TRMS 2026-2027 8th Grade Science
Syllabus and Pacing Guide
Mrs. Brooke Holland

Unit Topics	Timeline	Curriculum Resource	Major Concepts
Topic 1: Modeling Matter	1st Semester	• Savvas: Elevate Science- Topic 1	• 8.PS1.1 - Use a model to understand that atoms are a system composed of a positively charged nucleus surrounded by one or more negatively charged particles called electrons. (Lesson 1) • 8.PS1.2 - Develop a model to explain how the light coming from distant stars and the formation of heavier atoms is the result of changes in the composition of the nucleus of the atom and the energy released during the process of nuclear fusion. (Lesson 2)
Topic 2: Electricity and Magnetism	1st Semester	• Savvas: Elevate Science- Topic 2 • McGraw-Hill: Tennessee Integrated iScience o Chapters 3 and 4	• 8.PS2.1 - Conduct an investigation to provide evidence that the size of force fields (electric and magnetic) depends on the magnitudes of the charges, current, or magnetic strengths involved and the distances between interacting objects. (Lesson 1&2) • 8.PS2.2 - Ask scientific questions about data to determine how manipulating variables can increase or diminish the electric current and magnetic field strength in electromagnets, generators, and electric motors.(Lesson 3) • 8.PS2.3- Construct an argument using evidence to support the claim that gravitational interactions in a large-scale system (e.g., galaxies and solar system) are attractive and depend on the masses of and distance between interacting objects. (Lesson 4) • 8.ETS1.1 - Use a model of a device that incorporates an electromagnet to test solutions to a design problem with specific criteria and constraints. (Lesson 3)
Topic 3: Force and Motion	1st Semester	• Savvas: Elevate Science- Topic 3	• 8.PS2.4 - Construct an explanation to describe why the position and motion of object(s) in a system, and the effects of forces on those objects, vary with respect to the observer. (Lesson 1)

		• McGraw-Hill: Tennessee Integrated iScience o Chapters 1 and 2	• 8.PS2.5 - Plan and conduct an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.(Lesson 2) • 8.PS2.6 - Evaluate and interpret that for every force exerted on an object there is an equal force exerted in the opposite direction. (Lesson 3)
CASE 1 Benchmark: Cumulative Assessment (Sept. 29th - Oct.7th) All content covered to this point will be assessed.			
Topics	**Timeline**	**Curriculum Resource**	**Major Concepts**
Topic 4: Mechanical and Electromagnetic Waves	1st Semester	• Savvas: Elevate Science- Topic 4 • McGraw-Hill: Tennessee Integrated iScience o Chapters 5, 6, 7 and 8	• 8.PS4.1- Develop and use models to represent the basic properties of waves including frequency, amplitude, wavelength, and speed. (Lesson 1) • 8.PS4.2- Construct explanations from observed patterns of wave behaviors to compare and contrast mechanical waves and electromagnetic waves based on refraction, reflection, transmission, absorption, and their behavior through a vacuum and/or various media. (Lesson 2&3) • 8.PS4.3 - Engage in argument from evidence to support the claim that digitized signals, sent as wave pulses, are more reliable than analog signals to transmit information in a system. (Lesson 4)
Topic 5: Changes in Life Forms	1st Semester	• Savvas: Elevate Science- Topic 5 • McGraw-Hill: Tennessee Integrated iScience o Chapter 15	• 8.LS4.1 - Using evidence from the geologic timescale, analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change in life forms throughout Earth's history. (Lesson 1) • 8.LS4.2 - Construct an explanation addressing similarities and differences of the anatomical structures and genetic information between extinct and extant organisms using evidence of common ancestry and patterns between taxa. (Lesson 2)

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Topic 6: Natural Selection and Adaptations	1st Semester	• Savvas: Elevate Science- Topic 6 • McGraw-Hill: Tennessee Integrated iScience ○ Chapter 16	• 8.LS4.3 - Construct an explanation based on evidence that explains how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing.(Lesson 1) • 8.LS4.4 - Develop a scientific explanation of how natural selection plays a role in determining the survival of a species in a changing environment. (Lesson 2) • 8.LS4.5- Obtain, evaluate, and communicate information about the technologies that have changed the way humans use artificial selection to influence the inheritance of desired traits in other organisms. (Lesson 3)
CASE 2 Benchmark: Cumulative Assessment (Jan. 12th – Jan. 22nd) All content covered to this point will be assessed.			
Topic 7: The Universe	2nd Semester	• Savvas: Elevate Science Topic 7 • McGraw-Hill: Tennessee Integrated iScience ○ Chapters 9, 10 and 11	• 8.ESS1.1 - Research, analyze, and communicate that the universe began with a period of rapid expansion using evidence from the motion of galaxies (i.e., redshift and blueshift), elemental concentrations of hydrogen and helium, and cosmic background radiation. (Lesson 2) • 8.ETS2.1 - Analyze and interpret data to support the assertion that rapid or gradual geographic changes lead to drastic population changes and extinction events. (Lesson 1)
Topic 8: Earth's Systems	2nd Semester	• Savvas: Elevate Science Topic 8 • McGraw-Hill: Tennessee Integrated iScience ○ Chapters 12, 13, 14, 15 and 16	• 8.ESS2.1- Analyze and interpret data to support the assertion that rapid or gradual geographic changes lead to drastic population changes and extinction events. (Lesson 4) • 8.ESS2.2- Evaluate data collected from seismographs to create a model of Earth's structure and to understand how energy is derived from Earth's hot interior. (Lesson 1) • 8.ESS2.3- Gather and evaluate evidence that energy from the earth's interior drives convection cycles within the asthenosphere which creates changes within the lithosphere

			including plate movements, plate boundaries, and sea-floor spreading. (Lesson 3) • 8.ESS2.4- Construct a scientific explanation using data that explains the gradual process of plate tectonics accounting for (a) the distribution of fossils on different continents, and (b) continental and ocean floor features (i.e., mountains, volcanoes, faults, and trenches). (Lesson 2)
Topic	**Timeline**	**Curriculum Resource**	**Major Concepts**
Topic 9: Natural Hazards	2nd Semester	• Savvas: Elevate Science Topic 9	• 8.ESS3.1-Interpret data to explain that Earth's mineral, fossil fuel and groundwater resources are unevenly distributed as a result of geologic processes. (Lesson 1&2) • 8.ETS2.1- Research and communicate information to describe how data from technologies (e.g., telescopes, satellites, space probes, seismographs) provide information about Earth and objects in space and how those scientific discoveries have in turn led to improved technologies.
CASE 3 Benchmark: Final Comprehensive Assessment (Mar. 9th – Mar. 25th) All content will be assessed.			