

**Expedition Mars  
Mission TEKS**



**Matter and Energy**

<b>5.5A</b>	Classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy
<b>5.5D</b>	Identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water
<b>7.6A</b>	Identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur

**Force and Motion**

<b>8.5E</b>	Investigate how evidence of chemical reactions indicate that new substances with different properties are formed
<b>3.6B</b>	Demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons.
<b>5.6C</b>	Demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water
<b>5.6 D</b>	Design an experiment that tests the effect of force on an object
<b>6.8A</b>	Compare and contrast potential and kinetic energy
<b>6.8C</b>	Calculate average speed using distance and time measurements
<b>8.6A</b>	Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion
<b>8.6B</b>	Differentiate between speed, velocity, and acceleration
<b>8.6C</b>	Investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches

**Earth and Space**

<b>4.7A SS</b>	Examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants
<b>4.7C</b>	Identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation
<b>4.8B</b>	Describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process

<b>4.8C</b>	Collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time
<b>5.7B</b>	Recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice
<b>5.8A</b>	Differentiate between weather and climate
<b>5.8C</b>	Demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky
<b>5.8D</b>	Identify and compare the physical characteristics of the Sun, Earth, and Moon
<b>6.11B</b>	Understand that gravity is the force that governs the motion of our solar system
<b>8.7A</b>	Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons
<b>8.8C</b>	Explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe
<b>8.8D</b>	Model and describe how light years are used to measure distances and sizes in the universe
<b>8.9B</b>	Relate plate tectonics to the formation of crustal features
<b>8.9C</b>	Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.
<b>8.10A</b>	Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents
<b>8.10B</b>	Identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts

## **Organisms and Environments**

<b>3.9A</b>	Observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem
<b>5.9A</b>	Observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements
<b>7.10B</b>	Describe how biodiversity contributes to the sustainability of an ecosystem
<b>7.12B</b>	Identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems
<b>8.11B</b>	Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition
<b>8.11C</b>	Explore how short-and long-term environmental changes affect organisms and traits in subsequent populations

## Process Skills

<b>5.1A</b>	Demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations
<b>5.1B</b>	Make informed choices in the conservation, disposal, and recycling of mat
<b>5.2A</b>	Describe, plan, and implement simple experimental investigations testing one variable
<b>5.2B</b>	Ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology
<b>5.2C</b>	Collect information by detailed observations and accurate measuring
<b>5.2D</b>	Analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred)
<b>5.2E</b>	Demonstrate that repeated investigations may increase the reliability of
<b>5.2F</b>	Communicate valid conclusions in both written and verbal forms
<b>5.2G</b>	Construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information
<b>5.3A</b>	In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;
<b>5.3D</b>	Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists
<b>5.4A</b>	Collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, pan balances, triple beam balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observations of habitats or organisms such as terrariums and aquariums;
<b>5.4B</b>	Collect, record, and analyze use safety equipment, including safety goggles and gloves.
<b>8.1A</b>	Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards
<b>8.1B</b>	Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials
<b>8.2A</b>	Plan and implement comparative and descriptive investigations by making observations, asking well- defined questions, and using appropriate equipment and technology
<b>8.2B</b>	Design and implement comparative and experimental investigations by making observations, asking well- defined questions, formulating testable hypotheses, and using appropriate equipment and technology

<b>8.2C</b>	Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers
<b>8.2D</b>	Construct tables and graphs, using repeated trials and means, to organize data and identify patterns
<b>8.2E</b>	Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends
<b>8.3A</b>	In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student
<b>8.3B</b>	Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature
<b>8.3C</b>	Identify advantages and limitations of models such as size, scale, properties, and materials
<b>8.3D</b>	Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content
<b>8.4A</b>	Use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrosopes, timing devices, and other equipment as needed to teach the curriculum
<b>8.4B</b>	Use 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

