

MINNESOTA ACADEMIC STANDARDS GRADE 5

SCIENCE

Strand: I. HISTORY AND NATURE OF SCIENCE	Sub-Strand: A. Scientific World View	Standard: The student will understand that communication is essential to science.	Benchmarks: 1. The student will know that current scientific knowledge and understanding guide scientific investigation. 2. The student will recognize that clear communication of methods, findings and critical review is an essential part of doing science.
Strand: I. HISTORY AND NATURE OF SCIENCE	Sub-Strand: B. Scientific Inquiry	Standard: The student will understand the process of scientific investigations.	Benchmarks: 1. The student will perform a controlled experiment using a specific step-by-step procedure and present conclusions supported by the evidence. 2. The student will observe that when a science investigation or experiment is repeated, a similar result is expected.
Strand: II. PHYSICAL SCIENCE	Sub-Strand: D. Motion	Standard: The student will understand that changes in speed or direction of motion are caused by forces.	Benchmarks: 1. The student will investigate the use of a lever, inclined plane and wheel and axle to move objects. 2. The student will demonstrate that the greater the force applied, the greater the change in motion.
Strand: III. EARTH AND SPACE SCIENCE	Sub-Strand: A. Earth Structure and Processes	Standard: b. The student will explore the structures and functions of Earth systems.	Benchmarks: 1. The student will explore the interaction of the lithosphere, atmosphere, biosphere, hydrosphere and space.
Strand: III. EARTH AND SPACE SCIENCE	Sub-Strand: C. The Universe	Standard: a. The student will understand the characteristics and relationships of objects in the solar system.	Benchmarks: 1. The student will recognize the difference between rotation and revolution and their connection to day, night, seasons and the year. 2. The student will identify the planets in the solar system and their relative sizes, distances and basic characteristics. 3. The student will observe that the sun supplies heat and light to the Earth. 4. The student will know that planets look like stars, but over time they move differently than stars.

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<p>Strand: III. EARTH AND SPACE SCIENCE</p>	<p>Sub-Strand: C. The Universe</p>	<p>Standard: b. The student will identify the patterns and movements of celestial objects.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. The student will recognize that the stars in the sky appear to slowly move from east to west. 2. The student will identify the sun as an average-sized star and that the other stars are so far away that they look like points of light. 3. The student will know that telescopes magnify distant objects in the sky and dramatically increase the number of stars we can see.
<p>Strand: IV. LIFE SCIENCE</p>	<p>Sub-Strand: E. Biological Populations Change Over Time</p>	<p>Standard: The student will know that biological populations change over time.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. The student will recognize that individuals of the same species differ in their characteristics and that sometimes the differences give individuals an advantage in surviving and reproducing. 2. The student will recognize that extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. 3. The student will compare the structure of fossils to one another and to living organisms.
<p>Strand: IV. LIFE SCIENCE</p>	<p>Sub-Strand: F. Flow of Matter and Energy</p>	<p>Standard: The student will know that matter and energy flow into, out of, and within a biological system.</p>	<p>Benchmarks:</p> <ol style="list-style-type: none"> 1. The student will recognize that organisms need energy to stay alive and grow, and that this energy originates from the sun. 2. The student will use food webs to describe the relationships among producers, consumers, and decomposers in an ecosystem in Minnesota. 3. The student will recognize that organisms are growing, dying and decaying, and that their matter is recycled.