

EARTH AND SPACE SCIENCE

Florida Edition

SCOPE AND SEQUENCE



SCOPE AND SEQUENCE WITH PACING



Use the relative times shown as one tool to help prioritize segments of your course instruction and homework assignments. Timing is based on 50-minute periods or 90-minute blocks with consideration given to the amount and depth of the content presentation and the academic standards addressed.

As you allocate time, consider your students' backgrounds and the materials that are available to them at home. Many activities require very simple or no materials or advance preparation and may be assigned as homework, such as the Case Study/Tying It All Together activities, Minilabs, and Data Analysis activities.

Assessment tools such as the Lesson Reviews, Chapter Reviews, Performance Tasks, and Chapter Assessments are not included in this scope and sequence as their application varies widely with teacher discretion.

The Investigations offer ways to assess standards that may require in-class time. While they are included in the timing, choose among these based on how you want to promote understanding of various concepts and your available laboratory equipment.

An asterisk (*) indicates an honors-level standard.

CONTENTS

Unit 1	2
Chapters 1–2	2
Unit 2	2
Chapter 3	2
Chapters 4–5	3
Chapter 6	4
Unit 3	4
Chapters 7–8	4
Chapters 9–11	5
Unit 4	6
Chapters 12–13	6
Chapter 14	7
Unit 5	7
Chapters 15–16	7
Chapter 17	8
Unit 6	8
Chapter 18	8
Chapters 19–20	10
Chapter 21	10
Unit 7	11
Chapter 22	11
Chapters 23–24	11
Chapter 25	12



TITLE	PERIODS	BLOCKS	NGSSS
UNIT 1: INTRODUCTION TO EARTH AND SPACE SCIENCE			
CHAPTER 1 <i>Nature of Science and Engineering</i>			
1.1 The Nature of Science and Engineer-ing (pp. 9–20)	0.5	0.25	SC.912.N.1.1, SC.912.N.1.3*, SC.912.N.1.5, SC.912.N.2.1*, SC.912.N.2.2*, SC.912.N.2.3*, SC.912.N.2.4, SC.912.N.2.5, SC.912.N.3.1, SC.912.N.3.4*, SC.912.N.3.5, SC.912.N.4.1
1.1 Data Analysis: Distinguish Between Correlation and Causation (p. 14)	0.5	0.25	SC.912.N.1.1, SC.912.N.2.1*, SC.912.N.2.2*
1.1 Minilab: Puzzle: Law Versus Theory (p. 16)	0.4	0.2	SC.912.N.1.1, SC.912.N.2.1*, SC.912.N.2.2*, SC.912.N.3.1, SC.912.N.3.4*
1.2 Mapping Earth's Systems (pp. 21–29)	1	0.5	
1.2 Data Analysis: Develop a Topograph-ic Profile (p. 28)	0.6	0.3	
Case Study/Tying It All Together (p. 8, p. 29)	1	0.5	
Investigation: Interpret 2D and 3D Models	2	1	SC.912.N.1.1
Total Chapter 1	6	3	

CHAPTER 2 <i>Earth Systems and Cycles</i>			
2.1 Earth's Spheres (pp. 39–44)	0.7	0.35	SC.912.E.6.1, SC.912.E.7.3
2.1 Minilab: Model a Cloud in a Bottle (p. 44)	0.3	0.15	SC.912.N.1.6, SC.912.N.3.5
2.2 Earth's Systems (pp. 45–55)	1.2	0.6	
2.3 Earth's Life-Sustaining Cycles (pp. 56–59)	1	0.5	SC.912.E.7.1, SC.912.E.7.3, SC.912.E.7.9*
2.3 Data Analysis: Graphing the Carbon Cycle (p. 59)	0.3	0.15	SC.912.E.7.1, SC.912.E.7.3
Case Study/Tying It All Together (p. 38, p. 62)	1	0.5	
Investigation: Model Interactions in Earth's Spheres	0.5	0.25	
Total Chapter 2	5	2.5	

UNIT 2: EARTH MATERIALS AND GEOLOGIC TIME			
CHAPTER 3 <i>Minerals</i>			
3.1 What Are Minerals? (pp. 73–74)	0.5	0.25	
3.1 Minilab: Observe Minerals (p. 74)	0.5	0.25	SC.912.N.1.1
3.2 Composition and Structure of Min-erals (pp. 75–80)	0.5	0.25	
3.3 Physical Properties of Minerals (pp. 77–80)	0.5	0.25	SC.912.N.1.1

TITLE	PERIODS	BLOCKS	NGSSS
3.4 Mineral Classes and the Rock-Forming Minerals (pp. 81–86)	0.5	0.25	SC.912.N.1.6
3.4 Data Analysis: Abundance and Dis-tribution of Silicate Minerals (p. 81)	0.4	0.25	SC.912.N.1.6
3.5 Hazardous Rocks and Minerals (pp. 87–92)	0.5	0.2	SC.912.N.1.1
Case Study/Tying It All Together (p. 72, p. 92)	0.6	0.3	
Investigation: Identifying Minerals	1	0.5	SC.912.N.1.1
Total Chapter 3	5	2.5	

CHAPTER 4 *Rocks*

4.1 Rocks and the Rock Cycle (pp. 101–105)	0.5	0.25	SC.912.N.1.1
4.1 Minilab: Rock Cycle Model (p. 103)	0.8	0.4	SC.912.N.3.5
4.2 Igneous Rocks (pp. 106–109)	0.5	0.25	
4.3 Sedimentary Rocks (pp. 110–116)	0.5	0.25	
4.4 Metamorphic Rocks (pp. 117–122)	0.5	0.25	
4.4 Data Analysis: Metamorphism of Mudstone (p. 117)	0.5	0.25	SC.912.N.1.6
Case Study/Tying It All Together (p. 100, p. 122)	1.2	0.6	SC.912.N.1.4
Investigation: Identify Rocks	1.5	0.75	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 4	6	3	

CHAPTER 5 *Geologic Time*

5.1 Mass Extinctions in Earth's History (pp. 131–134)	0.5	0.25	SC.912.E.7.3
5.2 Relative Age (pp. 135–142)	1	0.5	SC.912.L.15.1, SC.912.N.1.6
5.3 Interpreting the Rock Record (pp. 143–147)	1	0.5	SC.912.N.1.1
5.4 Absolute Age (pp. 148–153)	0.5	0.25	SC.912.P.10.11
5.4 Minilab: Radioactivity and Half-Life (p. 150)	0.5	0.25	SC.912.N.1.1, SC.912.P.10.11
5.4 Data Analysis: Think About Radio-metric Testing (p. 151)	0.5	0.25	SC.912.N.1.6
5.5 The Geologic Timescale (pp. 154–158)	0.5	0.25	SC.912.E.6.4
Case Study/Tying It All Together (p. 130, p. 158)	0.5	0.25	SC.912.L.15.1, SC.912.N.1.1
Investigation: Visualizing Geologic Time	1.5	0.75	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 5	6.5	3.25	

TITLE	PERIODS	BLOCKS	NGSSS
CHAPTER 6 <i>Mineral and Energy Resources</i>			
6.1 Mineral Resources (pp. 167–175)	1.5	0.75	
6.2 Nonrenewable Energy Resources (pp. 176–180)	0.5	0.25	SC.912.P.10.11
6.3 Renewable Energy Resources (pp. 181–184)	0.6	0.3	SC.912.N.4.1
6.3 Minilab: Biofuel (p. 184)	0.4	0.2	SC.912.N.1.6
6.4 Conservation and Energy for the Future (pp. 185–194)	1.5	0.75	SC.912.N.1.3*, SC.912.N.4.1
6.4 Data Analysis: Analyze Patterns in U.S. Energy Consumption (p. 188)	0.5	0.25	SC.912.N.1.6
Case Study/Tying It All Together (p. 166, p. 190)	1.5	0.75	SC.912.N.1.4, SC.912.N.4.2*
Investigation: Design a Solar Device	0.5	0.25	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 6	7	3.5	

UNIT 3: INTERNAL PROCESSES

CHAPTER 7 *Plate Tectonics*

7.1 Early Hypotheses (pp. 201–209)	1	0.5	SC.912.E.6.1, SC.912.E.6.3
7.1 Data Analysis: Interpret Temperature and Pressure Graphs (p. 205)	0.2	0.1	SC.912.E.6.1
7.2 The Theory of Plate Tectonics (pp. 209–215)	0.5	0.25	SC.912.E.6.1, SC.912.E.6.3, SC.912.N.1.6
7.3 Plate Movement (pp. 215–220)	0.5	0.25	SC.912.E.6.1, SC.912.E.6.3, SC.912.P.10.4
7.3 Minilab: Convection (p. 217)	0.3	0.15	SC.912.E.6.1, SC.912.E.6.3, SC.912.P.10.4
7.3 Minilab: Isostasy (p. 220)	0.3	0.15	SC.912.E.6.1
7.4 Effects of Plate Tectonics (pp. 221–225)	1	0.5	SC.912.E.6.1, SC.912.E.6.
Case Study/Tying It All Together (p. 204, p. 230)	1.2	0.6	SC.912.E.6.3, SC.912.N.1.1, SC.912.N.1.4
Investigation: Tectonic Plates and Boundaries	1.5	0.75	SC.912.E.6.3, SC.912.N.1.1
Total Chapter 7	6.5	3.25	

CHAPTER 8 *Earthquakes and Earth's Structure*

8.1 Earthquakes and Seismic Waves (pp. 235–246)	1	0.5	SC.912.P.10.20, SC.912.P.12.2
8.1 Minilab: Build a Simple Seismograph (p. 244)	0.5	0.25	SC.912.N.1.6, SC.912.P.10.20
8.1 Data Analysis: Analyze Patterns of P and S Waves (p. 239)	0.2	0.1	SC.912.N.1.6, SC.912.P.10.20
8.2 Earthquakes and Tectonic Plate Boundaries (pp. 247–251)	1	0.5	

TITLE	PERIODS	BLOCKS	NGSSS
8.2 Data Analysis: Map Earthquakes in Real Time (p. 250)	0.5	0.25	
8.3 Earthquake Damage (pp. 252–258)	0.3	0.15	SC.912.N.1.6
8.4 Studying Earth’s Interior (pp. 259–263)	0.5	0.25	SC.912.E.6.1, SC.912.N.1.6, SC.912.P.10.20
Case Study/Tying It All Together (p. 232, p. 264)	1	0.5	
Investigation: Quantifying a Quake	1.5	0.75	SC.912.N.1.1, SC.912.N.1.4, SC.912.E.6.4
Total Chapter 8	6.5	3.25	

CHAPTER 9 *Volcanoes*

9.1 Magma (pp. 273–279)	1	0.5	
9.1 Minilab: Soda Bottle Volcano (p. 277)	0.3	0.15	
9.2 Magmatic Bodies and Volcanic Formations (pp. 280–285)	1	0.5	SC.912.E.6.4
9.3 Volcanic Eruptions (pp. 287–294)	1	0.5	
9.3 Data Analysis: Exploring Volcanic Risk in the United States (p. 292)	0.7	0.35	
Case Study/Tying It All Together (p. 272, p. 294)	1	0.5	
Investigation: Volcanoes and the Ring of Fire	1.5	0.75	SC.912.E.6.4, SC.912.N.1.1, SC.912.N.1.4
Total Chapter 9	6.5	3.25	

CHAPTER 10 *Mountains*

10.1 Geologic Structures and Tectonic Stress (pp. 303–309)	1	0.5	
10.2 Mountains and Mountain Ranges (pp. 310–316)	1	0.5	
10.2 Minilab: Fault-Block Mountain Models (p. 316)	0.3	0.15	SC.912.N.1.1, SC.912.N.1.6, SC.912.N.3.5
10.3 Continental Collision: The Hima-laya (pp. 317–322)	0.7	0.35	
10.3 Data Analysis: Compare Elevations (p. 320)	0.3	0.15	
Case Study/Tying It All Together (p. 302, p. 322)	1	0.5	
Investigation: Mountain Building	0.7	0.35	SC.912.E.6.4
Total Chapter 10	5	2.5	

CHAPTER 11 *The Seafloor*

11.1 Earth’s Oceans (pp. 331–334)	0.6	0.3	SC.912.E.6.5, SC.912.E.7.9*
11.1 Data Analysis: Compare Seafloor Data (p. 333)	0.2	0.1	SC.912.E.6.5, SC.912.N.1.6
11.2 Studying the Seafloor (pp. 334–336)	0.2	0.1	SC.912.P.10.16

TITLE	PERIODS	BLOCKS	NGSSS
11.3 Features of the Seafloor (pp. 337–347)	1	0.5	SC.912.E.6.5, SC.912.E.7.1
11.4 Continental Margins (pp. 348–354)	1.2	0.6	SC.912.E.6.4, SC.912.E.6.5
Case Study/Tying It All Together (p. 330, p. 354)	1.5	0.75	SC.912.N.1.4
Investigation: Mapping the Seafloor	3	1.5	SC.912.E.6.5, SC.912.N.1.1
Total Chapter 11	8.5	4.25	

UNIT 4: SURFACE PROCESSES

CHAPTER 12 *Weathering, Erosion, and Deposition*

12.1 Mechanical Weathering (pp. 365–370)	1	0.5	SC.912.N.1.6
12.1 Minilab: Weathering by Plant Roots (p. 370)	0.5	0.25	SC.912.N.1.1
12.2 Chemical Weathering (pp. 371–374)	1.5	0.75	SC.912.E.6.4
12.2 Minilab: Weathering of Iron (p. 374)	0.5	0.25	SC.912.N.1.1
12.3 Stream Erosion and Deposition (pp. 375–377)	0.8	0.4	SC.912.E.6.2, SC.912.E.6.4, SC.912.E.7.3
13.3 Data Analysis: Blackfoot River Dis-charge Over Time (p. 377)	0.2	0.1	SC.912.N.1.6
12.4 Mass Wasting (pp. 388–395)	1.5	0.75	SC.912.E.6.2
Case Study/Tying It All Together (p. 364, p. 395)	1	0.5	SC.912.E.6.2
Investigation: Erosion and Deposition	1.5	0.75	SC.912.E.6.2, SC.912.E.6.4, SC.912.E.7.3, SC.912.N.1.1
Total Chapter 12	8.5	4.25	

CHAPTER 13 *Glaciers and Deserts*

13.1 Formation of Glaciers (pp. 405–406)	0.25	0.125	
13.2 Glacial Movement (pp. 407–410)	0.2	0.1	
13.3 Glacial Erosion (pp. 411–414)	0.4	0.2	SC.912.E.6.2, SC.912.E.6.4
13.4 Glacial Deposits (pp. 415–419)	0.5	0.25	
13.5 Glaciation and Glaciers Today (pp. 420–422)	0.5	0.25	
13.5 Data Analysis: Graphing Glacial Melt (p. 421)	0.5	0.25	
13.6 Why Do Deserts Exist? (pp. 423–425)	0.6	0.3	
13.6 Data Analysis: Which Is the De-ert? (p. 425)	0.4	0.2	
13.7 Water and Deserts (pp. 427–433)	0.5	0.25	SC.912.E.6.2
13.8 Wind and Deserts (pp. 434–438)	0.5	0.25	SC.912.E.6.2, SC.912.E.6.4
13.8 Minilab: Simulating Wind Erosion (p. 437)	0.75	0.375	SC.912.E.6.2, SC.912.E.6.4

TITLE	PERIODS	BLOCKS	NGSSS
Case Study/Tying It All Together (p. 404, p. 438)	0.75	0.375	SC.912.E.6.2
Investigation: Glacier Movement	0.75	0.375	SC.912.E.6.4, SC.912.E.7.3, SC.912.N.1.1, SC.912.N.1.4
Total Chapter 13	6.5	3.25	

CHAPTER 14 *Soil Resources*

14.1 Soil Formation (pp. 449–454)	1	0.5	SC.912.E.7.3
14.1 Data Analysis: Effects on Soil Bio-diversity (p. 454)	0.3	0.13	SC.912.E.7.3, SC.912.N.1.6
14.2 Soil Classification (pp. 455–463)	1.3	0.65	SC.912.N.1.6
14.2 Minilab: What Is in the Soil? (p. 458)	0.4	0.2	
14.3 Soil Erosion and Desertification (pp. 464–470)	0.8	0.45	SC.912.N.4.1
14.3 Minilab: Modeling Soil Erosion (p. 466)	1	0.5	SC.912.N.3.5
14.3 Data Analysis Exploring Earth-worm Bioremediation (p. 471)	0.2	0.1	
Case Study/Tying It All Together (p. 448, p. 472)	1	0.5	
Investigation: Testing Soil	2	1	SC.912.N.1.1
Total Chapter 14	8	4	

UNIT 5: THE HYDROSPHERE

CHAPTER 15 *Fresh Water*

15.1 Hydrologic Cycle (p. 483)	0.25	0.125	SC.912.E.7.1
15.2 Lakes and Wetlands (pp. 484–492)	1	0.5	SC.912.E.6.4
15.2 Minilab: Lake Turnover (p. 488)	1	0.5	SC.912.E.7.1, SC.912.N.1.1
15.2 Data Analysis: Compare Wetland Gains and Losses (p. 491)	0.5	0.25	SC.912.N.1.6
15.2 Minilab: Role of Wetlands (p. 492)	0.5	0.25	SC.912.N.1.1
15.3 Groundwater (pp. 493–498)	0.5	0.25	SC.912.E.6.4
Case Study/Tying It All Together (p. 482, p. 500)	0.75	0.375	SC.912.E.7.1
Investigation: Transpiration and the Water Cycle	1.5	0.73	SC.912.E.7.1, SC.912.E.7.3, SC.912.N.1.1, SC.912.N.1.4
Total Chapter 15	6	3	

CHAPTER 16 *Oceans and Coastlines*

16.1 Ocean Geography and Seawater Composition (pp. 509–512)	0.5	0.25	SC.912.E.7.9*
16.2 Tides and Sea Waves (pp. 513–516)	0.5	0.25	SC.912.E.5.6, SC.912.P.10.20

TITLE	PERIODS	BLOCKS	NGSSS
16.3 Ocean Currents (pp. 517–525)	1	0.5	SC.912.E.5.6, SC.912.E.7.2, SC.912.E.7.9*
16.3 Minilab: Motion in the Ocean (p. 525)	0.5	0.25	SC.912.E.7.1, SC.912.E.7.9*, SC.912.N.1.1
16.4 Seacoasts (pp. 526–531)	0.5	0.25	SC.912.P.10.20, SC.912.N.1.6
16.5 Beaches (pp. 532–537)	1	0.5	
16.6 Life in the Sea (pp. 538–542)	0.8	0.4	
16.6 Data Analysis: Comparing World Fisheries (p. 538)	0.2	0.1	
Case Study/Tying It All Together (p. 508, p. 542)	1	0.5	SC.912.E.7.9*, SC.912.N.1.4, SC.912.N.4.2*
Investigation: Ocean Currents	1.5	0.75	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 16	7.5	3.75	

CHAPTER 17 *Water Resources*

17.1 Water Supply and Demand (pp. 551–556)	1	0.5	
17.1 Data Analysis: Global Water Use (p. 552)	0.3	0.15	
17.2 Dams and Diversion (pp. 557–563)	1	0.5	SC.912.N.1.6, SC.912.N.4.2*
17.3 Groundwater Diversion and De-pletion (pp. 564–568)	0.6	0.3	
17.4 Water Pollution (pp. 569–577)	1	0.5	SC.912.N.1.1
17.4 Minilab: Point Source Pollution Models (p. 573)	0.5	0.25	SC.912.N.1.1
Case Study/Tying It All Together (p. 550, p. 577)	1.6	0.8	SC.912.N.1.1, SC.912.N.1.3*
Investigation: Testing Water Quality	1.5	0.75	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 17	6.5	3.25	

UNIT 6: THE ATMOSPHERE

CHAPTER 18 *The Atmosphere*

18.1 Earth's Early Atmospheres (pp. 589–590)	0.2	0.1	
18.2 Life, Iron, and the Evolution of the Modern Atmosphere (pp. 591–595)	0.8	0.4	SC.912.L.15.8
18.2 Minilab: Carbon Dioxide, Photo-synthesis, and Oxygen (p. 594)	1	0.5	
18.2 Minilab: Oxygen in the Atmos-phere (p. 595)	0.5	0.25	SC.912.N.1.1
18.3 Atmospheric Pressure and Tem-perature (pp. 596–600)	0.5	0.25	SC.912.N.1.3*
18.4 Air Pollution (pp. 601–610)	1	0.5	SC.912.N.1.1, SC.912.N.1.3*
18.4 Data Analysis: Air Pollution (p. 603)	0.5	0.25	SC.912.N.1.1

TITLE	PERIODS	BLOCKS	NGSSS
Case Study/Tying It All Together (p. 588, p. 610)	0.5	0.25	
Investigation: Acid Rain	1.5	0.75	SC.912.E.7.3, SC.912.N.1.1, SC.912.N.1.4
Total Chapter 18	6.5	3.25	

CHAPTER 19 *Soil Resources*

19.1 Incoming Solar Radiation (pp. 621–627)	0.2	0.1	SC.912.E.5.4, SC.912.E.5.6, SC.912.E.5.8, SC.912.E.7.3, SC.912.P.10.4, SC.912.P.10.16, SC.912.P.10.18, SC.912.P.10.19, SC.912.P.10.20
19.2 The Radiation Balance (pp. 629–631)	0.8	0.4	SC.912.E.5.4, SC.912.E.7.1, SC.912.P.10.4, SC.912.P.10.18
19.2 Minilab: Simulating the Green-house Effect (p. 630)	0.8	0.4	SC.912.E.7.1, SC.912.N.1.1
19.3 Energy Storage and Transfer (pp. 632–635)	0.5	0.25	SC.912.E.7.1, SC.912.E.7.9, SC.912.P.10.4
19.3 Minilab: Modeling Atmospheric Convection and Wind (p. 630)	1	0.5	SC.912.N.1.1, SC.912.N.3.5, SC.912.P.10.4
19.4 Geographic Factors (pp. 634–641)	0.8	0.5	SC.912.E.5.6, SC.912.E.7.3, SC.912.E.7.4
19.4 Data Analysis: Hours of Sunlight per Day (p. 639)	0.5	0.25	SC.912.E.5.6, SC.912.E.7.4, SC.912.N.1.1
Case Study/Tying It All Together (p. 620, p. 643)	0.5	0.25	
Investigation: Compare and Contrast the Specific Heat of Sand and Water	1.5	0.75	SC.912.E.7.4, SC.912.N.1.1, SC.912.N.1.4, SC.912.P.10.4
Total Chapter 19	6.5	3.25	

CHAPTER 20 *Weather*

20.1 Moisture, Temperature, and Air (pp. 653–656)	0.3	0.15	
20.2 Clouds and Precipitation (pp. 657–660)	0.3	0.15	
20.2 Data Analysis: Record Data and Design a Game (p. 658)	0.5	0.25	
20.3 Pressure, Wind, and Fronts (pp. 661–666)	1	0.5	
20.3 Minilab: Make a Barometer (p. 665)	0.8	0.4	SC.912.E.7.5, SC.912.N.1.1
20.3 Minilab: Compare Two Coriolis Effect Models (p. 666)	0.4	0.2	SC.912.N.1.1
20.4 Storms (pp. 671–679)	1	0.5	SC.912.E.7.5, SC.912.E.7.6, SC.912.E.7.7, SC.912.E.7.8
20.4 Data Analysis: Compare Storm Statistics (p. 680)	0.4	0.2	SC.912.E.7.6
Case Study/Tying It All Together (p. 652, p. 681)	1	0.5	SC.912.E.7.5, SC.912.E.7.6, SC.912.E.7.8

TITLE	PERIODS	BLOCKS	NGSSS
Investigation: 24-Hour Weather Fore-casting	3.3	1.65	SC.912.E.7.5, SC.912.N.1.1
Total Chapter 14	9	4.5	

CHAPTER 21 *Climate and Climate Change*

21.1 Global Climate (pp. 691–693)	0.2	0.1	
21.2 Climate Types (pp. 694–699)	0.8	0.4	SC.912.E.7.4
21.2 Data Analysis: Compare Cli-mographs (p. 697)	0.6	0.3	SC.912.E.7.4
21.3 Historical Climate Change (pp. 700–705)	0.6	0.3	SC.912.E.5.4, SC.912.E.7.7
21.3 Minilab: Energy Exchanges in At-mospheric Models (p. 704)	1	0.5	SC.912.N.1.6, SC.912.E.7.7
21.4 Climate Change Today (pp. 706–708)	0.3	0.15	SC.912.E.7.1, SC.912.E.7.7
21.5 Consequences of Climate Change (pp. 709–714)	0.8	0.4	SC.912.E.7.3, SC.912.E.7.7, SC.912.E.7.9, SC.912.N.4.1
Case Study/Tying It All Together (p. 690, p. 715)	1	0.5	SC.912.E.7.9, SC.912.N.1.4
Investigation: Climate Change and Sea Ice	1.5	0.375	SC.912.N.1.1, SC.912.N.1.4
Total Chapter 21	7	3.5	

UNIT 7: EARTH AND SPACE

CHAPTER 22 *Evolving Models of the Sky*

22.1 Patterns in the Sky (pp. 727–729)	0.25	0.125	SC.912.E.5.10*, SC.912.5.11, SC.912.N.1.1, SC.912.N.1.3*
22.1 Data Analysis: Reading a Star Map (p. 729)	0.25	0.125	
22.2 Evolving Models of the Universe (pp. 731–734)	0.5	0.25	SC.912.E.5.6, SC.912.E.5.11
22.3 The Role of Gravity (pp. 735–744)	1.1	0.55	SC.912.E.5.2, SC.912.E.5.6, SC.912.P.10.10, SC.912.P.12.4
22.3 Data Analysis: Quantifying the Effect of Gravity (p. 735)	0.3	0.15	SC.912.E.5.2, SC.912.E.5.6, SC.912.P.10.10, SC.912.P.12.4
22.3 Minilab: Simulating Gravity (p. 740)	0.7	0.35	SC.912.E.5.2, SC.912.E.5.6, SC.912.P.10.10, SC.912.P.12.4
22.3 Data Analysis: Comparing the Fundamental Forces (p. 744)	0.2	0.1	
22.4 Tools of Modern Astronomy (pp. 745–751)	0.75	0.375	SC.912.E.5.5, SC.912.E.5.7*, SC.912.E.5.8*, SC.912.E.5.9, SC.912.N.1.1, SC.912.P.10.20
22.4 Data Analysis: Evolution of the Tel-escape (p. 748)	0.25	0.125	SC.912.E.5.8*

TITLE	PERIODS	BLOCKS	NGSSS
Case Study/Tying It All Together (p. 726, p. 752)	0.7	0.35	SC.912.E.5.2, SC.912.E.5.5, SC.912.E.5.6, SC.912.E.5.11, SC.912.P.10.10, SC.912.P.12.
Investigation: Reflection and Refraction	1.5	0.75	
Total Chapter 22	6.5	3.25	

CHAPTER 23 *Our Solar System*

23.1 The Solar System: A Brief Overview (pp. 759–761)	0.7	0.35	SC.912.E.5.5
		0.13	SC.912.E.7.3, SC.912.N.1.6
23.1 Data Analysis: Compare Planetary Data (p. 761)	0.3	0.15	
23.2 The Terrestrial Planets and Earth’s Moon (pp. 762–769)	1	0.5	SC.912.E.5.5, SC.912.E.5.6, SC.912.N.1.6
23.3 The Jovian Planets (pp. 770–774)	0.5	0.25	
23.4 Jovian Moons (pp. 775–777)	0.5	0.25	SC.912.N.1.6
23.5 Dwarf Planets, Minor Planets, and Comets (pp. 778–781)	1	0.5	SC.912.E.5.5
23.5 Minilab: Micrometeorites (p. 781)	0.3	0.15	SC.912.N.1.1, SC.912.N.1.6
Case Study/Tying It All Together (p. 758, p. 782)	1.2	0.6	SC.912.E.5.7*
Investigation: Scale Model of the Solar System	1.5	0.75	
Total Chapter 23	7	3.5	

CHAPTER 24 *Stars*

24.1 The Birth of Stars (pp. 791–792)	0.3	0.15	SC.912.P.10.11
24.2 The Sun (pp. 793–797)	0.7	0.35	SC.912.E.5.4, SC.912.P.10.4
24.2 Build a Spectroscope (p. 796)	0.8	0.4	SC.912.N.1.1, SC.912.N.1.6
24.3 The Life and Death of Stars (pp. 782–802)	0.7	0.35	SC.912.E.5.3, SC.912.E.5.11, SC.912.P.10.11
24.3 Data Analysis: Estimating the Life-time of the Sun (p. 800)	0.5	0.25	SC.912.E.5.3, SC.912.E.5.4
24.4 Extreme Stellar Remnants (pp. 803–806))	1	0.5	SC.912.E.5.3, SC.912.E.5.8*, SC.912.P.10.18
Case Study/Tying It All Together (p. 790, p. 807)	1	0.5	SC.912.E.5.2, SC.912.E.5.4, SC.912.E.5.6, SC.912.P.10.10, SC.912.P.10.11, SC.912.P.12.4
Investigation: Visible Light Spectrum	6.5	3.25	SC.912.E.5.11, SC.912.N.1.1, SC.912.P.10.18
Total Chapter 24	8	4	

TITLE	PERIODS	BLOCKS	NGSSS
CHAPTER 25 Galaxies and the Universe			
25.1 The Milky Way and Other Galaxies (pp. 817–820)	0.4	0.2	SC.912.E.5.2, SC.912.E.5.11, SC.912.N.1.6
25.2 The Big Bang (pp. 821–825)	0.6	0.3	SC.912.E.5.1, SC.912.E.5.2, SC.912.E.5.11, SC.912.P.10.11, SC.912.P.10.18
25.2 Data Analysis: Quantify the Expansion Rate of the Universe (p. 823)	0.5	0.25	SC.912.E.5.1, SC.912.E.5.2, SC.912.E.5.11, SC.912.N.1.1
25.2 Minilab: Big Bang Balloon (p. 824)	0.4	0.2	SC.912.E.5.1, SC.912.E.5.2
25.3 Quasars, Dark Matter, and the Fate of the Universe (pp. 826–829)	1	0.5	SC.912.E.5.2, SC.912.P.10.18
Case Study/Tying It All Together (p. 816, p. 830)	1	0.5	SC.912.E.5.1, SC.912.E.5.2, SC.912.E.5.8*, SC.912.P.10.18
Investigation: Galaxy Classifications	1.75	0.875	SC.912.E.5.2, SC.912.E.5.4, SC.912.N.1.1, SC.912.N.1.4
Total Chapter 25	6	3	
Total for all Chapters	165.5	82.8	