Coal City Unit District #1
Seventh Grade
Science Curriculum

SC.7:1   **Students will perform scientific investigations and communicate scientific conclusions.**

SC.7:1-1   Ask scientific questions.

SC.7:1-2   Plan scientific investigations.

SC.7:1-3   Analyze scientific experiments based on their understanding of hypotheses, variables, and data collection.

SC.7:1-4   Use tools to observe and measure things within a scientific study.

SC.7:1-5   Construct and communicate conclusions from scientific experimentation.

SC.7:2   **Students will demonstrate understanding in the structure and function of cells and the role it plays in disease. (MS-LS1-1 & MS-LS1-2)**

SC.7:2-1   Investigate different living things to support that all living things are made of cells. (MS-LS1.A)

SC.7:2-2   Compare and contrast the structure of different cells. (MS-LS1.A)

SC.7:2-3   Develop and use a model to describe the function of a cell as a whole and ways parts of a cell contribute to that function. (MS-LS1-2)

SC.7:2-4   Identify infections disease causing agents.

SC.7:2-5   Evaluate ways that humans work to fight disease causing agents.

SC.7:3   **Students will demonstrate understanding in the application of genetics and heredity and how those relate to current medical and social issues. (MS-LS3)**

SC.7:3-1   Construct a scientific explanation based on evidence for how genetic factors influence the growth of organisms (MS-LS1-5)

SC.7:3-2   Develop and use a model to describe why structural changes to genes located on chromosomes may result in harmful, beneficial, or neutral effects to the structure and function of the organism. (MS-LS3-1)

SC.7:3-3   Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (MS-LS3-2)

SC.7:4   **Students will demonstrate understanding of matter, energy, and organisms' interactions within an ecosystem. (MS-LS2)**

SC.7:4-1   Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. (MS-LS2-1)

SC.7:4-2   Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (MS-LS2-2)

SC.7:4-3   Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (MS-LS1-6)

SC.7:4-4   Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. (MS-LS1-7)

SC.7:4-5   Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. (MS-LS2-3)

SC.7:4-6   Construct an argument supported by evidence that changes to physical or biological components of an ecosystem affect populations. (MS-LS1-5; MS-LS2-4)

SC.7:4-7   Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (MS-LS2-5)

SC.7:5   **Students will demonstrate understanding of evolution of organisms using supporting theories and evidence. (MS-LS4)**

SC.7:5-1   Analyze data for patterns in the fossil record that document the existence, diversity, extinction, and change in life forms throughout history. (MS-LS4-1)

SC.7:5-2   Construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer relationships. (MS-LS4-2)

SC.7:5-3   Analyze pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships.(MS-LS4-3)

SC.7:5-4   Construct an explanation for natural selection and its effect on specific traits over time. (MS-LS4-4)

SC.7:5-5   Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. (MS-S1-4)

SC.7:5-6   Gather and synthesize information about the way humans influence the inheritance of desired traits in organisms. (MS-LS4-5)

SC.7:5-7   Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. (MS-LS4-6)

SC.7:6   **Students will demonstrate understanding of how scientists and engineers work together to better the world.**

SC.7:6-1   Design scientific solutions to everyday problems. (MS-ET1-1)

SC.7:6-2   Communicate scientific solutions to everyday problems. (MS-ET1-1)

SC.7:6-3   Evaluate different solutions for their effectiveness in solving a problem. (MS-ETS1-2)

SC.7:6-4   Refine scientific solutions based off of observations and data collected from investigations.