Summit K12 Pacing Materials

Fourth Grade Science

SUMMIT K12

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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 4th grade. This guide provides a comprehensive timeline and framework based on state standards and serves as an optional 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	3	24 days
Force, Motion, and Energy	4	32 days
Earth and Space	8	54 days
Organisms and Environments	5	40 days
		150 days*

**Only 150 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, STAAR review, district and state testing, field trips, or any 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 an optional 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.

4th Grade Science Units

Unit 1:
- 4.6A: Observable Physical Properties
- 4.6B: Mixtures
- 4.6C: Mixtures Conserve Matter

Unit 2:
- 4.7A: Exploring Forces

Unit 3:
- 4.8A: Transfer of Energy
- 4.8B: Conductors and Insulators
- 4.8C: Electrical Energy

Unit 4:
- 4.9A: Patterns of Seasons
- 4.9B: Appearance of the Moon

Unit 5:
- 4.10A: The Water Cycle
- 4.10B: Slow Changes to Earth's Surface
- 4.10C: Weather and Climate

Unit 6:
- 4.11A: Earth’s Resources
- 4.11B: Energy Resources
- 4.11C: Physical Properties of Rocks

Unit 7:
- 4.12A: Producers
- 4.12B: Food Webs
- 4.12C: Fossil Evidence of Past Environments
- 4.13A: Plant Structures and Functions
- 4.13B: Inherited and Acquired Traits

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Scope and Sequence

RC	Unit	TEKS	Suggested Instructional Time	Unit Total
RC1: Matter and Energy	1	**4.6A:** Observable Physical Properties	8 days	24 days
		4.6B: Mixtures	8 days	
		4.6C: Mixtures Conserve Matter	9 days	
RC2: Force, Motion, and Energy	2	**4.7A:** Exploring Forces	8 days	8 days
	3	**4.8A:** Transfer of Energy	8 days	24 days
		4.8B: Conductors and Insulators	8 days	
		4.8C: Electrical Energy	8 days	
RC3: Earth and Space	4	**4.9A:** Patterns of Seasons	8 days	14 days
		4.9B: Appearance of the Moon	6 days	
	5	**4.10A:** The Water Cycle	8 days	22 days
		4.10B: Slow Changes to Earth's Surface	8 days	
		4.10C: Weather and Climate	6 days	
	6	**4.11A:** Earth's Resources	6 days	18 days
		4.11B: Energy Resources	6 days	
		4.11C: Physical Properties of Rocks	6 days	
RC4: Organisms and Environments	7	**4.12A:** Producers	10 days	40 days
		4.12B: Food Webs	7 days	
		4.12C: Fossil Evidence of Past Environments	8 days	
		4.13A: Plant Structures and Functions	8 days	
		4.13B: Inherited and Acquired Traits	7 days	

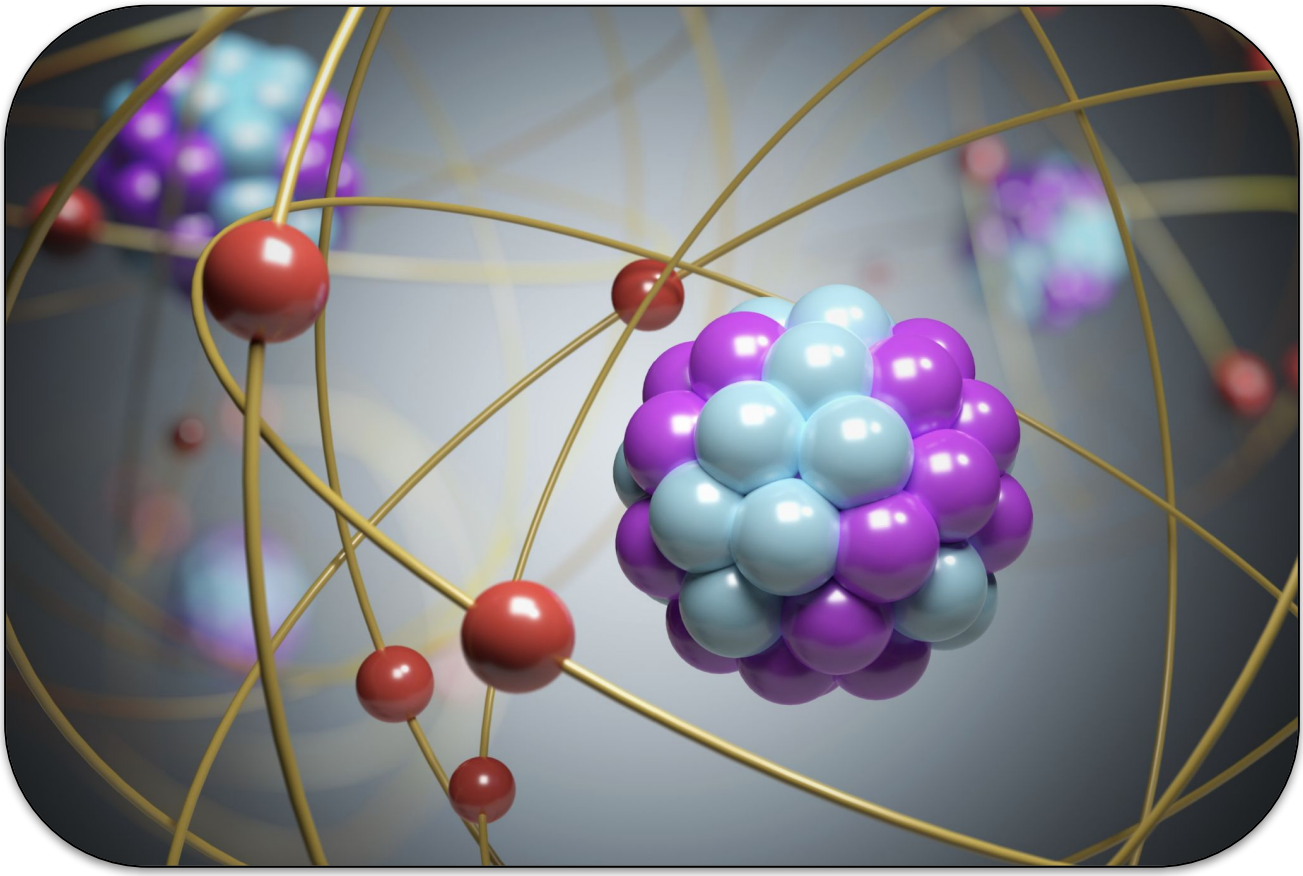
Pacing Guide

In addition to the Scope and Sequence, Summit K12 has also developed a Pacing Guide that can be adapted for teaching the Texas Essential Knowledge and Skills (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 (SEPS) 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 8-31, 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 page 6.



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. 6.

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4.6A: Observable Physical Properties

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Frozen Oil	30 minutes
	* Establish Relevance: How Is Matter Described and Classified?	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Describing and Classifying Matter	30 minutes
	* Investigation: Classifying Matter Using Physical Properties	45 minutes
	* Investigation: Temperature	60 minutes
	* Investigation: Addressing Misconceptions	45 minutes
	TEKS Video: Observable Physical Properties	15 minutes
Apply and Extend	Literacy Connection: Matter's Many Properties	30 minutes
	Research: Matter Has Uses	45 minutes
	Virtual Investigation: Density	30 minutes
	Study Guide: Observable Physical Properties	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Frozen Oil	20 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Connecting Matter	45 minutes

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4.6B Mixtures

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Pink Drink	30 minutes
	* Establish Relevance: Everyday Products	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Mixtures	45 minutes
	* Investigation: Comparing Mixtures	45 minutes
	* Investigation: Comparing Solutions	45 minutes
	* Investigation: Special Types of Mixtures	45 minutes
	TEKS Video: Mixtures	15 minutes
Apply and Extend	Discussion: Concept Attainment: Mixtures	30 minutes
	Connection to Art: Mixed Media	60 minutes
	Connection to STEM Career: Chemical Engineer	30 minutes
	Engineering Challenge: Solar Stills	60 minutes
	Study Guide: Mixtures	20 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Pink Drink	45 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Community Garden	30 minutes

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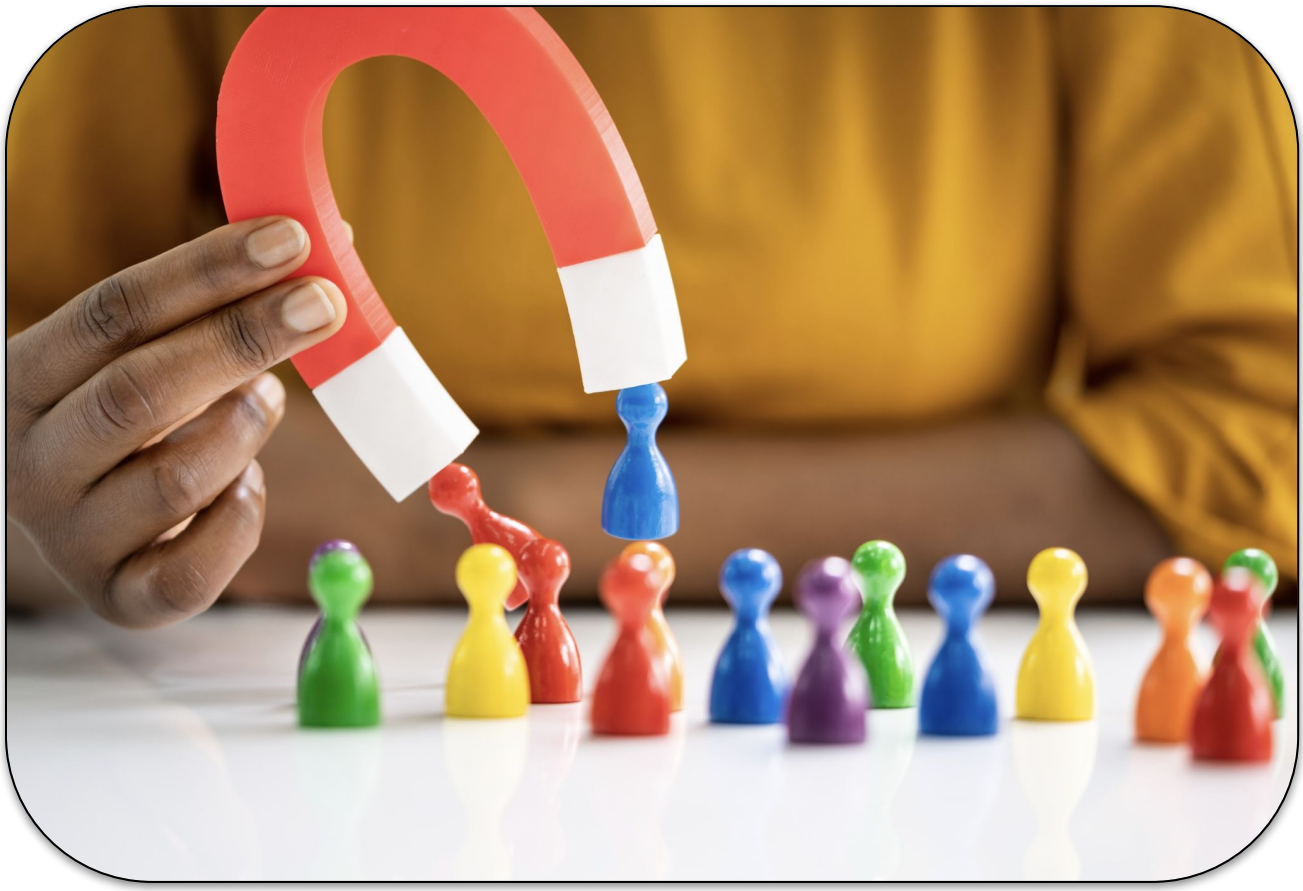
4.6C Mixtures Conserve Matter

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Water Beads	30 minutes
	* Establish Relevance: Cooking at Home	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Conservation of Matter	45 minutes
	* Investigation: Mixtures Conserve Matter	45 minutes
	* Investigation: Changes in Mixtures	90 minutes
	* Planning an Investigation: Conserving Matter	90 minutes
	TEKS Video: Mixtures Conserve Matter	15 minutes
Apply and Extend	Literacy Connection: Real-World Mixtures	30 minutes
	Connection to Math: Problem-Solving with Matter	30 minutes
	Argumentation: Compost Piles	90 minutes
	Study Guide: Mixtures Conserve Matter	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Water Beads	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Conserving Matter	30 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. 6.

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4.7A: Exploring Forces

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Icy Hill	30 minutes
	* Establish Relevance: Movement on Ice	20 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Ramp Roll	45 minutes
	* Investigation: Friction	60 minutes
	* Investigation: Levitating Paper Clip	60 minutes
	* Planning An Investigation: Forces Inquiry	90 minutes
	TEKS Video: Exploring Forces	15 minutes
Apply and Extend	Activity: Magnetic Fields in a Bottle	45 minutes
	Connection to STEM Career: Aerospace Engineer	30 minutes
	Literacy Connection: Magnetic Applications	30 minutes
	Engineering Challenge: Tires and Ice	90 minutes
	Study Guide: Exploring Forces	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Icy Hill	30 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Design A Sled	90 minutes

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4.8A: Transfer of Energy

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Waves	30 minutes
	* Establish Relevance: How Is Energy Transferred?	20 minutes
Investigate and Learn **Suggested Activities*	* Activity: Waves	30 minutes
	* Investigation: Objects Transfer Energy	45 minutes
	* Investigation: Waves In Water	45 minutes
	* Investigation: Sound Travels Through Matter	45 minutes
	TEKS Video: Transfer of Energy	15 minutes
Apply and Extend	Literacy Connection: Sound Waves	20 minutes
	Activity: Comparing Waves	20 minutes
	Connection to STEM Career: Seismologist	30 minutes
	Article: Tsunami Waves	30 minutes
	Study Guide: Transfer of Energy	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Waves	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Transfer of Energy Connections	30 minutes

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4.8B: Conductors and Insulators

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Melting Blocks	30 minutes
	* Establish Relevance: We Use Conductors and Insulators Everyday	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Conductors and Insulators of Thermal Energy	90 minutes
	* Investigation: Conductors and Insulators of Electrical Energy	45 minutes
	* Planning An Investigation: Conductors and Insulators Inquiry	90 minutes
	* Engineering Challenge: Home Insulation	135 minutes
	TEKS Video: Conductors and Insulators	15 minutes
Apply and Extend	Literacy Connection: Conductors and Insulators	30 minutes
	Activity: Conductors and Insulators Card Sort	30 minutes
	Connection to STEM Career: Electrical Engineer	30 minutes
	Activity: Frayer Model	30 minutes
	Study Guide: Conductors and Insulators	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Melting Blocks	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	20 minutes
	Performance Task: Conductor or Insulator?	30 minutes

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4.8C: Electrical Energy

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Orange Lights	30 minutes
	* Establish Relevance: Electrical Energy Pathway	20 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Turn On The Light	45 minutes
	* Investigation: Open and Closed Circuits	45 minutes
	* Activity: Circuit Errors	30 minutes
	* Planning an Investigation: Electrical Energy	90 minutes
	TEKS Video Electrical Energy	15 minutes
Apply and Extend	Activity: Energy Balls	30 minutes
	Connection to STEM Career: Residential Electrician	30 minutes
	Activity: Paper Circuits	45 minutes
	Study Guide: Electrical Energy	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Orange Lights	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Circuit Systems	45 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. 6.

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4.9A: Patterns of Seasons

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Getting Dark Outside	30 minutes
	* Establish Relevance: Getting Darker Outside	30 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Changes in Temperature	45 minutes
	* Investigation: Changes in Length of Day	45 minutes
	* Investigation: The Sun's Path in the Sky	45 minutes
	* Activity: Modeling the Seasons	60 minutes
	TEKS Video: Patterns of Seasons	15 minutes
Apply and Extend	Activity: The Season is…	30 minutes
	Research: Patterns in Constellations	60 minutes
	Activity: Sequencing the Seasons	45 minutes
	Literacy Connection: Daylight Saving Time	30 minutes
	Study Guide: Patterns of Seasons	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Getting Dark Outside	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Changes on the Horizon	45 minutes

4.9B: Appearance of the Moon

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: The Far Side of the Moon	30 minutes
	* Establish Relevance: The Moon Looks Like…	30 minutes
Investigate and Learn **Suggested Activities*	* Activity: Graphing the Moon	45 minutes
	* Investigation: Moon Pops	45 minutes
	* Activity: Change in Appearance	45 minutes
	* Investigation: Modeling the Far Side	60 minutes
	TEKS Video: Appearance of the Moon	15 minutes
Apply and Extend	Activity: Moon Wheel	30 minutes
	Literacy Connection: Supermoons	30 minutes
	Engineering Challenge: Make a Moon in a Box	90 minutes
	Activity: Naming the Moon Phases	30 minutes
	Study Guide: Appearance of the Moon	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: The Far Side of the Moon	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	30 minutes
	Performance Task: The Next Phase	45 minutes

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4.10A: The Water Cycle

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Morning Fog	30 minutes
	*Establish Relevance: Weather and the Water Cycle	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Observe the Water Cycle	60 minutes
	* Activity: A Closer Look at Condensation	45 minutes
	* Investigation: The Water Cycle is a System	45 minutes
	* Investigation: Water Cycles	60 minutes
	TEKS Video: The Water Cycle	15 minutes
Apply and Extend	Activity: Water Cycle Sequencing	30 minutes
	Literacy Connection: All About Aquifers	30 minutes
	Planning an Investigation: Water Cycle Inquiry	60 minutes
	Engineering Challenge: Reducing Evaporation	90 minutes
	Study Guide: The Water Cycle	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Morning Fog	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task; A Water Cycle System	45 minutes

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4.10B: Slow Changes to Earth's Surface

* additional time required

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: River Changes Course	30 minutes
	* Establish Relevance: The Changing Landscape	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Ice Changes Earth	60 minutes*
	* Investigation: Wind Changes Earth	45 minutes
	* Investigation: Water Changes Earth	90 minutes
	* Plan an Investigation: Slow Changes Inquiry	60 minutes
	TEKS Video: Slow Changes to the Earth's Surface	15 minutes
Apply and Extend	Activity: Waves Shape the Shoreline	45 minutes
	Activity: Slow Changes on Earth	45 minutes
	Literacy Connection: When Erosion Is Not a Slow Change	30 minutes
	Connection to STEM Career: Geologists	30 minutes
	Study Guide: Slow Changes to the Earth's Surface	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: River Changes Course	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	30 minutes
	Performance Task: Modeling Slow Changes	45 minutes

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4.10C: Weather and Climate

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Climographs	30 minutes
	* Establish Relevance: Hometown Climate	15 minutes
Investigate and Learn **Suggested Activities*	* Activity: Concept Attainment - Weather vs. Climate	45 minutes
	* Investigation: Weather or Climate?	45 minutes
	* Investigation: Climate Zones	45 minutes
	* Argumentation: Weather or Climate?	60 minutes
	TEKS Video: Weather and Climate	15 minutes
Apply and Extend	Activity: Weather or Climate Card Sort	30 minutes
	Connection to STEM Career: Climatologists	30 minutes
	Literacy Connection: Weather on the Big Island	45 minutes
	Research: What I Wonder About Climate	45 minutes
	Study Guide: Weather and Climate	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Climographs	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Weather or Climate?	45 minutes

4.11A: Earth's Resources

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Energy from Earth	30 minutes
	* Establish Relevance: Four Corners - Earth's Resources	30 minutes
Investigate and Learn **Suggested Activities*	* Activity: Odd One Out - Earth's Resources	30 minutes
	* Investigation: An Energy Problem	120 minutes
	* Argumentation: Evaluating Solutions	60 minutes
	TEKS Video: Earth's Resources	15 minutes
Apply and Extend	Activity: Comparing Natural Resources	30 minutes
	Activity: Earth's Resources Connection	30 minutes
	Literacy Connection: Big Boom in the Big Thicket	30 minutes
	Engineering Challenge: Oil Pumps and Water Wheels	90 minutes
	Study Guide: Earth's Resources	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Energy from Earth	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	30 minutes
	Performance Task: Revisiting Earth's Resources	45 minutes

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4.11B: Energy Resources

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Energy Consumption	30 minutes
	* Establish Relevance: No Electricity	15 minutes
Investigate and Learn **Suggested Activities*	* Activity: Energy Use	45 minutes
	* Activity: Conservation, Energy Efficiency, and the Environment	60 minutes
	* Activity: The Impact of Innovation	90 minutes
	TEKS Video: Energy Resources	15 minutes
Apply and Extend	Activity: Making Sense of Energy Resources	30 minutes
	Literacy Connection: Biofuel on the Rise	30 minutes
	Engineering Challenge: Pollution in the Aquifer	90 minutes
	Study Guide: Energy Resources	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Energy Consumption	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Energy Consumption and Conservation	45 minutes

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4.11C: Physical Properties of Rock

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Wet Sand	30 minutes
	Establish Relevance: Rocks and Storage	15 minutes
Investigate and Learn **Suggested Activities*	* Activity: A Sponge and a Rock	30 minutes
	* Investigation: Porosity	75 minutes
	* Planning an Investigation: Rocks and Oil	60 minutes
	TEKS Video: Physical Properties of Rocks	15 minutes
Apply and Extend	Activity: Rocks Store Resources	30 minutes
	Literacy Connection: Metals and Minerals in Rocks	30 minutes
	Connection to STEM: Mining	30 minutes
	Study Guide: Physical Properties of Rocks	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Wet Sand	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Do You Agree?	45 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. 6.

4.12A: Producers

* additional time required

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring The Investigative Phenomenon: Water Lily	30 minutes
	Establish Relevance: Plants	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Removing The Light Source	45 minutes*
	* Investigation: Producers	45 minutes*
	* Investigation: How Do Plants Breathe?	90 minutes
	* Argumentation: Cycling of Matter	90 minutes
	TEKS Video: Producers	15 minutes
Apply and Extend	Literacy Connection: Leaves	30 minutes
	Activity: Cycling of Matter	30 minutes
	Connection to STEM Career: Botanist	30 minutes
	Planning an Investigation: Producer Inquiry	60 minutes
	Study Guide: Producers	20 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Water Lily	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Producers and Caves	30 minutes

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4.12B: Food Webs

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring The Investigative Phenomenon: Worms in Soil	30 minutes
	* Establish Relevance: Discussing Food Webs	15 minutes
Investigate and Learn **Suggested Activities*	* Activity: Food Webs Are a System	45 minutes
	* Investigation: Follow the Energy	45 minutes
	* Investigation: The Role of a Decomposer	60 minutes
	* Argumentation: Where Did It Go?	2 days
	TEKS Video: Food Webs	15 minutes
Apply and Extend	Literacy Connection: Getting Energy	30 minutes
	Research: Comparing Ecosystems	45 minutes
	Problem Solvers: Environmental Engineers	30 minutes
	Field Investigation: Energy and Matter Outside	45 minutes
	Study Guide: Food Webs	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Worms in Soil	30 minutes
	* Connecting to the Anchoring Phenomenon	30 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: The Sun, Systems, and Cycles	30 minutes

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4.12C: Fossil Evidence of Past Environments

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Fossils in the Rocks	30 minutes
	* Establish Relevance: Fossils	30 minutes
Investigate and Learn **Suggested Activities*	* Activity: Structures and Environments	30 minutes
	* Investigation: Where Was this Fossil Found?	45 minutes
	* Planning an Investigation: What Was the Past Environment?	135 minutes
	TEKS Video: Fossil Evidence of Past Environments	15 minutes
Apply and Extend	Activity: Take a Stand - Fossil Evidence	30 minutes
	Literacy Connection: Texas in the Jurassic Period	30 minutes
	Connection to STEM: Museums of Natural History	30 minutes
	Research: Past Environments Across Texas	45 minutes
	Study Guide: Fossil Evidence of Past Environments	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Fossils in the Rocks	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Describing the Past	45 minutes

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4.13A: Plant Structures and Functions

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring the Investigative Phenomenon: Blue Agave	30 minutes
	* Establish Relevance: Harvesting Agave	15 minutes
Investigate and Learn **Suggested Activities*	* Field Investigation: Plants In Nature	60 minutes
	* Investigation: Structures for Survival	45 minutes
	* Investigation: Find My Function	60 minutes
	* Activity: Roots and Environments	45 minutes
	TEKS Video: Plant Structures and Functions	15 minutes
Apply and Extend	Activity: Flow of Water In A Plant	30 minutes
	Activity: Graphic Organizer	30 minutes
	Research: Comparing Plant Structures	30 minutes
	Activity: Structures and Functions of Plants Video	30 minutes
	Engineering Challenge: Design an Irrigation System	60 minutes
	Study Guide: Plant Structures and Functions	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Blue Agave	30 minutes
	* Connecting to the Anchoring Phenomenon	30 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Plant Structures and Functions	30 minutes

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4.13B: Inherited and Acquired Traits

* additional time required

Lesson Section	Activity	Time Allotment
Engage and Establish Relevance **Suggested Activities*	* Exploring The Investigative Phenomenon: Traits of Puppies	30 minutes
	* Establish Relevance: Do You Have Dimples?	15 minutes
Investigate and Learn **Suggested Activities*	* Investigation: Parents and Their Offspring	60 minutes
	* Investigation: Plant Traits and Soil Quality	45 minutes*
	* Activity: Inventory of Traits	30 minutes
	* Argumentation: Baby Hamsters	90 minutes
	TEKS Video: Inherited and Acquired Traits	15 minutes
Apply and Extend	Discussion: Odd One Out	30 minutes
	Activity: Tree Map - Traits	30 minutes
	Activity: Card Sort - What's My Trait?	30 minutes
	Study Guide: Inherited and Acquired Traits	30 minutes
Evaluate **Suggested Activities*	* Explaining the Investigative Phenomenon: Traits of Puppies	30 minutes
	* Connecting to the Anchoring Phenomenon	15 minutes
	Concept Mastery Assessments	20 min each
	Vocabulary Mastery	15 minutes
	Performance Task: Inherited and Acquired Traits Claim-Evidence-Reasoning	60 minutes