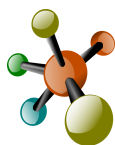


Seventh Grade Science Syllabus

This phenomena-based course is intended to inspire students to use **Recurring Themes and Concepts (RTCs)** to expand their knowledge and understanding of science in our world. Students will be using **Scientific and Engineering Practices (SEPs)** to analyze, evaluate and communicate scientific concepts identified in the **Texas Essential Knowledge and Skills (TEKS)**.



Matter and Energy (approximately 15 instructional days)

Activities in this unit focus on the understanding that matter can be classified according to its properties and matter is conserved in chemical changes that occur within closed systems. Major topics include differentiating between compounds and elements, periodic table trends, chemical and physical changes in matter, interpreting the concentration and dilution of aqueous solutions and factors influencing dissolution rate (temperature, surface area, and agitation) and the significance of concentration in aqueous solutions. This unit culminates with a performance assessment where students will design an experiment that would justify why specific properties are required for elements and compounds utilized in industry.



Force Motion and Energy (approximately 23 instructional days)

Activities in this unit focus on rationalizing how forces of motion and energy can impact decisions in everyday society. Major topics include calculating and graphing the average speed, differentiating between speed and velocity, analyzing the effect of balanced and unbalanced forces, investigating methods of thermal energy transfer (conduction, convection, and radiation), the relationship between temperature and the kinetic energy of particles within a substance. This unit concludes with a performance assessment where students will create an amusement park ride that relates to force and motion and thermal and kinetic energy.



Earth and Space (approximately 31 instructional days)

Activities in this unit focus on characteristic components of our solar system, cause and effects of plate tectonics, and human activities impact on Earth's hydrosphere. Major topics include the sun, planets, moons, comets, law of gravity, law of superposition, plate tectonics cause and effects, fossil evidence, and how human activity can impact several water sources. This unit concludes with a performance assessment where students culminate their knowledge of Earth by designing a mission to explore exoplanets as potential future habitable planets.



Organisms and Environment(approximately 45 instructional days)

Activities in this unit focus on the cycling of matter and flow of energy, the organization of systems and how they function to support the health of an organism, and how the taxonomic system is used to describe relationships between organisms. Major topics include the flow of energy within trophic levels, the human body systems, levels of organization, asexual and sexual reproduction, natural and artificial selection, activities that affect populations and classification of organisms. This unit concludes with a performance assessment where students culminate their knowledge by creating a report that summarizes their findings on their argument for or against a claim.