

## 8<sup>th</sup> Grade TEKS Year-at-a-Glance

*This year-at-a-glance is designed to cover 150 school days. Use your local guidelines to determine how to address the standards in the time you have.*

### **Unit 0: Back-to-School (5 days)**

### **Unit 1: Properties of Matter (17 days)**

- 8.6A - Modeling Matter
- 8.6C - Properties of Water
- 8.6D - Properties of Acids & Bases

### **Unit 2: Chemical Reactions (17 days)**

- 8.6B - Periodic Table & Reactions
- 8.6E - Conservation in Reactions

### **Unit 3: Newton's Laws (15 days)**

- 8.7A - Newton's Second Law of Motion
- 8.7B - Laws of Motion in Systems

### **Unit 4: Waves (11 days)**

- 8.8A - Transverse Waves
- 8.8B - Electromagnetic Waves

### **Unit 5: Space (12 days)**

- 8.9A - Classifying Stars
- 8.9B - Categorizing Galaxies
- 8.9C - Origins of the Universe

### **Unit 6: Weather (15 days)**

- 8.10A - Energy from the Sun
- 8.10B - Atmospheric Movement
- 8.10C - Tropical Storms

### **Unit 7: Cells (7 days)**

- 8.13A - Cell Organelles

### **Unit 8: Genetics (11 days)**

- 8.13B - Genes
- 8.13C - Adaptations for Survival

### **Unit 9: Ecosystems (15 days)**

- 8.12A - Disruptions in Ecosystems
- 8.12B - Succession & Species Diversity
- 8.12C - Sustainability of an Ecosystem

### **Unit 10: Climate (15 days)**

- 8.11C - Describing the Carbon Cycle
- 8.11A - Natural Events & Climate
- 8.11B - Human Activities & Climate

### **Unit 11: Engineering Design (10 days)**

**Unit 0: Back-to-School**

We have several resources that can be used during the first week of class to engage students and build strong foundation skills. You can find these resources in the Beginning of the Year lesson collection.

- Back to School Escape Room
- Lab Safety Station Lab
- Lab Safety Escape Room
- Graphing Station Lab
- Graphing Escape Room
- Measurement Station Lab
- Measurement Escape Room
- Scientific Method Station Lab
- Scientific Method Escape Room
- Engineering Design Station Lab
- Engineering Design Escape Room

## Unit 1: Properties of Matter

### Content Standards:

- TEKS.8.6A - explain by modeling how matter is classified as elements, compounds, homogeneous mixtures, or heterogeneous mixtures
- TEKS.8.6C - 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
- TEKS.8.6D - compare and contrast the properties of acids and bases, including pH relative to water

### Suggested Recurring Themes:

- TEKS.8.5A - identify and apply patterns to understand and connect scientific phenomena or to design solutions
- TEKS.8.5E - analyze and explain how energy flows and matter cycles through systems and how energy and matter are conserved through a variety of systems

### Suggested Science and Engineering Practices:

- TEKS.8.1B - use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems
- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.2B - analyze data by identifying any significant descriptive statistical features, patterns, sources of error, or limitations

### Key Vocabulary

- matter
- element
- compound
- molecule
- pure substance
- heterogeneous mixture
- homogenous mixture
- solution
- cohesion
- adhesion
- surface tension
- capillary action
- pH scale
- indicator
- acid
- base

**Unit 1: Properties of Matter**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS.8.6A - Modeling Matter Engagement  TEKS.8.6A - Modeling Matter Station Labs - Input Stations	TEKS.8.6A - Modeling Matter Station Labs - Output Stations	TEKS.8.6A - Modeling Matter Presentation and INB	TEKS.8.6A - Modeling Matter Presentation and INB	TEKS.8.6A - Modeling Matter Assessment  TEKS.8.6C - Properties of Water Engagement
<b>Day 6</b>	<b>Day 7</b>	<b>Day 8</b>	<b>Day 9</b>	<b>Day 10</b>
TEKS.8.6C - Properties of Water Station Labs - Input Stations	TEKS.8.6C - Properties of Water Station Labs - Output Stations	TEKS.8.6C - Properties of Water Presentation and INB	TEKS.8.6C - Properties of Water Presentation and INB	TEKS.8.6C - Properties of Water Inquiry Lab
<b>Day 11</b>	<b>Day 12</b>	<b>Day 13</b>	<b>Day 14</b>	<b>Day 15</b>
TEKS.8.6C - Properties of Water Assessment  TEKS.8.6D - Properties of Acids and Bases Engagement	TEKS.8.6D - Properties of Acids and Bases Station Labs - Input Stations	TEKS.8.6D - Properties of Acids and Bases Station Labs - Output Stations	TEKS.8.6D - Properties of Acids and Bases Presentation and INB	TEKS.8.6D - Properties of Acids and Bases Presentation and INB
<b>Day 16</b>	<b>Day 17</b>			
TEKS.8.6D - Acids and Bases Inquiry Lab	TEKS.8.6D - Properties of Acids and Bases Assessment			

## Unit 2: Chemical Reactions

### Content Standards:

- TEKS.8.6B - use the periodic table to identify the atoms involved in chemical reactions
- TEKS.8.6E - investigate how mass is conserved in chemical reactions and relate conservation of mass to the rearrangement of atoms using chemical equations, including photosynthesis

### Suggested Recurring Themes:

- TEKS.8.5A - identify and apply patterns to understand and connect scientific phenomena or to design solutions
- TEKS.8.5E - analyze and explain how energy flows and matter cycles through systems and how energy and matter are conserved through a variety of systems

### Suggested Science and Engineering Practices:

- TEKS.8.1B - use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems
- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.3C - engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence

### Key Vocabulary

- periodic table
- atomic number
- periods
- groups
- atoms
- chemical reaction
- reactants
- products
- law of conservation of mass
- photosynthesis

## Unit 2: Chemical Reactions

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS.8.6B - Periodic Table & Reactivity Amazing Anchors Part 1  TEKS.8.6B - Periodic Table & Reactions Station Labs - Input Stations	TEKS.8.6B - Periodic Table & Reactions Station Labs - Output Stations	TEKS.8.6B - Periodic Table & Reactions Presentation and INB	TEKS.8.6B - Periodic Table & Reactions Presentation and INB  TEKS.8.6B - Periodic Table & Reactivity WIKI Ticket	TEKS.8.6B - Periodic Table & Reactivity Science Reading Comprehension Passage
Day 6	Day 7	Day 8	Day 9	Day 10
TEKS.8.6B - Periodic Table & Reactions Student Choice	TEKS.8.6B - Periodic Table & Reactions Student Choice	TEKS.8.6B - Periodic Table & Reactions Student Choice  TEKS.8.6B - Periodic Table & Reactivity Amazing Anchors Part 2	TEKS.8.6B - Periodic Table & Reactions Assessment	TEKS.8.6E - Conservation in Reactions Engagement  TEKS.8.6E - Counting Atoms & Elements Inquiry Lab
Day 11	Day 12	Day 13	Day 14	Day 15
TEKS.8.6E - Counting Atoms & Elements Inquiry Lab	TEKS.8.6E - Conservation in Reactions Presentation and INB	TEKS.8.6E - Conservation in Reactions Presentation and INB  TEKS.8.6E - Counting Atoms & Elements WIKI Ticket	TEKS.8.6E - Mass & Chemical Reactions Science Reading Comprehension Passage	TEKS.8.6E - Mass & Chemical Reactions Writing Prompt
Day 16	Day 17			
TEKS.8.6BE - Balancing Equations & Counting Atoms Escape Room	TEKS.8.6E - Conservation in Reactions Assessment			

### Unit 3: Newton's Laws

#### Content Standards:

- TEKS.8.7A - calculate and analyze 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
- TEKS.8.7B - investigate and describe 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

#### Suggested Recurring Themes:

- TEKS.8.5B - identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
- TEKS.8.5C - analyze how differences in scale, proportion, or quantity affect a system's structure or performance

#### Suggested Science and Engineering Practices:

- TEKS.8.1B - use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems
- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.1H - distinguish between scientific hypotheses, theories, and laws
- TEKS.8.2C - use mathematical calculations to assess quantitative relationships in data

#### Key Vocabulary

- acceleration
- mass
- velocity
- force
- net force
- motion
- inertia
- unbalanced forces
- simultaneously
- Newton's first law of motion
- Newton's second law of motion
- Newton's third law of motion

### Unit 3: Newton's Laws

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS.8.7A - Newton's Second Law Amazing Anchors Part 1  TEKS.8.7A - Newton's Second Law Inquiry Lab	TEKS.8.7A - Newton's Second Law Inquiry Lab	TEKS.8.7A - Newton's Second Law of Motion Presentation and INB	TEKS.8.7A - Newton's Second Law of Motion Presentation and INB  TEKS.8.7A - Newton's Second Law WIKI Ticket	TEKS.8.7A - Newton's Second Law Writing Prompt  TEKS.8.7A - Newton's Second Law Amazing Anchors Part 2
Day 6	Day 7	Day 8	Day 9	Day 10
TEKS.8.7A - Newton's Second Law of Motion Assessment	TEKS.8.7B - Laws of Motion in Systems Engagement  TEKS.8.7B - Laws of Motion in Systems Station Labs - Input Stations	TEKS.8.7B - Laws of Motion in Systems Station Labs - Output Stations	TEKS.8.7B - Laws of Motion in Systems Presentation and INB	TEKS.8.7B - Laws of Motion in Systems Presentation and INB
Day 11	Day 12	Day 13	Day 14	Day 15
TEKS.8.7B - Laws of Motion in Systems Student Choice	TEKS.8.7B - Laws of Motion in Systems Student Choice	TEKS.8.7B - Laws of Motion in Systems Student Choice	TEKS.8.7AB - Newton's Laws Escape Room	TEKS.8.7B - Laws of Motion in Systems Assessment



## Unit 4: Waves

### Content Standards:

- TEKS.8.8A - compare the characteristics of amplitude, frequency, and wavelength in transverse waves, including the electromagnetic spectrum
- TEKS.8.8B - explain the use of electromagnetic waves in applications such as radiation therapy, wireless technologies, fiber optics, microwaves, ultraviolet sterilization, astronomical observations, and X-rays

### Suggested Recurring Themes:

- TEKS.8.5A - identify and apply patterns to understand and connect scientific phenomena or to design solutions
- TEKS.8.5E - analyze and explain how energy flows and matter cycles through systems and how energy and matter are conserved through a variety of systems

### Suggested Science and Engineering Practices:

- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.2A - identify advantages and limitations of models such as their size, scale, properties, and materials
- TEKS.8.2C - use mathematical calculations to assess quantitative relationships in data
- TEKS.8.4A - relate the impact of past and current research on scientific thought and society, including the process of science, cost-benefit analysis, and contributions of diverse scientists as related to the content

### Key Vocabulary

- waves
- vibration
- mechanical waves
- longitudinal waves
- transverse waves
- crest
- trough
- amplitude
- wavelength
- frequency
- electromagnetic waves
- electromagnetic spectrum
- radio waves
- microwaves
- infrared radiation
- visible light
- ultraviolet radiation
- x-rays
- gamma rays

**Unit 4: Waves**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS.8.8A - Transverse Waves Engagement  TEKS.8.7A - Transverse Waves Station Labs - Input Stations	TEKS.8.8A - Transverse Waves Station Labs - Output Stations	TEKS.8.8A - Transverse Waves Presentation and INB	TEKS.8.8A - Transverse Waves Presentation and INB	TEKS.8.8A - Transverse Waves Assessment
<b>Day 6</b>	<b>Day 7</b>	<b>Day 8</b>	<b>Day 9</b>	<b>Day 10</b>
TEKS.8.8B - Electromagnetic Spectrum Amazing Anchors Part 1  TEKS.8.8B - Electromagnetic Waves Station Labs - Input Stations	TEKS.8.8B - Electromagnetic Waves Station Labs - Output Stations	TEKS.8.8B - Electromagnetic Waves Presentation and INB	TEKS.8.8B - Electromagnetic Waves Presentation and INB  TEKS.8.8B - Electromagnetic Spectrum Amazing Anchors Part 2	TEKS.8.8B - Electromagnetic Spectrum Science Reading Comprehension Passage
<b>Day 11</b>				
TEKS.8.8B - Electromagnetic Waves Assessment				

## Unit 5: Space

### Content Standards:

- TEKS.8.9A - describe the life cycle of stars and compare and classify stars using the Hertzsprung-Russell diagram
- TEKS.8.9B - categorize galaxies as spiral, elliptical, and irregular and locate Earth's solar system within the Milky Way galaxy
- TEKS.8.9C - research and analyze scientific data used as evidence to develop scientific theories that describe the origin of the universe

### Suggested Recurring Themes:

- TEKS.8.5A - identify and apply patterns to understand and connect scientific phenomena or to design solutions
- TEKS.8.5C - analyze how differences in scale, proportion, or quantity affect a system's structure or performance

### Suggested Science and Engineering Practices:

- TEKS.8.1A - ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- TEKS.8.2C - use mathematical calculations to assess quantitative relationships in data
- TEKS.8.3C - engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence

### Key Vocabulary

- main sequence
- red giant
- white dwarf
- red supergiant
- blue giant
- H-R diagram
- luminosity
- apparent magnitude
- absolute magnitude
- galaxy
- Milky Way
- spiral galaxies
- elliptical galaxies
- irregular galaxies
- light year
- redshift
- microwave background radiation

**Unit 5: Space**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS.8.9A Classifying Stars Engagement  TEKS.8.9A Classifying Stars Station Labs - Input Stations	TEKS.8.9A Classifying Stars Station Labs - Output Stations	TEKS.8.9A Classifying Stars Presentation and INB	TEKS.8.9A Classifying Stars Presentation and INB  TEKS.8.9A H-R Diagram WIKI Ticket	TEKS.8.9A Classifying Stars Waves Assessment  TEKS.8.8B Categorizing Galaxies Engagement
Day 6	Day 7	Day 8	Day 9	Day 10
TEKS.8.8B Categorizing Galaxies Inquiry Lab	TEKS.8.8B Categorizing Galaxies Presentation and INB	TEKS.8.8B Galaxies & Light Years Writing Prompt	TEKS.8.8B Categorizing Galaxies Assessment  TEKS.8.9C Origins of the Universe Engagement	TEKS.8.9C Origins of the Universe Station Labs - Input Stations
Day 11	Day 12			
TEKS.8.9C Origins of the Universe Station Labs - Output Stations	TEKS.8.8C Big Bang Theory Inquiry Lab			

## Unit 6: Weather

### Content Standards:

- TEKS.8.10A - describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate
- TEKS.8.10B - identify global patterns of atmospheric movement and how they influence local weather
- TEKS.8.10C - describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes

### Suggested Recurring Themes:

- TEKS.8.5A - identify and apply patterns to understand and connect scientific phenomena or to design solutions
- TEKS.8.5D - examine and model the parts of a system and their interdependence in the function of the system

### Suggested Science and Engineering Practices:

- TEKS.8.1D - use appropriate tools such as weather maps
- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.2A - identify advantages and limitations of models such as their size, scale, properties, and materials
- TEKS.8.2B - analyze data by identifying any significant descriptive statistical features, patterns, sources of error, or limitations

### Key Vocabulary

- weather
- climate
- hydrosphere
- atmosphere
- air pressure
- low pressure
- high pressure
- convection
- global winds
- Coriolis effect
- jet stream
- isobars
- front
- weather map
- hurricane
- typhoon
- cyclone
- ocean currents

**Unit 6: Weather**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS.8.10A - Energy from the Sun Engagement  TEKS.8.10A - Energy from the Sun Station Labs - Input Stations	TEKS.8.10A - Energy from the Sun Station Labs - Output Stations	TEKS.8.10A - Energy from the Sun Presentation and INB	TEKS.8.10A - Energy from the Sun Presentation and INB	TEKS.8.10A - Energy from the Sun Assessment
<b>Day 6</b>	<b>Day 7</b>	<b>Day 8</b>	<b>Day 9</b>	<b>Day 10</b>
TEKS.8.10B - Weather Maps & Air Pressure Amazing Anchors Part 1  TEKS.8.10B - Atmospheric Movement Station Labs - Input Stations	TEKS.8.10B - Atmospheric Movement Station Labs - Output Stations	TEKS.8.10B - Atmospheric Movement Presentation and INB	TEKS.8.10B - Atmospheric Movement Presentation and INB  TEKS.8.10B - Weather Maps & Air Pressure WIKI Ticket	TEKS.8.10B - Weather Maps & Air Pressure Inquiry Lab  TEKS.8.10B - Weather Maps & Air Pressure Amazing Anchors Part 2
<b>Day 11</b>	<b>Day 12</b>	<b>Day 13</b>	<b>Day 14</b>	<b>Day 15</b>
TEKS.8.10B - Atmospheric Movement Assessment  TEKS.8.10C - Hurricanes Amazing Anchors Part 1	TEKS.8.10C - Hurricanes Inquiry Lab	TEKS.8.10C - Tropical Storms Presentation and INB  TEKS.8.10C - Hurricanes WIKI Ticket	TEKS.8.10C - Hurricanes Writing Prompt  TEKS.8.10C - Hurricanes Amazing Anchors Part 2	TEKS.8.10C - Tropical Storms Assessment

## Unit 7: Cells

### Content Standards:

- TEKS.8.13A - identify the function of the cell membrane, cell wall, nucleus, ribosomes, cytoplasm, mitochondria, chloroplasts, and vacuoles in plant or animal cells

### Suggested Recurring Themes:

- TEKS.8.5F - analyze and explain the complementary relationship between the structure and function of objects, organisms, and systems

### Suggested Science and Engineering Practices:

- TEKS.8.2B - analyze data by identifying any significant descriptive statistical features, patterns, sources of error, or limitations

### Key Vocabulary

- cells
- organelles
- cell membrane
- mitochondria
- cytoplasm
- nucleus
- ribosomes
- vacuole
- cell wall
- chloroplast

**Unit 7: Cells**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS.8.13A - Cell Organelles Engagement  TEKS.8.13A - Cell Organelles Station Labs - Input Stations	TEKS.8.13A - Cell Organelles Station Labs - Output Stations	TEKS.8.13A - Cell Organelles Presentation and INB	TEKS.8.13A - Cell Organelles Presentation and INB  TEKS.8.13A - Plant & Animal Cells Organelles WIKI Ticket	TEKS.8.13A - Plant & Animal Cells Science Reading Comprehension Passage
<b>Day 6</b>	<b>Day 7</b>			
TEKS.8.13A - Cells Escape Room	TEKS.8.13A - Cell Organelles Assessment			



## Unit 8: Genetics

### Content Standards:

- TEKS.8.13B - describe the function of genes within chromosomes in determining inherited traits of offspring
- TEKS.8.13C - 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

### Suggested Recurring Themes:

- TEKS.8.5F - analyze and explain the complementary relationship between the structure and function of objects, organisms, and systems
- TEKS.8.5G - analyze and explain how factors or conditions impact stability and change in objects, organisms, and systems

### Suggested Science and Engineering Practices:

- TEKS.8.2D - evaluate experimental and engineering designs
- TEKS.8.3C - engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence

### Key Vocabulary

- heredity
- inherited trait
- cell
- nucleus
- chromosomes
- DNA
- gene
- variations
- natural selection
- adaptations
- structural adaptations
- behavioral adaptations
- physiological adaptations

**Unit 8: Genetics**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS.8.13B - Inherited Traits & DNA Amazing Anchors Part 1  TEKS.8.13B - Genes Station Labs - Input Stations	TEKS.8.13B - Genes Station Labs - Output Stations	TEKS.8.13B - Genes Presentation and INB  TEKS.8.13B - Inherited Traits & DNA WIKI Ticket	TEKS.8.13B - Inherited Traits & DNA Writing Prompt  TEKS.8.13B - Inherited Traits & DNA Amazing Anchors Part 2	TEKS.8.13B - Inherited Traits & DNA Assessment  TEKS.8.13C - Adaptations for Survival Engagement
Day 6	Day 7	Day 8	Day 9	Day 10
TEKS.8.13C - Adaptations for Survival Station Labs - Input Stations	TEKS.8.13C - Adaptations for Survival Station Labs - Output Stations	TEKS.8.13C - Adaptations for Survival Presentation and INB	TEKS.8.13C - Adaptations for Survival Presentation and INB  TEKS.8.13C - Variation in Populations WIKI Ticket	TEKS.8.13C - Variation in Populations Science Reading Comprehension Passage
Day 11				
TEKS.8.13C - Adaptations for Survival Assessment				

## Unit 9: Ecosystems

### Content Standards:

- TEKS.8.12A - explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems
- TEKS.8.12B - describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity
- TEKS.8.12C - describe how biodiversity contributes to the stability and sustainability of an ecosystem and the health of the organisms within the ecosystem

### Suggested Recurring Themes:

- TEKS.8.5B - identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
- TEKS.8.5G - analyze and explain how factors or conditions impact stability and change in objects, organisms, and systems

### Suggested Science and Engineering Practices:

- TEKS.8.1A - ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- TEKS.8.2A - identify advantages and limitations of models such as their size, scale, properties, and materials
- TEKS.8.2B - analyze data by identifying any significant descriptive statistical features, patterns, sources of error, or limitations
- TEKS.8.3A - develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories
- TEKS.8.3C - engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence

### Key Vocabulary

- ecosystems
- food webs
- ecological succession
- primary succession
- secondary succession
- pioneer species
- species diversity
- climax community
- biodiversity
- genetic diversity
- species diversity
- ecological diversity

**Unit 9: Ecosystems**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS.8.12A - Disruptions in Ecosystems Engagement  TEKS.8.12A - Disruptions in Ecosystems Station Labs - Input Stations	TEKS.8.12A - Disruptions in Ecosystems Station Labs - Output Stations	TEKS.8.12A - Disruptions in Ecosystems Presentation and INB	TEKS.8.12A - Disruptions in Ecosystems Presentation and INB  TEKS.8.12A - Environmental Changes WIKI Ticket	TEKS.8.12A - Disruptions in Ecosystems Assessment  TEKS.8.12B - Ecological Succession Amazing Anchors Part 1
<b>Day 6</b>	<b>Day 7</b>	<b>Day 8</b>	<b>Day 9</b>	<b>Day 10</b>
TEKS.8.12B - Ecological Succession Inquiry Lab	TEKS. 8.12B - Succession & Species Diversity Presentation and INB	TEKS. 8.12B - Succession & Species Diversity Presentation and INB  TEKS.8.12B - Ecological Succession WIKI Ticket	TEKS.8.12B - Ecological Succession Writing Prompt  TEKS.8.12B - Ecological Succession Amazing Anchors Part 2	TEKS. 8.12B - Succession & Species Diversity Assessment  TEKS. 8.12C - Sustainability of an Ecosystem Engagement
<b>Day 11</b>	<b>Day 12</b>	<b>Day 13</b>	<b>Day 14</b>	<b>Day 15</b>
TEKS. 8.12C - Sustainability of an Ecosystem Station Labs - Input Stations	TEKS. 8.12C - Sustainability of an Ecosystem Station Labs - Output Stations	TEKS. 8.12C - Sustainability of an Ecosystem Presentation and INB	TEKS. 8.12C - Sustainability of an Ecosystem Science Reading Comprehension Passage	TEKS. 8.12C - Sustainability of an Ecosystem Assessment

## Unit 10: Climate

### Content Standards:

- TEKS.8.11A - 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 gases influence climate
- TEKS.8.11B - use scientific evidence to describe how human activities, including the release of greenhouse gases, deforestation, and urbanization, can influence climate
- TEKS.8.11C - describe the carbon cycle

### Suggested Recurring Themes:

- TEKS.8.5B - identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
- TEKS.8.5D - examine and model the parts of a system and their interdependence in the function of the system
- TEKS.8.5G - analyze and explain how factors or conditions impact stability and change in objects, organisms, and systems

### Suggested Science and Engineering Practices:

- TEKS.8.1G - develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- TEKS.8.3A - develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories
- TEKS.8.4C - research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field to investigate STEM careers

### Key Vocabulary

- carbon cycle
- photosynthesis
- respiration
- decomposition
- combustion
- climate
- greenhouse gases
- deforestation
- urbanization
- atmosphere
- volcanic eruptions
- meteor
- ocean currents

**Unit 10: Climate**

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>
TEKS. 8.11C - Describing the Carbon Cycle Engagement  TEKS. 8.11C - Describing the Carbon Cycle Station Labs - Input Stations	TEKS. 8.11C - Describing the Carbon Cycle Station Labs - Output Stations	TEKS. 8.11C - Describing the Carbon Cycle Presentation and INB	TEKS. 8.11C - Describing the Carbon Cycle Assessment  TEKS. 8.11A - Natural Events & Climate Engagement	TEKS. 8.11A - Natural Events & Climate Station Labs - Input Stations
<b>Day 6</b>	<b>Day 7</b>	<b>Day 8</b>	<b>Day 9</b>	<b>Day 10</b>
TEKS. 8.11A - Natural Events & Climate Station Labs - Output Stations	TEKS. 8.11A - Natural Events & Climate Presentation and INB	TEKS. 8.11A - Natural Events & Climate Student Choice	TEKS. 8.11A - Natural Events & Climate Student Choice	TEKS. 8.11A - Natural Events & Climate Student Choice
<b>Day 11</b>	<b>Day 12</b>	<b>Day 13</b>	<b>Day 14</b>	<b>Day 15</b>
TEKS. 8.11A - Natural Events & Climate Assessment	TEKS. 8.11B - Human Activities & Climate Engagement  TEKS. 8.11B - Human Activities & Climate Station Labs - Input Stations	TEKS. 8.11B - Human Activities & Climate Station Labs - Output Stations	TEKS. 8.11B - Human Activities & Climate Presentation and INB	TEKS. 8.11B - Human Activities & Climate Assessment

### Unit 11: Engineering Design

The unit plan below is a suggestion. Each day is based on a typical 45-minute class period.

Day 1	Day 2	Day 3	Day 4	Day 5
Project Off to the Races	Project Off to the Races	Project Off to the Races	Project Off to the Races	Project Off to the Races
Day 6	Day 7	Day 8	Day 9	Day 10
Project Star Gazer	Project Star Gazer	Project Star Gazer	Project Star Gazer	Project Star Gazer

Additional STEM Challenges include:

- Project Last Dance
- Project What Happens Next
- Project Skydive