Scope and Sequence for Science Grade 8
2026-2027

Unit Title	Performance Expectations
Unit One: *Genes and Molecular Machines* 8/24/2026 – 11/20/2026 **60 Instructional Periods**	**3.1.6-8.A**: Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells. **3.1.6-8.B**: Develop and use a model to describe the function of a cell as a whole and the ways that parts of cells contribute to the function. **3.1.6-8.D**: Use arguments 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. **3.1.6-8.N:** 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. **3.1.6-8.M:** 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. **3.1.6-8.R:** Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. **3.1.6-8.S:** Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. **3.1.6-8.T:** Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.
Unit Two: *Electricity Waves and Information Transfer* 11/23/2026 – 3/6/2027 **60 Instructional Periods**	**3.2.6-8.I**: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. **3.2.6-8.K**: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. **3.2.6-8.M**: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. **3.2.6-8.N:** Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. **3.2.6-8.O:** Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. **3.2.6-8.Q:** 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. **3.2.6-8.R**: Develop and use a model to describe how waves are reflected, absorbed, or transmitted through various materials. **3.2.6-8.S:** 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. **3.1.6-8.H:** Gather and synthesize information about how sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
Unit Three: *Space Systems Exploration* **60 Instructional Periods** 3/5/2027 – 6/4/2027	**3.3.6-8.A**: Develop and use a model of the Earth sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. **3.3.6-8.B**: Develop and use a model to describe the role of gravity in the motion within galaxies and the solar system. **3.3.6-8.C:** Analyze and interpret data to determine scale properties of objects in the solar system. **3.2.6-8.J:** Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

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