



## Grade 4 Science Curriculum

### K-12 Benchmarks

**Inquiry:** Students will become scientifically literate citizens who develop and apply the skills of scientific inquiry by ...

- ✓ solving problems by applying scientific/mathematical reasoning,
- ✓ safely using the tools of science through active, hand-on experiences,
- ✓ analyzing and synthesizing information, and
- ✓ communicating understanding of science concepts.

**Knowledge:** Experience the richness and excitement of knowing about and understanding the natural world.

**Apply:** Develop scientific habits of mind in order to apply scientific processes and principles to everyday aspects of life.

▲ = Indicator assessed on Grade 4 Kansas Science Assessment

Standard: Physical Science Topic: Magnetism and Electricity	Standard: Life Science Topic: Environmental Interactions	Standard: Life Science Topic: Bones & Muscles; Eyes & Ears	Standard: Earth-Space Science Topics: Rock Cycle; Changes in the Earth
<p><b>Inquiry:</b></p> <ul style="list-style-type: none"> <li>▲ Ask questions about the strengths of a magnet that can be answered by investigating.</li> <li>▲ Designs a simple experiment to classify classroom objects as magnetic or not.</li> </ul> <p>Investigate electricity safely.</p> <ul style="list-style-type: none"> <li>▲ Observe and investigate static electricity.</li> <li>▲ Explore substances to identify insulators and conductors.</li> </ul>	<p><b>Inquiry:</b></p> <ul style="list-style-type: none"> <li>▲ Observe and classify trees by their leaves.</li> <li>▲ Observe and classify pond life.</li> </ul> <p>Make a model of a food chain, showing relationships.</p>	<p><b>Inquiry:</b></p> <p>Classify muscles by their functions and actions.</p> <p>Diagram the connection of the ear and eye to the nervous system.</p> <ul style="list-style-type: none"> <li>▲ Identifies that the source of sound (in the ear) is vibrations.</li> </ul>	<p><b>Inquiry:</b></p> <ul style="list-style-type: none"> <li>▲ Collect and observe rocks and classify rocks by their properties.</li> <li>▲ Plan and conduct a simple investigation to identify minerals.</li> </ul>
<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>▲ Demonstrate that magnets attract and repel.</li> <li>▲ Demonstrate that like poles of a magnet repel and opposite poles attract.</li> <li>▲ Define and demonstrate a complete electrical circuit</li> <li>▲ Make or recognize a series circuit; make or recognize a parallel circuit</li> </ul>	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>▲ Observe tree growth rings (tree cookies) and infer the environmental variables that affect tree growth. Explain a food chain, a tree, a pond as a system.</li> </ul> <p>Model predator/prey relationships. (including humans) to life in different environments /biomes.</p>	<p><b>Knowledge:</b></p> <p>Identify the main components of the skeletal and muscular systems.</p> <ul style="list-style-type: none"> <li>▲ Relate the different structural characteristics that serve distinct functions of the skeletal and muscular systems.</li> <li>▲ Identify the major parts of the ear and eye and describe the function of each part.</li> <li>▲ Identifies that the source of sound (in the ear) is vibrations.</li> </ul>	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>▲ Identify, describe, and classify properties of rocks according to three rock types: igneous, metamorphic, and sedimentary.</li> <li>▲ Model how each type of rock is formed.</li> </ul> <p>Model and describe the layers of the earth.</p>
<p><b>Application:</b></p> <ul style="list-style-type: none"> <li>▲ Use magnets to move things.</li> <li>▲ Describe and provide evidence that the earth is a magnet.</li> <li>▲ Build a circuit that performs a task or solves a problem.</li> </ul> <p>Identify and discuss sources of electrical energy and energy conservation.</p>	<p><b>Application:</b></p> <ul style="list-style-type: none"> <li>▲ Compare and contrast the basic needs of organisms (including humans) to life in different environments /biomes.</li> </ul> <p>Compare and contrast adaptations of animals in different biomes.</p> <p>Identify endangered species in Kansas and the U.S.</p>	<p><b>Application:</b></p> <p>Make a model of the skeletal/muscular system, the ear, and the eye.</p> <ul style="list-style-type: none"> <li>▲ Measures and compares human body proportions.</li> <li>▲ Discusses that various foods contribute to healthy bones, muscles, eyes and ears</li> </ul>	<p><b>Application:</b></p> <ul style="list-style-type: none"> <li>▲ Apply understandings of the rock cycle to describe changes in the surface of the earth.</li> <li>▲ Describes changes in the surface of the earth as a result of erosion.</li> </ul>