plants and animals. Next is Geology, where students study rock and soil. The Magnetism Energy kit introduces students to magnets, and finally students study Push Pull Energy where they explore the use of force to do work.

SC-KI-01 ASTRONOMY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.5 Objects in the Sky

Students will demonstrate an awareness of the characteristics which distinguish a daytime sky and a nighttime sky, as well as an awareness of star pictures. The demonstration could include verbal descriptions, child-created pictures of the daytime and nighttime skies, and sky pictures or other manipulatives to create these pictures.

SC-KI-01-01 - Develop Awareness of Day/Nighttime Skies (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will share what they know about things seen in the sky during the day and at night. The students will become aware of the characteristics of the day and nighttime sky.

TEACHING SUGGESTIONS: Make a day and nighttime collage. Compare pictures of day and nighttime skies. Sort paper colors as related to either day or night colors.

SC-KI-01-02 - Develop Awareness of Star Pictures (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will develop an awareness of star pictures through the planetarium visits. The students will understand the constellations by creating their own.

TEACHING SUGGESTIONS: Place salt on black paper. Make pictures by punching holes in paper. Put on overhead. Share, etc.

SC-KI-02 GEOLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.4 Properties of Earth Materials

SC4.1.6 Changes in Earth and Sky

SC4.1.7 Properties of Objects

Students will demonstrate an understanding of the characteristics which distinguish rocks, sand, and soil. The demonstration should include various ways of classifying rocks (size, color, smoothness, etc.). The students are able to make observations on wet and dry sand, and make comparisons of different types of soil.

ASSESSMENT TASK: Sort samples of rocks, sand, and soil. Product: each student will give an explanation of his sorting methods.

SC-KI-02-01 - Identify Rocks and Soil (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Given samples, the student will separate rocks, sand, and soil.

TEACHING SUGGESTIONS: Have the student explore by manipulating rocks and categorizing them by size, shape, color, smooth, rough, etc. Have the student make observations on wet and dry sand. Compare different soils using appropriate senses. Separate soil parts. Manipulate wet and dry soils. Collect soils from outside.

SC-KI-03 METEOROLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.6 Changes in Earth and Sky

Students will observe, describe, and record daily weather and the seasons.

SC-KI-03-01 - Describe Daily Weather Patterns (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will describe daily weather as cloudy, sunny, partly cloudy. They will choose symbols that describe the daily weather and orally state the current weather.

TEACHING SUGGESTIONS: Make a large monthly calendar; pick the appropriate weather symbol each day and place it on the calendar; go on class walks on days that have different weather. Compare and contrast each type. Get a weather report for each day.

SC-KI-03-02 - Demonstrate a Knowledge of the Seasons (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be able to associate weather with a season and select clothing appropriate for that season; they will be able to describe the four seasons.

TEACHING SUGGESTIONS: Have the student make direct observations of appropriate clothing from magazines; cut clothing pictures and make a poster of the type of clothing for each season; dress a weather bear each day; pantomime activities of your favorite season and what would be worn.

SC-KI-04 FORMS OF LIFE (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.1.7 Properties of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students are able to demonstrate the care of a plant. This could include discussions, observations, or demonstrations of the care of a plant and naming, drawing, or pointing to the parts of a plant. The students are able to classify common animals. This should include identifying similar and different characteristics of different animals by pictures, discussions, or concrete objects.

SC-KI-04-01 - Classify Common Animals (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will classify animals (put in a like group), and name a characteristic of each group; be able to identify differences among animals (size, shape, color, movement, feathers, etc.).

TEACHING SUGGESTIONS: Cut out animal pictures, discuss and place in groups according to characteristics; go on a walk, look for animals and insects, discuss habitat

and animal characteristics; bring a class pet to teach animal needs; classify pets vs. non-pets.

SC-KI-04-02 - Demonstrate the Care of a Plant (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will care for a plant and discuss its needs.

TEACHING SUGGESTIONS: Have the students grow a variety of plants and discuss the needs of their plants; sort pictures of non-plants; mount pictures of different plants and sort according to likenesses and differences (tree-bush).

ASSESSMENT TASK: Using pictures and live plants, the student will identify the different parts of a plant and its needs.

Product: verbal presentation to show understanding.

SC-KI-04-03 - Describe Some of the Plant's Parts (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will discuss plant parts and share observations about each part.

TEACHING SUGGESTIONS: Find a place outside where the students can pull plants. Come together and share how they are alike and different; name the parts. Collect leaves and sort them according to their various characteristics; make leaf rubbings; visit a greenhouse.

ASSESSMENT TASK: Using pictures and live plants, the student will identify the different parts of a plant and its needs.

Product: verbal presentation to show understanding.

SC-KI-05 PROPERTIES OF ENERGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.7 Properties of Objects

SC4.1.9 Physical Phenomena

SC4.1.10 Position and Motion of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students are able to demonstrate how things move in different ways when placed near a magnet. This demonstration may be in the form of discussions or with concrete objects. The students are able to demonstrate whether an object can be pushed or pulled. This demonstration may be in the form of discussions, drawings, or the use of concrete objects.

SC-KI-05-01 - Manipulate a Magnet (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will show how some things move in different ways when placed near a magnet. The students will classify objects that attract compared to objects that will not attract.

TEACHING SUGGESTIONS: Allow the students to collect several items from the room. Let the students discover how each object attracts or doesn't attract. See if the students can come up with a reason to explain why some attract, and others do not.

ASSESSMENT TASK: Sorting a variety of objects that will or will not be attracted to a magnet. Product: each child's explanation of his own sorting methods.

SC-KI-05-02 Describe Pushes and Pulls for Movement (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore objects from their own

surroundings to find those that require a push or require a pull.

TEACHING SUGGESTIONS: Allow the students to collect several items from the room; give students time to discover how each moves on a sloping surface and place into a group according to its movement (rolling/sliding). Have stations on the playground-- discuss how each thing was moved (roll, slide, push, pull).

ASSESSMENT TASK: Given a small block and ruler, the students will demonstrate and explain different ways to make the block move without lifting it up. Product: student is able to explain what caused the block to move.

SC-KI-06 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will understand their responsibilities related to having a positive interaction with their environment.

SC-KI-06-01 - Interacting With the Environment (Objective)

C-NR - Critical-District Reporting Not Required

Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on his environment whether it be school, home, neighborhood, community, etc.

TEACHING SUGGESTIONS: This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: The students will demonstrate an understanding of the positive effect that his project will have on the various aspects of the environment.

Alternative forms of assessment are recommended.

last update 8/17/2009

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Campbell County School District # 1
Gillette, Wyoming

Science - Grade 1

Campbell County School District #1 uses hands on science kits in their K-2 curriculum. First grade students study four different science kits. First, is Life Science in which students study seeds. Next is Geology, where students study rocks and soil. In the Light Energy kit students study light and shadow, and finally Push Pull Energy where they explore the use of force to do work.

SC-01-01 ASTRONOMY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.5 Objects in the Sky

Students will explore the stars and planets by observing the nighttime sky, using models, and through the use of the CCSD Planetarium. Using the daytime and nighttime skies, as well as the Planetarium, students will identify the earth, moon, and sun.

SC-01-01-01 - Develop an Awareness of Stars and Planets (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore the stars and planets by observing the nighttime sky and through the use of models and multimedia presentations in the planetarium.

SC-01-01-02 - Identify the Earth, Moon, and Sun (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will identify the earth, moon, and sun by observation outside and through the use of the planetarium.

TEACHING SUGGESTIONS: Most of this objective can be covered at the planetarium. Activities involving the sun and the moon are recommended.

SC-01-02 GEOLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.4 Properties of Earth Materials

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will compare and contrast different substances that make up the earth such as rock, sand, soil, ice, and water.

ASSESSMENT TASK: After completing each indicator (objective), the students will write or dictate and illustrate a page to go into their "Important Book."

Product: Page for the "Important Book."

SC-01-02-01 - Identify the Makeup of the Earth (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will compare and contrast different substances that make up the earth--rock, sand, soil, ice, water.

TEACHING SUGGESTIONS: Have the students collect different samples from outside and use them to make an Earth collage. Have the students present their collage to the class and tell what they collected. Discussion should make students aware that the Earth is also covered in part by water and ice. (Could use media to demonstrate this.)

SC-01-03 METEOROLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.4 Properties of Earth Materials

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will observe and identify the properties of air.

SC-01-03-01 - Describe the Properties of Air (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be able to identify the properties of air as invisible, tasteless, and odorless.

TEACHING SUGGESTIONS: Have the students set up and run experiments with air to show that it is tasteless and colorless. Experiments could help with the use of a parachute.

SC-01-04 FORMS OF LIFE (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will describe the basic needs of animals as water, food, space, and air. The students will also describe the basic needs of plants as water, light, space, and soil.

ASSESSMENT TASK: Complete a project that explains the basic needs of plants and animals. Product: book, mindmap, web, diorama, poster, oral presentation, or some other product.

SC-01-04-01 - Describe the Basic Needs of Animals (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: The students will demonstrate the basic needs of animals as water, food, space, air.

TEACHING SUGGESTIONS: Have the students take care of a classroom pet. Discuss the basic needs of their pet and what could happen if these needs are not provided.

PROCESSES: inferring, cause and effect, predicting

INSTRUCTIONAL LEVEL: Concrete/Contextual

SC-01-04-02 - Describe the Basic Needs of Plants (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will describe the basic needs of plants as water, light, space, and soil.

TEACHING SUGGESTIONS: Have the students raise plants and discuss the needs of their plants and what could happen if their needs were not provided for. The students should be led through simple small group projects where a basic need is not provided. Have the students predict what might happen to the plant. Experiments could show the actual outcome of a loss of one of the needs.

SC-01-05 PROPERTIES OF ENERGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.7 Properties of Objects

SC4.1.9 Physical Phenomena

SC4.1.0 Position and Motion of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will identify light sources and understand that light enables us to see things. The

students will explore objects around him/her and explore those that push and pull.

SC-01-05-01 - Identify Light Sources (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will identify objects that are sources of light and will recognize that light enables us to see things.

TEACHING SUGGESTIONS: Allow the students to explore various objects to find sources of light in their surroundings. Bring various objects to test as light sources; test by turning out the lights.

SC-01-05-02 - Describe Pushes and Pulls (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore objects in his surroundings to find those that push and pull.

TEACHING SUGGESTIONS: Have the students experiment and name things that require push or pull; categorize as pushes or pulls. Have them explore ways of pushing and pulling using objects other than themselves.

SC-01-06 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will understand his responsibilities related to having a positive interaction with his environment.

SC-01-06-01 - Interacting With the Environment (Objective)

C-NR - Critical-District Reporting Not Required

Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on their environment whether it be school, home, neighborhood, community, etc.

TEACHING SUGGESTIONS: This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: The students will demonstrate an understanding of the positive effect that his project will have on the various aspects of the environment.

Alternative forms of assessment are recommended.

last update 8/17/2009

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Campbell County School District # 1
Gillette, Wyoming

Science - Grade 2

Campbell County School District #1 uses hands-on science kits in the K-2 curriculum. The four kits used in second grade include Life Science/Geology where they study soil, seeds, and animals. Next is Sound Energy. In the Machines kit students explore the use of force to do work. Finally, Light Energy where students explore the sun as a source of energy.

SC-02-01 - ASTRONOMY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.5 Objects in the Sky

SC4.1.7 Properties of Objects

Students will observe and identify seasons, planets, and constellations.

SC-02-01-01 - Name the Seasons (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will categorize things (such as appropriate clothing) according to the seasons.

TEACHING SUGGESTIONS: Cut out pictures from a magazine and categorize them appropriately; label according to the seasons. Observe changes throughout the seasons in Campbell County. Make collages for each season, using materials available such as a collage of leaves for fall. Have the students keep a journal or write poems about the seasons.

SC-02-01-02 - Identify the Earth as One of the Nine Planets (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: The students will explore the earth as a planet using models, visual aids, and multimedia at the planetarium.

TEACHING SUGGESTIONS: Most of this objective can be covered at the planetarium. Show the students a movie about the solar system.

SC-02-01-03 - Identify Constellations as Star Pictures (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: The students will learn about constellations through models and visual aids at the planetarium and through exploratory activities in the classroom.

TEACHING SUGGESTIONS: Have the students create their own constellations using marshmallows and write a story about their own constellations. Make a telescope so others can view their constellation using a paper towel tube, aluminum foil, and a pin. Play the Big Dipper Game.

SC-02-02 GEOLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.4 Properties of Earth Materials

SC4.1.7 Properties of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.2.3 Identify & Use Appropriate Scientific Equipment

Students will demonstrate a knowledge of the makeup of differing soils (texture, ability to retain water) and how it affects plant growth.

SC-02-02-01 - Describe Different Kinds of Soil (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will compare and contrast characteristics of soil when given several soil samples. They will describe texture, ability to retain water, etc.

TEACHING SUGGESTIONS: Have the students collect different soil samples and use a hand lens or low power microscope to discuss the attributes of different soils. Allow the students to manipulate the soils and experiment with it.

SC-02-03 METEOROLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.6 Changes in Earth and Sky

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will use instruments to observe and record the weather.

SC-02-03-01 - Record Daily Changes in the Weather (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be able to use a thermometer, wind vane, and precipitation gauge to record the weather.

TEACHING SUGGESTIONS: Have the students set up and run their own wind vane and weather station.

SC-02-04 LIFE SCIENCE (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.1 Characteristics of Organisms

SC4.1.3 Organisms and Their Environments

SC4.1.6 Changes in Earth and Sky

SC4.1.7 Properties of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will demonstrate an understanding of seeds, plants, and animals, and explore how seasonal changes affect each one.

ASSESSMENT TASK: Using illustrations and a written description, the students will show how seasonal changes affect seeds, plants, and animals. Product: a written document with illustrations that is presented to the class.

SC-02-04-01 - Classify Seeds According to Characteristics (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Given an assortment of seeds, the students will sort them into groups. Students will be able to discuss how they were put into groups, or what characteristics were the same (size, shape, etc.).

TEACHING SUGGESTIONS: Use Venn diagrams to have the students classify the seeds.

SC-02-04-02 - Describe Some Seeds as Edible (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be aware that some seeds are edible.

TEACHING SUGGESTIONS: Have a seed-tasting party where students bring samples of seeds for the class to eat.

SC-02-04-03 - How Seeds Become Plants (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will plant and nurture seeds into plants.

TEACHING SUGGESTIONS: Have the students plant and grow seeds into plants.

SC-02-04-04 - Seasonal Changes Affecting Plants and Animals (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be able to observe and discuss how plants and animals change throughout the season.

TEACHING SUGGESTIONS: Take a field trip to one location at different times of the year. Have the students make observations about the plants and animals. Compile them into a class journal. Write a class book about observations of animals and plants during the seasons. Make seasonal collages of pictures of plants and animals at different times of the year.

SC-02-04-05 - Use Tracks and Traces to Identify Animals (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will discuss how tracks and traces can be used to identify animals.

TEACHING SUGGESTIONS: Take a nature walk to observe tracks and traces; use cooperative groups to identify an animal from tracks and traces; have the students play a game where they try to identify what has happened in a situation by looking at the tracks and traces that were left; have the students classify tracks using track cards; make plaster casts of tracks.

SC-02-05 ENERGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.7 Properties of Objects

SC4.1.9 Physical Phenomena

SC4.1.0 Position and Motion of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will demonstrate a knowledge of different types of energy through activities with sound vibrations and the use of force in simple machines. They will understand how the sun is useful for heat and light energy.

SC-02-05-01 - Demonstrate Sound From a Vibrating Object (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will identify and use a vibrating object (such as a ruler, rubber bands, and tuning forks) to create sounds

PROCESSES: observation, prediction, classifying

INSTRUCTIONAL LEVEL: Concrete/Contextual

ASSESSMENT TASK: Given an object (i.e., pencil, paper clip, book) the students will write an explanation of how they can get a sound from that object. (Do this before your students touches it.) Product: each child's explanation of how he can get a sound from the object.

SC-02-05-02 - Use Force to do Work (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will discuss and experiment with simple machines such as levers, pulleys, inclined planes, and wheels. They will discuss the advantages of using simple machines.

TEACHING SUGGESTIONS: Have the students find as many simple machines in the classroom as possible (Venetian blinds, stairs, doorknobs, electric switches, tools, etc. Have them classify or group these examples. Do experiments with levers to demonstrate how it is easier to lift with a lever.

ASSESSMENT TASK: In groups, the students will build one assigned simple machine out of paper, rope, etc., label the machine push/pull, and describe its task. Students may build machines out of recyclable materials, and this can be a home project involving parents. Product: a simple machine which shows the student's understanding of how simple machines work.

SC-02-05-03 - Identify the Sun as a Source of Heat and Light (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will be able to discuss and observe how the sun gives off heat and light.

TEACHING SUGGESTIONS: Have the students place objects in the sun and in the shade and observe which is warmer by touch and by measuring with a thermometer.

ASSESSMENT TASK: To write a sequential story telling about their typical day--BUT without the sun. Product: students' examples which show the effects of the absence of heat and light.

SC-02-05-04 - Describe the Sun as a Source of Energy (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will discuss and experiment with solar energy and discuss the benefits of using solar energy.

TEACHING SUGGESTIONS: Build a solar collector using a coffee can, plastic wrap, and a thermometer. Build a solar oven and cook or roast seeds.

SC-02-06 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will understand their responsibilities related to having a positive interaction with their environment.

SC-02-06-01 - Interacting With the Environment (Objective)

C-NR - Critical-District Reporting Not Required

Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on their environment whether it be school, home, neighborhood, community, etc.

TEACHING SUGGESTIONS: This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: Students will demonstrate an understanding of the positive effect that their project will have on the various aspects of the environment. Alternative forms of assessment are recommended.

last update 8/17/2009

pc

Campbell County School District #1
Gillette, Wyoming

Science - Grade 3

Campbell County School District #1 uses inquiry based science experiments in conjunction with researched based information in the 3-6 science curriculum. These skills will be acquired through the use of Houghton Mifflin Science series and hands-on science kits.

SC-03-01 ASTRONOMY (Content Standard)

State Standards and Benchmarks Correlations:

SC4.1.5 Objects in the Sky

SC4.1.6 Changes in Earth and Sky

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will explore the concepts of day and night, the movement of planets around the sun, and the movement of the moon around the earth.

SC-03-01-01 - Identify the Causes of Day and Night (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore the concept of the cause of day and night on the earth through the use of models and multimedia presentations in the planetarium.

TEACHING SUGGESTIONS: Science Series Unit D, Chapter 10, Lesson 1;
Planetarium

SC-03-01-02 - Identify the Movement of the Planets (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore the movement of the planets around the sun.

TEACHING SUGGESTIONS: Science Series Unit D, Chapter 9, Lessons 2 & 3;
Planetarium.

SC-03-01-03 - Describe the Movement of the Moon (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will become aware of the movement of the moon around the earth.

TEACHING SUGGESTIONS: Science Series Unit D, Chapter 10, Lesson 2;
Planetarium

SC-03-02 GEOLOGY (Content Standard)

State Standards and Benchmarks Correlations:

SC4.1.4 Properties of Earth Materials

SC4.1.7 Properties of Objects

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.2.3 Identify & Use Appropriate Scientific Equipment

SC-03-02-01 – Landforms (Objective)

C – NR – Critical – District Reporting Not Required

CRITICAL OBJECTIVE: Students will define five kinds of landforms and explains how some landforms are shown on a map.

TEACHING SUGGESTIONS: Science Series Unit C – Chapter 6, Lesson 1; field trip to a mine; have students create a model with the five main landforms and label them.

ASSESSMENT STANDARD: Students will be able to label and define the five main landforms.

SC-03-02-02 – Layers of Earth (Objective)

C – NR – Critical – District Reporting Not Required

CRITICAL OBJECTIVE: Students will describe the Earth's three layers, explain the different types of rocks and minerals, and discuss the rapid changes to the Earth's crust, such as volcanoes and earthquakes.

TEACHING SUGGESTIONS: Science Series Unit C – Chapter 6, Lesson 2

ASSESSMENT STANDARD: Students will describe the Earth's three layers, explain the different types of rocks and minerals, and discuss the rapid changes to the Earth's crust, such as volcanoes and earthquakes

SC-03-02-03 – Weathering and Erosion (Objective)

C – NR – Critical – District Reporting Not Required

CRITICAL OBJECTIVE: Students will explain the processes of weathering and erosion, and discuss how layers of soil build up over time.

TEACHING SUGGESTIONS: Science Series Unit C – Chapter 6, Lesson 3, Extreme Science C34-C35; field trip to a mine, Devil's Tower

ASSESSMENT STANDARD: Students will explain the processes of weathering and erosion, and discuss how layers of soil build up over time.

SC-03-03 METEOROLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.4 Properties of Earth Materials

SC4.1.9 Physical Phenomena

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will demonstrate how air takes up space and how it can be used as a source of power.

SC-03-03-01 - Describe How Air Can Take Up Space (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will be able to demonstrate how air can take up space.

TEACHING SUGGESTIONS: Have the students set up and run experiments with containers of water, a clear plastic tumbler, and a tissue. Allow them to stuff a tissue into the tumbler, invert the tumbler, and carefully force it to the bottom of the container of water. Allow discussion and predicting within the class.

ASSESSMENT STANDARDS: Students will explain or demonstrate at least one example of how air takes up space. This assessment may be in report, demonstration, or oral format.

SC-03-03-02 - Demonstrate Air as a Source of Power (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will be able to demonstrate how air can move objects. Make observations and predictions relating to experiments with air movement.

TEACHING SUGGESTIONS: Have the students make direct observations of the effects of the air in a balloon on objects. (The air expelled from a balloon can be directed towards a small can which is lying on its side and will cause it to roll.) Have the students make predictions and observations.

ASSESSMENT STANDARDS: Students will explain or demonstrate at least one example of air used as a source of power. This assessment may be in report, demonstration, or oral format.

SC-03-04 FORMS OF LIFE (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.1 Characteristics of Organisms

SC4.1.3 Organisms and Their Environments

SC4.1.7 Properties of Objects

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

Students will identify parts of a plant, classifications of animals with and without backbones, and life cycles of plants and animals.

SC-03-04-01 – Identify Parts of a Plant (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will identify parts of plants – roots, stems, and leaves – and understand how the parts help a plant meet its needs.

TEACHING SUGGESTIONS: Science Series Unit A, Chapter 1, Lesson 1; field trip to the community garden or “Seed Walk” at Cam-plex.

ASSESSMENT STANDARDS: Students will explain the parts of plants.

SC-03-04-02 – Classification of Animals With/Without Backbones (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Given pictures of common animals and plants, the students will classify those animals and plants found in various communities.

TEACHING SUGGESTIONS: Science Series Unit A, Chapter 2

ASSESSMENT STANDARDS: Students will be able to compare and contrast vertebrates and invertebrates.

SC-03-04-03 – Describe Life Cycles of Plants and Animals (Objective)

C-NR - Critical-District Reporting Not Required

(1) **CRITICAL OBJECTIVE:** Students will describe the life cycles of flowering plants and conifers and explain the function of flowers, fruits, and seeds.

(2) **CRITICAL OBJECTIVE:** Students will describe the life cycles of different animals and introduce life stages such as egg, larva, and adults.

(1) **TEACHING SUGGESTIONS:** Science Series Unit A, Chapter 3, Lesson 1; “Seed Walk” at Cam-plex

(2) **TEACHING SUGGESTIONS:** Science Series Unit A, Chapter 3, Lesson 2; Extreme Science A90-A91; Hatch chick or tadpole

ASSESSMENT STANDARDS: Students will describe the life cycles of plants and animals.

SC-03-04-04 - Classify Life Forms Common to Communities (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Given pictures of common animals and plants, the students will classify those animals and plants found in various communities.

TEACHING SUGGESTIONS: Science Series Unit B, Chapters 4 & 5, Extreme Science B36; field trip to the Fishing Lake.

ASSESSMENT STANDARD: Students will demonstrate an understanding of the forms of life common to a community through knowledge of communities and habitats.

SC-03-04-05 - Describe the Interactions of a Food Chain (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will describe ways living things depend on each other (food, shelter) and will be introduced to the terms producer, consumer, and decomposer.

TEACHING SUGGESTION: Science Series Unit B, Chapter 5; Extreme Science B66

ASSESSMENT STANDARD: Students will demonstrate an understanding of the interactions of a food chain by identifying at least one organism and by showing or telling how this organism interacts and depends on other living things in the community. This assessment may be in report, demonstration, or oral format.

SC-03-05 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will understand their responsibilities related to having a positive interaction with their environment.

SC-03-05-01 - Interacting With the Environment (Objective)

C-NR - Critical-District Reporting Not Required

Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on their environment whether it be school, home, neighborhood, community, etc.

TEACHING SUGGESTIONS: This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: Students will demonstrate an understanding of the positive effect that their project will have on the various aspects of the environment. Alternative forms of assessment are recommended.

Campbell County School District # 1
Gillette, Wyoming

Science - Grade 4

Campbell County School District #1 uses inquiry based science experiments in conjunction with researched based information in the 3-6 science curriculum. These skills will be acquired through the use of the Houghton Mifflin Science series and hands-on science kits.

SC-04-01 ASTRONOMY (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.5 Objects in the Sky

Students will demonstrate an understanding of astronomy through knowledge of the constellations.

SC-04-01-01 - Identify Constellations in the Sky (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will explore constellations in the nighttime sky and will identify some of the major constellations.

TEACHING SUGGESTIONS: Use the planetarium and overhead projections to identify major constellations. Several computer programs are available. Use star charts and posters.

SC-04-02 FORMS OF LIFE (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.1 Characteristics of Organisms

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.1 Recognize Nature and History of Science

Students will demonstrate an understanding of the forms of life through knowledge of plant and animal cells, digestive, circulatory, respiratory, skeletal and muscular systems.

ASSESSMENT TASK: Using a microscope, the student will create a drawing or diagrams of animal and plant cells with correct basic parts and functions labeled using scientific language. Students will explain the relationship of cells> tissues> organs> systems> organism and name the major components of the five systems and their basic functions.

SC-04-02-01 - Identify Plant and Animal Cells (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will recognize plant and animal cells through the use of a microscope; identify and describe the basic parts of an animal or plant cell (cell wall, cell membrane, cytoplasm, nucleus); describe some basic functions of those parts; explain the relationship of: cells > tissues > organs > systems > organism

TEACHING SUGGESTION: Science Series Unit A, Chapter 1; Extreme Science A24; Use of the microscope is recommended so that children can actually see the cells.

ASSESSMENT STANDARD: Students are able to demonstrate an understanding of the animal and plant cells through the use of a microscope. The demonstration should include the identification and description of the basic parts and functions of an animal or plant cell (cell wall, cell membrane, nucleus, cytoplasm). The students are also able to explain the relationship of cells, tissues, organs, systems, and organisms. This

demonstration may be in the form of student-generated diagrams, quizzes, or other comparable means.

CCSD Life Science Rubric

Criteria I - DIAGRAMS

- Level 4: More than two diagrams on at least three pages as well as additional detail and labels on at least three pages.
- Level 3: Two diagrams per page, accurately labeled; the last page of the booklet requires three diagrams.
- Level 2: Either one diagram per page or half of the diagrams complete, while the other half has missing parts.
- Level 1: Several diagrams left out or mislabeled (more than half).

Criteria II - TEXT

- Level 4: More than two facts written using scientific language.
- Level 3: Two facts written using scientific language.
- Level 2: One fact written using scientific language.
- Level 1: No facts used.

Criteria III - MECHANICS/NEATNESS

- Level 4: No more than one error per page with coloring which enhances the diagram.
- Level 3: Few errors, with coloring and penmanship neatly done.
- Level 2: Several errors with pages partially colored or using quality in coloring and penmanship which detracts from the project.
- Level 1: Many errors, and quality of penmanship and coloring interferes with presentation of information.

SC-04-02-02 - Identify the Functions of the Digestive, Circulatory, Respiratory, Skeletal and Muscular Systems (Objective)

C – NR - Critical – District Reporting Not Required

CRITICAL OBJECTIVE: Students will describe the basic functions of the nervous system; they will identify major components of the system.

TEACHING SUGGESTIONS: Science Series Unit A, Chapter 2; Extreme Science A56; Observe stimulus/response through group activities (pass the hand squeeze, clap hands in front of eyes, test reflexes).

SC-04-03 PROPERTIES OF ENERGY (Content Standard)

State Standards and Benchmarks Correlations:

- SC4.1.7 Properties of Objects
- SC4.1.8 Changes in States of Matter
- SC4.1.9 Physical Phenomena
- SC4.2.2 Use Inquiry Process for Scientific Investigations
- SC4.2.3 Identify & Use Appropriate Scientific Equipment
- SC4.2.4 Properly Use Safety Equipment; Recognize Hazards

Students will demonstrate an understanding of energy through the knowledge of conductors and insulators, parallel and series circuitry, sounds and vibrations, and the force of friction.

SC-04-03-01 Construct Parallel and Series Circuits (Objective)

C - Critical--Assessment Reporting Required

CRITICAL OBJECTIVE: Students will construct a series and parallel circuit. Given prediction sheets, students will decide whether the bulb will light or not.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 15, Lesson 2; Extreme Science F74

ASSESSMENT STANDARD: Students are able to demonstrate the difference between a series circuit and a parallel circuit. The students could explain orally or in writing the advantages of having parallel circuits in their homes. The demonstration could include the construction and/or identification of a series circuit and a parallel circuit.

ASSESSMENT TASK: Using bulbs, cells, wires, and clips, students will construct a teacher-specified electrical circuit. Focus will be on problem solving. Product: diagrams and lists of tests used in developing the circuit which show the students' understanding of how the circuit works; discussion of problems encountered while designing the circuit.

SC-04-03-02 - Identify Conductors and Insulators (Objective)

C - Critical--Assessment Reporting Required

CRITICAL OBJECTIVE: Students will classify objects as insulators or conductors.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 15, Lesson 2; Test objects for conductivity using a circuit tester. Allow students to make predictions before testing objects.

ASSESSMENT STANDARD: Students are able to demonstrate an understanding of the characteristics which distinguish insulators from conductors. The demonstration should include the identification of insulators and conductors.

ASSESSMENT TASK: Using bulbs, cells, wires, and clips, students will construct a teacher-specified electrical circuit. Focus will be on problem solving. Product: diagrams and lists of tests used in developing the circuit which show the students' understanding of how the circuit works; discussion of problems encountered while designing the circuit.

SC-04-03-03 - Describe the Energy of Sound (Objective)

C - Critical--Assessment Reporting Required

CRITICAL OBJECTIVE: Students will describe sound as being produced from vibrating objects; explain how vibration frequency relates to the pitch of the sound.

TEACHING SUGGESTION: Science Series unit F, Chapter 14, Lesson 3; Extreme Science F36; Observe sounds produced by vibration (ruler, chalk on the chalkboard, rubber bands). Have the students make a musical instrument that can play "Mary Had a Little Lamb" (about a 5-note range). Explore the effects of vibration and frequency on the pitch of the sound. Listen to musical instruments and have students predict whether the vibration is fast or slow.

ASSESSMENT STANDARD: Students are able to demonstrate an understanding that sound is being produced from vibrating objects. The demonstration should include an explanation of how frequency relates to the pitch of sound. This demonstration may be in the form of quizzes, student-generated diagrams, written reports, construction of an instrument including a written or oral explanation on how to vary the pitch.

ASSESSMENT TASK: Create an instrument that can play "Mary Had a Little Lamb" which has a five-note range. Product: a working instrument.

SC-04-04 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.3 Organisms and Their Environments

SC4.2.1 Research Answers; Present Findings

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.1 Recognize Nature and History of Science

SC4.3.2 Know How Scientific Info is Used for Decisions

Students will understand their responsibilities related to having a positive interaction with their environment.

SC-04-04-01 - Interacting With the Environment (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on their environment whether it be school, home, neighborhood, community, etc. (Lesson Review C37)

TEACHING SUGGESTIONS: Science Series Unit C, Chapter 9; Extreme Science C66; This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: Students will demonstrate an understanding of the positive effect that their projects will have on the various aspects of the environment. Alternative forms of assessment are recommended.

SC-04-05 CHANGES IN STATES OF MATTER (Content Standard)

State Standard and Benchmark Correlation:

SC4.1.8 Changes in States of Matter

SC4.2.2 Use Inquiry Process for Scientific Investigations

SC4.3.1 Recognize Nature and History of Science

Students will demonstrate that the processes of heating and cooling can change matter from one state to another.

SC-04-05-01 – Identify States of Matter (Objective)

C-NR - Critical-District Reporting Not Required

CRITICAL OBJECTIVE: Students will identify and explain that everything around us is made of matter; explain that atoms are arranged in three different states – solid, liquid, and gas.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 12, Lesson 1; Chapter 13, Lesson 1; Extreme Science E74

ASSESSMENT STANDARD: Students are able to demonstrate knowledge and understanding of the characteristics which distinguish solids, liquids, and gases.

Campbell County School District # 1
Gillette, Wyoming
Science - Grade 5

Campbell County School District #1 uses inquiry based science experiments in conjunction with researched based information. These skills will be acquired through the use of the Houghton Mifflin Science series and hands-on science kits.

SC-05-01 EARTH AND SPACE SYSTEMS (Content Standards)

State Standard and Benchmark Correlation:

SC8.1.7 The Earth in the Solar System

SC8.2.1 Research Scientific Info., Present Findings

SC8.2.2 Use Inquiry to Conduct Scientific Investigations

SC8.2.3 Clearly/Accurately Communicate Results, Other Information

SC8.2.4 Meeting Human Needs With Science and Technology

Students will become familiar with day and night skies, constellations, and the location and phases of the moon.

SC-05-01-01- Explore Weather and Climate (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will gain an understanding of the three climate zones and how they are characterized

TEACHING SUGGESTIONS: Science Series Unit D – Chapter 9, Lessons 1 & 2

SC-05-01-02 – Structure of the Earth’s Atmosphere (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will describe the four levels of the Earth’s atmosphere.

TEACHING SUGGESTIONS: Science Series Unit D – Chapter 9, Lesson 2

SC-05-01-03 – Explore the Earth/Sun Relationship (Objective)

T – Teach

EXPLORATORY OBJECTIVE: Students will analyze how seasons result from the tilt of the Earth’s axis and the revolution around the Sun.

TEACHING SUGGESTIONS: Science Series Unit D – Chapter 10, Lesson 1

SC-05-01-04 – Explore the Earth/Moon Relationship (Objective)

T – Teach

EXPLORATORY OBJECTIVE: Students will explore the relationship of the moon to the Earth and the moon’s movements and phases.

TEACHING SUGGESTIONS: Science Series Unit D – Chapter 10, Lesson 2.

ADDITIONAL RESOURCES: Use the planetarium and other resources to aid in identifying major phases of the moon. Care should be taken to stress the distances and spatial relationship misconceptions.

SC-05-01-05 – Exploring Space (Objective)

S – Supporting

EXPLORATORY OBJECTIVE: Students will become familiar with the concepts of the solar system and galaxy.

TEACHING SUGGESTIONS: Science Series Unit D – Chapter 11

SC-05-02 PHYSICAL SYSTEMS (Content Standard)

State Standard and Benchmark Correlation:

- SC8.1.10 Structure and Properties of Matter
- SC8.1.11 Physical and Chemical Changes in Matter
- SC8.1.12 Forms and Uses of Energy
- SC8.1.13 Conservation of Matter and Energy
- SC8.2.1 Research Scientific Info, Present Findings
- SC8.2.2 Use Inquiry to Conduct Scientific Investigations
- SC8.2.3 Clearly/Accurately Communicate Results, Other Info
- SC8.2.4 Meeting Human Needs With Science and Technology

SC-05-02-01 – Structure of Matter (Objective)

T - Teach

EXPLORATORY OBJECTIVE: Students will recognize that elements are the basic components of matter.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 12

SC-05-02-02 – Classifying Elements (Objective)

S - Supporting

EXPLORATORY OBJECTIVE: Students will demonstrate knowledge of how elements are classified in the periodic table.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 12, Lesson 2

SC-05-02-03 – Compounds (Objective)

S - Support

EXPLORATORY OBJECTIVE: Students will recognize how compounds are made.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 13, Lessons 1 & 2

SC-05-02-04 - Characteristics of Matter (Objective)

T - Teach

EXPLORATORY OBJECTIVE: Students will compare chemical and physical changes.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 13, Lessons 1 & 2

SC-05-02-05 – Solutions & Mixtures (Objective)

S - Support

EXPLORATORY OBJECTIVE: Students will recognize the differences between solutions and mixtures.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 12, Lesson 3

SC-05-02-06 - Changes of State (Objective)

T- Teach

EXPLORATORY OBJECTIVE: Students will recognize that elements are the basic components of matter.

TEACHING SUGGESTIONS: Science Series Unit E, Chapter 14

SC-05-02-07 – Force, Motion & Work (Objective)

T - Teach

EXPLORATORY OBJECTIVE: Students will observe the effects of force on an object's motions.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 15, Lessons 1 & 2

SC-05-02-08 – Magnets (Objective)

T - Teach

EXPLORATORY OBJECTIVE: Students will recognize magnetism as a force that acts between magnets and magnetic objects.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 15, Lesson 3

SC-05-02-09 – Energy & Waves (Objective)

T - Teach

EXPLORATORY OBJECTIVE: Students will identify different forms of energy and recognize that waves can transfer energy.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 16

SC-05-02-10 – Temperature & Heat (Objective)

S - Support

EXPLORATORY OBJECTIVE: Students will compare and contrast thermal and temperature.

TEACHING SUGGESTIONS: Science Series Unit F, Chapter 17

SC-05-02-11 – Electrical Energy (Objective)

S - Support

EXPLORATORY OBJECTIVE: Students will explain how electricity is produced and how electrical energy can be changed into mechanical energy.

TEACHING SUGGESTIONS: Science Series Unit F Chapter 18

SC-05-03 MALLO CAMP (Content Standard)

C - Critical--Assessment Reporting Required

State Standard and Benchmark Correlation:

SC8.1.1 Levels of Organization in Living Systems

SC8.1.3 Evolution as a Theory

SC8.1.4 Diversity of Organisms

SC8.1.5 Behavior and Adaptation

SC8.1.6 Interrelationships of Populations/Ecosystems

SC8.1.9 The Earth's History

SC8.1.11 Physical and Chemical Changes in Matter

SC8.1.13 Conservation of Matter and Energy

SC8.2.2 Use Inquiry to Conduct Scientific Investigations

SC8.2.5 Use Scientific/Safety Equipment, Recognize Hazards

SC8.3.2 Making Decisions With Scientific Information

Students will demonstrate an understanding of the objectives covered under the Mallo Camp competency.

ASSESSMENT STANDARD: Students will develop an ongoing appreciation for the environment and nature; they will understand their responsibilities as a caretaker of our environment.

SC-05-03-01 - Animal Signs (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will identify common signs of animals. Students will be able to distinguish between the scats of plant eaters and meat eaters; describe the three primary means of locomotion of animals; and observe and describe other animal signs such as beds, chewings, caches, rubs, homes, etc.

SC-05-03-02 - Forestry (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will identify the common tree types at Mallo Camp as conifers or deciduous trees. Using a dichotomous key, they will key out one conifer and one deciduous tree.

SC-05-03-03 - Limnology (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will be introduced to food chains in water; state the effects of water pollution on aquatic life forms; collect, examine, and identify specimens of aquatic life.

SC-05-03-04 - Entomology (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will describe how insects are classified (six jointed legs, outside skeleton); identify the three main body regions (head, thorax, abdomen); describe insects as being the largest group of animals; and describe the differences between spiders and insects.

SC-05-03-05 - Botany (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will identify some plants by common name, potential uses, and botanical history.

SC-05-03-06 - Geology (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will be introduced to sedimentary rock formations and will identify them. They will discuss the differences between rocks and minerals. Students will define fossils, how they are formed, and how they are used by geologists to reconstruct the Earth's history. The students will define types of material in which fossils (plants and animals) are found, and he will collect various rocks and minerals.

SC-05-03-07 - Meteorology (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will be introduced to instruments in a weather station and be will be able to take readings from: thermometer, barometer, anemometer, and hydrometer. The students and instructor will discuss the role weather plays in our daily lives. The students will construct a cloud chamber and develop an understanding of the makeup of clouds and how they can be predictors of weather.

SC-05-03-08 - Directionality (Objective)

C-CS - Critical-Assessment at Content Standard

CRITICAL OBJECTIVE: Students will identify the uses of a compass in terms of a preventive measure from getting lost and in determining direction. They will identify procedures to follow if lost. The students will be introduced to topographical maps to determine elevation.

SC-05-03-09 - Respect for Environment (Objective)

C-CS - Critical-Assessment at Content Standard

Students will demonstrate a respect for the environment through instruction and discussion, and through participation in a council hike.

SC-05-03-10 - Our Environment: Each One - Teach One (Objective)

C-CS - Critical-Assessment at Content Standard

Students will take responsibility for learning ways to keep our environment healthy and natural. "Each One, Teach One" means each student will teach someone else what he/she has learned.

SC-05-04 FORMS OF LIFE (Content Standard)

State Standard and Benchmark Correlation:

SC8.1.1 Levels of Organization in Living Systems

SC8.1.4 Diversity of Organisms

SC8.2.1 Research Scientific Info, Present Findings

SC8.2.2 Use Inquiry to Conduct Scientific Investigations

SC8.2.3 Clearly/Accurately Communicate Results, Other Info

Students will understand how to classify animals into like groups and describe functions and parts of the digestive, respiratory, and circulatory systems in the human body.

SC-05-04-01 - Identify the Functions of Body Systems (Objective)

C - Critical--Assessment Reporting Required

CRITICAL OBJECTIVE: Students will describe the functions and parts of the digestive, respiratory, circulatory and nervous systems.

TEACHING SUGGESTIONS: Science Series Unit A, Chapter 1, Lesson 4

ASSESSMENT STANDARDS: Students will be able to demonstrate knowledge of the functions and parts of the digestive, respiratory, circulatory and nervous systems. The demonstration should include identification of major parts in each of the four systems and a description of functions.

ASSESSMENT TASK: Label and describe the parts and functions of the digestive, respiratory, circulatory and nervous systems.

SC-05-05 ENVIRONMENTAL INTERACTION (Content Standard)

State Standard and Benchmark Correlation:

SC8.1.6 Interrelationships of Populations/Ecosystems

SC8.2.1 Research Scientific Info, Present Findings

SC8.2.2 Use Inquiry to Conduct Scientific Investigations

SC8.2.3 Clearly/Accurately Communicate Results, Other Info

SC8.3.2 Making Decisions With Scientific Information

Students will understand his responsibilities related to having a positive interaction with his environment.

SC-05-05-01 - Interacting With the Environment (Objective)

C - Critical--Assessment Reporting Required

Students will collaboratively plan and participate in an environmental project and demonstrate an understanding of the effect that the project will have on their environment whether it be school, home, neighborhood, community, etc.

TEACHING SUGGESTIONS: This will normally involve individual or group projects that focus on identifying specific environmental concerns and activities which provide students the opportunity for a positive experience in interacting with that environment.

SUGGESTED ACTIVITIES: We encourage students to develop their own projects, but have attached a list of suggestions.

ASSESSMENT STANDARD: The students will demonstrate an understanding of the positive effect that their project will have on the various aspects of the environment. Alternative forms of assessment are recommended.

last update 8/17/2009

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Campbell County School District #1
Gillette, Wyoming
Science - Grade 6

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SC-06-01 LIFE SYSTEMS Content Standard)

State Standard and Benchmark Correlation:

SC8.1.1 Levels of Organisms in Living Systems

SC8.1.2 Reproduction and Heredity

SC8.1.3 Evolution as a Theory

SC8.1.4 Diversity of Organisms

SC8.1.6 Interrelationships of Populations and Ecosystems

SC-06-01-01 (Unit A) – Classifying Organisms (Objective)

S – Supporting

TEACHING SUGGESTIONS: Science Series Unit 1 – Chapter 1

Students will:

- understand that scientists classify living things into different groups.
- recognize common characteristics of bacteria, fungi, and protists and their categories.
- identify characteristics that plants have in common.
- recognize common characteristics of invertebrates and vertebrates.
- understand the categories of vertebrates and invertebrates.

SC-06-01-02 (Unit A) Cell Structure and Function (Objective)

S- Supporting

TEACHING SUGGESTIONS: Science Series Unit A – Chapter 2

Students will:

- recognize that cells are the building blocks of all living organisms.
- understand how cells acquire and use energy.
- understand the role of cell division.
- describe functions of cells, tissues, organs, and organ systems.
- identify the organization of structure and function of cells, tissues, organs, organ systems, and whole organisms.
- define disease and compare different types of disease.
- explain how diseases affect an organism.
- describe the immune system.

SC-06-01-03 (Unit A) Reproduction and Heredity (Objective)

S - Supporting

TEACHING SUGGESTIONS: Science Series Unit A – Chapter 3

Students will:

- recognize that all organisms reproduce.
- define asexual and sexual reproduction.
- describe mitosis.

- describe how traits are passed on.
- describe meiosis.
- understand the roles of DNA, genes and chromosomes.
- describe Mendel's experiments.
- distinguish between the effects of dominant and recessive genes.
- understand DNA replication and its importance.
- understand DNA production of RNA and its importance.
- recognize that flaws in DNA reproduction can affect traits of offspring.

SC-06-01-04 (Unit A) Change Over Time (Objective)

S - Supporting

TEACHING SUGGESTIONS: Science Series Unit A – Chapter 4

Students will:

- describe the characteristics of fossils and how they are used to study the past.
- understand the purpose of a fossil record.
- examine the evidence of change for a particular species.
- explain why organisms with certain traits are more likely than others to survive and have offspring.
- describe the effects of natural selection.

SC-06-01-05 (Unit A) Identify the Parts of the Eye and Their Functions (Objective)

C – NR – Critical – District Reporting Not Required

TEACHING SUGGESTIONS: Use models, drawings, and charts; have an optometrist visit your class

Students will:

- identify and label the parts of the eye as (the organ of sight).
- explain how each part functions in the process of gathering and sending images to the brain.
- dissect a sheep eye to show their understanding of the parts of the eye and their functions.

SC-06-02 GEOLOGY (Content Standard)

State Standard and Benchmark Correlation:

SC8.1.8 The Structure of the Earth System

SC8.1.9 The Earth's History

SC-06-02-01 (Unit B) – Cycles in the Biosphere (Objective)

S - Supporting

(Lessons 1 & 2 CAN be covered by are not included in state standards)

TEACHING SUGGESTIONS: Science Series Unit B – Chapter 5, Lesson 3

Students will:

- recognize that all organisms require energy from food, and that some organisms produce their own food.
- describe the relationships among organisms.
- explore the effects of changes in a food web.

SC-06-02-02 (Unit B) – Earth’s Ecosystems (Objective)

S- Supporting

TEACHING SUGGESTIONS: Science Series Unit B – Chapter 6

Students will:

- define ecosystem and explore different kinds of ecosystems.
- recognize that organisms live in ecosystems that provide what they need.
- describe the interactions between biotic and abiotic parts of an ecosystem.
- distinguish between predators and prey.
- describe how organisms respond and adapt to their environment.
- recognize that some interactions between species are harmful and some are beneficial.
- describe parasitic, commensal, and mutualistic relationships.
- recognize that some species have adapted to depend on each other.

(Unit B, Chapter 7 **CAN** be covered but are not included in state standards)

(Unit B, Chapter 8 is covered in 3rd grade and is a major unit in the 8th grade curriculum)

SC-06-02-03 (Unit C) – Dynamic Earth (Objective)

C – Critical – Assessment Reporting Required

(Lessons 1 & 2 **CAN** be covered but are not included in state standards)

CRITICAL OBJECTIVE: Students will list three factors and describe how these factors can change the surface of the earth: erosion, earthquakes, volcanoes, glaciers and weathering.

TEACHING SUGGESTIONS: Science Series Unit C – Chapter 9; local resource people and field trips to help teach this objective; use models

Students will:

- describe fossil formation and dating.
- recognize that sedimentary rocks form layers that can contain clues to Earth’s history.
- understand evidence for glaciation and ice ages found in the geologic record.
- describe fossil evidence that supports the theory of continental drift.
- recognize that tectonic plates are huge slabs of lithosphere, which make up the Earth’s crust and upper mantle.
- know that the part of the mantle below the lithosphere behaves like a liquid.
- recognize that most dramatic changes in the Earth’s surface occur at plate boundaries.
- describe the features of a volcano.
- understand how many different factors change the earth’s surface.

ASSESSMENT STANDARD: Students will demonstrate an understanding of factors that change the surface of the earth. The demonstration should make reference to three or more factors: erosion, earthquakes, volcanoes, glaciers and weathering, and moving plates.

SC-06-03 PROPERTIES OF ENERGY (Content Standard)

State Standards and Benchmarks Correlations:

SC8.1.12 Forms and Uses of Energy

SC-06-03-01 (Unit C) – Earth’s Energy Resources (Objective)

S- Supporting

TEACHING SUGGESTION: Science Series Unit C, Chapter 10

Students will:

- identify fossil fuels as nonrenewable resources.

- trace energy stored in fossil fuels back to energy from the Sun.
- describe how coal, oil, and natural gas is formed.
- recognize the impact of conservation and technology on fossil fuel usage.
- recognize that the Sun's energy can be transformed into other forms of energy.
- identify promising alternative energy sources.

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