



**8th Grade Science/STEM  
Year at a Glance (YAG)  
2024-2025**



GT Modification

First Semester

1 <sup>st</sup> Nine Weeks – 45 days (August 12 <sup>th</sup> – October 16 <sup>th</sup> ) (September 2 <sup>nd</sup> – School Holiday) (October 11 <sup>th</sup> – Teacher Workday/Student Holiday) (October 14 <sup>th</sup> – School Holiday)		2 <sup>nd</sup> Nine Weeks – 42 days (October 17 <sup>th</sup> – December 20 <sup>th</sup> ) (November 25 <sup>th</sup> – 29 <sup>th</sup> – Fall Break) (December 23 <sup>rd</sup> – January 3 <sup>rd</sup> – Winter Holiday Break) (January 6 <sup>th</sup> – Teacher Workday/Student Holiday)	
<b>TEKS</b>		<b>TEKS</b>	
8.1A, 8.1C, 8.1D, 8.1E	<p><b>Scientific &amp; Engineering Practices (10 days)</b></p> <p>During this introductory unit, students will ask questions, plan and conduct investigations to answer questions, and explain phenomena using tools and models. Students will review the use of appropriate safety equipment and practices during laboratory, classroom, and field investigations. During these initial weeks students will also collect quantitative data using the International System of Units (SI) and qualitative data and will use review the use of tools such as graduated cylinders, metric rulers, balances, scales, thermometers, temperature probes, laboratory ware, timing devices, spring scales, hand lenses, and will set up lab notebooks/journals to be used throughout the school year.</p>	8.7A, 8.7B	<p><b>Newton’s Laws &amp; F=ma (15 days)</b></p> <p>This new semester starts with students calculating and analyzing how the acceleration of an object is dependent upon the net force acting on the object and the mass of the object using Newton's Second Law of Motion; and investigating and describing how Newton's three laws of motion act simultaneously within systems such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.</p>
8.6A, 8.6D	<p><b>Classification of Matter (17 days)</b></p> <p>This unit starts off with students explaining by modeling how matter is classified as elements, compounds, homogeneous mixtures, or heterogeneous mixtures. Students will then use the periodic table to identify the atoms involved in chemical reactions.</p>	8.8A, 8.8B	<p><b>Energy and Waves (10 days)</b></p> <p>This unit asks students to compare the characteristics of amplitude, frequency, and wavelength in transverse waves, including the electromagnetic spectrum; and explain the use of electromagnetic waves in applications such as radiation therapy, wireless technologies, fiber optics, microwaves, ultraviolet sterilization, astronomical observations, and X-rays.</p>
8.6B, 8.6E	<p><b>Conservation of Mass (12 days)</b></p> <p>In this next section of the grading period, students will compare and contrast the properties of acids and bases, including pH relative to water. They will also investigate how mass is conserved in chemical reactions and relate conservation of mass to the rearrangement of atoms using chemical equations.</p>	8.9A, 8.9B, 8.9C	<p><b>Components of the Universe (10 days)</b></p> <p>This unit asks students to describe the life cycle of stars and compare and classify stars using the Hertzsprung-Russell diagram; categorize galaxies as spiral, elliptical, and irregular and locate Earth's solar system within the Milky Way galaxy; and research and analyze scientific data used as evidence to develop scientific theories that describe the origin of the universe.</p>
8.6C	<p><b>Adhesion, Cohesion, Surface Tension of Water (8 days)</b></p> <p>To wrap up the semester, students will describe the properties of cohesion, adhesion, and surface tension in water and relate to observable phenomena such as the formation of droplets, transport in plants, and insects walking on water.</p>		



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**Second Semester**

<b>3<sup>rd</sup> Nine Weeks – 41 days</b> (January 7 <sup>th</sup> – March 7 <sup>th</sup> ) (January 20 <sup>th</sup> – School Holiday) (February 14 <sup>th</sup> – Teacher Workday/Student Holiday) (February 17 <sup>th</sup> – Staff Development/Student Holiday) (March 10 <sup>th</sup> – 14 <sup>th</sup> – Spring Break)		<b>4<sup>th</sup> Nine Weeks – 46 days</b> (March 18 <sup>th</sup> – May 22 <sup>nd</sup> ) (March 17 <sup>th</sup> – Teacher Workday/Student Holiday) (April 18 <sup>th</sup> – School Holiday) (May 2 <sup>nd</sup> – School Holiday) (May 22 <sup>nd</sup> – Last Day of School)	
<b>TEKS</b>  8.10A, 8.10B, 8.10C   8.11A, 8.11.B, 8.11C	<p><b>Atmospheric and Ocean Movement (9 days)</b> This final unit of the grading period asks students to describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate; identify global patterns of atmospheric movement and how they influence local weather; and describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes.</p> <p><b>Global Influences on Climate (9 days)</b> This unit asks learners to use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gasses influence climate. Students will also need to use scientific evidence to describe how human activities, including the release of greenhouse gasses, deforestation, and urbanization, can influence climate; and describe the carbon cycle.</p>	<b>TEKS</b>  8.13A  8.13B, 8.13C  8.12A-C	<p><b>Cellular Functions (9 days)</b> In our first content-related unit of the school year, students are expected to identify the function of the cell membrane, cell wall, nucleus, ribosomes, cytoplasm, mitochondria, chloroplasts, and vacuoles in plant or animal cells.</p> <p><b>Genes and Chromosomes (14 days)</b> During this unit, students will describe the function of genes within chromosomes in determining inherited traits of offspring. Students will also describe how variations of traits within a population lead to structural, behavioral, and physiological adaptations that influence the likelihood of survival and reproductive success of a species over generations.</p> <p><b>Organisms and Environments (13 days)</b> During this unit, students will explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems. Students will also describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity. Lastly, students will describe how biodiversity contributes to the stability and sustainability of an ecosystem and the health of the organisms within the ecosystem.</p> <p><b>STAAR Review &amp; STAAR Testing (9 days of review, 9 additional days set aside for testing)</b> 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 6<sup>th</sup> and 7<sup>th</sup> grade science are also highlighted during our review.</p> <p><b>Biology Prep/Other (14 days)</b> 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>