



Summit K12 Pacing Materials

6th Grade Science

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Introduction

The Summit K12 pacing materials are intended to assist educators in planning and organizing science curriculum according to the Texas Essential Knowledge and Skills for 6th grade. This guide provides a comprehensive timeline and framework based on state standards and serves as an resource that teachers and administrators may use in addition to or in support of any district-provided pacing guidelines.

All pacing materials are based on 45-minute class sessions. Please note that actual times will vary depending on scheduling considerations, the number of students, the amount of setup done ahead of time, the depth of class discussions, and your own needs and preferences.

Year at a Glance

Reporting Category	# of TEKS	Estimated Time Allotment
Matter and Energy	5	35 days
Force, Motion, and Energy	6	42 days
Earth and Space	7	47 days
Organisms and Environments	6	36 days
		160 days*

**Only 160 days have been planned out of the 180 school days, though this course includes more than enough material to cover the full 180 days of instruction. This was intended to account for beginning of year logistics, district and state testing, field trips, or other interruptions to the daily cycle of instruction. Pacing should be adjusted according to student assessment data and district instructional priorities.*

Scope and Sequence

Summit K12 has developed a year-long scope and sequence for schools and districts who wish to follow a set lesson progression that ensures all TEKS are covered within one school year. Within this framework, all grade-level TEKS have been organized into units of study with suggested time allotments for each TEKS. Each lesson guide includes key concepts, investigations, and activities to facilitate quality instruction for all learners.

Scientific and Engineering Practices and Recurring Themes and Concepts standards are integrated into lessons throughout the course and should be taught within the context of science content standards.

Teachers and administrators should adjust the instructional timeline according to student data and classroom needs. This scope and sequence was designed to be flexible, with extra time built in for concept and spiral review, in-depth discussions and investigations, and extension activities to support learners of all abilities.

6th Grade Science Units

Unit 1: Properties of Matter

- 6.6A: Compare Solids, Liquids, and Gases
- 6.6B: Pure Substances, Solutions, and Mixtures
- 6.6C: Identify Metals, Nonmetals, Metalloids, and Rare Earth Elements
- 6.6D: Density

Unit 2: Chemical Changes

- 6.6E: Evidence of a Chemical Change

Unit 3: The Role of Forces in Systems

- 6.7A: Forces Acting on Objects
- 6.7B: Balanced and Unbalanced Forces
- 6.7C: Newton's Third Law of Motion

Unit 4: Energy Transfers and Transformations

- 6.8A: Applications of Electromagnetic Waves
- 6.8B: Energy Transfers and Transformations
- 6.8C: Transverse and Longitudinal Waves

Unit 5: Movements of the Sun, Earth, and Moon

- 6.9A: Seasons
- 6.9B: Ocean Tides

Unit 6: Our Earth

- 6.10A: Biosphere, Hydrosphere, Atmosphere, and Geosphere
- 6.10B: Layers of Earth
- 6.10C: Metamorphic, Igneous, and Sedimentary Rocks

Unit 7: Resource Management

- 6.11A: Impact of Resource Management on Global Issues
- 6.11B: Management of Air, Water, Soil and Energy Resources

Unit 8: Organisms

- 6.13A: Cell Theory
- 6.13B: Basic Characteristics of Organisms

Unit 9: Interdependence in Ecosystems

- 6.12C: Levels of Organization in an Ecosystem
- 6.13C: Variations within a Population
- 6.12A: Biotic and Abiotic Factors
- 6.12B: Predatory, Competitive, and Symbiotic Relationships



Scope and Sequence

RC	Unit	TEKS	Suggested Instructional Time	Unit Total
RC1: Matter and Energy	1	6.6A: Compare Solids, Liquids, and Gases	7 days	25 days
		6.6B: Pure Substances, Solutions, and Mixtures	7 days	
		6.6C: Identify Metals, Nonmetals, Metalloids, and Rare Earth Elements	6 days	
		6.6D: Density	5 days	
	2	6.6E: Evidence of a Chemical Change	10 days	10 days
RC2: Force, Motion, and Energy	3	6.7A: Forces Acting on Objects	10 days	24 days
		6.7B: Balanced and Unbalanced Forces	7 days	
		6.7C: Newton's Third Law of Motion	7 days	
	4	6.8A: Gravitational, Elastic, and Chemical Potential Energies	6 days	18 days
		6.8B: Energy Transfers and Transformations	7 days	
		6.8C: Transverse and Longitudinal Waves	5 days	
RC3: Earth and Space	5	6.9A: Seasons	6 days	11 days
		6.9B: Ocean Tides	5 days	
	6	6.10A: Biosphere, Hydrosphere, Atmosphere, and Geosphere	7 days	18 days
		6.10B: Layers of Earth	6 days	
		6.10C: Metamorphic, Igneous, and Sedimentary Rocks	5 days	
	7	6.11A: Impact of Resource Management on Global Issues	10 days	18 days
		6.11B: Management of Air, Water, Soil and Energy Resources	8 days	
RC4: Organisms and Environments	8	6.13A: Cell Theory	7 days	14 days
		6.13B: Basic Characteristics of Organisms	7 days	
	9	6.12C: Levels of Organization in an Ecosystem	4 days	22 days
		6.13C: Variations within a Population	7 days	
		6.12A: Biotic and Abiotic Factors	5 days	
		6.12B: Predatory, Competitive, and Symbiotic Relationships	6 days	

Pacing Guide

In addition to the Scope and Sequence, Summit K12 has also developed a Pacing Guide that can be adapted for teaching the TEKS in any preferred order or according to a district provided Scope and Sequence. The Pacing Guide is arranged by reporting category and includes suggested instructional time for each TEKS, but the actual order of instruction is flexible and should be adjusted according to student needs and district priorities.

Summit K12 suggests introducing the fundamental concepts and principles of science prior to beginning instruction. To assist with this, the Scientific and Engineering Practices section of the LMS provides valuable resources that can be utilized at the teacher's discretion. Within the "Introduction to Science" unit, there are lessons on topics such as the definition of science, scientific conversations, and science notebooking. In addition, SEPS presentations are available to aid in teaching and practicing these skills.

Individual TEKS Pacing Guides

On pages 9-37, you will find more in depth pacing guides for each individual TEKS. Please note that the time allotment lists the estimated time it may take to complete each activity in the Lesson Guide. Please use your professional judgment to determine which activities are best suited for your students, while keeping in mind the recommended pacing located on pg. 8.

Pacing Guide

Reporting Category	TEKS	Suggested Instructional Time
RC1: Matter and Energy	6.6A: Compare Solids, Liquids, and Gases	7 days
	6.6B: Pure Substances, Solutions, and Mixtures	7 days
	6.6C: Identify Metals, Nonmetals, Metalloids, and Rare Earth Elements	6 days
	6.6D: Density	5 days
	6.6E: Evidence of a Chemical Change	10 days
RC2: Force, Motion, and Energy	6.7A: Forces Acting on Objects	10 days
	6.7B: Balanced and Unbalanced Forces	7 days
	6.7C: Newton's Third Law of Motion	7 days
	6.8A: Gravitational, Elastic, and Chemical Potential Energies	6 days
	6.8B: Energy Transfers and Transformations	7 days
	6.8C: Transverse and Longitudinal Waves	5 days
RC3: Earth and Space	6.9A: Seasons	6 days
	6.9B: Ocean Tides	5 days
	6.10A: Biosphere, Hydrosphere, Atmosphere, and Geosphere	7 days
	6.10B: Layers of Earth	6 days
	6.10C: Metamorphic, Igneous, and Sedimentary Rocks	5 days
	6.11A: Impact of Resource Management on Global Issues	10 days
	6.11B: Management of Air, Water, Soil and Energy Resources	8 days
RC4: Organisms and Environments	6.12A: Biotic and Abiotic Factors	5 days
	6.12B: Predatory, Competitive, and Symbiotic Relationships	6 days
	6.12C: Levels of Organization in an Ecosystem	4 days
	6.13A: Cell Theory	7 days
	6.13B: Basic Characteristics of Organisms	7 days
	6.13C: Variations within a Population	7 days



Reporting Category 1: Matter and Energy

NOTE: The time allotment for each TEKS lists the estimated time it may take to complete each activity in the Lesson Guide. Please use your professional judgment to determine which activities are best suited for your students, while keeping in mind the recommended pacing located on pg. 8.

6.6A: Compare Solids, Liquids, and Gases

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Dry Ice Bubbles	30 minutes
Establish Relevance	Discussion: Water Cycle	20 minutes
Investigate and Learn	Demonstration: Modeling Atoms and Molecules	20 minutes
	Key Concept Slides	1 day
	Notebooking: Solids, Liquids, and Gases	
	Virtual Investigation: States of Matter	1 day
	Demonstration: Modeling the States of Matter	20 minutes
	Practice: States of Matter Card Sort	20 minutes
	TEKS Video: Compare Solids, Liquids, and Gases	11 minutes
Apply and Extend	Project: Comic Chronicles of Matter	1 day
	Phenomenon: Dry Ice Bubbles	30 minutes
	Study Guide: Compare Solids, Liquids, and Gases	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

**6.6B: Pure Substance, Solutions, and Mixtures**

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Cleaning Water	30 minutes
Establish Relevance	Discussion: Savoring Science	20 minutes
Investigate and Learn	Station Investigation: Mixing It Up	1 day
	Key Concept Slides	30 minutes
	Notebooking: Pure Substances, Solutions, and Mixtures	
	Practice: Matter Mysteries	1 day
	TEKS Video: Pure Substances, Solutions, and Mixtures	10 minutes
Apply and Extend	Project: Cultural Cuisines	2 days
	Project: Deserted Island Survival	2 days
	Phenomenon: Cleaning Water	30 minutes
	Study Guide: Pure Substances, Solutions, and Mixtures	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.6C: Identify Metals, Nonmetals, Metalloids, and Rare Earth Elements

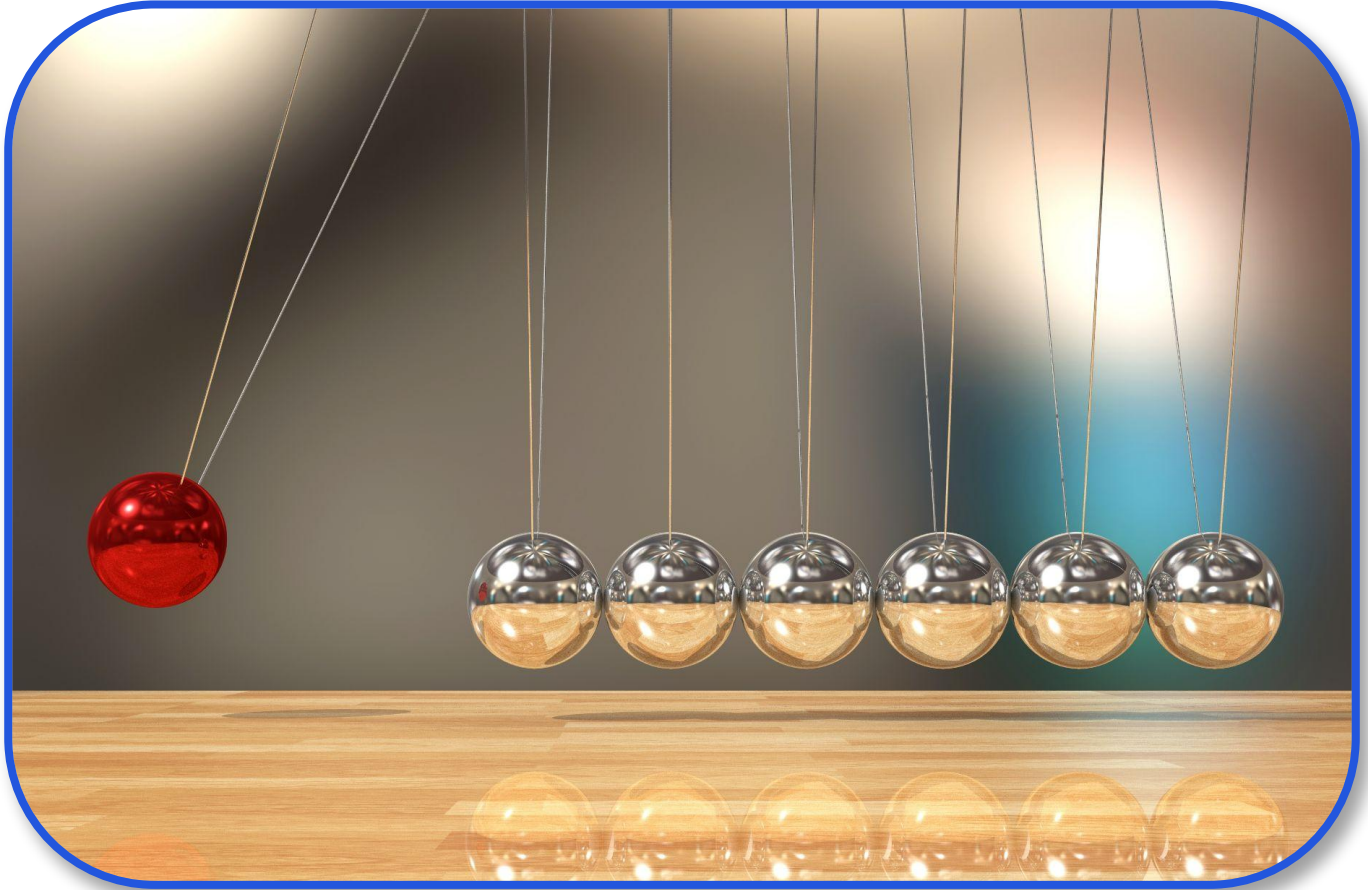
Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Sorting the Elements	30 minutes
Establish Relevance	Discussion: Our Elemental World	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Metals, Nonmetals, Metalloids, and Rare Earth Elements	
	Descriptive Investigation: Element Properties	1 day
	Practice: Everyday Elements	30 minutes
	TEKS Video: Identify Metals, Nonmetals, Metalloids, and Rare Earth Elements	13 minutes
Apply and Extend	Project: Elements in Plain Sight	1 day
	Project: Cost of Cell Phones	2 days
	Phenomenon: Sorting the Elements	30 minutes
	Study Guide: Metals, Nonmetals, Metalloids, and Rare Earth Elements	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.6D: Density

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Floating Balloons	30 minutes
Establish Relevance	Literacy Connection: Deepwater Horizon	1 day
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Density Graphic Organizer	
	Demonstration: Cola vs. Diet Cola	20 minutes
	Demonstration: Density Rainbow	30 minutes
	Descriptive Investigation: Relative Density	1 day
	Practice: Density of Fluids	20 minutes
	TEKS Video: Density	9 minutes
Apply and Extend	Research: Where Is the Easiest Place to Float?	2 days
	Phenomenon: Floating Balloons	30 minutes
	Study Guide: Density	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.6E: Evidence of a Chemical Change

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Marshmallow Roast	30 minutes
	Activity: Paper Plane	15 minutes
Establish Relevance	Discussion: Everyday Changes	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Demonstration: Elephant Toothpaste	20 minutes
	Literacy Connection: Chemical Changes	1 day
	Station Investigation: Exploring Chemical Changes	1 day
	Practice: Chemical Changes Log	30 minutes
	TEKS Video: Evidence of a Chemical Change	12 minutes
Apply and Extend	Project: Chemical Changes in Art	1 day
	Descriptive Investigation: Mystery Powders	1 day
	Phenomenon: Marshmallow Roast	30 minutes
	Study Guide: Evidence of a Chemical Change	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes



Reporting Category 2: Force, Motion, and Energy

NOTE: The time allotment for each TEKS lists the estimated time it may take to complete each activity in the Lesson Guide. Please use your professional judgment to determine which activities are best suited for your students, while keeping in mind the recommended pacing located on pg. 8.

6.7A: Forces Acting on Objects

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Doing Dishes	30 minutes
Establish Relevance	Discussion: Pushing a Box	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Practice: Normal Force in Action	20 minutes
	Experimental Investigation: Friction	2 days
	Practice: Identifying Forces	1 day
	Virtual Investigation: Gravitational Force	1 day
	Literacy Connection: Maglev Trains	1 day
	TEKS Video: Forces Acting on Objects	13 minutes
Apply and Extend	Project: Magnet Magic	2 days
	Engineering Challenge: Chain Reaction Machine	5 days
	Phenomenon: Doing Dishes	30 minutes
	Study Guide: Forces Acting on Objects	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.7B: Balanced and Unbalanced Net Forces

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Rock Tower	30 minutes
Establish Relevance	Demonstration: Tug-of-War	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Practice: Balanced or Unbalanced Forces Card Sort	15 minutes
	Virtual Investigation: Robot Tug-of-War	30 minutes
	Practice: Calculating Net Force	30 minutes
	Comparative Investigation: Modeling Forces	1 day
	TEKS Video: Balanced and Unbalanced Forces	10 minutes
Apply and Extend	Project: Everyday Forces	2 days
	Phenomenon: Rock Tower	30 minutes
	Study Guide: Balanced and Unbalanced Net Forces	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.7C: Newton's Third Law of Motion

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Soaring on Water	30 minutes
Establish Relevance	Discussion: Third Law Scenarios	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Demonstration: Simultaneous Force Pair Chairs	20 minutes
	Comparative Investigation: Balloon Rockets	1 day
	Station Investigation: Third Law	1 day
	Practice: Force Pairs	30 minutes
	TEKS Video: Newton's Third Law of Motion	7 minutes
Apply and Extend	Project: Third Law of Action	1 day
	Phenomenon: Soaring on Water	30 minutes
	Study Guide: Newton's Third Law of Motion	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.8A: Gravitational, Elastic, and Chemical Potential Energies

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Bungee Jumping	30 minutes
Establish Relevance	Discussion: Energy in Motion	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Comparative Investigation: Kinetic Cans	1 day
	Station Investigation: Potential Energy	1 day
	Practice: Energy All Around Card Sort	20 minutes
	Practice: Diagram Analysis	30 minutes
	TEKS Video: Gravitational, Elastic, and Chemical Potential Energies	12 minutes
Apply and Extend	Engineering Challenge: Roller Coaster Physics	5 days
	Phenomenon: Bungee Jumping	30 minutes
	Study Guide: Gravitational, Elastic, and Chemical Potential Energies	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.8B: Energy Transfers and Transformations

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Cell Phone Transformations	30 minutes
Establish Relevance	Activity: How Does It Work?	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Demonstration: Lemon Cell and Radiometer	30 minutes
	Virtual Investigation: Energy Skate Park	1 day
	Literacy Connection: Energy Transfer and Transformations in Food Webs	1 day
	Virtual Investigation: Roller Coasters	1 day
	Experimental Investigation: Light Energy	1 day
	Station Investigation: Conservation of Energy	1 day
	TEKS Video Energy Transfers and Transformations	13 minutes
Apply and Extend	Engineering Challenge: The Quiet Newton's Cradle	5 days
	Phenomenon: Cell Phone Transformations	30 minutes
	Study Guide: Energy Transfers and Transformations	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.8C: Transverse and Longitudinal Waves

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: A Silent Sight	30 minutes
Establish Relevance	Discussion: Beams and Beats	20 minutes
Investigate and Learn	Demonstration: Wave Simulation	30 minutes
	Key Concept Slides	30 minutes
	Notebooking: Transverse and Longitudinal Waves	
	Station Investigation: Waves	1 day
	TEKS video: Transverse and Longitudinal Waves	11 minutes
Apply and Extend	Project: Modeling Waves	2 days
	Phenomenon: A Silent Sight	30 minutes
	Study Guide: Transverse and Longitudinal Waves	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes



Reporting Category 3: Earth and Space

NOTE: The time allotment for each TEKS lists the estimated time it may take to complete each activity in the Lesson Guide. Please use your professional judgment to determine which activities are best suited for your students, while keeping in mind the recommended pacing located on pg. 8.

6.9A: Seasons

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: The Midnight Sun	30 minutes
Establish Relevance	Discussion: What Do We Know about Seasons?	20 minutes
Investigate and Learn	Demonstration: Direct vs. Indirect Sunlight	30 minutes
	Descriptive Investigation: Earth's Revolution	1 day
	Activity: Daylight Hours around the World	1 day
	Key Concept Slides	30 minutes
	Notebooking: Seasons Notes	
	Practice: Identifying the Seasons	30 minutes
	TEKS Video: Seasons	13 minutes
Apply and Extend	Project: Planning a Vacation	2 days
	Project: Modeling Revolution	2 days
	Phenomenon: The Midnight Sun	30 minutes
	Study Guide: Seasons	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.9B: Ocean Tides

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Where Did the Water Go?	30 minutes
Establish Relevance	Discussion: A Day at the Beach	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Ocean Tides	
	Literacy Connection: The Moon and Tides	1 day
	Practice: Modeling Ocean Tides	30 minutes
	Practice: Predicting Tides	30 minutes
	Practice: Tides Calendar	30 minutes
	TEKS Video: Ocean Tides	10 minutes
Apply and Extend	Project: Ocean Tides Model	2 days
	Practice: Ocean Tides Comic Strip	1 day
	Phenomenon: Where Did the Water Go?	30 minutes
	Study Guide: Ocean Tides	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.10A: Biosphere, Hydrosphere, Atmosphere, and Geosphere

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Old Faithful	30 minutes
	Demonstration: Earth's Spheres in a Bag	15 minutes
Establish Relevance	Discussion: View of Earth from the Moon	20 minutes
Investigate and Learn	Key Concept Slides	1 day
	Notebooking: Earth's Spheres Graphic Organizer	
	Notebooking: Atmospheric Layers Fold-It	
	Notebooking: Earth's Geosphere	20 minutes
	Practice: Spheres of Earth Card Sort	20 minutes
	TEKS Video: Biosphere, Hydrosphere, Atmosphere, and Geosphere	12 minutes
Apply and Extend	Practice: Sphere Interaction Stations	30 minutes
	Project: Earth's Spheres Diorama	2 days
	Phenomenon: Old Faithful	30 minutes
	Study Guide: Biosphere, Hydrosphere, Atmosphere, and Geosphere	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.10B: Layers of Earth

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Earth's Features	30 minutes
Establish Relevance	Discussion: Layers Around Us	15 minutes
Investigate and Learn	Key Concepts Slide	30 minutes
	Notebooking: Layers of Earth Graphic Organizer	
	Demonstration: Modeling the Geosphere	30 minutes
	Descriptive Investigation: The Egg and Earth	30 minutes
	Literacy Connection: Voyage into Planet Earth	1 day
	TEKS Video: Layers of Earth	11 minutes
Apply and Extend	Activity: Peeling Back the Layers	1 day
	Project: Layers of Earth 3-D Model	2 days
	Phenomenon: Earth's Features	30 minutes
	Study Guide: Layers of Earth	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.10C: Metamorphic, Igneous, and Sedimentary Rocks

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Mystery Formations	30 minutes
Establish Relevance	Activity: Rocks in Our Lives	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: The Rock Cycle	
	Literacy Connections: Rock Transformations	30 minutes
	Descriptive Investigation: Rocks in the Rock Cycle	1 day
	Descriptive Investigation: The Chocolate Rock Cycle	1 day
	Practice: Labeling the Rock Cycle	20 minutes
	CER: The Twelve Apostles	30 minutes
	TEKS Video: Metamorphic, Igneous, and Sedimentary Rocks	11 minutes
Apply and Extend	Project: Creative Stoney-Telling	1 day
	Phenomenon: Mystery Formations	30 minutes
	Study Guide: Metamorphic, Igneous, and Sedimentary Rocks	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.11A: Impact of Resource Management on Global Issues

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: The Future of Our Resources	30 minutes
Establish Relevance	Discussion: Everyday Energy Sources	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Practice: Renewable vs. Nonrenewable Card Sort	20 minutes
	Research: School Power	2 days
	Discussion: Calorie Consumption	30 minutes
	Activity: Our Local Air Quality	30 minutes
	Project: The Impact of Fuel Economy	1 day
	Literacy Connection: Garbage Patches	30 minutes
	Research: Polluted Waters	1 day
	TEKS Video: Impact of Resource Management on Global Issues	15 minutes
Apply and Extend	Project: Resource Management Infographic	2 days
	Project: Influential Environmental Scientists	2 days
	Phenomenon: The Future of Our Resources	30 minutes
	Study Guide: Impact of Resource Management on Global Issues	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.11B: Management of Air, Water, Soil and Energy Resources

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Vertical Farming	30 minutes
	Discussion: Reducing My Carbon Footprint	1 day
Establish Relevance	Literacy Connection: Greenhouse Effect	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Comparative Investigation: Air Pollution Lab	2 days
	Engineering Challenge: Dishwashing Fiasco	5 days
	Project: Farming Models	3 days
	Activity: My Energy Use	1 day
	Project: Home Appliance Ad	2 days
	TEKS Video: Management of Air, Water, Soil, and Energy Resources	15 minutes
Apply and Extend	Project: Public Service Announcement	2 days
	Project: EPA Researcher Infographic	2 days
	Phenomenon: Vertical Farming	30 minutes
	Study Guide: Management of Air, Water, Soil, and Energy Resources	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes



Reporting Category 4: Organisms and Environments

NOTE: The time allotment for each TEKS lists the estimated time it may take to complete each activity in the Lesson Guide. Please use your professional judgment to determine which activities are best suited for your students, while keeping in mind the recommended pacing located on pg. 8.

6.12A: Biotic and Abiotic Factors

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Wildebeest Migration	30 minutes
Establish Relevance	Discussion: Our School's Ecosystem	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Practice: Biotic vs. Abiotic Factors	30 minutes
	Activity: Survival Game	1 day
	Practice: Competition and Dependence in Ecosystems	30 minutes
	Descriptive Investigation: Factors in the Field	1 day
	TEKS Video: Biotic and Abiotic Factors	9 minutes
Apply and Extend	Project: Creature Quest	2 days
	Design an Investigation: Plant Growth	15 days*
	Project: Connecting Competition and Survival	2 days
	Phenomenon: Wildebeest Migration	30 minutes
	Study Guide: Biotic and Abiotic Factors	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

* NOTE: This activity will not take 15 full days. After setting up the experiment, students will only need a few minutes daily to check their plants and collect data.

6.12B: Predatory, Competitive, and Symbiotic Relationships

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: The Interactions of Bees	30 minutes
Establish Relevance	Discussion: Animal Interactions	20 minutes
Investigate and Learn	Key Concept Slides	1 day
	Notebooking: Relationships Fold-It	
	Practice: Relationships in Food Webs	30 minutes
	Literacy Connection: Relationships Among Organisms	1 day
	Practice: Relationship Card Sort	20 minutes
	Practice: Identifying Relationships	1 day
	TEKS Video: Predatory, Competitive, and Symbiotic Relationships	13 minutes
Apply and Extend	Project: EcoConnections	2 days
	Activity: Predator-Prey Math	30 minutes
	Phenomenon: The Interactions of Bees	30 minutes
	Study Guide: Predatory, Competitive, and Symbiotic Relationships	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.12C: Levels of Organization in an Ecosystem

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: The Watering Hole	30 minutes
Establish Relevance	Discussion: City vs. Ecosystem	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Levels of Organization in an Ecosystem Fold-It	
	Practice: Levels of Organization Card Sort	15 minutes
	Literacy Connection: Ecological Hierarchy	1 day
	TEKS Video: Levels of Organization in an Ecosystem	9 minutes
Apply and Extend	Project: Nature's Tiers	1 day
	Phenomenon: The Watering Hole	30 minutes
	Study Guide: Levels of Organization in an Ecosystem	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.13A: Cell Theory

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Decomposing Meat	30 minutes
Establish Relevance	Discussion: We Have Something In Common	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Cell Theory Graphic Organizer	
	Descriptive Investigation: Cell Microscopy	1 day
	Literacy Connection: Hypothesis, Theory, and Law	1 day
	TEKS Video: Cell Theory	8 minutes
Apply and Extend	Project: Cell Theory Past and Present	1 day
	Project: Cell Theory and Healthcare	2 days
	Phenomenon: Decomposing Meat	30 minutes
	Study Guide: Cell Theory	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.13B: Basic Characteristics of Organisms

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Organism Examination	30 minutes
Establish Relevance	Discussion: Grouping Organisms by Traits	20 minutes
Investigate and Learn	Key Concept Slides	1 day
	Notebooking: Characteristics of Organisms Fold-It	
	Literacy Connection: Prokaryotes vs. Eukaryotes	1 day
	Practice: Comparing Organisms	30 minutes
	Practice: What Am I?	20 minutes
	TEKS Video: Basic Characteristics of Organisms	13 minutes
Apply and Extend	Project: Ecological Trio Spotlight	2 days
	Phenomenon: Organism Examination	30 minutes
	Study Guide: Basic Characteristics of Organisms	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

6.13C: Variations within a Population

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: A Crabby Takeover	30 minutes
	Discussion: Identifying Organisms	30 minutes
Establish Relevance	Discussion: Variation in Poison Dart Frogs	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Descriptive Investigation: Variations within a Grape Population	1 day
	Discussion: The Effects of Environmental Changes	20 minutes
	Literacy Connection: The Importance of Differences	1 day
	Virtual Investigation: Environmental Changes	1 day
	TEKS Video: Variations within a Population	12 minutes
Apply and Extend	Project: Variation within a Species	2 days
	Research: Diminishing Populations	2 days
	Phenomenon: A Crabby Takeover	30 minutes
	Study Guide: Variations within a Population	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes