

Third Grade Science

Science Content Standard 1. Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations.

Benchmark End of Grade 4	Essential Learning Expectation	Essential Vocabulary
<p>1. Develop the abilities necessary to safely conduct scientific inquiry, including (a step-by-step sequence is not implied): (a) asking questions about objects, events, and organisms in the environment, (b) planning and conducting simple investigations</p>	<p>A. Use observations to ask questions about objects, events and organisms in the environment. B. Recognize testable questions. C. Follow appropriate safety rules D. Design the steps of a simple investigation, with guidance E. Follow step-by-step directions to conduct a simple investigation</p>	<p>procedure, investigation, testable question, measure, observation</p>
<p>2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations</p>	<p>A. Select appropriate tools for an investigation B. Demonstrate proper use of tools C. Recognize and use metric measurements D. Display measurements using simple tables and graphs.</p>	<p>tables, metric system, volume (milliliter, liter), mass (gram, kilogram), distance (centimeter, meter), time (seconds), graph, graduated cylinder, meter stick, thermometer (Celsius)</p>
<p>3. Use data to describe and communicate the results of scientific investigations</p>	<p>A. Share results with classmates. B. Compare the results to the testable question</p>	<p>data, results</p>
<p>4. Use models that illustrate simple concepts and compare those models to the actual phenomenon</p>	<p>A. Match models to actual phenomenon B. Use models to demonstrate understanding of simple concepts (i.e., Model of Earth and sun to show day/night)</p>	<p>model</p>
<p>5. Identify a valid test in an investigation</p>	<p>A. Define valid B. Identify components of an investigation that make it valid</p>	<p>valid</p>

6. Identify how observations of nature form an essential base of knowledge among the MT.American Indians	A. Identify ways that some American Indians used observation for survival (i.e. natural phenomenon, animal and insect behaviors, weather	
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Science Content Standard 2. Students, through the inquiry process, demonstrate the knowledge of properties, forms, changes and interactions of physical and chemical systems.		
Benchmark End of Grade 4	Essential Learning Expectation	Essential Vocabulary
1. Identify that plants and animals have structures and systems that serve different functions for growth, survival, and reproduction	A. List the five needs of every living thing. (energy, habitat, water, nutrients, air) B. Identify plant and animal structures, i.e., plants: root, stem, leaf. animal: bones, skin	living, plant, animal, energy, habitat, nutrients, air
3. Describe and use models that trace the life cycles of different plants and animals and discuss how they are differ from species to species	A. Identify that from food, animals obtain energy and materials for body repair and growth. B. Identify that solar energy is the primary source of energy for plants. C. Describe how and why energy sources are needed to sustain life.	energy, solar energy
3. Describe and use models that trace the life cycles of different plants and animals and discuss how they are differ from species to species	A. Define species B. Compare the life cycle of two different organisms in the animal kingdom. C. Compare the life cycle of two different plant species.	life cycle, animal kingdom, species, organism, plant kingdom
4. Explain cause and effect relationships between nonliving and living components with ecosystems; and explain individual response to the changes in the environment including identifying differences between inherited, instinctual, and learned behaviors	Benchmark is addressed in grade 4	

5. Create and use a classification system to group a variety of plants and animals according to their similarities and differences	Benchmark is addressed in grade 4	
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Science Content Standard 4. Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.



Benchmark End of Grade 4	Essential Learning Expectation	Essential Vocabulary
1. Describe and give examples of earth's changing features	<p>A. Identify examples of Earth's features, i.e., rocks and soil</p> <p>B. List materials that make up soil, i.e., weathered rock, humus, water, and air</p> <p>C. Describe the steps that rocks go through in weathering</p> <p>D. Identify causes of erosion</p>	erosion, weathering, soil, rock, water, air
2. Describe and measure the physical properties of earth's basic materials (including soil, rocks, water and gases) and the resources they provide	Benchmark addressed in grade 4	
3. Investigate fossils and make inferences about life, the plants, animals, and the environment at that time	Benchmark is addressed in grade 4	
4. Observe and describe the water cycle and the local weather and demonstrate how weather conditions are measured	<p>A. Differentiate between melting, freezing, evaporation, condensation, and precipitation</p> <p>B. Illustrate or create a model of the water cycle</p> <p>C. Explain the changes that occur to water as it moves through the cycle</p>	melting, freezing, evaporation, condensation, precipitation, water cycle
	<p>D. Identify the instruments used for measuring temperature and precipitation</p> <p>E. Record local temperature and precipitation</p> <p>F. Describe local weather using</p>	thermometer, rain gauge, temperature, local weather, precipitation

	recorded data	
5. Identify seasons and explain the difference between weather and climate	A. Distinguish between weather and climate B. Describe local climate conditions for each season.	climate, weather, seasons, fall, autumn, winter, spring, summer
6. Identify objects (e.g., moon, stars, meteors) in the sky and their patterns of movement and explain that light and heat comes from a star called the sun	A. Recognize that planets can have moons B. Identify the planets in our solar system C. Identify the relative location of planets and the sun	solar system, planets, sun, moon
7. Identify technology and methods used for space exploration (e.g., star patterns, space shuttles, telescopes)	A. Identify the current types of technology and methods being used for space exploration B. Identify the types of information that can be learned from these methods	
Science Content Standard 5. Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies		
Benchmark End of Grade 4	Essential Learning Expectation	Essential Vocabulary
1. Describe and discuss examples of how people use science and technology	Benchmark is addressed in grades 1, 2, and 4	
2. Describe a scientific or technological innovation that impacts communities, cultures, and societies	A. Identify technology as the knowledge, processes and products used to solve problems and make lives easier B. Define and discuss what constitutes a society C. Identify examples of scientific or technological discoveries that impact societies	technology, knowledge, society, processes, products, impact, discovery
3. Simulate scientific collaboration by sharing and communicating ideas to identify and describe problems	Benchmark is addressed in grade 4	

<p>4. Use scientific knowledge to make inferences and propose solutions for simple environmental problems</p>	<p>A. List and discuss environmental problems and concerns. B. Propose solutions for environmental problems using scientific knowledge</p>	<p>environment, problem, solution</p>
<p>5. Identify how the knowledge of science and technology influences the development of the Montana American Indian cultures</p>	<p>A. Identify how tools for a specific use have changed over time. B. Identify how the change in tools have influenced Montana American Indian cultures C. Research local American Indian people who have made notable contributions D. Discuss how these works contributed to communities and society at large</p>	<p>tool, culture</p>

Science Content Standard 6. Students, understand historical developments in science and technology.

<p>Benchmark End of Grade 4</p>	<p>Essential Learning Expectation</p>	<p>Essential Vocabulary</p>
<p>1. Give historical examples of scientific and technological contributions to communities, cultures and societies, including Montana American Indian examples</p>	<p>A. Define and discuss what constitutes a community B. Identify historical examples of scientific or technological contributions that impacted societies, including Montana American Indians</p>	<p>society, contribution, historical, technology, impact</p>
<p>2. Describe how scientific inquiry has produced much knowledge about the world and a variety of contributions toward understanding events and phenomenon within the universe</p>	<p>A. Identify examples where scientific inquiry is used to gain understanding of the natural world</p>	<p>scientific inquiry, natural world</p>
<p>3. Describe science as a human endeavor and an ongoing process</p>	<p>A. Identify examples of science as an ongoing process.</p>	