



**8th Grade Science/STEM
Year at a Glance (YAG)
2023-2024**



GT Modification

First Semester

1 st Nine Weeks – 43 days (August 15 th – October 12 th) (September 5 th – Labor day – No School) (October 10 th – Staff Development)		2 nd Nine Weeks – 40 days (October 13 th – December 16 th) (November 21 st – 25 th – Thanksgiving Break) (December 19 th – January 2 nd – Holiday Break)	
TEKS		TEKS	
8.1-8.4 Processing TEKS	<p>Scientific Investigation, Reasoning, and Safety (5 days) During this week, students will demonstrate safe practices during laboratory and field and practice appropriate use and conservation of resources. Students will use appropriate tools, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectroscopes, timing devices, and other necessary equipment to collect, record, and analyze information. Students will also review the use of preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>	8.5A, 8.5B, 8.5C, & 8.5E	<p>Matter & Energy (40 days) This unit starts off with an expectation that students describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud. Next, students will need to identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity.</p> <p>This unit bundles student expectations that require students to interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements. During this unit, students will also need to recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts. Heavy emphasis will also be on investigating how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass. In addition, 6th grade science TEKS are spiraled in during this unit to support the learning. These spiraled TEKS include asking students to distinguish between physical and chemical changes in matter, compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability, and asking students to calculate density to identify an unknown substance.</p>
8.7A, 8.7B, 8.7C	<p>Earth & Space (19 days) During this bundled unit, students will model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons. Students will also need to demonstrate and predict the sequence of events in the lunar cycle. Lastly, students will relate the positions of the Moon and Sun to their effect on ocean tides.</p>		
8.8A, 8.8B, 8.8C, 8.8D*	<p>Earth & Space (19 days) During this bundled unit, students will describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification. Students should be able to recognize that the Sun is a medium-sized star located in a spiral arm of the Milky Way galaxy and that the Sun is many thousands of times closer to Earth than any other star. In addition, students will need to be able to identify how different wavelengths of the electromagnetic spectrum such as visible light and radio waves are used to gain information about components in the universe. During this unit, TEKS that spiral from the previous 6th grade level includes the ability for students to understand that gravity is the force that governs the motion of our solar system. *It is important to note that 8.8D "students will research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe" is not a STAAR accessed part of this curriculum.</p>		



**8th Grade Science/STEM
Year at a Glance (YAG)
2023-2024**



Second Semester

<p>3rd Nine Weeks – 47 days (January 3rd – March 10th) (January 16th – MLK – No School) (February 20th Staff Development -Presidents Day) (March 13th – 17th – Spring Break)</p>		<p>4th Nine Weeks – 45 days (March 21st – May 24th) (April 7th – Good Friday – No School) (April 15th – Battle of Flowers – No School)</p>	
<p>TEKS</p> <p>8.6A, 8.6B, & 8.6C</p>	<p>Force, Motion, & Energy (23 days) This unit bundles student expectations that focus on demonstrating and calculating how unbalanced forces change the speed or direction of an object’s motion. This unit also emphasizes the student’s ability to differentiate between speed, velocity, and acceleration. In addition, 6th and 7th grade science TEKS are spiraled in during this unit to support the learning. These spiraled TEKS include asking students to compare and contrast potential and kinetic energy, calculate average speed using distance and time measurements, measure and graph changes in motion, and demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy. During this unit, students will revisit unbalanced forces as they investigate and describe applications of Newton’s three laws of motion such as in vehicle restraints, sports activities, amusement park rides, Earth’s tectonic activities, and rocket launches.</p>	<p>TEKS</p> <p>8.10A, 8.10B, 8.10C</p>	<p>Earth & Space (9 days) This unit bundles student expectations related to atmospheric and ocean movement. During this unit, students are asked to recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds. Students will also need to identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts. Students will need to identify the role of the oceans in the formation of weather systems such as hurricanes. During this unit, TEKS that spiral from the previous 7th grade science course include modeling the effects of human activity on groundwater and surface water in a watershed.</p>
<p>8.9A, 8.9B, 8.9C</p>	<p>Earth & Space (24 days) This unit asks students to relate plate tectonics to the formation of crustal features. In addition, students should interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering. During this time, students should describe the historical development of evidence that supports plate tectonic theory. It’s important to know that these topics spiral from previous TEKS in 6th and 7th grade science.</p>	<p>8.11A, 8.11B, 8.11C</p>	<p>Organisms & Environments (18 days) This unit bundles student expectations that address environmental interactions. Students will investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as quantity of light, water, range of temperatures, or soil composition. In addition, students will explore how short- and long-term environmental changes affect organisms and traits in subsequent populations. Students should also recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems. It’s important to know that the topics above along with a number of additional supporting TEKS from 6th and 7th grade science have been spiraled in from elementary school and previous middle school grade levels. We often review these during our STAAR Review.</p> <p>STAAR Review & STAAR Testing (10 days of review, 4 additional days set aside for testing) During these two weeks, teachers design thoughtful review warm-ups/exits, stations, and review resources for students to prepare for exams during school hours and at home. An emphasis is on readiness standards. Supporting standards, especially those spiraled into the curriculum from 6th and 7th grade science are also highlighted during our review.</p> <p>Finals Week/Enrichment (4 days) During finals week, study time is provided for students who need to take End of Course exams. Those not taking exams will participate in enrichment lessons and activities focused on topics ranging from next year preparation to Genius Hour presentations.</p>