

**Unit 6—Insolation****The Physical Setting****Chapter 26: Studying Space****Chapter 22: The Atmosphere****New York Physical Settings/Earth Science Core Curriculum**

- 1.MA.2 Deductive and inductive reasoning are used to reach mathematical conclusions.
- 1.SI.1 The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.
- 1.SI.2 Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.
- 1.SI.3 The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.
- 2.IS.3 Information technology can have positive and negative impacts on society, depending upon how it is used.
- LE4.7.1c Human beings are part of the Earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems. Humans modify ecosystems as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems may be irreversibly affected.
- PSE4.1.1a Most objects in the solar system are in regular and predictable motion.
- PSE4.1.1b Eight planets move around the Sun in nearly circular orbits.
- PSE4.1.1d Earth rotates on an imaginary axis at a rate of 15 degrees per hour. To people on Earth, this turning of the planet makes it seem as though the Sun, the moon, and the stars are moving around Earth once a day. Rotation provides a basis for our system of local time; meridians of longitude are the basis for time zones.
- PSE4.1.1e The Foucault pendulum and the Coriolis effect provide evidence of Earth's rotation.
- PSE4.1.1f Earth's changing position with regard to the Sun and the moon has noticeable effects.
- PSE4.1.1g Seasonal changes in the apparent positions of constellations provide evidence of Earth's revolution.
- PSE4.1.1h The Sun's apparent path through the sky varies with latitude and season.
- PSE4.1.2a The universe is vast and estimated to be over ten billion years old. The current theory is that the universe was created from an explosion called the Big Bang.
- PSE4.1.2d Asteroids, comets, and meteors are components of our solar system.
- PSE4.1.2g Earth has continuously been recycling water since the outgassing of water early in its history. This constant recirculation of water at and near Earth's surface is described by the hydrologic cycle.

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- PSE 4.2.1b The transfer of heat energy within the atmosphere, the hydrosphere, and Earth's interior results in the formation of regions of different densities. These density differences result in motion.
- PSE 4.2.2a Insolation heats Earth's surface and atmosphere unequally due to variations.
- PSE 4.2.2b The transfer of heat energy within the atmosphere, the hydrosphere, and Earth's surface occurs as the result of radiation, convection, and conduction.
- PSE4.2.2c A location's climate is influenced by latitude, proximity to large bodies of water, ocean currents, prevailing winds, vegetative cover, elevation, and mountain ranges.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
93	Chapter 26 Opener and Section 1, pp. 658-66	<ol style="list-style-type: none"> <li><b>Describe</b> characteristics of the universe in terms of time, distance, and organization.</li> <li><b>Identify</b> the visible and nonvisible parts of the electromagnetic spectrum.</li> <li><b>Compare</b> refracting telescopes and reflecting telescopes.</li> <li><b>Explain</b> how telescopes for nonvisible electromagnetic radiation differ from light telescopes.</li> </ol>	1.SI.1 1.SI.3 2.IS.3 PSE4.1.2a PSE4.1.2b PSE4.1.2d	Pre-Reading Activity, Foldnotes, p. 658  Skill Builder, p. 660 (Teachers Edition), “Astronomical Distances”	Read Chapter 1, Section 1, pp. 659-666.  Section 1 Review, answer questions 1-9.
94	Chapter 26 Opener and Section 1 (cont.)			Debate, p. 665 (Teachers Edition), “Space Exploration”	Read Chapter 26, Section 2, pp. 667-674.  Section 2 Review, answer questions 1-8.
95	Chapter 26 Section 2, pp. 667-74	<ol style="list-style-type: none"> <li><b>Describe</b> two lines of evidence for Earth’s rotation.</li> <li><b>Explain</b> how the change in apparent positions of constellations provides evidence of Earth’s rotation and revolution around the sun.</li> <li><b>Summarize</b> how Earth’s rotation and revolution provide a basis for measuring time.</li> <li><b>Explain</b> how the tilt of Earth’s axis and Earth’s movement cause seasons.</li> </ol>	1.MA.2 1.SI.2 1.SI.3 2.IS.3 PSE4.1.1a PSE4.1.1b PSE4.1.1d PSE4.1.1e PSE4.1.1g PSE4.1.1h PSE4.1.2b PSE4.2.2a	QuickLab, p. 668, “Making a Pendulum”	Section 2 Review, answer questions 9-11.  Graphic Organizer, p. 670.

\* A Day equals a 45-minute period.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
96	Chapter 26 Section 2 (cont.)			QuickLab, p. 673, “The Angle of the Sun’s Rays”	Chapter 26 Review, questions 1-21.
97	Chapter 26 Chapter Review and Assessment, pp. 675-83			Chapter 26 Inquiry Lab, p. 680, “Earth-Sun Motion”	Chapter 26 Review, questions 22-28, 30-34.
98	Chapter26 Chapter Review and Assessment (cont.)				Regents Exam Prep, pp. 678-679, questions 1-12.
99	Chapter 22 Opener and Section 1, pp. 546-554	<ol style="list-style-type: none"> <li>1. <b>Describe</b> the composition of Earth’s atmosphere.</li> <li>2. <b>Explain</b> how two types of barometers work.</li> <li>3. <b>Identify</b> the layers of the atmosphere.</li> <li>4. <b>Identify</b> two effects of air pollution.</li> </ol>	LE4.7.1c, PSE4.1.2g PSE4.2.1d PSE4.2.2c	Pre-Reading Activity, Foldnotes, p. 546	<p>Read Chapter 22, Section 1, pp. 547-554.</p> <p>Section 1 Review, answer questions 1-11.</p>
100	Chapter 22 Opener and Section 1 (cont.)			<p>QuickLab, p. 551, “Barometric Pressure”</p> <p>Math Practice, p. 550, “Force of the Air”</p>	<p>Read Chapter 22, Section 2, pp. 555-560.</p> <p>Section 2 Review, answer questions 1-10.</p>

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
101	Chapter 22 Section 2, pp. 555-60	<ol style="list-style-type: none"> <li><b>Explain</b> how radiant energy reaches Earth.</li> <li><b>Describe</b> how visible light and infrared energy warm Earth.</li> <li><b>Summarize</b> the processes of radiation, conduction, and convection.</li> </ol>	1.MA.2 1.SI.2 LE4.7.1c PSE4.1.1f PSE4.2.1a PSE4.2.1b PSE4.2.2a PSE4.2.2b PSE4.2.2c PSE4.2.2d	QuickLab, p. 559, “Light and Latitude”	Read Chapter 22, Section 3, pp. 561-564.  Section 3 Review, answer questions 1-5.
102	Chapter 22 Section 3, pp. 561-64	<ol style="list-style-type: none"> <li><b>Explain</b> the Coriolis effect.</li> <li><b>Describe</b> the global patterns of air circulation, and name three global wind belts.</li> <li><b>Identify</b> two factors that form local wind patterns.</li> </ol>	PSE4.1.1e PSE 4.2.1b PSE4.2.2a PSE4.2.2b PSE4.2.2c	Graphic Organizer, p. 563, “Comparison Table”  Maps in Action, p. 572, “Absorbed Solar Radiation”	Section 3 Review, answer questions 6-9.
103	Chapter 22 Section 3 (cont.)			Demonstration, p. 561 (Teachers Edition) “Modeling the Coriolis Effect”	Chapter 22 Review, pp. 566-567, questions 1-24.
104	Chapter 22 Chapter Review and Assessment, pp. 565-73			Inquiry Lab, p. 570, “Energy Absorption and Reflection”	Chapter 22 Review, pp. 566-567, questions 25-35, 37-39.
105	Chapter22 Chapter Review and Assessment (cont’d)				Regents Exam Prep, pp. 568-569, questions 1-10.

## Unit 7—Meteorology

### The Physical Setting

#### Chapter 23: Water in the Atmosphere

#### Chapter 24: Weather

#### New York Physical Settings/Earth Science Core Curriculum

- 1.MA.2 Deductive and inductive reasoning are used to reach mathematical conclusions.
- 1.SI.1 The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.
- 1.SI.3 The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.
- 2.IS.1 Information technology is used to retrieve, process, and communicate information as a tool to enhance learning.
- 2.IS.3 Information technology can have positive and negative impacts on society, depending upon how it is used.
- 6.M.2 Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design.
- 6.MS.3 The grouping of magnitudes of sizes, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems.
- 6.PC.5 Identifying patterns of change is necessary for making predictions about future behavior and conditions.
- 7.S.2 Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits, gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among the common themes of mathematics, science, and technology; and presenting results.
- LE4.7.1c Human beings are part of the Earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems. Humans modify ecosystems as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems may be irreversibly affected.
- PSE4.1.1e The Foucault pendulum and the Coriolis effect provide evidence of Earth's rotation.
- PSE4.1.2g Earth has continuously been recycling water since the outgassing of water early in its history. This constant recirculation of water at and near Earth's surface is described by the hydrologic cycle.
- PSE 4.2.1b The transfer of heat energy within the atmosphere, the hydrosphere, and Earth's interior results in the formation of regions of different densities. These density differences result in motion.
- PSE 4.2.1c Weather patterns become evident when weather variables are observed, measured, and recorded. These variables include air temperature, air pressure, moisture, precipitation, wind speed and direction, and cloud cover.
- PSE 4.2.1d Weather variables are measured using instruments.
- PSE 4.2.1e Weather variables are interrelated.

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- PSE 4.2.1f Air temperature, dewpoint, cloud formation, and precipitation are affected by the expansion and contraction of air due to vertical atmospheric movement.
- PSE 4.1.2g Earth has continuously been recycling water since the outgassing of water early in its history. This constant recirculation of water at and near Earth's surface is described by the hydrologic cycle.
- PSE 4.2.1h Atmospheric moisture, temperature and pressure distributions; jet streams, wind; air masses and frontal boundaries; and the movement of cyclonic systems and associated tornadoes, thunderstorms, and hurricanes occur in observable patterns. Loss of property, personal injury, and loss of life can be reduced by effective emergency preparedness.
- PSE 4.2.1t Natural agents of erosion, generally driven by gravity, remove, transport, and deposit weathered rock particles. Each agent of erosion produces distinctive changes in the material that it transports and creates characteristic surface features and landscapes. In certain erosional situations, loss of property, personal injury, and loss of life can be reduced by effective emergency preparedness.
- PSE 4.2.2a Insolation heats Earth's surface and atmosphere unequally due to variations.
- PSE 4.2.2b The transfer of heat energy within the atmosphere, the hydrosphere, and Earth's surface occurs as the result of radiation, convection, and conduction.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
106	Chapter 23 Opener and Section 1, pp. 574-80	<ol style="list-style-type: none"> <li><b>Explain</b> how heat energy affects the changing phases of water.</li> <li><b>Explain</b> what absolute humidity and relative humidity are, and describe how they are measured.</li> <li><b>Describe</b> what happens when the temperature of air decreases to the dew point or below the dew point.</li> </ol>	1.MA.2 1.SI.3 6.M.2 7.S.2 LE4.7.1c PSE 4.2.1c PSE 4.2.1d PSE 4.2.1e PSE 4.2.1f PSE 4.2.1g PSE 4.2.1t	Pre-Reading Activity, p. 574, FoldNote.	Read Chapter 23, Section 1, pp. 575-580.  Section 1 Review, p. 580, questions 1-10.
107	Chapter 23 Opener and Section 1 (cont.)			QuickLab, p. 579, “Dew Point”	Read Chapter 23, Section 2, pp. 581-586.  Section 2 Review, p. 586, questions 1-7.
108	Chapter 23 Section 2, pp. 581-86	<ol style="list-style-type: none"> <li><b>Describe</b> the conditions that are necessary for clouds to form.</li> <li><b>Explain</b> the four processes of cooling that can lead to the formation of clouds.</li> <li><b>Identify</b> the three types of clouds.</li> <li><b>Describe</b> four ways in which fog can form.</li> </ol>	1.SI.3 PSE 4.2.1e PSE 4.2.1f	QuickLab, p. 584, “Cloud Formation”	Section 2 Review, p. 586, questions 8-11.
109	Chapter 23 Section 2 (cont.)			Demonstration, p. 581 (Teachers Edition) “Condensation Nuclei”  Math Skill Builder, p. 582 (Teachers Edition), “Adiabatic Lapse Rate”	Read Chapter 23, Section 3, pp. 587-590.  Section 3 Review, p. 586, questions 1-6.

\* A Day equals a 45-minute period.



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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
110	Chapter 23 Section 3 pp. 587-90	<ol style="list-style-type: none"> <li><b>Identify</b> the four forms of precipitation.</li> <li><b>Compare</b> the two processes that cause precipitation.</li> <li><b>Describe</b> two ways that precipitation is measured.</li> <li><b>Explain</b> how rain can be produced artificially.</li> </ol>	PSE 4.2.1c PSE 4.2.1d PSE 4.2.1e PSE 4.2.1f PSE 4.2.1g	Demonstration, p. 587 (Teachers Edition), “Indoor Rain”	Section 3 Review, p. 586, questions 7-9.
111	Chapter 23 Section 3 (cont.)			Group Activity, p. 588 (Teachers Edition), “Supercooled: Test-Tube Hail”	Chapter 23 Review, p. 592, questions 1-24.
112	Chapter 23 Chapter Review and Assessment, pp. 591-99			Maps in Action, p. 598, “Annual Precipitation in the United States”	Chapter 23 Review, p. 592, questions 25-32, 34-39.
113	Chapter 23 Chapter Review and Assessment (cont.)				Regents Exam Prep, Chapter 23, pp. 594-595, questions 1-12.
114	Chapter 24 Opener and Section 1, pp. 600-04	<ol style="list-style-type: none"> <li><b>Explain</b> how an air mass forms.</li> <li><b>List</b> the four main types of air masses.</li> <li><b>Describe</b> how air masses affect the weather of North America.</li> </ol>	PSE 4.1.1e PSE 4.2.1e PSE 4.2.1f PSE 4.2.1h PSE 4.2.2a PSE 4.2.2b	Chapter 24 Pre-Reading Activity, p. 600, Foldnotes.	Read Chapter 24, Section 1, pp. 601-604.  Section 1 Review, p. 604, questions 1-9.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
115	Chapter 24 Opener and Section 1 (cont.)			Demonstration, p. 601 (Teachers Edition), “Coriolis Effect”	Read Chapter 24, Section 2, pp. 605-610.  Section 2 Review, p. 604, questions 1-6.
116	Chapter 24 Section 2, pp. 605-10	<ol style="list-style-type: none"> <li><b>1. Compare</b> the characteristic weather patterns of cold fronts with those of warm fronts.</li> <li><b>2. Describe</b> how a midlatitude cyclone forms.</li> <li><b>3. Describe</b> the development of hurricanes, thunderstorms, and tornadoes.</li> </ol>	PSE 4.2.1f PSE 4.2.1h	MathPractice, p. 608, “Thunderstorm Distance”	Section 2 Review, p. 604, questions 7-10.
117	Chapter 24 Section 2 (cont.)			Graphic Organizer, p. 609, “Venn Diagram”	Read Chapter 24, Section 3, pp. 611-614.  Section 3 Review, p. 614, questions 1-6.
118	Chapter 24 Section 3, pp. 611-14	<ol style="list-style-type: none"> <li><b>1. Identify</b> four instruments that measure lower-atmospheric weather conditions.</li> <li><b>2. Describe</b> how scientists measure conditions in the upper atmosphere.</li> <li><b>3. Explain</b> how computers help scientists understand weather.</li> </ol>	2.IS.1 2.IS.3 6.M.2 6.PC.5 PSE 4.2.1c PSE 4.2.1d PSE 4.2.1g PSE 4.2.1h	QuickLab, p. 612, “Wind Chill”	Read Chapter 24, Section 4, pp. 615-620.  Section 4 Review, p. 620, questions 1-7.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
119	Chapter 24 Section 4 pp. 615-20	<ol style="list-style-type: none"> <li>1. <b>Explain</b> how weather stations communicate weather data.</li> <li>2. <b>Explain</b> how a weather map is created.</li> <li>3. <b>Explain</b> how computer models help meteorologists forecast weather.</li> <li>4. <b>List</b> three types of weather that meteorologists have attempted to control.</li> </ol>	1.SI.1 2.IS.1 6.MS.3 PSE 4.2.1d; PSE 4.2.1g PSE 4.2.1h	QuickLab, p. 618, “Gathering Weather Data”  Reteaching Strategy, p. 619 (Teachers Edition) “Matching Game”	Section 4 Review, p. 620, questions 8-10.
120	Chapter 24 Section 4 (cont.)			Maps in Action, p. 628, “Weather-Related Disasters, 1980-2005”	Chapter 24 Review, p. 622, questions 1-23.
121	Chapter 24 Chapter Review and Assessment, pp. 621-29			Skills Practice Lab, p. 626, “Weather Map Interpretation”	Chapter 24 Review, p. 623, questions 24-31, 33-35.
122	Chapter24 Chapter Review and Assessment (cont.)				Regents Exam Prep, pp. 624-625, questions 1-13.

**Unit 8—Climate****The Physical Setting****Chapter 25: Climate****Chapter 15: River Systems****New York Physical Settings/Earth Science Core Curriculum**

- 1.SI.2 Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.
- 1.SI.3 The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.
- 6.M.2 Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design.
- 6.PC.5 Identifying patterns of change is necessary for making predictions about future behavior and conditions.
- LE4.7.1a The Earth has finite resources; increasing human consumption of resources places stress on the natural processes that renew some resources and deplete those resources that cannot be renewed.
- LE4.7.1c Human beings are part of the Earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems. Humans modify ecosystems as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems may be irreversibly affected.
- PSE 4.1.1f Earth's changing position with regard to the Sun and the moon has noticeable effects.
- PSE4.1.2g Earth has continuously been recycling water since the outgassing of water early in its history. This constant recirculation of water at and near Earth's surface is described by the hydrologic cycle.
- PSE 4.1.2j Geologic history can be reconstructed by observing sequences of rock types and fossils to correlate bedrock at various locations.
- PSE 4.2.1i Seasonal changes can be explained using concepts of density and heat energy. These changes include the shifting of global temperature zones, the shifting of planetary wind and ocean current patterns, the occurrence of monsoons, hurricanes, flooding, and severe weather.
- PSE 4.2.1o Plate motions have resulted in global changes in geography, climate, and the patterns of organic evolution.
- PSE 4.2.1p Landforms are the result of the interaction of tectonic forces and the processes of weathering, erosion and deposition.
- PSE 4.2.2a Insolation heats Earth's surface and atmosphere unequally due to variations.
- PSE 4.2.2b The transfer of heat energy within the atmosphere, the hydrosphere, and Earth's surface occurs as the result of radiation, convection, and conduction.
- PSE 4.2.2c A location's climate is influenced by latitude, proximity to large bodies of water, ocean currents, prevailing winds, vegetative cover, elevation, and mountain ranges.
- PSE 4.2.2d Temperature and precipitation patterns are altered.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
123	Chapter 25 Opener and Section 1 pp. 630-36	<ol style="list-style-type: none"> <li><b>Identify</b> two major factors used to describe climate.</li> <li><b>Explain</b> how latitude determines the amount of solar energy received on Earth.</li> <li><b>Describe</b> how the different rates at which land and water are heated affect climate.</li> <li><b>Explain</b> the effects of topography on climate.</li> </ol>	1.SI.2 1.SI.3 6.M.2 PSE 4.1.1f PSE 4.1.2j PSE 4.2.1i PSE 4.2.1p PSE 4.2.2a PSE 4.2.2b PSE 4.2.2c PSE 4.2.2d	Pre-Reading Activity, Foldnote, p. 630  Using the Figure, p. 631, “Temperature Ranges”	Read Chapter 25, Section 1, pp. 631-636.  Section 1 Review, p. 636, questions 1-6.
124	Chapter 25 Opener and Section 1 (cont.)			QuickLab, p. 634, “Evaporation”	Section 1 Review, p. 636, questions 1-6.  Read Chapter 25, Section 2, pp. 637-640.
125	Chapter 25 Section 2, pp. 637-40	<ol style="list-style-type: none"> <li><b>Describe</b> the three types of tropical climates.</li> <li><b>Describe</b> the five types of middle-latitude climates.</li> <li><b>Describe</b> the three types of polar climates</li> <li><b>Explain</b> why city climates may differ from rural climates.</li> </ol>	PSE 4.2.2a PSE 4.2.2c	Activity, p. 638 (Teachers Edition), “Adaptations”	Section 2 Review, p. 640, questions 1-5.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
126	Chapter 25 Section 2 (cont.)			Skill Builder, p. 638 (Teachers Edition), “Temperature and Precipitation Conversions”	Section 2 Review, p. 640, questions 6-9.  Read Chapter 25, Section 3, pp. 641-646.
127	Chapter 25 Section 3, pp. 641-46	<ol style="list-style-type: none"> <li>1. <b>Compare</b> four methods used to study climate change.</li> <li>2. <b>Describe</b> four factors that may cause climate change.</li> <li>3. <b>Identify</b> potential impacts of climate change.</li> <li>4. <b>Identify</b> ways that humans can minimize their effect on climate change.</li> </ol>	6.M.2 6.PC.5 LE4.7.1c PSE 4.1.1f PSE 4.1.2j PSE 4.2.1o PSE 4.2.2a PSE 4.2.2d	Internet Activity, p. 642 (Teachers Edition), “Climate Models”  Graphic Organizer, p. 643, “Cause and Effect Map”	Section 3 Review, p. 646, questions 1-6.
128	Chapter 25 Section 3 (cont.)			QuickLab, p. 644, “Hot Stuff”	Section 3 Review, p. 646, questions 7-10.
129	Chapter 25 Chapter Review and Assessment, pp. 647-55			Inquiry Lab, p. 652, “Factors That Affect Climate”	Chapter 25 Review, p. 648, questions 1-18.
130	Chapter 25 Chapter Review and Assessment (cont.)				Chapter 25 Review, p. 649, questions 19-25, 28-30.  Review Chapter 15, pp. 375-378.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
131	Chapter 15 Section 1, pp. 375-78	<b>1. Review</b> water budget (from first term).	LE4.7.1a PSE4.1.2g	Reteaching Activity, p. 377 (Teachers Edition) “Water Budget Diagram”	Maps in Action, p. 654.
132	Reteaching/ Remediation			Per teacher observation	Regents Exam Prep, pp. 650-651, questions 1-13.

## Unit 8—Climate

### The Physical Setting

**Chapter 27: Planets of the Solar System**

**Chapter 28: Minor Bodies of the Solar System**

**Chapter 21: Movements of the Ocean**

**Chapter 30: Stars, Galaxies, and the Universe**

### New York Physical Settings/Earth Science Core Curriculum

- 1.MA.2 Deductive and inductive reasoning are used to reach mathematical conclusions.
- 1.SI.1 The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.
- 1.SI.3 The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.
- 6.ES.4 Equilibrium is a state of stability due either to a lack of change or a balance between opposing forces.
- 6.MS.3 The grouping of magnitudes of sizes, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems.
- PSE 4.1.1a Most objects in the solar system are in regular and predictable motion.
- PSE 4.1.1b Eight planets move around the Sun in nearly circular orbits.
- PSE 4.1.1d Earth rotates on an imaginary axis at a rate of 15 degrees per hour. To people on Earth, this turning of the planet makes it seem as though the Sun, the moon, and the stars are moving around Earth once a day. Rotation provides a basis for our system of local time; meridians of longitude are the basis for time zones.
- PSE 4.1.1f Earth's changing position with regard to the Sun and the moon has noticeable effects.
- PSE 4.1.1g Seasonal changes in the apparent positions of constellations provide evidence of Earth's revolution.
- PSE 4.1.1i Approximately 70 percent of Earth's surface is covered by a relatively thin layer of water, which responds to the gravitational attraction of the moon and the Sun with a daily cycle of high and low tides.
- PSE4.1.2a The universe is vast and estimated to be over ten billion years old. The current theory is that the universe was created from an explosion called the Big Bang.
- PSE 4.1.2b Stars form when gravity causes clouds of molecules to contract until nuclear fusion of light elements into heavier ones occurs. Fusion releases great amounts of energy over millions of years.
- PSE 4.1.2c Our solar system formed about five billion years ago from a giant cloud of gas and debris. Gravity caused Earth and the other planets to become layered according to density differences in their materials.



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- PSE 4.1.2e Earth's early atmosphere formed as a result of the outgassing of water vapor, carbon dioxide, nitrogen, and lesser amounts of other gases from its interior.
- PSE 4.1.2f Earth's oceans formed as a result of precipitation over millions of years. The presence of an early ocean is indicated by sedimentary rocks of marine origin, dating back about four billion years.
- PSE 4.1.2h The evolution of life caused dramatic changes in the composition of Earth's atmosphere. Free oxygen did not form in the atmosphere until oxygen-producing organisms evolved.
- PSE 4.2.1a Earth systems have internal and external sources of energy, both of which create heat.

Second Term

DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
133	Chapter 27 Opener and Section 1, pp. 684-90	<ol style="list-style-type: none"> <li><b>Explain</b> the nebular hypothesis of the origin of the solar system.</li> <li><b>Describe</b> how the planets formed.</li> <li><b>Describe</b> the formation of the land, the atmosphere, and the oceans of Earth.</li> </ol>	1.SI.1 PSE4.1.2b PSE4.1.2c PSE4.1.2e PSE4.1.2f PSE4.1.2h PSE4.2.1a	Pre-Reading Activity, p. 684, FoldNote, “Three Panel Flip Chart”  QuickLab, p. 687, “Water Planetesimals”	Read Chapter 27, Section 1, pp. 685-690.  Section 1 Review, p. 690, Questions 1-9.
134	Chapter 27 Section 2, pp. 691-94	<ol style="list-style-type: none"> <li><b>Compare</b> the models of the universe developed by Ptolemy and Copernicus.</li> <li><b>Summarize</b> Kepler’s three laws of planetary motion.</li> <li><b>Describe</b> how Newton explained Kepler’s laws of motion.</li> </ol>	1.MA.2 1.SI.1 PSE4.1.1a PSE4.1.1b	QuickLab, p. 692, “Ellipses”	Read Chapter 27, Section 2, pp. 691-694.  Section 2 Review, p. 694, Questions 1-9.
135	Chapter 27 Section 3, pp. 695-700	<ol style="list-style-type: none"> <li><b>Identify</b> the basic characteristics of the inner planets.</li> <li><b>Compare</b> the characteristics of the inner planets.</li> <li><b>Summarize</b> the features that allow Earth to sustain life.</li> </ol>	6.MS.3 PSE4.1.2c	Math Practice, p. 697, “Distance from the Sun”  Paired Summarizing, p. 698 (Teachers Edition)	Read Chapter 27, Section 3, pp. 695-700.  Section 3 Review, p. 700, Questions 1-9.
136	Chapter 27 Section 4, pp. 701-708	<ol style="list-style-type: none"> <li><b>Identify</b> the basic characteristics that make the outer planets different from terrestrial planets.</li> <li><b>Compare</b> the characteristics of the outer planets.</li> <li><b>Explain</b> why Pluto is different from the planets.</li> </ol>	PSE4.1.2c	Meteorology Connection, p. 702 (Teachers Edition), “Lightning Discharge Model”  Graphic Organizer, p. 704, “Comparison Table”	Read Chapter 27, Section 4, pp. 701-708.  Section 4 Review, p. 708, Questions 1-10.

\* A Day equals a 45-minute period.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
137	Chapter 27 Lab Experiments			Making Models Lab, p. 714, “Crater Analysis”	Chapter 27 Review, pp. 710-711, questions 1-19.
138	Chapter 27 Chapter Review and Assessment pp. 709-17			Maps in Action, p. 716, “MOLA Map of Mars”	Chapter 27 Review, pp. 710-711, questions 20-28, 30-32, 35-37.
139	Chapter 27 Chapter Review and Assessment (cont.)				Regents Exam Prep, pp. 712-713, questions 1-12.
140	Chapter 28 Section 1, pp. 718-24	<ol style="list-style-type: none"> <li><b>List</b> four kinds of lunar surface features.</li> <li><b>Describe</b> the three layers of the moon.</li> <li><b>Summarize</b> the three stages by which the moon formed.</li> </ol>	PSE4.1.1b	<p>Pre-Reading Activity, p. 718, FoldNote, “Booklet”</p> <p>QuickLab, p. 722, “Liquid and Solid Cores”</p>	<p>Read Chapter 28, Section 1, pp. 719-724.</p> <p>Section 1 Review, p. 724, questions 1-9.</p>
141	Chapter 28 Section 2, pp. 725-32	<ol style="list-style-type: none"> <li><b>Describe</b> the shape of the moon’s orbit around Earth.</li> <li><b>Explain</b> why eclipses occur.</li> <li><b>Describe</b> the appearance of four phases of the moon.</li> <li><b>Explain</b> how the movements of the moon affect tides on Earth.</li> </ol>	6.MS.3 PSE4.1.1a	QuickLab, p. 728, “Eclipses”	<p>Read Chapter 28, Section 2, pp. 725-732.</p> <p>Section 2 Review, p. 732, questions 1-7.</p>

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
142	Chapter 28 Section 2 (cont.)			Making Models Lab, p. 714, “Crater Analysis”	Section 2 Review, p. 732, questions 8-12.  Read Chapter 21, Section 3, pp. 531-534
143	Chapter 21 Section 3, pp. 531-34	<ol style="list-style-type: none"> <li><b>Describe</b> how the gravitational pull of the moon causes tides.</li> <li><b>Compare</b> spring tides and neap tides.</li> <li><b>Describe</b> how tidal oscillations affect tidal patterns.</li> <li><b>Explain</b> how the coastline affects tidal currents.</li> </ol>	PSE4.1.1a PSE4.1.1i	Math Practice, p. 532, “Tidal Friction”	Section Review, p. 534, questions 1-10.
144	Chapter 30 Opener and Section 1, pp. 774-780	<ol style="list-style-type: none"> <li><b>Describe</b> how astronomers determine the composition and temperature of stars.</li> <li><b>Explain</b> why stars appear to move in the sky.</li> <li><b>Describe</b> one way astronomers measure the distances to stars.</li> <li><b>Explain</b> the difference between absolute magnitude and apparent magnitude.</li> </ol>	1.SI.3 PSE4.1.1d PSE4.1.1f PSE4.1.1g PSE4.1.2b	Pre-Reading Activity, p. 774, FoldNote, “Layered Book”  QuickLab, p. 779, “Parallax”	Read Chapter 30, Section 1, pp. 775-780.  Section 1 Review, p. 780, questions 1-10.
145	Chapter 30 Section 2, pp. 781-88	<ol style="list-style-type: none"> <li><b>Describe</b> how a protostar becomes a star.</li> <li><b>Explain</b> how a main-sequence star generates energy.</li> <li><b>Describe</b> the evolution of a star after its main-sequence stage.</li> </ol>	1.SI.3 6.ES.4 PSE4.1.1a PSE4.1.2b	Math Practice, p. 782, “Nuclear Fusion”  Using the Figure, p. 784 (Teachers Edition), “Identifying Stars”	Read Chapter 30, Section 2, pp. 781-788.  Section 2 Review, p. 788, questions 1-13.

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DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
146	Chapter 30 Section 3, pp. 789-92	<ol style="list-style-type: none"> <li><b>Describe</b> the characteristics that identify a constellation.</li> <li><b>Describe</b> the three main types of galaxies.</li> <li><b>Explain</b> how a quasar differs from a typical galaxy.</li> </ol>	PSE4.1.1g PSE4.1.2b	Activity, p. 789 (Teachers Edition), “Constellations”	<p>Read Chapter 30, Section 3, pp. 789-792.</p> <p>Section 3 Review, p. 792, questions 1-8.</p>
147	Chapter 30 Section 4, pp. 793-96	<ol style="list-style-type: none"> <li><b>Explain</b> how Hubble’s discoveries lead to an understanding that the universe is expanding.</li> <li><b>Summarize</b> the big bang theory.</li> <li><b>List</b> evidence for the big bang theory.</li> </ol>	1.SI.1 PSE4.1.2a	QuickLab, p. 795, “The Expanding Universe”	<p>Read Chapter 30, Section 4, pp. 793-796.</p> <p>Section 4 Review, p. 796, questions 1-8.</p>
148	Chapter 30 Chapter Review and Assessment, pp. 797-805			Making Models Lab, p. 802, “Star Magnitudes”	Chapter 30 Review, p. 798, questions 1-21.
149	Chapter 30 Chapter Review and Assessment (cont.)				Chapter 30 Review, p. 798, questions 22-30, 33-35.

## Second Term

## Unit 10—Review

DAY*	CHAPTER/ SECTION	KEY IDEAS	NYS CORE CURRICULUM	LABS & ACTIVITIES	HOMEWORK SUGGESTIONS
150		First Term Topics Regents Exam Prep			
151		First Term Topics Regents Exam Prep			
152		First Term Topics Regents Exam Prep			
153		First Term Topics Regents Exam Prep			
154		First Term Topics Regents Exam Prep			
156		First Term Topics Regents Exam Prep			
157		First Term Topics Regents Exam Prep			
158		First Term Topics Regents Exam Prep			
159		First Term Topics Regents Exam Prep			

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