Chicago Ridge District 127.5
7th Grade Science Scope and Sequence

Unit	Disciplinary Core Ideas	Performance Expectations	SEP	CCC
MS.Growth, Development, and Reproduction of Organisms Unit 1: Traits Unit 4: Genes Unit 5: Changes in Genes	**LS1.B: Growth and Development of Organisms** (MS-LS1-4), (MS-LS1-4), (MS-LS1-5), (secondary to MS-LS3-2) **LS3.A: Inheritance of Traits** (MS-LS3-1), (MS-LS3-2) **LS3.B: Variation of Traits** (MS-LS3-2), (MS-LS3-1) **LS4.B: Natural Selection** (MS-LS4-5)	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-LS1-4 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. MS-LS1-5 Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. MS-LS3-1 Develop and use a model to describe why asexual reproduction results in	**Developing and Using Models** (MS-LS3-1), (MS-LS3-2) **Constructing Explanations and Designing Solutions** (MS-LS1-5) **Engaging in Argument from Evidence** (MS-LS1-4) **Obtaining, Evaluating, and Communicating Information** (MS-LS4-5)	**Cause and Effect** (MS-LS3-2), (MS-LS1-4), (MS-LS1-5), (MS-LS4-5) **Structure and Function** (MS-LS3-1) **Interdependence of Science, Engineering, and Technology** (MS-LS4-5) **Science Addresses Questions About the Natural and Material World** (MS-LS4-5)

		offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. MS-LS3-2 Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. MS-LS4-5		
Unit	**Disciplinary Core Ideas**	**Performance Expectations**	**SEP**	**CCC**
MS. Structure, Function, and Information Processing Unit 2: Bodies Unit 3: Cells	**LS1.A: Structure and Function** (MS-LS1-1), (MS-LS1-2), (MS-LS1-3) **LS1.D: Information Processing** (MS-LS1-8)	Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-1 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. MS-LS1-2 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. MS-LS1-3 Gather and synthesize information that sensory	**Developing and Using Models** (MS-LS1-2) **Planning and Carrying Out Investigations** (MS-LS1-1) **Engaging in Argument from Evidence** (MS-LS1-3) **Obtaining, Evaluating, and Communicating Information** (MS-LS1-8)	**Cause and Effect** (MS-LS1-8) **Scale, Proportion, and Quantity** (MS-LS1-1) **Systems and System Models** (MS-LS1-3) **Structure and Function** (MS-LS1-2) **Interdependence of Science, Engineering, and Technology** (MS-LS1-1) **Science Is a Human Endeavor** (MS-LS1-3)

		receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. MS-LS1-8		
Unit	**Disciplinary Core Ideas**	**Performance Expectations**	**SEP**	**CCC**
MS. Waves and Electromagnetic Radiation Unit 1: Mechanical Waves Unit 2: Light Unit 3: Waves for Information Transfer	**PS4.A: Wave Properties** (MS-PS4-1), (MS-PS4-2) **PS4.B: Electromagnetic Radiation** (MS-PS4-2), (MS-PS4-2), (MS-PS4-2), (MS-PS4-2) **PS4.C: Information Technologies and Instrumentation** (MS-PS4-3)	Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. MS-PS4-1 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-PS4-2 Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals. MS-PS4-3	**Developing and Using Models** (MS-PS4-2) **Using Mathematics and Computational Thinking** (MS-PS4-1) **Obtaining, Evaluating, and Communicating Information** (MS-PS4-3) **Science Knowledge Is Based on Empirical Evidence** (MS-PS4-1)	**Patterns** (MS-PS4-1) **Structure and Function** (MS-PS4-2), (MS-PS4-3) **Influence of Science, Engineering, and Technology on Society and the Natural World** (MS-PS4-3) **Science Is a Human Endeavor** (MS-PS4-3)
Unit	**Disciplinary Core Ideas**	**Performance Expectations**	**SEP**	**CCC**
MS. Space Systems Unit 2: The Solar System	**ESS1.A: The Universe and Its Stars** (MS-ESS1-1). (MS-ESS1-2)	Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and	**Developing and Using Models** (MS-ESS1-1), (MS-ESS1-2) **Analyzing and Interpreting**	**Patterns** (MS-ESS1-1) **Scale, Proportion, and Quantity**

Unit 3: The Solar System and Beyond	**ESS1.B: Earth and the Solar System**. (MS-ESS1-2), (MS-ESS1-3), (MS-ESS1-1), (MS-ESS1-2)	moon, and seasons. MS-ESS1-1 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. MS-ESS1-2 Analyze and interpret data to determine scale properties of objects in the solar system. MS-ESS1-3	**Data** (MS-ESS1-3)	(MS-ESS1-3) **Systems and System Models** (MS-ESS1-2) **Interdependence of Science, Engineering, and Technology** (MS-ESS1-3) **Scientific Knowledge Assumes an Order and Consistency in Natural Systems** (MS-ESS1-1), (MS-ESS1-2)
Unit	**Disciplinary Core Ideas**	**Performance Expectations**	**SEP**	**CCC**
MS. Earth's Systems Unit 1: The Earth-Sun-Moon System	**ESS2.A: Earth Materials and Systems** (MS-ESS2-1) **ESS2.C: The Roles of Water in Earth's Surface Processes** (MS-ESS2-4), (MS-ESS2-4) **ESS3.A: Natural Resource** (MS-ESS3-1)	Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. MS-ESS2-1 Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. MS-ESS2-4 Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are	**Developing and Using Models** (MS-ESS2-1), (MS-ESS2-4) **Constructing Explanations and Designing Solutions** (MS-ESS3-1)	**Cause and Effect** (MS-ESS3-1) **Energy and Matter** (MS-ESS2-4), (MS-ESS2-1) **Influence of Science, Engineering, and Technology on Society and the Natural World**. (MS-ESS3-1)

		the result of past and current geoscience processes. MS-ESS3-1		