

# LEE'S SUMMIT R-7 YEAR AT A GLANCE -6TH GRADE CURRICULUM

<b>Unit 1: Scientific Measurement</b> Estimated Time To Complete: 14 Sessions Estimated Window: August 24 - September 14	<b>Unit 2: Science Inquiry</b> Estimated Time To Complete: 20-25 Sessions Estimated Window: September 15 – October 15	<b>Unit 3: Living Organisms</b> Estimated Time To Complete: 38 Sessions Estimated Window: October 19 - December 18	<b>Unit 4: Genetics and Heredity</b> Estimated Time To Complete: 30 Sessions Estimated Window: January 6 – February 18
<p><b>Essential Standard(s):</b>  <b>6_SC_1</b> Students will use tools and instruments in scientific exploration to gather data.</p> <p><b>Learning Targets:</b>  <b>6_SC_1_A</b>                      Determine the appropriate tools and techniques to collect data  <b>6_SC_1_B</b>                      Measure mass to the nearest gram.  <b>6_SC_1_C</b>                      Measure length to the nearest millimeter.  <b>6_SC_1_D</b>                      Measure volume to the nearest milliliter.  <b>6_SC_1_E</b>                      Measure temperature to the nearest degree Celsius  <b>6_SC_1_F</b>                      Measure force to the nearest Newton.  <b>6_SC_1_G</b>                      Measure time to the nearest second.  <b>6_SC_1_H</b>                      Compare amounts and measurements.</p>	<p><b>Essential Standard(s):</b>  <b>6_SC_2_A</b> Students will understand and use scientific and engineering practices to conduct investigations and solve problems.</p> <p><b>Learning Targets:</b>  <b>6_SC_2_A</b>                      Write a testable question and apply the scientific method to answer it.  <b>6_SC_2_B</b>                      Write a hypothesis using an if/then format.  <b>6_SC_2_C</b>                      Identify and describe the independent, dependent and control variables.  <b>6_SC_2_D</b>                      Describe the importance of multiple trials in an experiment.  <b>6_SC_2_E</b>                      Design and conduct a valid experiment.  <b>6_SC_2_F</b>                      Evaluate the validity of an experiment and brainstorm ways to take it further.  <b>6_SC_2_G</b>                      Recognize that testable questions require various types of data collection.  <b>6_SC_2_H</b>                      Analyze data to develop and defend a conclusion.  <b>6_SC_2_I</b>                      Communicate results of investigations through a variety of visual representations.</p>	<p><b>Essential Standard(s):</b>  <b>6_SC_3</b> Students will examine the various structures and their role in cells, plants, and animals to carry out life processes necessary for survival.</p> <p><b>Learning Targets:</b>  <b>6_SC_3_A</b>                      Describe the common life processes that all unicellular and multicellular organisms carry out.  <b>6_SC_3_B</b>                      Recognize all living organisms are made of cells, which can be observed at various scales, and carry out life processes.  <b>6_SC_3_C</b>                      Label and describe the function of the organelles that are specific to animal and plant needs.  <b>6_SC_3_D</b>                      Compare and contrast organelles found in animal and plant cells; structure of unicellular and multicellular organisms.  <b>6_SC_3_E</b>                      Understand that the body is a system of cells, tissues, organs and organ systems interacting and scientific advances have led to improvements in nutrition, health and wellness  <b>6_SC_3_F</b>                      Identify how sensory receptors allow organisms to respond to changes in their environment.  <b>6_SC_3_G</b>                      Identify the structures, systems, and organelles in a plant necessary to perform life processes including the aid of animals in reproduction.</p>	<p><b>Essential Standard(s):</b>  <b>6_SC_4</b> Students will analyze the reproduction of various life forms and identification of traits to be inherited</p> <p><b>Learning Targets:</b>  <b>6_SC_4_A</b>                      Genetic material is passed from parent to offspring  <b>6_SC_4_B</b>                      Recognize asexual reproduction as the process of mitosis.  <b>6_SC_4_C</b>                      Recognize sexual reproduction as the process of meiosis.  <b>6_SC_4_D</b>                      Traits are characteristics passed from parent to offspring.  <b>6_SC_4_E</b>                      Genetic mutations impact the structure and function of organisms.  <b>6_SC_4_F</b>                      Environmental factors affect characteristics not biologically connected to the organism.</p>

<p align="center"><b>Unit 5: Ecosystems: Matter and Energy</b>  <b>Estimated Time To Complete: 15 Sessions</b>  <b>Estimated Window: February 19 – March 11</b>  <b>*March 14- 18 flex days</b></p>	<p align="center"><b>Unit 6: Ecosystems: Relationships</b>  <b>Estimated Time To Complete: 20 Sessions</b>  <b>Estimated Window: March 28 – April 22</b></p>	<p align="center"><b>Unit 7: Ecosystems and Diversity</b>  <b>Estimated Time To Complete: 15 Sessions</b>  <b>Estimated Window: April 25 - May 13</b>  <b>*May 16-20 flex days</b></p>	
<p><b>Essential Standard(s):</b>  <b>6_SC_5 Students will model and describe the existence and changes in matter and energy within an ecosystem.</b></p> <p><b>Learning Targets:</b>  <b>6_SC_5_A</b>            Simulate and model the continuous transfer of energy, beginning at the Sun, among living and nonliving parts of an ecosystem.  <b>6_SC_5_B</b>            Illustrate the oxygen/carbon dioxide cycles. (including the processes of photosynthesis and cellular respiration)  <b>6_SC_5_C</b>            Describe the processes involved in the recycling of matter in the oxygen/carbon dioxide cycles.  <b>6_SC_5_D</b>            Develop and use a model to explain the transfer of matter and energy into and out of ecosystems and among organisms  <b>6_SC_5_E</b>            Predict the possible effects of changes in the number and types of organisms in an ecosystem on the populations of other organisms within that ecosystem  <b>6_SC_5_F</b>            Identify the factors that affect growth, population, and a variety of organisms an ecosystem can support.</p>	<p><b>Essential Standard(s):</b>  <b>6_SC_6 Students will diagram and explain the impact various relationships have on the integrity of an ecosystem.</b></p> <p><b>Learning Targets:</b>  <b>6_SC_6_A</b>            Diagram and describe the transfer of energy in a variety of food webs with references to producers, consumers, decomposers, scavengers, and predator/prey relationships.  <b>6_SC_6_B</b>            Classify populations of unicellular and multicellular organisms as producers, consumers, and decomposers by the role they serve in an ecosystem.  <b>6_SC_6_C</b>            Identify populations within a community that are in competition with one another for resources and predict the possible effects on a population.  <b>6_SC_6_D</b>            Describe beneficial and harmful activities of organisms, including humans, and explain how these activities affect organisms within an ecosystem.</p>	<p><b>Essential Standard(s):</b>  <b>6_SC_7 Students will evaluate the interdependence and diversity among various life forms in an ecosystem.</b></p> <p><b>Learning Targets:</b>  <b>6_SC_7_A</b>            Relate examples of adaptations within a species to its ability to survive in a specific environment.  <b>6_SC_7_B</b>            Predict how certain adaptations such as behavior, body structure, or coloration may offer a survival advantage to an organism in a particular environment and allow for successful reproduction.  <b>6_SC_7_C</b>            Formulate and support possible solutions to potentially harmful environmental changes within an ecosystem.  <b>6_SC_7_D</b>            Compare anatomical similarities and differences among modern organisms and fossilized remains of previous organisms.</p>	