

SCIENCE OVERVIEW
GRADE: THIRD
Lemont-Bromberek CSD 113A

<p><i>What is the story a third grader is able to tell by the end of the year?</i></p> <p>We live in a diverse and interdependent world. Scientists study diverse patterns and their causes and effects. They use patterns to make predictions and to support their claims with evidence. There are patterns in and amongst living organisms, forces and interactions and weather and climate.</p>			
UNITS of STUDY	SCIENTIFIC & ENGINEERING PRACTICES <i>The actual doing of science and engineering piques student interest</i>	DISCIPLINARY CORE IDEAS <i>Key ideas that build conceptually throughout the K-8 experience</i>	CROSSCUTTING CONCEPTS <i>Important themes that pervade science, engineering and mathematics</i>
LIFE SCIENCE <i>Interdependent Relationships in Ecosystems & Inheritance and Variation of Traits: Life Cycles and Traits</i>	<p>Analyzing and Interpreting Data Analyze and interpret data to make sense of phenomena using logical reasoning.</p> <p>Engaging in Argument from Evidence Construct an argument with evidence, data, and/or a model.</p> <p>Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.</p> <p>Developing and Using Models Develop models to describe phenomena.</p> <p>Constructing Explanations and Designing Solutions Use evidence (e.g., observations, patterns) to construct an explanation.</p> <p>Use evidence (e.g., observations, patterns) to support an explanation.</p>	<p>Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>Social Interactions and Group Behavior Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size.</p> <p>Evidence of Common Ancestry and Diversity Some kinds of plants and animals that once lived on Earth are no longer found anywhere.</p> <p>Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments.</p> <p>Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p>	<p>Cause and Effect Cause and effect relationships are routinely identified and used to explain change.</p> <p>Scale, Proportion, and Quantity Observable phenomena exist from very short to very long time periods.</p> <p>Systems and System Models A system can be described in terms of its components and their interactions.</p> <p>Patterns Similarities and differences in patterns can be used to sort and classify natural phenomena.</p> <p>Patterns of change can be used to make predictions.</p>

		<p>Life Science Continued</p> <p>Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>Growth and Development of Organisms Reproduction is essential to the continued existence of every kind of organism.</p> <p>Plants and animals have unique and diverse life cycles</p> <p>Inheritance of Traits Many characteristics of organisms are inherited from their parents.</p> <p>Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.</p> <p>Variation of Traits Different organisms vary in how they look and function because they have different inherited information.</p> <p>The environment also affects the traits that an organism develops.</p> <p>Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.</p>	
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<p>PHYSICAL SCIENCE <i>Forces and Interactions</i></p>	<p>Asking Questions and Defining Problems Ask questions that can be investigated based on patterns such as cause and effect relationships.</p> <p>Define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Planning and Carrying Out Investigations Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.</p> <p>Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.</p>	<p>Forces and Motion Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object.</p> <p>Forces that do not sum to zero can cause changes in the object's speed or direction of motion.</p> <p>The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it.</p> <p>Types of Interactions Objects in contact exert forces on each other.</p> <p>Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other.</p>	<p>Patterns Patterns of change can be used to make predictions.</p> <p>Cause and Effect Cause and effect relationships are routinely identified, tested, and used to explain change.</p>
<p>EARTH/SPACE SCIENCE <i>Weather and Climate</i></p>	<p>Analyzing and Interpreting Data Represent data in tables and various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.</p> <p>Engaging in Argument from Evidence Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.</p> <p>Obtaining, Evaluating, and Communicating Information Obtain and combine information from books and other reliable media to explain phenomena.</p>	<p>Weather and Climate Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years.</p> <p>Natural Hazards A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.</p>	<p>Patterns Patterns of change can be used to make predictions.</p> <p>Cause and Effect Cause and effect relationships are routinely identified, tested, and used to explain change.</p>

