Eighth Grade Science of the Physical World
Curriculum Map 2026-2027

FIRST SEMESTER			SECOND SEMESTER			
UNIT 1	**UNIT 2**	**UNIT 3**	**UNIT 3**	**UNIT 4**	**UNIT 5**	**Capstone**
Matter	***Energy***	***Motion***		***Waves***	***Force***	***Culminating Capstone Unit***
GMAS WEIGHT: 28%	***GMAS WEIGHT: 18%***	***GMAS WEIGHT: 15%***		***GMAS WEIGHT: 24%***	***GMAS WEIGHT: 15%***	
10 Weeks	***5 Weeks***	***6 Weeks***		***6 Weeks***	***5 Weeks***	***4 Weeks***
Unit Dates 8/3/2026-10/16/2026	**Unit Dates** 10/19/2026-11/20/2026	**Unit Dates** 11/30/2026-1/22/2027		**Unit Dates** 1/25/2027-3/12/2027	**Unit Dates** 3/16/2027-4/23/2027	**Unit Dates** 4/26/2027-5/21/2027
ASSESSMENT WINDOW						
10/13-10/16	**11/16-11/20**	**1/19-1/22**		**3/8-3/12**	**4/19-4/23**	**All standards** The days in this unit include days for GMAS review and testing
Standards	**Standards**	**Standards**	**Standards**	**Standards**	**Standards**	
S8P1a S8P1b S8P1c S8P1d S8P1e S8P1f	S8P2a S8P2b S8P2c S8P2d	S8P3a S8P3b S8P3c	S8P3a S8P3b S8P3c	S8P4a S8P4b S8P4c S8P4d S8P4e S8P4f S8P4g	S8P5a S8P5b S8P5c	

Updated 5/1/2026

First Semester		
Unit 1 – Matter **GMAS Weight: 28%**	**Unit 2 – Energy** **GMAS Weight: 18%**	**Unit 3 – Motion** **GMAS Weight: 15%**
S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter. a. Develop and use a model to compare and contrast pure substances (elements and compounds) and mixtures. (Clarification statement: Include heterogeneous and homogeneous mixtures. Types of bonds and compounds will be addressed in high school physical science.) b. Develop and use models to describe the movement of particles in solids, liquids, gases, and plasma states when thermal energy is added or removed. c. Plan and carry out investigations to compare and contrast chemical (i.e., reactivity, combustibility) and physical (i.e., density, melting point, boiling point) properties of matter. d. Construct an argument based on observational evidence to support the claim that when a change in a substance occurs, it can be classified as either chemical or physical. (Clarification statement: Evidence could include ability to separate mixtures, development of a gas, formation of a precipitate, change in energy, color, and/or form.) e. Develop models (e.g., atomic-level models, including drawings, and computer representations) by analyzing patterns within the periodic table that illustrate the structure, composition, and characteristics of atoms (protons, neutrons, and electrons) and simple molecules. f. Construct an explanation based on evidence to describe conservation of matter in a chemical reaction, including the resulting differences between products and reactants. (Clarification statement: Evidence could include models such as balanced chemical equations.)	**S8P2. Obtain, evaluate, and communicate information about the law of conservation of energy to develop arguments that energy can transform from one form to another within a system.** a. Analyze and interpret data to create graphical displays that illustrate the relationships of kinetic energy to mass and speed, and potential energy to mass and height of an object. b. Plan and carry out an investigation to explain the transformation between kinetic and potential energy within a system (e.g., roller coasters, pendulums, rubber bands, etc.). c. Construct an argument to support a claim about the type of energy transformations within a system [e.g., lighting a match (light to heat), turning on a light (electrical to light)]. d. Plan and carry out investigations on the effects of heat transfer on molecular motion as it relates to the collision of atoms (conduction), through space (radiation), or in currents in a liquid or a gas (convection).	**S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.** a. Analyze and interpret data to identify patterns in the relationships between speed and distance, and velocity and acceleration. (Clarification statement: Students should be able to analyze motion graphs, but students should not be expected to calculate velocity or acceleration.) b. Construct an explanation using Newton's Laws of Motion to describe the effects of balanced and unbalanced forces on the motion of an object. c. Construct an argument from evidence to support the claim that the amount of force needed to accelerate an object is proportional to its mass (inertia).

Second Semester		
Unit 3 – Motion **GMAS Weight: 15%**	**Unit 4 – Waves** **GMAS Weight: 24%**	**Unit 5 – Force** **GMAS Weight: 15%**
S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects. a. Analyze and interpret data to identify patterns in the relationships between speed and distance, and velocity and acceleration. (Clarification statement: Students should be able to analyze motion graphs, but students should not be expected to calculate velocity or acceleration.) b. Construct an explanation using Newton's Laws of Motion to describe the effects of balanced and unbalanced forces on the motion of an object. c. Construct an argument from evidence to support the claim that the amount of force needed to accelerate an object is proportional to its mass (inertia).	**S8P4. Obtain, evaluate, and communicate information to support the claim that electromagnetic (light) waves behave differently than mechanical (sound) waves.** a. Ask questions to develop explanations about the similarities and differences between electromagnetic and mechanical waves. (Clarification statement: Include transverse and longitudinal waves and wave parts such as crest, trough, compressions, and rarefactions.) b. Construct an explanation using data to illustrate the relationship between the electromagnetic spectrum and energy. c. Design a device to illustrate practical applications of the electromagnetic spectrum (e.g., communication, medical, military). d. Develop and use a model to compare and contrast how light and soundwaves are reflected, refracted, absorbed, diffracted or transmitted through various materials. (Clarification statement: Include echo and how color is seen but do not cover interference and scattering.) e. Analyze and interpret data to predict patterns in the relationship between density of media and wave behavior (i.e., speed). f. Develop and use a model (e.g., simulations, graphs, illustrations) to predict and describe the relationships between wave properties (e.g., frequency, amplitude, and wavelength) and energy. g. Develop and use models to demonstrate the effects that lenses have on light (i.e., formation an image) and their possible technological applications.	**S8P5. Obtain, evaluate, and communicate information about gravity, electricity, and magnetism as major forces acting in nature.** a. Construct an argument using evidence to support the claim that fields (i.e., magnetic fields, gravitational fields, and electric fields) exist between objects exerting forces on each other even when the objects are not in contact. b. Plan and carry out investigations to demonstrate the distribution of charge in conductors and insulators. (Clarification statement: Include conduction, induction, and friction.) c. Plan and carry out investigations to identify the factors (e.g., distance between objects, magnetic force produced by an electromagnet with varying number of wire turns, varying number or size of dry cells, and varying size of iron core) that affect the strength of electric and magnetic forces. (Clarification statement: Including, but not limited to, generators or motors.)