Summit K12 Pacing Materials

7th 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 7th 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	5	29 days
Force, Motion, and Energy	7	40 days
Earth and Space	7	41 days
Organisms and Environments	8	50 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, 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.

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7th Grade Science Units

Unit 1: Matter
- 7.6A Elements and Compounds
- 7.6B Chemical Formulas
- 7.6C Physical and Chemical Changes in Matter

Unit 2: Properties of Solutions
- 7.6D Solutions
- 7.6E Factors Affecting Rates of Dissolving

Unit 3: Force and Motion
- 7.7A Calculating Average Speed
- 7.7B Speed vs. Velocity
- 7.7C Distance-Time Graphs
- 7.7D Newton's First Law of Motion

Unit 4: Thermal Energy
- 7.8A Methods of Thermal Energy Transfer
- 7.8B Patterns of Thermal Energy
- 7.8C Temperature and Kinetic Energy

Unit 5: Our Solar System
- 7.9A Components of Our Solar System
- 7.9B Gravity and Our Solar System
- 7.9C Characteristics that Enable Life on Earth

Unit 6: Plate Tectonics
- 7.10A Changes in Earth Over Time
- 7.10B Effects of Plate Tectonics

Unit 7: Impacts of Human Activity on the Hydrosphere
- 7.11A Watershed and Human Activity
- 7.11B Ocean Systems and Human Activity

Unit 8: Ecosystems
- 7.12A Flow of Energy in Trophic Levels
- 7.12B Energy and Sustainability of Ecosystems

Unit 9: Organization in Organisms
- 7.13B Levels of Organization in Plants and Animals
- 7.13A Functions of Human Body Systems

Unit 10: Inherited Traits
- 7.13C Asexual vs. Sexual Reproduction
- 7.13D Natural and Artificial Selection

Unit 11: Taxonomy
- 7.14A Taxonomy
- 7.14B Characteristics of Kingdoms

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Scope and Sequence

RC	Unit	TEKS	Suggested Instructional Time	Unit Total
RC1: Matter and Energy	1	**7.6A** Elements and Compounds	5 days	17 days
		7.6B Chemical Formulas	5 days	
		7.6C Physical and Chemical Changes in Matter	7 days	
	2	**7.6D** Solutions	6 days	12 days
		7.6E Factors Affecting Rates of Dissolving	6 days	
RC2: Force, Motion, and Energy	3	7.7A Calculating Average Speed	7 days	25 days
		7.7B Speed vs. Velocity	6 days	
		7.7C Distance-Time Graphs	7 days	
		7.7D Newton's First Law of Motion	5 days	
	4	7.8A Methods of Thermal Energy Transfer	7 days	15 days
		7.8B Patterns of Thermal Energy	4 days	
		7.8C Temperature and Kinetic Energy	4 days	
RC3: Earth and Space	5	7.9A Components of Our Solar System	8 days	17 days
		7.9B Gravity and Our Solar System	4 days	
		7.9C Characteristics that Enable Life on Earth	5 days	
	6	7.10A Changes in Earth Over Time	6 days	14 days
		7.10B Effects of Plate Tectonics	8 days	
	7	7.11A Watershed and Human Activity	5 days	10 days
		7.11B Ocean Systems and Human Activity	5 days	
RC4: Organisms and Environments	8	7.12A Flow of Energy in Trophic Levels	8 days	13 days
		7.12B Energy and Sustainability of Ecosystems	5 days	
	9	7.13B Levels of Organization in Plants and Animals	4 days	16 days
		7.13A Functions of Human Body Systems	12 days	
	10	7.13C Asexual vs. Sexual Reproduction	5 days	10 days
		7.13D Natural and Artificial Selection	5 days	
	11	7.14A Taxonomy	5 days	11 days
		7.14B Characteristics of Kingdoms	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 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 9-41, 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 8.

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Pacing Guide

Reporting Category	TEKS	Suggested Instructional Time
RC1: Matter and Energy	**7.6A:** Elements and Compounds	5 days
	7.6B: Chemical Formulas	5 days
	7.6C: Physical and Chemical Changes in Matter	7 days
	7.6D: Solutions	6 days
	7.6E: Factors Affecting Rates of Dissolving	6 days
RC2: Force, Motion, and Energy	**7.7A:** Calculating Average Speed	7 days
	7.7B: Speed vs. Velocity	6 days
	7.7C: Distance-Time Graphs	7 days
	7.7D: Newton's First Law of Motion	5 days
	7.8A: Methods of Thermal Energy Transfer	7 days
	7.8B: Patterns of Thermal Energy	4 days
	7.8C: Temperature and Kinetic Energy	4 days
RC3: Earth and Space	**7.9A:** Components of Our Solar System	8 days
	7.9B: Gravity and Our Solar System	4 days
	7.9C: Characteristics that Enable Life on Earth	5 days
	7.10A: Changes in Earth Over Time	6 days
	7.10B: Effects of Plate Tectonics	8 days
	7.11A: Watershed and Human Activity	5 days
	7.11B: Ocean Systems and Human Activity	5 days
RC4: Organisms and Environments	**7.12A:** Flow of Energy in Trophic Levels	8 days
	7.12B: Energy and Sustainability of Ecosystems	5 days
	7.13A: Functions of Human Body Systems	12 days
	7.13B: Levels of Organization in Plants and Animals	4 days
	7.13C: Asexual and Sexual Reproduction	5 days
	7.13D: Natural and Artificial Selection	5 days
	7.14A: Taxonomy	5 days
	7.14B: Characteristics of Kingdoms	6 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.

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7.6A: Elements and Compounds

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Writing Like a Chemist	30 minutes
Establish Relevance	Demonstration: Micro Foil	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Elements and Compounds	
	Activity: Periodic Table Search	30 minutes
	Practice: Elements vs. Compounds Card Sort	20 minutes
	Practice: Elements vs. Compounds	30 minutes
	TEKS Video: Elements and Compounds	14 minutes
Apply and Extend	Project: Comparing the Building Blocks	2 days
	Practice: Compound Models	1 day
	Phenomenon: Writing Like a Chemist	30 minutes
	Study Guide: Elements and Compounds	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.6B: Chemical Formulas

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Counting Like a Chemist	30 minutes
Establish Relevance	Activity: Element Search	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Chemical Formulas	
	Demonstration: Modeling Chemical Formulas	20 minutes
	Practice: Counting Atoms	30 minutes
	Practice: Formula Comparisons	20 minutes
	TEKS Video: Chemical Formulas	11 minutes
Apply and Extend	Practice: Chemical Plant Chaos!	1 day
	Phenomenon: Counting Like a Chemist	30 minutes
	Study Guide: Chemical Formulas	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.6C: Physical and Chemical Changes in Matter

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Blue vs. Yellow	30 minutes
	Activity: Matter Memory Check	30 minutes
Establish Relevance	Discussion: Physical and Chemical Changes in Baking	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Descriptive Investigation: Testing Physical Properties	1 day
	Practice: Physical and Chemical Changes Card Sort	20 minutes
	Practice: Physical and Changes in My Daily Life	1 day
	Station Investigation: Physical and Chemical Changes	3 days
	TEKS Video: Physical and Chemical Changes in Matter	9 minutes
Apply and Extend	Literacy Connection: Changes in Wood CER	30 minutes
	Project: My Recipe Book	2 days
	Design an Investigation: Physical and Chemical Changes	2 days
	Phenomenon: Blue vs. Yellow	30 minutes
	Study Guide: Physical and Chemical Changes in Matter	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.6D: Solutions

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Drink Powder	30 minutes
Establish Relevance	Demonstration: Drink Mix Taste Test	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Solutions	
	Practice: Solute or Solvent?	30 minutes
	Descriptive Investigation: Soluble vs. Insoluble	1 day
	Demonstration: Saturated Solution	20 minutes
	Virtual Investigation: Concentration	1 day
	Descriptive Investigation: Aqueous Solutions	1 day
	TEKS Video: Solutions	11 minutes
Apply and Extend	Design and Investigation: Salt vs. Sugar	2 days
	Phenomenon: Drink Powder	30 minutes
	Study Guide: Solutions	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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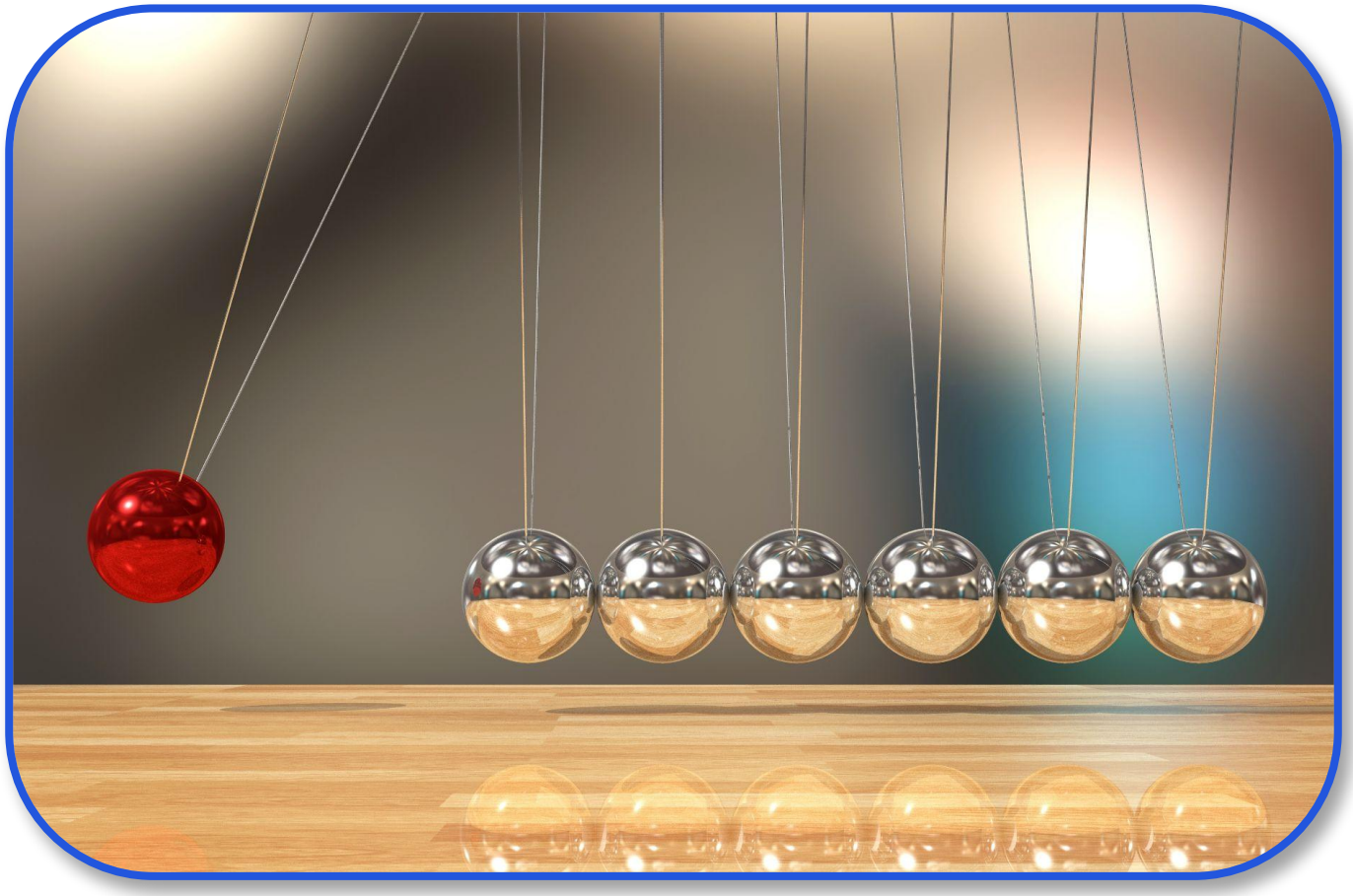
7.6E: Dissolution

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Disappearing Candy	30 minutes
Establish Relevance	Discussion: Hot Chocolate	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Dissolution	
	Practice: Dissolution	30 minutes
	Comparative Investigation: Dissolution Rates	1 day
	Practice: Dissolution Log	1 day
	TEKS Video: Factors Affecting Rates of Dissolution	13 minutes
Apply and Extend	Project: Coffee-Making Methods	2 days
	Design an Investigation: Dissolving the Candy	2 days
	Phenomenon: Disappearing Candy	30 minutes
	Study Guide: Dissolution	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.

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7.7A: Calculating Average Speed

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: 100 Meter Dash	30 minutes
Establish Relevance	Discussion: Taking a Trip	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Calculating Average Speed	
	Discussion: Average vs. Top Speed	30 minutes
	Practice: Calculating Average Speed	30 minutes
	Comparative Investigation: The Speedy Science Showdown	1 day
	TEKS Video: Calculating Average Speed	12 minutes
Apply and Extend	Design an Investigation: Calculating Speed	1 day
	Phenomenon: 100 Meter Dash	1 day
	Study Guide: Calculating Average Speed	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.7B: Speed vs. Velocity

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Comeback Can	30 minutes
Establish Relevance	Discussion: Speedy Scenarios	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Activity: Rolling Rally	10 minutes
	Activity: Speed or Velocity?	20 minutes
	Descriptive Investigation: On the Fast Track	1 day
	Practice: Speed vs. Velocity Card Sort	15 minutes
	TEKS Video: Speed vs. Velocity	10 minutes
Apply and Extend	Project: Velocity Ventures	2 days
	Phenomenon: Comeback Can	30 minutes
	Study Guide: Speed vs. Velocity	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.7C: Distance-Time Graphs

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Visualizing Motion	30 minutes
Establish Relevance	Discussion: Everyday Graphs	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: DIstance-Time Graphs	
	Virtual Investigation: Graphing Motion	1 day
	Practice: Motion Graph Match	20 minutes
	Practice: Interpreting Distance-Time Graphs	1 day
	TEKS Video: Distance-Time Graphs	11 minutes
Apply and Extend	Activity: Graph Stories	1 day
	Phenomenon: Visualizing Motion	30 minutes
	Study Guide: Distance-Time Graphs	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.7D: Newton's First Law of Motion

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Knife the Potato	30 minutes
Establish Relevance	Discussion: Car Crash	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Demonstration: Crossing the Finish Line	30 minutes
	Descriptive Investigation: Sloshing Water	1 day
	Station Investigation: Newton's First Law	1 day
	TEKS Video: Newton's First Law of Motion	8 minutes
Apply and Extend	Project: Inertia One-Pager	2 days
	Design an Investigation: Mass and Inertia	2 days
	Phenomenon: Knife the Potato	30 minutes
	Study Guide: Newton's First Law of Motion	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.8A: Methods of Thermal Energy Transfer

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Making Popcorn	30 minutes
Establish Relevance	Discussion: Everyday Heat Transfer	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Thermal Energy Transfer Fold-It	
	Demonstration: Convection	30 minutes
	Descriptive Investigation: Melting Chocolate	1 day
	Descriptive Investigation: Thermal Energy Transfer	1 day
	Practice: Convection, Conduction, and Radiation	1 day
	TEKS Video: Methods of Thermal Energy Transfer	13 minutes
Apply and Extend	Engineering Challenge: No Electricity? No problem!	5 days
	Engineering Challenge: The Warmest Cup	5 days
	Phenomenon: Making Popcorn	30 minutes
	Study Guide: Methods of Thermal Energy Transfer	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.8B: Patterns of Thermal Energy

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Throwing Clouds	30 minutes
	Demonstration: Melting Ice Cubes	10 minutes
Establish Relevance	Discussion: Heat Flow	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Virtual Investigation: Thermal Energy Transfer	1 day
	Descriptive Investigation: Warmer to Cooler	1 day
	Literacy Connection: Thermal Energy in Our Lives	30 minutes
	TEKS Video: Patterns of Thermal Energy	9 minutes
Apply and Extend	Project: Bread-Baking Disaster	2 days
	Engineering Challenge: Designing a Cooler	5 days
	Phenomenon: Throwing Clouds	30 minutes
	Study Guide: Patterns of Thermal Energy	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.8C: Temperature and Kinetic Energy

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Freezing Balloon Animals	30minutes
	Demonstration: Describing vs. Measuring Temperature	15 minutes
Establish Relevance	Discussion: Boiling Water	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Descriptive Investigation: Rice in Water	1 day
	Descriptive Investigation: Colorful Water	1 day
	Literacy Connection: Temperature and Kinetic Energy	1 day
	TEKS Video: Temperature and Kinetic Energy	6 minutes
Apply and Extend	Design an Investigation: Relating Temperature to Kinetic Energy	2 days
	Project: Modeling the Kinetic Energy of Particles	2 days
	Phenomenon: Freezing Balloon Animals	30 minutes
	Study Guide: Temperature and Kinetic Energy	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.

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7.9A: Components of Our Solar System

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Halley's Comet	30 minutes
Establish Relevance	Discussion: Our Solar System	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Activity: Solar System Card Sort	30 minutes
	Activity: Solar System Scroll	1 day
	Practice: Physical Property Card Sort	30 minutes
	TEKS Video: Components of Our Solar System	17 minutes
Apply and Extend	Project: Famous Celestial Bodies	2 days
	Project: Astronomy Careers	2 days
	Phenomenon: Halley's Comet	30 minutes
	Study Guide: Components of Our Solar System	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.9B: Gravity and Our Solar System

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Planets in Motion	30 minutes
Establish Relevance	Activity: Jumping in Space	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Gravity and Our Solar System	
	Demonstration: Modeling Orbits	15 minutes
	Virtual Investigation: Gravity and Orbits	1 day
	Literacy Connection: Gripping Gravity	1 day
	TEKS Video: Gravity and Our Solar System	11 minutes
Apply and Extend	Project: Cosmic Carnival	2 days
	Phenomenon: Planets in Motion	30 minutes
	Study Guide: Gravity and Our Solar System	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.9C: Characteristics that Enable Life on Earth

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Earth vs. Mars	30 minutes
	Discussion: A Search for Fresh Air	20 minutes
Establish Relevance	Discussion: Space Colonization	15 minutes
Investigate and Learn	Literacy Connection: Earth's Life Sustaining Atmosphere	30 minutes
	Key Concept Slides	30 minutes
	Notebooking: Life on Earth Fold-It	
	Experimental Investigation: Imagining Alien Plants	3 days
	Project: Is Mars the New Earth	2 days
	TEKS Video: Characteristics That Enable Life on Earth	8 minutes
Apply and Extend	Project: Artemis Missions Travel Brochure	2 days
	Phenomenon: Earth vs. Mars	30 minutes
	Study Guide: Characteristics That Enable Life on Earth	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.10A: Changes in Earth Over Time

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Marine Fossils in Texas	30 minutes
Establish Relevance	Activity: The Motion of Earth's Plates	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Activity: Tracking Earth's Landmasses	1 day
	Activity: Superposition	30 minutes
	Activity: Wegener's Drifting Continents	1 day
	Literacy Connection: Seafloor Spreading	30 minutes
	TEKS Video: Changes in Earth Over Time	10 minutes
Apply and Extend	Literacy Connection: Present-Day Continents	30 minutes
	Project: Superposition	2 days
	Phenomenon: Marine Fossils in Texas	30 minutes
	Study Guide: Changes in Earth Over Time	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.10B: Effects of Plate Tectonics

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Ring of Fire	30 minutes
Establish Relevance	Discussion: Earth's Features	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Effects of Plate Tectonics	
	Activity: Tectonic Plates and Volcanoes	30 minutes
	Descriptive Investigation: Tasty Tectonics	1 day
	TEKS Video: Effects of Plate Tectonics	15 minutes
Apply and Extend	Research: The Growing Mountain	2 days
	Project: 3-D Tectonics	2 days
	Engineering Challenge: A Bridge Built for Earthquakes	5 days
	Phenomenon: Ring of Fire	30 minutes
	Study Guide: Effects of Plate Tectonics	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.11A: Watersheds and Human Activity

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Floating Fish	30 minutes
Establish Relevance	Discussion: Litter, Littler, Everywhere	20 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Activity: Modeling a Watershed	30 minutes
	Literacy Connection: Watersheds	1 day
	Practice: Human Impact on Water	30 minutes
	TEKS Video: Watersheds and Human Activity	14 minutes
Apply and Extend	Engineering Challenge: Water, Water, Everywhere, and Not a Drop to Drink	5 days
	Project: Water Public Service Announcement	2 days
	Phenomenon: Floating Fish	30 minutes
	Study Guide: Watersheds and Human Activity	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.11B: Ocean Systems and Human Activity

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Sunken Ships	30 minutes
Establish Relevance	Discussion: Seeing Seafood	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Descriptive Investigation: Overfishing	1 day
	Research: Microplastics and their Effect on Ocean Systems	2 days
	Literacy Connection: What is an Artificial Reef?	30 minutes
	Literacy Connection: Human Dependence and Impact on Coral Reefs	1 day
	TEKS Video: Ocean Systems and Human Activity	9 minutes
Apply and Extend	Project: Human Impact on Oceans One-Pager	2 days
	Project: Our Oceans Deliver	2 days
	Activity: Solution Swap	15 minutes
	Phenomenon: Sunken Ships	30 minutes
	Study Guide: Ocean Systems and Human Activity	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.

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7.12A: Flow of Energy in Trophic Levels

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: The Chesapeake Bay	30 minutes
Establish Relevance	Descriptive Investigation: Observing Our School's Ecosystem	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Literacy Connection: Energy Transfer in Ecosystems	1 day
	Activity: Energy Transfer in the Food Chain	1 day
	Practice: Flow of Energy	20 minutes
	TEKS Video: Flow of Energy in Trophic Levels	12 minutes
Apply and Extend	Activity: Building an Aquatic Energy Pyramid	30 minutes
	Project: Go with the Energy Flow	2 days
	Project: Modeling an Energy Pyramid	2 days
	Phenomenon: The Chesapeake Bay	30 minutes
	Study Guide: Flow of Energy in Trophic Levels	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.12B: Energy and the Sustainability of Ecosystems

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Bottled Up Shrimp	30 minutes
Establish Relevance	Discussion: The Role of Bees	30 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Literacy Connection: The Loss of Large Predators	1 day
	Descriptive Investigation: Recycling Matter	30 minutes
	Project: The Role of Decomposers	2 days
	TEKS Video: Energy and the Sustainability of Ecosystems	11 minutes
Apply and Extend	Project: Ecosystem Sustainability	2 days
	Phenomenon: Bottled Up Shrimp	30 minutes
	Study Guide: Energy and the Sustainability of Ecosystems	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.13A: Functions of Human Body Systems

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Walking a Tightrope	30 minutes
Establish Relevance	Discussion: Moving Your Body	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Human Body Systems Notes	1 day
	Demonstration: Pump It Up	20 minutes
	Descriptive Investigation: Modeling the Respiratory System	1 day
	Project: Building a Functional Model of an Arm	3 days
	Practice: Digestive Process Card Sort	30 minutes
	Descriptive Investigation: Modeling Kidney Filtration	1 day
	Activity: Reproductive System Flowchart	20 minutes
	Descriptive Investigation: Temperature Regulation in the Integumentary System	1 day
	Comparative Investigation: Ruler Reaction Times	1 day
	Activity: “I Won’t Let You In” Simulation	1 day
	Activity: “Hormonal Day” Board Game	1 day
	Practice: Body System Card Sort	30 minutes
	TEKS Video: Functions of Human Body Systems	16 minutes

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7.13A: Functions of Human Body Systems

Lesson Section	Activity	Time Allotment
Apply and Extend	Project: Body System Specialist Fact File	1 day
	Project: Human Body System Model	2 days
	Project: The History of Medical Advancements	2 days
	Phenomenon: Walking a Tightrope	30 minutes
	Study Guide: Functions of Human Body Systems	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.13B: Levels of Organization in Plants and Animals

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Avocado Grafting	30 minutes
Establish Relevance	Discussion: Size It Up	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Levels of Organization Fold-It	
	Practice: Levels of Organization Card Sort	20 minutes
	Practice: Create a Mnemonic	20 minutes
	TEKS Video: Levels of Organization in Plants and Animals	9 minutes
Apply and Extend	Practice: Levels of Organization Analogies	30 minutes
	Project: Levels of Organization 3D Model	2 days
	Phenomenon: Avocado Grafting	30 minutes
	Study Guide: Levels of Organization in Plants and Animals	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.13C: Asexual and Sexual Reproduction

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Comparing Offspring	30 minutes
	Activity: Survival Lottery	30 minutes
Establish Relevance	Discussion: Cloning Yourself	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Asexual vs. Sexual Reproduction Venn Diagram	
	Discussion: Asexual Reproduction	15 minutes
	Discussion: Sexual Reproduction	15 minutes
	Comparative Investigation: Asexual vs. Sexual Reproduction	1 day
	TEKS Video: Asexual vs. Sexual Reproduction	12 minutes
Apply and Extend	Project: Asexual Reproduction	2 days
	Design an Investigation: Plant Reproduction*	15 days
	Phenomenon: Comparing Offspring	30 minutes
	Study Guide: Asexual and Sexual Reproduction	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

*NOTE: This 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.

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7.13D: Natural and Artificial Selection

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Wolf-Chihuahua Connection	30 minutes
	Demonstration: Hiding in Plain View	15 minutes
Establish Relevance	Discussion: Dog Breeds	15 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Natural and Artificial Selection	
	Virtual Investigation: Natural Selection	1 day
	Descriptive Investigation: Can You See Me?	1 day
	Descriptive Investigation: Designer Dogs	1 day
	TEKS Video: Natural and Artificial Selection	12 minutes
Apply and Extend	Project: Become an Adaptation Expert	2 days
	Project: Natural and Artificial Selection	2 days
	Phenomenon: Wolf-Chihuahua Connection	30 minutes
	Study Guide: Natural and Artificial Selection	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.14A: Taxonomy

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Whale, Dolphins, and Seals, Oh My!	30 minutes
Establish Relevance	Discussion: Grocery Store Organization	10 minutes
Investigate and Learn	Key Concept Slides	30 minutes
	Notebooking: Taxonomy Fold-It	
	Practice: Create a Mnemonic	15 minutes
	Practice: Taxonomy Levels	20 minutes
	TEKS Video: Taxonomy	18 minutes
Apply and Extend	Research: Taxonomy	1 day
	Literacy Connection: Mule Analysis	15 minutes
	Phenomenon: Whales, Dolphins, and Seals, Oh My!	30 minutes
	Study Guide: Taxonomy	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes

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7.14B: Characteristics of Kingdoms

Lesson Section	Activity	Time Allotment
Engage	Phenomenon: Categorizing by Kingdoms	30 minutes
Establish Relevance	Discussion: Messy Room	10 minutes
Investigate and Learn	Practice: Vocabulary Card Sort	20 minutes
	Key Concept Slides	30 minutes
	Notebooking: Kingdoms Graphic Organizer	
	Practice: Characteristics Card Sort	30 minutes
	Practice: Kingdoms Venn Diagram	1 day
	TEKS Video: Characteristics of Kingdoms	20 minutes
Apply and Extend	Project: Kingdoms Wanted Poster	2 days
	Phenomenon: Categorizing by Kingdoms	30 minutes
	Study Guide: Characteristics of Kingdoms	30 minutes
Evaluate	Formative Assessment 1	20 minutes
	Vocabulary Mastery	15 minutes
	Formative Assessment 2	20 minutes