



Science Odyssey Scope and Sequence



Introduction to Working with *Science Odyssey Grade 7-8 Series*

Welcome to the *Science Odyssey Grade 7-8 Series*, a comprehensive educational resource designed to engage and empower students in the exploration of scientific concepts aligned with the **Next Generation Science Standards (NGSS)**. This introduction serves as a guide to effectively navigate and utilize the contents of this series, comprising two volumes of textbooks and accompanying activity books.

Textbook Overview:

The textbook component of the series encompasses **18 chapters**, each meticulously crafted to facilitate a deep understanding of scientific principles. With a total of **92 lessons (grade 7)** and **107 lessons (grade 8)**, students will embark on a journey of discovery, guided by clear lesson objectives, key vocabulary elucidated with synonyms and explanations, and direct alignment with NGSS standards. Each lesson is structured to stimulate curiosity with engaging questions, followed by theoretical exploration and STEM-

including identification, explanation, comparison, contrast, description, summarization, and prediction.

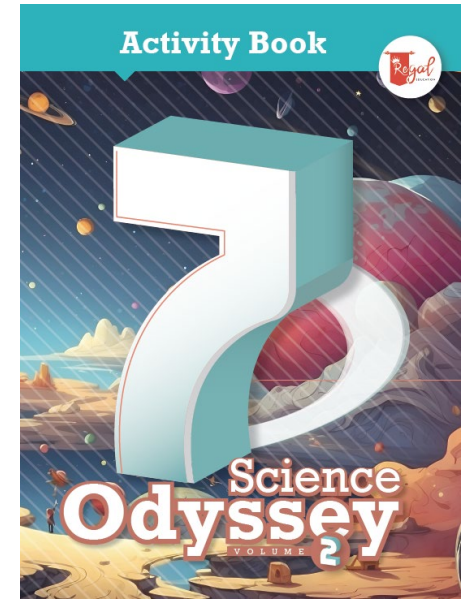
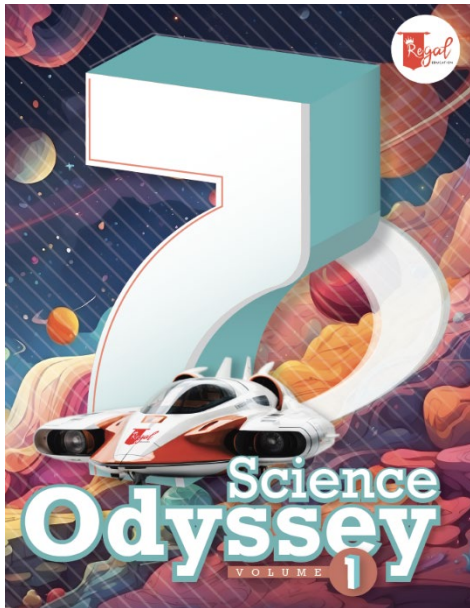
Activity Book Integration:

Complementing each lesson in the textbook is a designated activity in the accompanying activity book. These activities foster hands-on learning experiences, with STEAM projects tailored to reinforce lesson concepts and activity worksheets designed to consolidate learning. Whether utilized in the classroom or assigned as homework, these resources provide avenues for practical application and reinforcement of theoretical knowledge.

Assessment Components:

To gauge comprehension and readiness for **summative assessments**, each chapter includes a **standardized practice test** within the textbook. These tests are structured to assess knowledge acquisition at different cognitive levels, featuring multiple-choice questions (DOK 1) for foundational understanding, short-answer questions (DOK 2-3) to promote critical thinking, and long-answer questions (DOK 4) for real-life application and synthesis of concepts.

The *Science Odyssey Grade 7-8* Series offers a comprehensive framework for engaging with science education, fostering curiosity, critical thinking, and practical application of knowledge. By leveraging the resources provided in the textbooks and activity books, students can embark on a transformative learning journey that equips them with the skills and understanding needed to excel in scientific exploration and inquiry.



Science Odyssey Grade 7

GRADE 7

Knowledge Odyssey



NGSS STANDARDS

CHAPTER 1: Science and the Awesome Adventure Ahead

- NGSS Domain: Science and Engineering Practices
- Disciplinary Core Ideas: Crosscutting Concepts

Lesson 1: Curiosity is your superpower. Use it to explore and understand the world.

- NGSS Standard: Asking Questions and Defining Problems

Lesson 2: Ask epic questions like a true scientist and drive your discoveries forward.

- NGSS Standard: Planning and Carrying Out Investigations

Lesson 3: Step into the shoes of a science explorer and learn different exploration methods.

- NGSS Standard: Obtaining, Evaluating, and Communicating Information

Lesson 4: Become a data detective, crack the code of data, and draw meaningful conclusions.

- NGSS Standard: Analyzing and Interpreting Data

Lesson 5: Build your scientific superpowers by mastering the scientific method and critical thinking.

- NGSS Standard: Developing and Using Models

Lesson 6: Face the Epic Science Showdown and apply everything you've learned.

- NGSS Standard: Constructing Explanations and Designing Solutions

CHAPTER 2: Cells and the Magical World Within

- NGSS Domain: Life Science

Lessons 1-6: Explore the microscopic marvels, ecosystems, adaptations, and ecological balance.

- NGSS Standard: Structure and Function

CHAPTER 3: Earth's Amazing Makeover

- NGSS Domain: Earth and Space Science

Lessons 1-6: Dive into the Earth's crust, volcanic wonders, rock detectives, soil ecosystems, weathering, and fossils.

- NGSS Standard: Earth's Systems

CHAPTER 4: The Earth's Structure

- NGSS Domain: Physical Science

Lessons 1-6: Meet the unsung heroes of chemistry, explore alchemical transformations, witness the magic of matter, density duels, and become elemental explorers.

- NGSS Standard: Matter and Its Interactions

CHAPTER 5: Dynamic Earth: Forces, Laws, and Energies

- NGSS Domain: Physical Science

Lessons 1-6: Learn about forces, Newton's laws, energy types, and the dynamics of Earth's forces.

- NGSS Standard: Motion and Stability: Forces and Interactions

CHAPTER 6: Energies Unleashed: From Cosmic Symphony to Quantum Dance

- NGSS Domain: Physical Science

Lessons 1-6: Dive into the realms of kinetic, potential, thermal, radiant, and electrical energy.

- NGSS Standard: Energy



NGSS STANDARDS

CHAPTER 7: Exploring Our Cosmic Neighborhood

- NGSS Domain: Earth and Space Science

Lessons 1-6: Journey through our solar system, lunar phases, seasons, and the pioneers of space exploration.

- NGSS Standard: Earth and Space Sciences

CHAPTER 8: Engineering Odyssey

- NGSS Domain: Engineering, Technology, and Applications of Science

Lessons 1-4: Master prototyping, explore ethics in engineering, and understand the impact of technology on society.

- NGSS Standard: Engineering Design

CHAPTER 9: Amazing Human Body

- NGSS Domain: Life Science

Lessons 1-6: Unlock the human blueprint, explore cardio and lung systems, digestive and excretory systems, brain and hormones, and the muscular-skeletal system.

- NGSS Standard: From Molecules to Organisms: Structures and Processes

CHAPTER 10: Biodiversity

- NGSS Domain: Life Science

Lessons 1-6: Explore biodiversity, conservation, ecosystems, adaptations, and the role of individuals in environmental protection.

- NGSS Standard: Ecosystems: Interactions, Energy, and Dynamics



Chapter 11: Genetic Superpowers and Hereditary Wonders

- NGSS Domain: Life Science

Lessons 1-6: Journey through the world of genes, Mendel's discoveries, DNA magic, genetic traits, genetic diversity, and real-world applications.

- NGSS Standard: Heredity: Inheritance and Variation of Traits

Chapter 12: Chemical Adventures – From Reactions to Solutions

- NGSS Domain: Physical Science

Lessons 1-6: Dive into chemical reactions, balancing equations, environmental marvels, acid-base chemistry, and redox reactions.

- NGSS Standard: Chemical Reactions

Chapter 13: Energy Warriors – Battling Climate Change

- NGSS Domain: Earth and Space Science

Lessons 1-4: Explore fossil fuels, climate change history, collective action, and sustainable energy solutions.

- NGSS Standard: Earth and Human Activity

Chapter 14: Space Explorers and Cosmic Adventures

- NGSS Domain: Earth and Space Science

Lessons 1-6: Kick off the Space Odyssey, explore telescopes, the sun, distant galaxies, search for alien life, and glimpse into the future of space exploration.

- NGSS Standard: Earth and Space Sciences

GRADE 7

Knowledge Odyssey



NGSS STANDARDS

CHAPTER 15: Tech Titans and the Tech-Savvy World

■ NGSS Domain: Engineering, Technology, and Applications of Science

Lessons 1-4: Witness the impact of the Tech Revolution, navigate ethical dilemmas, explore futuristic technologies, and understand the global challenges posed by technology.

■ NGSS Standard: Technology and Engineering

CHAPTER 16: Eco-Warriors and Sustainability

■ NGSS Domain: Earth and Space Science

Lessons 1-5: Unveil Earth's environmental systems, meet ecosystem guardians, become pollution detectives, and embrace sustainable practices.

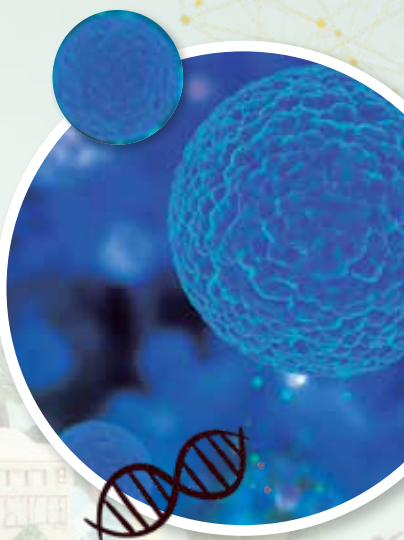
■ NGSS Standard: Earth and Human Activity

CHAPTER 17: Health Detectives – Solving the Mysteries of Wellness

■ NGSS Domain: Life Science

Lessons 1-4: Adopt the scientific approach to health, become nutritional wizards, preventative health heroes, and mind-body explorers.

■ NGSS Standard: From Molecules to Organisms: Structures and Processes



Textbook	Activity Book	NGSS
Chapter 01 Science and the Awesome Adventure Ahead Lesson 1: Unleash the Power of Curiosity! Lesson 2: Dare to Ask Epic Questions Lesson 3: Be a Science Explorer! Lesson 4: Crack the Code of Data Lesson 5: Build Your Scientific Superpowers Lesson 6: Epic Science Showdown! Standardized Practice Test	Chapter 01 Science and the Awesome Adventure Ahead Lesson 1: Unleash the Power of Curiosity! Lesson 2: Dare to Ask Epic Questions Lesson 3: Be a Science Explorer! Lesson 4: Crack the Code of Data Lesson 5: Build Your Scientific Superpowers Lesson 6: Epic Science Showdown!	Science and Engineering Practices: Asking Questions and Defining Problems (SEP1) Planning and Carrying Out Investigations (SEP3) Constructing Explanations and Designing Solutions (SEP6) Engaging in Argument from Evidence (SEP7) Analyzing and Interpreting Data (SEP4) Developing and Using Models (SEP2) Crosscutting Concepts: Patterns (CCC1) Cause and Effect (CCC2) Scale, Proportion, and Quantity (CCC4) Systems and System Models (CCC6) MS-PS1-3 MS-PS2-2 MS-ESS3-3 MS-ETS1-3 MS-LS1-8 MS-ESS3-1 MS-ETS1-1 MS-ETS1-4 MS-PS2-4 MS-LS2-5 MS-PS3-1 MS-ESS3-2

Textbook	Activity Book	NGSS
Chapter 02 Cells and the Magical World Within Lesson 1: Cell Discovery Quest Lesson 2: The Great Cell Carnival Lesson 3: Ecosystems Unveiled Lesson 4: Surviving the Wild World of Adaptations Lesson 5: Guardians of the Ecosystems Lesson 6: Battle of the Eco-Heroes! Standardized Practice Test	Chapter 02 Cells and the Magical World Within Lesson 1: Cell Discovery Quest Lesson 2: The Great Cell Carnival Lesson 3: Ecosystems Unveiled Lesson 4: Surviving the Wild World of Adaptations Lesson 5: Guardians of the Ecosystems Lesson 6: Battle of the Eco-Heroes!	Life Science: ▪ LS1: From Molecules to Organisms: Structures and Processes ▪ LS1.A: Structure and Function ▪ LS1.B: Growth and Development of Organisms ▪ S2: Ecosystems: Interactions, Energy, and Dynamics ▪ LS2.A: Interdependent Relationships in Ecosystems ▪ LS2.B: Cycles of Matter and Energy Transfer in Ecosystems ▪ LS2.C: Ecosystem Dynamics, Functioning, and Resilience ▪ LS4.C: Adaptation 2. Earth and Space Science: ▪ ESS3: Earth and Human Activity ▪ ESS3.A: Natural Resources ▪ ESS3.C: Human Impacts on Earth Systems 3. Engineering, Technology, and Applications of Science: ▪ ETS1: Engineering Design ▪ ETS1.B: Developing Possible Solutions Cross-Cutting Concepts: ○ Patterns ○ Systems and System Models ○ Energy and Matter ○ Stability and Change Ecosystems: Interactions, Energy, and Dynamics (NGSS LS2): ▪ LS2.A: Interdependent Relationships in Ecosystems Earth and Human Activity (NGSS ESS3): ▪ ESS3.C: Human Impacts on Earth Systems

Textbook	Activity Book	NGSS
		Earth's Systems (NGSS ESS2): ▪ ESS2.C: The Roles of Water in Earth's Surface Processes Science and Engineering Practices (NGSS SEP): ▪ SEP 1: Asking Questions and Defining Problems ▪ SEP 6: Constructing Explanations and Designing Solutions Crosscutting Concepts (NGSS CCC): ▪ CCC 4: Systems and System Models. MS-LS1-1 MS-LS1-5 MS-LS3-1 MS-LS4-2 MS-LS1-2 MS-LS1-3 MS-PS1-1 MS-PS1-3 MS-LS2-1 MS-LS2-2 MS-LS2-4 MS-LS2-5 MS-LS4-4 MS-ESS3-3 MS-ESS3-4

Textbook	Activity Book	NGSS
Chapter 03 Earth's Amazing Makeover Lesson 1: Dance of the Tectonic Plates Lesson 2: Earth's Fiery Spectacles Lesson 3: Rock Detectives Unite! Lesson 4: Secret Agents of Soil and Land Lesson 5: Weathering Warriors Lesson 6: Fossils Unearthed! Standardized Practice Test	Chapter 03 Earth's Amazing Makeover Lesson 1: Dance of the Tectonic Plates Lesson 2: Earth's Fiery Spectacles Lesson 3: Rock Detectives Unite! Lesson 4: Secret Agents of Soil and Land Lesson 5: Weathering Warriors Lesson 6: Fossils Unearthed!	MS-ESS2-2 MS-ESS3-1 ESS2.A ESS3.A ESS3.C ESS2.B MS-ESS2-2 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS2-1 MS-ESS3-1 MS-ESS3-2 MS-ESS3-1 MS-ESS2-2 MS-ESS2-4 MS-ESS3-1 MS-ESS3-1 MS-ESS3-1 MS-ESS2-3
Chapter 04 The Earth's Structure Lesson 1: Elements - The Heroes of Chemistry Lesson 2: Alchemical Transformations Lesson 3: The Matter Magicians Lesson 4: Density Duels and Buoyancy Battles Lesson 5: Elemental Explorers Unite! Lesson 6: Chemical Mayhem! Standardized Practice Test	Chapter 04 The Earth's Structure Lesson 1: Elements - The Heroes of Chemistry Lesson 2: Alchemical Transformations Lesson 3: The Matter Magicians Lesson 4: Density Duels and Buoyancy Battles Lesson 5: Elemental Explorers Unite! Lesson 6: Chemical Mayhem!	Crosscutting Concepts • Structure and Properties of Matter • Patterns • Structure and Function PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions PS1.C: Nuclear Processes PS2.B: Types of Interactions PS3.A: Definitions of Energy PS3.C: Relationship Between Energy and Forces and Interactions PS3.D: Energy in Chemical Processes and Everyday Life

Textbook	Activity Book	NGSS
		ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution MS-PS1-1 MS-PS1-2 MS-PS1-3 MS-PS1-4 MS-PS1-6 MS-PS1-5 MS-PS1-8 MS-PS2-2 MS-PS2-4 MS-PS3-4 MS-ESS3-3 MS-ESS2-5
Chapter 05 Dynamic Earth: Forces, Laws, and Energies Lesson 1-2: Forces Unleashed Lesson 3-4 : Newton's Laws and the Laws of Fun Lesson 5-6: From Motion to Energy Standardized Practice Test	Chapter 05 Dynamic Earth: Forces, Laws, and Energies Lesson 1-2: Forces Unleashed Lesson 3-4 : Newton's Laws and the Laws of Fun Lesson 5-6: From Motion to Energy	MS-PS1-2 MS-PS2-2 MS-PS2-4 MS-PS2-3 MS-PS2-5 MS-PS3-1 MS-PS3-2 MS-PS3-5 MS-ESS1-2
Chapter 06 Tech Energies Unleashed: From Cosmic Symphony to Quantum Dance Lesson 1: Delving Further into the Realm of Energy and the Transfer of Energy! Lesson 2-3: Powering the Future Lesson 4: Electricity and Magnetism Magic	Chapter 06 Tech Energies Unleashed: From Cosmic Symphony to Quantum Dance Lesson 1: Delving Further into the Realm of Energy and the Transfer of Energy! Lesson 2-3: Powering the Future Lesson 4: Electricity and Magnetism Magic	Crosscutting Concepts: Energy and Matter Cause and Effect MS-PS3-1 MS-PS3-2 MS-PS3-3 MS-PS3-5 MS-PS3-7

Textbook	Activity Book	NGSS
Lesson 5-6: Sound, Light and the Big Bang Standardized Practice Test	Lesson 5-6: Sound, Light and the Big Bang	MS-ESS3-3 MS-ESS3-4 MS-PS2-4 MS-PS2-2 MS-PS2-3 MS-PS2-5 MS-PS2-4 MS-PS1-4 MS-PS4-1 MS-PS4-2
Chapter 07 Exploring Our Cosmic Neighborhood Lesson 1-2: Earth's Cosmic Address and Space Neighbors Lesson 3: Lunar Magic and Tidal Tales Lesson 4: Seasons on Earth and Beyond Lesson 5-6: Space Pioneers, Gadgets and Gizmos Standardized Practice Test	Chapter 07 Exploring Our Cosmic Neighborhood Lesson 1-2: Earth's Cosmic Address and Space Neighbors Lesson 3: Lunar Magic and Tidal Tales Lesson 4: Seasons on Earth and Beyond Lesson 5-6: Space Pioneers, Gadgets and Gizmos	Physical Science: PS2.A: Forces and Motion PS2.B: Types of Interactions ESS1.C: The History of Planet Earth ESS1.D: The Human Impact on Earth's Systems Engineering Design: ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution MS-ESS1-1 MS-ESS1-3 MS-ESS1-4 MS-ESS1-6 MS-ESS2-2 MS-ESS2-1 MS-ESS2-4 MS-ESS3-1

Textbook	Activity Book	NGSS
Chapter 08 Engineering Odyssey Lesson 1-2: Prototyping, Testing and Designing Lesson 3-4: Engineers of Tomorrow. Ethics of Engineering Heroes Standardized Practice Test	Chapter 08 Engineering Odyssey Lesson 1-2: Prototyping, Testing and Designing Lesson 3-4: Engineers of Tomorrow. Ethics of Engineering Heroes	Crosscutting Concepts: 1. Systems and System Models 2. Cause and Effect Science and Engineering Practices: 1. Asking Questions and Defining Problems (SP1) 2. Developing and Using Models (SP2) 3. Planning and Carrying Out Investigations (SP3) 4. Analyzing and Interpreting Data (SP4) 5. Using Mathematics and Computational Thinking (SP5) 6. Constructing Explanations and Designing Solutions (SP6) 7. Engaging in Argument from Evidence (SP7) Crosscutting Concept: Stability and Change 7-ETS1-1 7-ETS1-2 7-PS2-3 7-PS2-4 7-PS3-3 7-PS3-4 7-PS3-5 7-PS3-1 7-PS3-2 7-PS1-3 7-PS1-4 MS-ESS3-3 MS-ETS1-4

Textbook	Activity Book	NGSS
Chapter 09 Amazing Human Body Lesson 1: Unlocking the Human Blueprint Lesson 2: Cardio Heroes and Lung Legends Lesson 3: Digestive Detectives and Excretory Explorers Lesson 4: Brainiacs and Hormone Heroes Lesson 5: Muscles and Bones - Body Builders Lesson 6: Health Heroes Assemble! Standardized Practice Test	Chapter 09 Amazing Human Body Lesson 1: Unlocking the Human Blueprint Lesson 2: Cardio Heroes and Lung Legends Lesson 3: Digestive Detectives and Excretory Explorers Lesson 4: Brainiacs and Hormone Heroes Lesson 5: Muscles and Bones - Body Builders Lesson 6: Health Heroes Assemble!	Life Science - LS1: From Molecules to Organisms: Structures and Processes LS1.A: Structure and Function LS1.D: Information Processing Life Science - LS3: Heredity: Inheritance and Variation of Traits ▪ LS3.A: Inheritance of Traits Engineering Design - ETS1: Engineering Design ▪ ETS1.A: Defining and Delimiting Engineering Problems Crosscutting Concept: Structure and Function MS-LS1-2 MS-LS1-3 MS-LS1-5 MS-LS1-8 MS-LS1-6 MS-LS1-7 MS-LS1-8 MS-PS1-1 MS-ESS3-3 MS-PS2-4
Chapter 10 Biodiversity Lesson 1: Biodiversity Bonanza!	Chapter 10 Biodiversity Lesson 1: Biodiversity Bonanza!	1. Life Science: LS2.C - Ecosystem Dynamics, Functioning, and Resilience 2. Life Science: LS4.D - Biodiversity and Humans

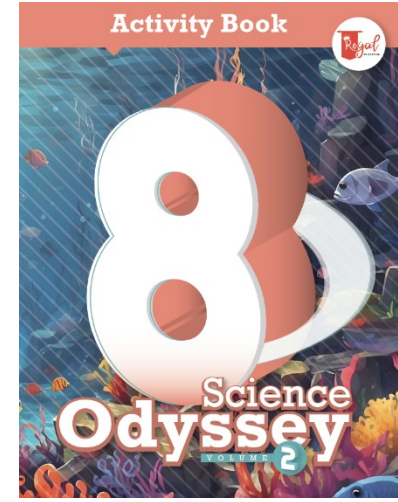
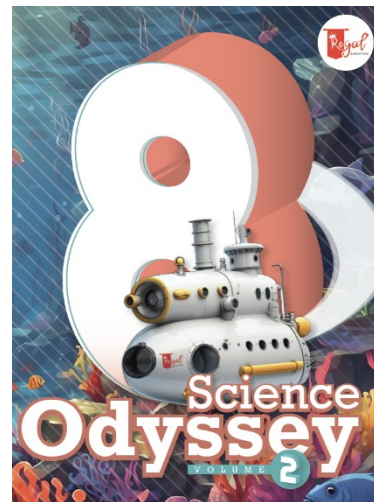
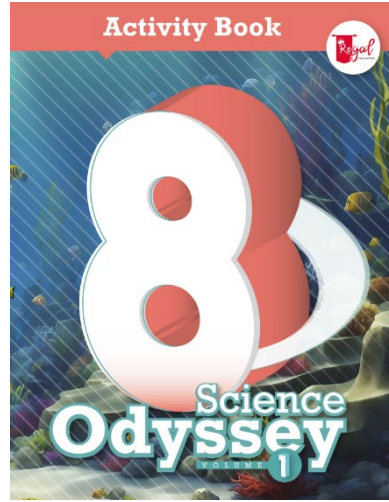
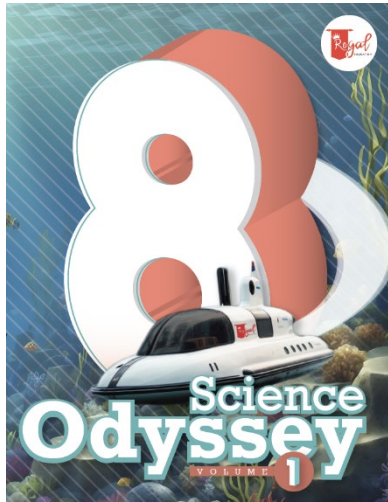
Textbook	Activity Book	NGSS
Lesson 2 – 3: Heroes for Endangered Species. Conservation Crusaders! Lesson 4: Ecosystems in Danger Lesson 5 – 6: Guardians of the Environment. Green Heroes Standardized Practice Test	Lesson 2 – 3: Heroes for Endangered Species. Conservation Crusaders! Lesson 4: Ecosystems in Danger Lesson 5 – 6: Guardians of the Environment. Green Heroes	3. Earth and Space Science: ESS3.C - Human Impacts on Earth Systems 4. Earth and Space Science: ESS3.D - Global Climate Change MS-LS1-5 MS-LS2-4 MS-LS2-5 MS-ESS3-1 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ESS3-6 MS-PS2-4
Chapter 11 Genetic Superpowers and Hereditary Wonders Lesson 1: The Marvelous World of Genes Lesson 2: Mendel’s Mystical Discoveries Lesson 3: DNA and Genetic Magic Lesson 4: Genetic Enigmas and Super Traits Lesson 5: Genetic Diversity and Evolution’s Marvels Lesson 6: DNA Detectives at Work Standardized Practice Test	Chapter 11 Genetic Superpowers and Hereditary Wonders Lesson 1: The Marvelous World of Genes Lesson 2: Mendel’s Mystical Discoveries Lesson 3: DNA and Genetic Magic Lesson 4: Genetic Enigmas and Super Traits Lesson 5: Genetic Diversity and Evolution’s Marvels Lesson 6: DNA Detectives at Work	MS-PS1-3 MS-LS1-5 MS-LS1-2 MS-LS1-1 MS-LS3-1 MS-LS3-2 MS-LS3-3 MS-LS3-5 MS-LS4-5 MS-LS4-3 MS-LS4-4 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5

Textbook	Activity Book	NGSS
Chapter 12 Chemical Adventures – From Reactions to Solutions Lesson 1: Chemical Reactions Revealed Lesson 2: Balancing Act of Chemical Equations Lesson 3: Chemical Wonders in the Environment Lesson 4: Acid-Base Showdown Lesson 5: Redox Reactors and Oxidation Expeditions Standardized Practice Test	Chapter 12 Chemical Adventures – From Reactions to Solutions Lesson 1: Chemical Reactions Revealed Lesson 2: Balancing Act of Chemical Equations Lesson 3: Chemical Wonders in the Environment Lesson 4: Acid-Base Showdown Lesson 5: Redox Reactors and Oxidation Expeditions	MS-PS1-1 MS-PS1-2 MS-PS1-3 MS-PS1-6 MS-PS1-4 MS-PS1-5 MS-PS1-7 MS-PS1-8 MS-ESS3-3 MS-LS2-3 MS-ESS2-4 MS-ESS2-5
Chapter 13 Energy Warriors – Battling Climate Change Lesson 1: Energy Warriors - The Fossil Fuel Frenzy Lesson 2: Climate Change Chronicles Lesson 3: Climate Warriors Assemble! Lesson 4: Sustainable Energy Saviors Standardized Practice Test	Chapter 13 Energy Warriors – Battling Climate Change Lesson 1: Energy Warriors - The Fossil Fuel Frenzy Lesson 2: Climate Change Chronicles Lesson 3: Climate Warriors Assemble! Lesson 4: Sustainable Energy Saviors	MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ESS3-6
Chapter 14 Space Explorers and Cosmic Adventures Lesson 1: Space Odyssey Kickoff Lesson 2 : Telescopes and Cosmic Voyages Lesson 3: The Sun and Starstruck Tales Lesson 4: Galaxy Quest Lesson 5: The Search for Alien Life Lesson 6: Future Space Explorers Standardized Practice Test	Chapter 14 Space Explorers and Cosmic Adventures Lesson 1: Space Odyssey Kickoff Lesson 2 : Telescopes and Cosmic Voyages Lesson 3: The Sun and Starstruck Tales Lesson 4: Galaxy Quest Lesson 5 : The Search for Alien Life Lesson 6: Future Space Explorers	Crosscutting Concepts: ▪ Patterns ▪ Scale, Proportion, and Quantity ▪ Systems and System Models Science and Engineering Practices: ▪ Asking Questions and Defining Problems ▪ Obtaining, Evaluating, and Communicating Information MS-ESS1-1 MS-ESS1-2

Textbook	Activity Book	NGSS
		MS-ESS1-3 MS-ESS1-4 MS-ESS2-2 MS-ESS2-4 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-PS1-1 MS-PS1-4 MS-PS2-4 MS-PS2-2 MS-ETS1-4 MS-ETS1-3 MS-ETS1-1
Chapter 15 Tech Titans and the Tech- Savvy World Lesson 1: Tech Revolution - Impact on Our World Lesson 2 : Ethical Dilemmas in the Tech Real Lesson 3: Tech Marvels of Tomorrow Lesson 4: Tech and Global Challenges Standardized Practice Test	Chapter 15 Tech Titans and the Tech- Savvy World Lesson 1: Tech Revolution - Impact on Our World Lesson 2 : Ethical Dilemmas in the Tech Real Lesson 3: Tech Marvels of Tomorrow Lesson 4: Tech and Global Challenges	MS-PS1-3 MS-PS2-2 MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4 MS-LS4-6 MS-ESS3-3 MS-ESS3-2 MS-ESS3-4 MS-PS3-3 MS-PS3-5 MS-ESS3-3 MS-ESS3-4
Chapter 16 Eco -Warriors and Sustainability Lesson 1: Earth’s Environmental Systems Unveiled Lesson 2 : Ecosystem Guardians and Conservation Crusaders	Chapter 16 Eco -Warriors and Sustainability Lesson 1: Earth’s Environmental Systems Unveiled Lesson 2 : Ecosystem Guardians and Conservation Crusaders	MS-ESS2-1 MS-ESS2-2 MS-ESS2-4 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4

Textbook	Activity Book	NGSS
Lesson 3: Pollution Detectives and Environmental Health Heroes Lesson 4: Guardians of the Earth's Resources Lesson 5 : Eco-Heroes in Action! Standardized Practice Test	Lesson 3: Pollution Detectives and Environmental Health Heroes Lesson 4: Guardians of the Earth's Resources Lesson 5 : Eco-Heroes in Action!	MS-ESS3-5 MS-ESS3-6 MS-LS2-4
Chapter 17 Health Detectives – Solving the Mysteries of Wellness Lesson 1: The Scientific Approach to Health Lesson 2 : Nutritional Wizards and Dietary Detectives Lesson 3: Preventative Health Heroes Lesson 4: Mind-Body Explorers Standardized Practice Test	Chapter 17 Health Detectives – Solving the Mysteries of Wellness Lesson 1: The Scientific Approach to Health Lesson 2 : Nutritional Wizards and Dietary Detectives Lesson 3: Preventative Health Heroes Lesson 4: Mind-Body Explorers	Disciplinary Core Ideas (DCIs): LS1.A: Structure and Function LS1.B: Growth and Development of Organisms LS1.C: Organization for Matter and Energy Flow in Organisms PS1.A: Structure and Properties of Matter ESS3.A: Natural Resources LS2.A: Interdependent Relationships in Ecosystems LS3.A: Inheritance of Traits LS4.B: Natural Selection Engineering Design: ETS1 - Engineering Design Crosscutting Concepts (CCCs): Patterns Cause and Effect Systems and System Models Science and Engineering Practices (SEPs): Asking Questions and Defining Problems Planning and Carrying Out Investigations Engaging in Argument from Evidence Connections to Nature of Science (NOS): Scientific Knowledge is Based on Empirical Evidence Science is a Human Endeavor

Textbook	Activity Book	NGSS
Chapter 18 Grand Finale of Grade 7 Adventure Grade 7 NGSS Science Super Review Challenge Grade 7 Earth and Space Sciences Test: Revision Time! Grade 7 NGSS Life Sciences Test: Unraveling the Mysteries of Life! Grade 7 NGSS Physical Sciences Test: Unveiling the Secrets of Matter and Motion! Grade 7 NGSS Nature of Science and Crosscutting Concepts Test: Unveiling the Secrets of Scientific Inquiry!	Chapter 18 Grand Finale of Grade 7 Adventure Ultimate Revision Test Grade 7 NGSS Science Mega Test: Embrace the Scientific Adventure!	MS-PS1: Matter and Its Interactions MS-PS2: Motion and Stability: Forces and Interactions MS-PS3: Energy MS-PS4: Waves and Their Applications in Technologies for Information Transfer MS-LS1: From Molecules to Organisms: Structures and Processes MS-LS2: Ecosystems: Interactions, Energy, and Dynamics MS-LS3: Heredity: Inheritance and Variation of Traits MS-LS4: Biological Evolution: Unity and Diversity MS-ESS1: Earth's Place in the Universe MS-ESS2: Earth's Systems MS-ESS3: Earth and Human Activity MS-ETS1: Engineering Design
Total: <i>92 lessons containing STEM Lab Work & Revision Activities</i> <i>17 Standardized Practice Test (Chapter Specific)</i> <i>5 NGSS.MS DCI Specific Tests</i>	Total: <i>92 Lessons containing STEAM Projects and Lesson Review Activities</i> <i>1 End-of-the-Year Revision Test</i>	As per the framework



Science Odyssey Grade 8



Chapter 1: Introduction to Scientific Inquiry

■ Aligns with NGSS Science and Engineering Practices.

Chapter 2: Earth's Systems: Geosphere, Hydrosphere, Atmosphere

■ Aligns with NGSS Disciplinary Core Ideas in Earth and Space Sciences.

Chapter 3: Weather and Climate Patterns

■ Aligns with NGSS Disciplinary Core Ideas in Earth and Space Sciences and Life Sciences.

Chapter 4: Biodiversity and Ecosystem Dynamics

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences and Earth and Space Sciences.

Chapter 5: Ecological Interactions: Predation, Competition, Symbiosis

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences.

Chapter 6: Human Impact on Oceans and Marine Life

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences and Earth and Space Sciences.

Chapter 7: Evolution and Natural Selection

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences.

Chapter 8: Human Anatomy and Physiology

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences.

Chapter 9: The Microbial World: Bacteria and Viruses

■ Aligns with NGSS Disciplinary Core Ideas in Life Sciences.

Chapter 10: Chemical Bonding and Molecular Structures

■ Aligns with NGSS Disciplinary Core Ideas in Physical Sciences.

Chapter 11: Chemistry in Action: Properties and Reactions

■ Aligns with NGSS Disciplinary Core Ideas in Physical Sciences.

Chapter 12: Forces and Motion: Newton's Laws

■ Aligns with NGSS Disciplinary Core Ideas in Physical Sciences.

Chapter 13: Energy Transformations: From Potential to Kinetic

■ Aligns with NGSS Disciplinary Core Ideas in Physical Sciences.

Chapter 14: Renewable and Nonrenewable Resources

■ Aligns with NGSS Disciplinary Core Ideas in Physical Sciences and Earth and Space Sciences.

Chapter 15: Space Exploration: Our Solar System and Beyond

■ Aligns with NGSS Disciplinary Core Ideas in Earth and Space Sciences.

Chapter 16: Engineering Solutions: Designing for the Future

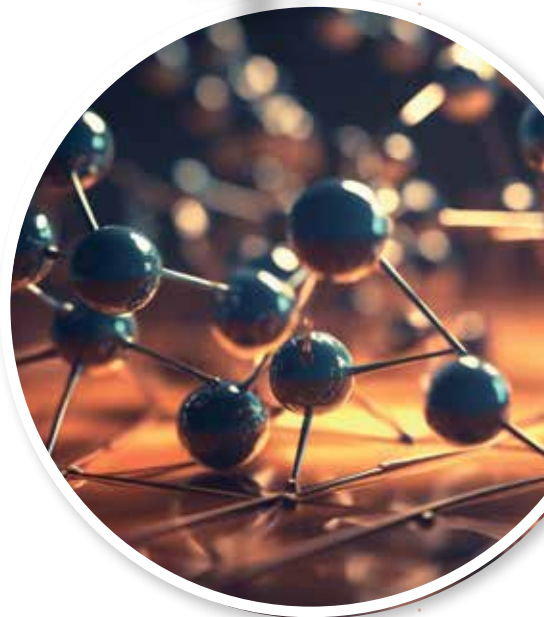
■ Aligns with NGSS Engineering Practices and Disciplinary Core Ideas.

Chapter 17: Technological Innovations in Communication

■ Aligns with NGSS Engineering Practices and Disciplinary Core Ideas in Physical Sciences and Engineering.

Chapter 18: Scientific Literacy and Critical Thinking

■ Aligns with NGSS Science and Engineering Practices and Crosscutting Concepts.



Textbook	Activity Book	NGSS
Chapter 01 Introduction to Scientific Inquiry (General Science) Lesson 1: The Nature of Science: Observing and Questioning (General Science) Lesson 2: Scientific Method (General Science) Lesson 3: Collecting and Analyzing Data (General Science) Lesson 4: Drawing Conclusions: Making Sense of Results (General Science) Lesson 5: Communication in Science. Scientific Ethics: Conducting Research Responsibly (General Science) Standardized Practice Test	Chapter 01 Introduction to Scientific Inquiry (General Science) Lesson 1: The Nature of Science: Observing and Questioning (General Science) Lesson 2: Scientific Method (General Science) Lesson 3: Collecting and Analyzing Data (General Science) Lesson 4: Drawing Conclusions: Making Sense of Results (General Science) Lesson 5: Communication in Science. Scientific Ethics: Conducting Research Responsibly (General Science)	NGSS Science and Engineering Practice: Analyzing and Interpreting Data NGSS Crosscutting Concept: Cause and Effect Scientific and Engineering Practices: Asking Questions and Defining Problems Planning and Carrying Out Investigation Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Crosscutting Concepts: Patterns Cause and Effect MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-PS1-3 MS-PS1-4 MS-PS2-2 MS-LS1-4 MS-LS2-4 MS-LS1-7 MS-ETS1-1 MS-ETS1-3 MS-ETS1-4

Textbook	Activity Book	NGSS
Chapter 02 Earth's Systems: Geosphere, Hydrosphere, Atmosphere (Geology and Earth Science) Lesson 1: Earth's Structure: Layers of the Geosphere (Geology/ Geophysics) Lesson 2: The Water Cycle and Hydrosphere (Hydrology / Oceanography) Lesson 3: Earth's Atmosphere: Layers and Composition (Meteorology / Atmospheric Science) Lesson 4: Climate Patterns and Weather Phenomena (Climatology / Meteorology) Lesson 5: Human Impact on Earth's Systems (Environmental Science/ Ecology) Lesson 6: Investigating Natural Disasters (Geophysics/Seismology/Meteorology / Environmental Science) Standardized Practice Test	Chapter 02 Earth's Systems: Geosphere, Hydrosphere, Atmosphere (Geology and Earth Science) Lesson 1: Earth's Structure: Layers of the Geosphere (Geology/ Geophysics) Lesson 2: The Water Cycle and Hydrosphere (Hydrology / Oceanography) Lesson 3: Earth's Atmosphere: Layers and Composition (Meteorology / Atmospheric Science) Lesson 4: Climate Patterns and Weather Phenomena (Climatology / Meteorology) Lesson 5: Human Impact on Earth's Systems (Environmental Science/ Ecology) Lesson 6: Investigating Natural Disasters (Geophysics/Seismology/Meteorology / Environmental Science)	Science and Engineering Practices: Developing and Using Models Planning and Carrying Out Investigations Crosscutting Concepts: Patterns Cause and Effect ESS2.A ESS2.B ESS2.C ESS3.B ESS3.C MS-ESS2-2 MS-ESS2-4 MS-ESS2-5 MS-ESS2-6 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ESS3-6 MS-PS1-2 MS-PS1-4 MS-PS2-4 MS-ETS1-1 MS-ETS1-4
Chapter 03 Weather and Climate Patterns (Biology and Environmental Science) Lesson 1: Atmosphere and Weather (Meteorology / Earth Science) Lesson 2: Climate Zones and Patterns (Environmental Science) Lesson 3: Climate Change: Causes and Impacts Lesson 4: Mitigating Climate Change: Sustainable	Chapter 03 Weather and Climate Patterns (Biology and Environmental Science) Lesson 1: Atmosphere and Weather (Meteorology / Earth Science) Lesson 2: Climate Zones and Patterns (Environmental Science) Lesson 3: Climate Change: Causes and Impacts (Environmental Science) Lesson 4: Mitigating Climate Change: Sustainable	Science and Engineering Practices (SEPs) and Crosscutting Concepts (CCCs) Science and Engineering Practices: SEP: Developing and using models SEP: Analyzing and interpreting data SEP: Engaging in argument from evidence

Textbook	Activity Book	NGSS
Practices (Environmental Science/ Biology) Lesson 5 -6: Weather Prediction and Meteorology. Studying Extreme Weather Events (Meteorology / Earth Science) Standardized Practice Test	Practices (Environmental Science/ Biology) Lesson 5 -6: Weather Prediction and Meteorology. Studying Extreme Weather Events (Meteorology / Earth Science)	Crosscutting Concepts: CCC: Cause and effect: Mechanism and explanation CCC: Systems and system models NGSS Engineering Design Standards: ETS1.B: Developing Possible Solutions MS-ESS2-4 MS-ESS2-5 MS-ESS2-6 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-PS1-4 MS-ETS1-1
Chapter 04 Biodiversity and Ecosystem Dynamics (Biology and Environmental Science) Lesson 1: Understanding Biodiversity (Biology / Environmental Science) Lesson 2: Ecosystem Interactions: Producers, Consumers, Decomposers (Biology / Environmental Science) Lesson 3: Food Webs and Chains (Biology / Environmental Science) Lesson 4: Human Impact on Ecosystems (Environmental Science) Lesson 5: Conservation of Species (Biology / Environmental Science) Lesson 6: Exploring Biomes: Earth's Diverse Habitats (Biology / Environmental Science)	Chapter 04 Biodiversity and Ecosystem Dynamics (Biology and Environmental Science) Lesson 1: Understanding Biodiversity (Biology / Environmental Science) Lesson 2: Ecosystem Interactions: Producers, Consumers, Decomposers (Biology / Environmental Science) Lesson 3: Food Webs and Chains (Biology / Environmental Science) Lesson 4: Human Impact on Ecosystems (Environmental Science) Lesson 5: Conservation of Species (Biology / Environmental Science) Lesson 6: Exploring Biomes: Earth's Diverse Habitats (Biology / Environmental Science) Standardized Practice Test	Crosscutting Concepts Systems and System Models Energy and Matter MS-LS1-5 MS-LS2-1 MS-LS2-2 MS-LS2-3 MS-LS2-4 MS-LS2-5 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ETS1-1

Textbook	Activity Book	NGSS
Chapter 05 Ecological Interactions (Biology and Environmental Science) Lesson 1: Predation: Hunting and Defense Strategies (Biology / Environmental Science) Lesson 2: Competition in Ecosystems (Biology / Environmental Science) Lesson 3: Mutualism, Commensalism, and Parasitism (Biology / Environmental Science) Lesson 4: Keystone Species and Biodiversity (Biology / Environmental Science) Lesson 5: Ecological Succession: Changes in Ecosystems (Biology / Environmental Science) Lesson 6: Human Impact on Ecological Relationships (Biology / Environmental Science) Standardized Practice Test	Chapter 05 Ecological Interactions (Biology and Environmental Science) Lesson 1: Predation: Hunting and Defense Strategies (Biology / Environmental Science) Lesson 2: Competition in Ecosystems (Biology / Environmental Science) Lesson 3: Mutualism, Commensalism, and Parasitism (Biology / Environmental Science) Lesson 4: Keystone Species and Biodiversity (Biology / Environmental Science) Lesson 5: Ecological Succession: Changes in Ecosystems (Biology / Environmental Science) Lesson 6: Human Impact on Ecological Relationships (Biology / Environmental Science)	Crosscutting Concepts Stability and Change Systems may interact with other systems MS-LS1-4 MS-LS1-5 MS-LS1-6 MS-LS2-1 MS-LS2-2 MS-LS2-4 MS-LS2-5 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5
Chapter 06 Human Impact on Oceans and Marine Life (Biology and Environmental Science) Lesson 1: The Importance of Oceans (Marine Biology / Environmental Science) Lesson 2: Ocean Zones and Biodiversity (Marine Biology / Environmental Science) Lesson 3: Human Activities and Ocean Pollution (Marine Biology / Environmental Science) Lesson 4: Conservation of Marine Resources (Marine Biology / Environmental Science) Lesson 5: Coral Reefs: Biodiversity Hotspots (Marine Biology / Environmental Science) Lesson 6: The Role of Oceans in Climate Regulation (Marine Biology / Environmental Science) Standardized Practice Test	Chapter 06 Human Impact on Oceans and Marine Life (Biology and Environmental Science) Lesson 1: The Importance of Oceans (Marine Biology / Environmental Science) Lesson 2: Ocean Zones and Biodiversity (Marine Biology / Environmental Science) Lesson 3: Human Activities and Ocean Pollution (Marine Biology / Environmental Science) Lesson 4: Conservation of Marine Resources (Marine Biology / Environmental Science) Lesson 5: Coral Reefs: Biodiversity Hotspots (Marine Biology / Environmental Science) (Marine Biology / Environmental Science)	MS-ESS2-4 MS-ESS2-6 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ESS3-6 MS-LS2-3 MS-LS2-4 MS-LS2-5 MS-PS1-3

Textbook	Activity Book	NGSS
Chapter 07 Evolution and Natural Selection (Biology) Lesson 1: The Theory of Evolution (Biology) Lesson 2: Evidence for Evolution: Fossils and Comparative Anatomy (Biology) Lesson 3: Mechanisms of Evolution: Natural Selection (Biology) Lesson 4: Adaptations and Survival (Biology) Lesson 5: Human Evolution: Ancestry and Diversity (Biology) Lesson 6: Ethics of Genetic Engineering (Biology/Ethics) Standardized Practice Test	Chapter 07 Evolution and Natural Selection (Biology) Lesson 1: The Theory of Evolution (Biology) Lesson 2: Evidence for Evolution: Fossils and Comparative Anatomy (Biology) Lesson 3: Mechanisms of Evolution: Natural Selection (Biology) Lesson 4: Adaptations and Survival (Biology) Lesson 5: Human Evolution: Ancestry and Diversity (Biology) Lesson 6: Ethics of Genetic Engineering (Biology/Ethics)	NGSS Crosscutting Concepts: Patterns Cause and Effect Scale, Proportion, and Quantity Science and Engineering Practices: Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Developing and Using Models MS-LS1-5 MS-LS2-3 MS-LS3-1 MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-4 MS-LS4-5 MS-LS4-6 MS-LS4-7 MS-ESS2-4 MS-ESS3-3 MS-ESS3-4
Chapter 08 Human Anatomy and Physiology (Biology) Lesson 1: Introduction to Human Biology (Biology) Lesson 2: Skeletal and Muscular Systems (Biology) Lesson 3: The Nervous System: Brain and Nerves Lesson 4: Circulatory and Respiratory Systems (Biology) Lesson 5: Digestive and Excretory Systems (Biology) Lesson 6: Reproductive System and Development (Biology) Standardized Practice Test	Chapter 08 Human Anatomy and Physiology (Biology) Lesson 1: Introduction to Human Biology (Biology) Lesson 2: Skeletal and Muscular Systems (Biology) Lesson 3: The Nervous System: Brain and Nerves (Biology) Lesson 4: Circulatory and Respiratory Systems (Biology) Lesson 5: Digestive and Excretory Systems (Biology) Lesson 6: Reproductive System and Development (Biology)	Crosscutting Concept: Systems and System Models Structure and Function Energy and Matter Patterns Engineering Practice: Developing and Using Models (SEP2) Obtaining, Evaluating, and Communicating Information Engaging in Argument from Evidence (SEP 7) Planning and Carrying Out Investigations (SEP 3) MS-LS1-3 MS-LS1-4 MS-LS1-5 MS-LS1-6

Textbook	Activity Book	NGSS
		MS-LS1-7 MS-LS1-8 MS-LS1-2 MS-ETS1-3 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4 MS-PS1-3 MS-PS1-4 MS-PS2-4 MS-PS3-2 MS-PS3-5 MS-PS3-7
Chapter 09 The Microbial World: Bacteria and Viruses (Biology) Lesson 1: The World of Microorganisms (Biology/ Microbiology) Lesson 2: Bacterial Structure and Function (Biology/ Microbiology) Lesson 3: Viral Structure and Replication (Biology/ Microbiology) Lesson 4: Microbes in Human Health and Disease (Biology/ Microbiology) Lesson 5: Antibiotics and Antiviral Medications (Biology/ Microbiology) Lesson 6: Microbes in Biotechnology (Biology/ Microbiology/ Genetic Engineering) Standardized Practice Test	Chapter 09 The Microbial World: Bacteria and Viruses (Biology) Lesson 1: The World of Microorganisms (Biology/ Microbiology) Lesson 2: Bacterial Structure and Function (Biology/ Microbiology) Lesson 3: Viral Structure and Replication (Biology/ Microbiology) Lesson 4: Microbes in Human Health and Disease (Biology/ Microbiology) Lesson 5: Antibiotics and Antiviral Medications (Biology/ Microbiology) Lesson 6: Microbes in Biotechnology (Biology/ Microbiology/ Genetic Engineering)	MS-LS1-1 MS-LS1-2 MS-LS1-3 MS-LS1-5 MS-LS1-6 MS-LS1-8 MS-LS2-4 MS-LS3-1 MS-LS4-4 MS-PS1-1 MS-PS1-2 MS-PS1-3 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ETS1-3 MS-ETS1-4

Textbook	Activity Book	NGSS
Chapter 10 Chemical Bonding and Molecular Structures (Chemistry) Lesson 1: Understanding Chemical Bonds (Chemistry) Lesson 2: Ionic and Covalent Bonds (Chemistry) Lesson 3: Molecular Geometry: Shapes of Molecules (Chemistry) Lesson 4: Polymers and Macromolecules (Chemistry) Lesson 5: Chemical Reactions in Living Organisms (Chemistry/Biology) Lesson 6: Applications of Chemistry in Industry (Chemistry/ Chemical Engineering) Standardized Practice Test	Chapter 10 Chemical Bonding and Molecular Structures (Chemistry) Lesson 1: Understanding Chemical Bonds (Chemistry) Lesson 2: Ionic and Covalent Bonds (Chemistry) Lesson 3: Molecular Geometry: Shapes of Molecules (Chemistry) Lesson 4: Polymers and Macromolecules (Chemistry) Lesson 5: Chemical Reactions in Living Organisms (Chemistry/Biology) Lesson 6: Applications of Chemistry in Industry (Chemistry/ Chemical Engineering)	MS-PS1-1 MS-PS1-2 MS-PS1-3 MS-PS1-4 MS-PS1-5 MS-PS1-6 MS-PS2-2 MS-ESS1-3 MS-ESS3-3 MS-LS1-3 MS-LS1-6 MS-LS1-7
Chapter 11 Chemistry in Action: Properties and Reactions (Chemistry) Lesson 1: Elements, Compounds, and Mixtures (Chemistry) Lesson 2: The Periodic Table: Organizing the Elements (Chemistry) Lesson 3: Chemical Reactions: Balancing Equations (Chemistry) Lesson 4: Acids and Bases: pH Scale (Chemistry) Lesson 5: The Chemistry of Everyday Life (Chemistry/Engineering) Lesson 6: Exploring the Nanoworld: Nanotechnology (Chemistry/Engineering) Standardized Practice Test	Chapter 11 Chemistry in Action: Properties and Reactions (Chemistry) Lesson 1: Elements, Compounds, and Mixtures (Chemistry) Lesson 2: The Periodic Table: Organizing the Elements (Chemistry) Lesson 3: Chemical Reactions: Balancing Equations (Chemistry) Lesson 4: Acids and Bases: pH Scale (Chemistry) Lesson 5: The Chemistry of Everyday Life (Chemistry/Engineering) Lesson 6: Exploring the Nanoworld: Nanotechnology (Chemistry/Engineering)	MS-PS1-1 MS-PS1-2 MS-PS1-3 MS-PS1-4 MS-PS1-5 MS-PS1-6 MS-PS1-8 MS-PS2-5 MS-ESS3-3 MS-ETS1-1 MS-ETS1-3
Chapter 12 Forces and Motion: Newton's Laws (Physics) Lesson 1: Introduction to Forces (Physics) Lesson 2: Newton's First Law: Inertia (Physics)	Chapter 12 Forces and Motion: Newton's Laws Lesson 1: Introduction to Forces (Physics) Lesson 2: Newton's First Law: Inertia (Physics)	MS-PS1-4 MS-PS2-1 MS-PS2-2 MS-PS2-3

Textbook	Activity Book	NGSS
Lesson 3: Newton's Second Law: Force and Acceleration (Physics) Lesson 4: Newton's Third Law: Action and Reaction (Physics) Lesson 5: Friction and its Effects (Physics) Lesson 6: Momentum and Collisions (Physics) Standardized Practice Test	Lesson 3: Newton's Second Law: Force and Acceleration (Physics) Lesson 4: Newton's Third Law: Action and Reaction (Physics) Lesson 5: Friction and its Effects (Physics) Lesson 6: Momentum and Collisions (Physics)	MS-PS2-4 MS-PS2-5 MS-PS3-1 MS-PS3-2 MS-PS3-5 MS-ESS1-1 MS-ESS1-2 MS-ETS1-1
Chapter 13 Energy Transformations: From Potential to Kinetic Lesson 1: Forms of Energy: Kinetic and Potential (Physics) Lesson 2: Thermal Energy: Heat Transfer (Physics) Lesson 3: Sound Energy and Waves (Physics) Lesson 4: Light Energy: Reflection and Refraction (Physics) Lesson 5: Electrical Energy: Circuits and Conductors (Physics) Lesson 6: Energy Conservation and Efficiency (Physics) Standardized Practice Test	Chapter 13 Energy Transformations: From Potential to Kinetic Lesson 1: Forms of Energy: Kinetic and Potential (Physics) Lesson 2: Thermal Energy: Heat Transfer (Physics) Lesson 3: Sound Energy and Waves (Physics) Lesson 4: Light Energy: Reflection and Refraction (Physics) Lesson 5: Electrical Energy: Circuits and Conductors (Physics) Lesson 6: Energy Conservation and Efficiency (Physics)	MS-PS1-1 MS-PS1-4 MS-PS2-2 MS-PS2-3 MS-PS2-4 MS-PS2-5 MS-PS3-1 MS-PS3-2 MS-PS3-3 MS-PS3-4 MS-PS3-5 MS-PS4-2 MS-ESS3-1 MS-ESS3-3 MS-ETS1-1 MS-ETS1-4
Chapter 14 Renewable and Nonrenewable Resources Lesson 1: Introduction to Energy Resources (Physics/Environmental Science) Lesson 2: Fossil Fuels and their Environmental Impact (Environmental Science) Lesson 3: Renewable Energy Sources: Solar and Wind (Physics/Environmental Science) Lesson 4: Hydropower and Biomass Energy	Chapter 14 Renewable and Nonrenewable Resources Lesson 1: Introduction to Energy Resources (Physics/Environmental Science) Lesson 2: Fossil Fuels and their Environmental Impact (Environmental Science) Lesson 3: Renewable Energy Sources: Solar and Wind (Physics/Environmental Science) Lesson 4: Hydropower and Biomass Energy	Cross-Cutting Concepts (CCCs): Patterns Stability and Change MS-ESS3-1 MS-ESS3-3 MS-ESS3-4 MS-ESS3-5 MS-ESS3-6 MS-PS1-3

Textbook	Activity Book	NGSS
(Physics/Environmental Science) Lesson 5: Geothermal Energy: Earth's Internal Heat (Physics/Environmental Science) Lesson 6: Nuclear Energy: Benefits and Risks (Physics/Environmental Science) Standardized Practice Test	(Physics/Environmental Science) Lesson 5: Geothermal Energy: Earth's Internal Heat (Physics/Environmental Science) Lesson 6: Nuclear Energy: Benefits and Risks (Physics/Environmental Science)	MS-PS1-4 MS-PS2-4 MS-PS3-1 MS-PS3-3 MS-PS3-5 MS-PS3-6 MS-ETS1-4
Chapter 15 Space Exploration: Our Solar System and Beyond (Physics / Astronomy) Lesson 1: Overview of the Solar System (Astronomy) Lesson 2: Sun and Stars: Sources of Light and Heat (Physics /Astronomy) Lesson 3: Planetary Orbits and Gravity (Physics / Astronomy) Lesson 4: Celestial Bodies: Moons, Comets, and Asteroids (Astronomy/ Geology) Lesson 5 -6 : Space Missions, Exploration & the Search for Extraterrestrial Life (Physics/ Astronomy/ Aerospace Engineering) Standardized Practice Test	Chapter 15 Space Exploration: Our Solar System and Beyond (Physics / Astronomy) Lesson 1: Overview of the Solar System (Astronomy) Lesson 2: Sun and Stars: Sources of Light and Heat (Physics /Astronomy) Lesson 3: Planetary Orbits and Gravity (Physics / Astronomy) Lesson 4: Celestial Bodies: Moons, Comets, and Asteroids (Astronomy/ Geology) Lesson 5 -6 : Space Missions, Exploration & the Search for Extraterrestrial Life (Physics/ Astronomy/ Aerospace Engineering)	MS-ESS1-1 MS-ESS1-2 MS-ESS1-3 MS-ESS2-2 MS-ESS2-4 MS-ESS3-1 MS-ESS3-2 MS-ESS3-4 MS-PS2-4 MS-PS2-5
Chapter 16 Engineering Solutions: Designing for the Future (General Science) Lesson 1: Introduction to Engineering Design (General Engineering Principles / Basic Physics / Mathematics) Lesson 2: Problem Solving and Prototyping (Engineering/ Physics /Material Science) Lesson 3: Materials and Structures (Materials Science /Engineering) Lesson 4: Renewable Energy Engineering (Renewable Energy / Engineering / Physics) Lesson 5: Biomedical Engineering: Innovations in Medicine (Biomedical Science/ Engineering/	Chapter 16 Engineering Solutions: Designing for the Future (General Science) (General Engineering Principles / Basic Physics / Mathematics) Lesson 2: Problem Solving and Prototyping (Engineering/ Physics /Material Science) Lesson 3: Materials and Structures (Materials Science /Engineering) Lesson 4: Renewable Energy Engineering (Renewable Energy / Engineering / Physics) Lesson 5: Biomedical Engineering: Innovations in Medicine (Biomedical Science/ Engineering/	Cross-Cutting Concepts (CCCs): Patterns Cause and Effect System and System Models Disciplinary Core Ideas: ETS1.A - Defining and Delimiting Engineering Problems ETS1.B - Developing Possible Solutions ETS1.C - Optimizing the Design Solution MS-LS1-8

Textbook	Activity Book	NGSS
Medicine) Lesson 6: Ethical Considerations in Engineering (General Ethics/ Engineering Ethics) Standardized Practice Test	Medicine) Lesson 6: Ethical Considerations in Engineering (General Ethics/ Engineering Ethics)	MS-PS1-1 MS-PS1-3 MS-PS2-2 MS-PS2-4 MS-PS3-2 MS-PS3-3 MS-PS3-5 MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4 MS-ESS3-1 MS-ESS3-3 MS-ESS3-4
Chapter 17 Technological Innovations in Communication Lesson 1 -2: Evolution of Communication Technologies. Digital Communication and Information Systems (Technology) Lesson 3: Internet and Networking Technologies (Technology) Lesson 4: Cybersecurity: Protecting Digital Information (Technology) Lesson 5-6: Artificial Intelligence, Machine Learning & The Future of Communication Technologies (Technology) Standardized Practice Test	Chapter 17 Technological Innovations in Communication Lesson 1 -2: Evolution of Communication Technologies. Digital Communication and Information Systems (Technology) Lesson 3: Internet and Networking Technologies (Technology) Lesson 4: Cybersecurity: Protecting Digital Information (Technology) Lesson 5-6: Artificial Intelligence, Machine Learning & The Future of Communication Technologies (Technology)	Cross-Cutting Concepts (CCCs): CCC1: Patterns CCC2: Cause and Effect CCC7: Stability and Change NGSS Standards for Middle School PS2.B: Types of Interactions PS3.C: Relationship Between Energy and Forces PS3.D: Energy in Chemical Processes and Everyday Life NGSS Standards for Middle School Life Science: LS1.A: Structure and Function LS1.B: Growth and Development of Organisms LS2.A: Interdependent Relationships in Ecosystems NGSS Standards for Middle School Earth and Space Science:

Textbook	Activity Book	NGSS
		ESS3.C: Human Impacts on Earth Systems Standards for Engineering Design: ETS1.A: Defining and Delimiting an Engineering Problem ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution NGSS Standards for Middle School Science and Engineering Practices: SEP2: Developing and Using Models SEP6: Constructing Explanations and Designing Solutions SEP8: Obtaining, Evaluating, and Communicating Information MS-PS1-1 MS-PS1-4 MS-PS2-3 MS-PS2-4 MS-PS2-5 MS-PS3-5 MS-ETS1-1 MS-ETS1-3 MS-ESS3-3 MS-ESS3-4
Chapter 18 Scientific Literacy and Critical Thinking (General Science) Lesson 1 -2: Evaluating Scientific Information & Media Literacy in Science (General Science/ Information Literacy) Lesson 3 -4: Critical Thinking in Scientific Research & Engaging with Scientific Controversies (General Science/ Critical Thinking) Lesson 5 -6: Applying Scientific Knowledge in Daily Life & Becoming Informed and Responsible Global	Chapter 18 Scientific Literacy and Critical Thinking (General Science) Lesson 1 -2: Evaluating Scientific Information & Media Literacy in Science (General Science/ Information Literacy) Lesson 3 -4: Critical Thinking in Scientific Research & Engaging with Scientific Controversies (General Science/ Critical Thinking) Lesson 5 -6: Applying Scientific Knowledge in Daily	MS-ETS1 MS-LS2 MS-PS2 MS-PS1-3 MS-PS3-4 MS-ESS3-5 MS-ESS3-1 MS-ESS3-2 MS-ESS3-3 MS-ESS3-4

Textbook	Activity Book	NGSS
Citizens (General Science/Ethics) Standardized Practice Test	Citizens (General Science/Ethics)	MS-ESS3-5 MS-ESS3-6 MS-ETS1-4
Grand Finale of Grade 8 Adventure GRADE 8 Knowledge Odyssey (NGSS Revision) Smarty Pants Showdown Ultimate Revision Tests	Grand Finale of Grade 8 Adventure Ultimate Revision Tests	MS-PS1: Matter and Its Interactions MS-PS2: Motion and Stability: Forces and Interactions MS-PS3: Energy MS-PS4: Waves and Their Applications in Technologies for Information Transfer MS-LS1: From Molecules to Organisms: Structures and Processes MS-LS2: Ecosystems: Interactions, Energy, and Dynamics MS-LS3: Heredity: Inheritance and Variation of Traits MS-LS4: Biological Evolution: Unity and Diversity MS-ESS1: Earth's Place in the Universe MS-ESS2: Earth's Systems MS-ESS3: Earth and Human Activity MS-ETS1: Engineering Design
Total: <i>107 lessons containing STEM Lab Work & Revision Activities</i> <i>18 Standardized Practice Test (Chapter Specific)</i> <i>1 NGSS.MS DCI Test</i>	Total: <i>107 Lessons containing STEAM Projects and Lesson Review Activities</i> <i>1 End-of-the-Year Revision Test</i>	