

Unit 4—Humans in Their Environment

Essential Question: How does human consumption of resources impact the environment and our health?

Chapter 8: Conserving Resources, pp. 220–251

Major Understandings: **LE 7.2d:** Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth’s resources. **PS 4.1a:** The Sun is a major source of energy for Earth. Other sources of energy include nuclear and geothermal energy. **4.1b:** Fossil fuels contain stored solar energy and are considered nonrenewable resources. They are a major source of energy in the United States. Solar energy, wind, moving water, and biomass are some examples of renewable energy resources.

	<p>Section 1: Resources, pp. 220–229 Objectives:</p> <ul style="list-style-type: none"> • Compare renewable and nonrenewable resources. • List uses of fossil fuels. • Identify alternatives to fossil fuel use. 	<p>Alignment with NYS Core Curriculum: PS 4.1a: The Sun is a major source of energy for Earth. Other sources of energy include nuclear and geothermal energy. 4.1b: Fossil fuels contain stored solar energy and are considered nonrenewable resources. Solar energy, wind, moving water, and biomass are some examples of</p>	
<p>WEEK 1</p>	<p>Lesson 1 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity Essential Question Activity: <i>Class Web</i>, Teacher Edition, p. 220A Launch Lab: <i>What happens when topsoil is left unprotected?</i>, p. 221</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Reading Essentials, pp. 103-107 – Take Home Science Notebook, pp. 85-88 – Complete lab wrap-up questions
	<p>Lesson 2 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity Transparency: <i>The Material World</i> MiniLAB: <i>Observing Mineral Mining Effects</i>, p. 224 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes National Geographic Visualizing Solar Energy, p. 229</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Section 1 Review, p. 228 – NY Physical Setting box, p. 226 – Complete lab wrap-up questions – Read text, pp. 230-238
	<p>Section 2 Pollution, pp. 230–238 Objectives:</p> <ul style="list-style-type: none"> • Describe types of air pollution. • Identify causes of water pollution. • Explain methods that can be used to prevent erosion. 	<p>Alignment with NYS Core Curriculum: LE 7.2d: Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth’s resources.</p>	

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WEEK 1 (continued)	<p>Lesson 3 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Transparency: <i>Ocean-Sized Ice Cubes</i> MiniLab: <i>Measuring Acid Rain</i>, p. 231 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes</p>	<p>Homework/Extra Practice – Reading Essentials, pp. 108-114 – Take Home Science Notebook, pp. 89-91 – Complete lab wrap-up questions – Read text, p. 239</p>
	<p>Lesson 4 (45 min) Lab setup</p>	<p>Investigation/Activity Lab: <i>The Greenhouse Effect</i>, p. 239 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period</p>	<p>Homework/Extra Practice – Section 2 Review, p. 238 – Complete lab wrap-up questions – Read text, pp. 240-243</p>
	<p>Section 3: The Three Rs of Conservation, pp. 240–243 Objectives</p> <ul style="list-style-type: none"> • Recognize ways you can reduce your use of natural resources. • Explain how you can reuse resources to promote conservation. • Describe how many materials can be recycled. 		<p>Alignment with NYS Core Curriculum: LE 7.2d: Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth’s resources. Also Covered: PS 4.1b</p>
	<p>Lesson 5 (45 min) Advanced Planning/Notes to Teachers</p>	<p>Investigation/Activity Transparency: <i>The Art of Recycling</i> Applying Science: <i>What items are you recycling at home?</i>, p. 242 Virtual Lab: <i>Clean Water</i>, Teacher Edition, p. 235</p>	<p>Homework/Extra Practice – Reading Essentials, pp. 115-118 – Take Home Science Notebook, pp. 92-96 – NY Living Environment box, p. 242 – Section 3 Review, p. 243 – Read text, pp. 244-245</p>
WEEK 2	<p>Lesson 6 (45 min) Lab setup</p>	<p>Investigation/Activity Lab: <i>Solar Cooking</i>, pp. 244-245 (Lab worksheet available in the Chapter FastFile, pp. 7–8) Suggested Time: 1 class period</p>	<p>Homework/Extra Practice – Complete lab wrap-up questions – FastFile: Chapter Review, pp. 37-38 – Foldable: Students complete – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review</p>
	<p>Lesson 7 (45 min)</p>	<p>Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p>Homework/Extra Practice Read text, <i>Conserving Life</i>, pp. 252-264</p>

Chapter 9: Conserving Life, pp. 252–279

Major Understandings: LE 3.1b: Changes in environmental conditions can affect the survival of individual organisms with a particular trait. Small differences between parents and offspring can accumulate in successive generations so that descendants are very different from their ancestors. Individual organisms with certain traits are more likely to survive and have offspring than individuals without those traits. **3.2b:** Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to permit its survival. Extinction of species is common. Fossils are evidence that a great variety of species existed in the past. **5.1a:** Animals and plants have a great variety of body plans and internal structures that contribute to their ability to maintain a balanced condition. **5.1b:** An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. **7.1a:** A population consists of all individuals of a species that are found together at a given place and time. Populations living in one place form a community. The community and the physical factors with which it interacts compose an ecosystem. **7.1b:** Given adequate resources and no disease or predators, populations (including humans) increase. Lack of resources, habitat destruction, and other factors such as predation and climate limit the growth of certain populations in the ecosystem. **7.1c:** The environment may contain dangerous levels of substances (pollutants) that are harmful to organisms. Therefore, the good health of environments and individuals requires the monitoring of soil, air, and water, and taking steps to keep them safe. **7.2c:** Overpopulation by any species impacts the environment due to the increased use of resources. Human activities can bring about environmental degradation through resource acquisition, urban growth, land-use decisions, waste disposal, etc. **7.2d:** Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth’s resources.

	<p>Section 1: Biodiversity, pp. 252–265 Objectives</p> <ul style="list-style-type: none"> • Define biodiversity. • Explain why biodiversity is important in an ecosystem. • Identify factors that limit biodiversity in an ecosystem. 	<p>Alignment with NYS Core Curriculum:</p> <p>LE 5.1a Animals and plants have a great variety of body plans and internal structures that contribute to their ability to maintain a balanced condition. 7.2d Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Also Covered: LE 3.1b, 3.2b, 5.1b, 7.1a, 7.1b, 7.2c</p>	
WEEK 2 (continued)	<p>Lesson 8 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Launch Lab: <i>Recognize Environmental Differences</i>, p. 253 Transparency: <i>Oops!</i> MiniLAB: <i>Demonstrating Habitat Loss</i>, p. 261 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Reading Essentials, pp. 119-125 – Take Home Science Notebook, pp. 97-100 – Complete lab wrap-up questions
	<p>Lesson 9 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>MiniLAB: <i>Modeling the Effects of Acid Rain</i>, p. 263 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes National Geographic <i>Visualizing Threatened and Endangered Species</i>, p. 260</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – NY Living Environment box, pp. 255, 256, 262 – Section 1 Review, p. 264 – Complete lab wrap-up questions – Read text, p. 265
	<p>Lesson 10 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Oily Birds</i>, p. 265 (Lab worksheet available in the Chapter FastFile, p. 5-6) Suggested Time: 1 class period</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Complete lab wrap-up questions – Read text, pp. 266-271

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WEEK 3	<p>Section 2: Conservation Biology, pp. 266–271 Objectives</p> <ul style="list-style-type: none"> Identify several goals of conservation biology. Recommend strategies to prevent the extinction of species. Explain how an endangered species can be reintroduced into its original habitat. 		<p>Alignment with NYS Core Curriculum: LE 7.2d: Since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth’s resources. Also Covered: LE 3.2b, 7.1b, 7.1e, 7.2c</p>
	<p>Lesson 11 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Transparency: <i>Marsupial Misdeed</i> Quick Demo, Teacher Edition, p. 268 Suggested Time: 2 minutes Virtual Lab, <i>Friend or Foe</i>, Teacher Edition, p. 262</p>	<p style="text-align: center;">Homework/Extra Practice</p> <ul style="list-style-type: none"> – Reading Essentials, pp. 126-130 – Take Home Science Notebook, pp. 101-104 – NY Living Environment box, p. 269 – Read text, pp. 272-273
	<p>Lesson 12 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Lab: <i>Biodiversity and the Health of a Plant Community</i>, pp. 272-273 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 class period</p>	<p style="text-align: center;">Homework/Extra Practice</p> <ul style="list-style-type: none"> – Complete lab wrap-up questions – Section 2 Review, p. 271
	<p>Lesson 13 (45 min) Advanced Planning/Notes to Teachers</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Essential Question Activity: <i>Flow Chart</i>, Teacher Edition, p. 275</p>	<p style="text-align: center;">Homework/Extra Practice</p> <ul style="list-style-type: none"> – Fast File: Chapter Review, pp. 35-36 – Foldable: Students complete – Visit glencoe.com for <ul style="list-style-type: none"> ~ Self Check Quiz ~ Chapter Review
	<p>Lesson 14 (45 min) Advanced Planning/Notes to Teachers</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® <i>Assessment Suite</i> Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p style="text-align: center;">Homework/Extra Practice</p> <p>Read text, pp. 280-286</p>

Chapter 10: Immunity and Disease, pp. 280–309

Major Understandings: **LE 1.2a:** Each system is composed of organs and tissues which perform specific functions and interact with each other. **1.2j:** Disease breaks down the structures or functions of an organism. Some diseases are the result of failures of the system. Other diseases are the result of damage by infection from other organisms (germ theory). Specialized cells protect the body from infectious disease. The chemicals they produce identify and destroy microbes that enter the body. **4.4d:** Cancers are a result of abnormal cell division. **5.2:** Contraction of infectious disease, and personal behaviors such as use of toxic substances and some dietary habits, may interfere with one’s dynamic equilibrium. During pregnancy these conditions may also affect the development of the child. Some effects of these conditions are immediate; others may not appear for many years.

WEEK 3 (continued)	Section 1: The Immune System, pp. 280–286 Objectives <ul style="list-style-type: none"> Describe the natural defenses your body has against disease. Explain the difference between an antigen and an antibody. Compare and contrast active and passive immunity. 		Alignment with NYS Core Curriculum: LE 1.2a Each system is composed of organs and tissues which perform specific functions and interact with each other. 1.2j Disease breaks down the structures or functions of an organism. Specialized cells protect the body from infectious disease. The chemicals they produce identify and destroy microbes that enter the body.
	Lesson 15 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Launch Lab: How do diseases spread?, p. 281 Transparency: A Deadly Virus MiniLAB: Determining Reproduction Rates, p. 285 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes	Homework/Extra Practice <ul style="list-style-type: none"> Reading Essentials, pp. 131-135 Take Home Science Notebook, pp. 105-108 NY Living Environment box, p. 284 Section 1 Review, p. 286 Complete lab wrap-up questions Read text, pp. 287-294
WEEK 4	Section 2: Infectious Diseases, pp. 287–294 Objectives <ul style="list-style-type: none"> Describe the work of Pasteur, Koch, and Lister in the discovery and prevention of disease. Identify diseases caused by viruses and bacteria. List sexually transmitted diseases, their causes, and treatments. Explain how HIV affects the immune system. 		Alignment with NYS Core Curriculum: LE 1.2j: Disease breaks down the structures or functions of an organism. Other diseases are the result of damage by infection from other organisms (germ theory). Specialized cells protect the body from infectious disease. Also Covered: LE 1.2a, 5.2f
	Lesson 16 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Transparency: <i>The Invisible World</i> MiniLAB: <i>Observing Antiseptic Action</i> , p. 290 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes	Homework/Extra Practice <ul style="list-style-type: none"> Reading Essentials, pp. 136-141 Take Home Science Notebook, pp. 109-111 Complete lab wrap-up questions
	Lesson 17 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Microorganisms and Disease</i> , p. 295 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period	Homework/Extra Practice <ul style="list-style-type: none"> NY Living Environment box, p. 288 Section 2 Review, p. 294 Complete lab wrap-up questions Read text, pp. 296-301

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WEEK 4 (continued)	Section 3: Noninfectious Diseases, pp. 296–301 Objectives <ul style="list-style-type: none"> • Define noninfectious diseases and list causes of them. • Describe the basic characteristics of cancer. • Explain what happens during an allergic reaction. • Explain how chemicals in the environment can be harmful to humans. 	Alignment with NYS Core Curriculum: LE 1.2j: Disease breaks down the structures or functions of an organism. Some diseases are the result of failures of the system. Other diseases are the result of damage by infection from other organisms (germ theory). Specialized cells protect the body from infectious disease. The chemicals they produce identify and destroy microbes that enter the body. 4.4d: Cancers are a result of abnormal cell division. Also Covered: LE 1.2a, 5.2f		
	Lesson 18 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Transparency: <i>Ah-Chooo! (Gesundheit)</i> Inquiry Lab: <i>Controlling Cancer Growth</i> , Teacher Edition, p. 300 Virtual Lab: <i>Foreign Invaders</i> , Teacher Edition, p. 286	Homework/Extra Practice – Reading Essentials, pp. 142-146 – Take Home Science Notebook, pp. 112-116 – Complete lab wrap-up questions	
	Lesson 19 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Defensive Saliva</i> , pp. 302-303 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 2 class periods	Homework/Extra Practice – NY Living Environment box, p. 299 – Section 3 Review, p. 301	
	Lesson 20 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Defensive Saliva</i> , continued	Homework/Extra Practice Complete lab wrap-up questions	
WEEK 5	Lesson 21 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Essential Question Activity: <i>Experimental Design</i> , Teacher Edition, p. 305	Homework/Extra Practice – Fast File: Chapter Review, pp. 35-36 – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review	
	Lesson 22 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	Homework/Extra Practice	

***Review Chapter Planning Guide**

Chapter 4: Classifying Animals, pp. 96–129

Major Understandings: **LE 1.1c:** Most cells have cell membranes, genetic material, and cytoplasm. Some cells have a cell wall and/or chloroplasts. Many cells have a nucleus. **1.1d** Some organisms are single cells; others, including humans, are multicellular. **1.1e:** Cells are organized for more effective functioning in multicellular organisms. Levels of organization for structure and function of a multicellular organism include cells, tissues, organs, and organ systems. **1.1g:** Multicellular animals often have similar organs and specialized systems for carrying out major life activities. **1.1h:** Living things are classified by shared characteristics on the cellular and organism level. In classifying organisms, biologists consider details of internal and external structures. Biological classification systems are arranged from general (kingdom) to specific (species). **4.1a:** Some organisms reproduce asexually. Other organisms reproduce sexually. Some organisms can reproduce both sexually and asexually. **4.3d:** Patterns of development vary among animals. In some species the young resemble the adult, while in others they do not. Some insects and amphibians undergo metamorphosis as they mature. **5.1a** Animals and plants have a great variety of body plans and internal structures that contribute to their ability to maintain a balanced condition. **5.1b:** An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. **5.1g:** The survival of an organism depends on its ability to sense and respond to its external environment.

Section 1: What Is an Animal, pp. 94–100			Alignment with NYS Core Curriculum:
Objectives			LE 1.1h: Living things are classified by shared characteristics on the cellular and organism level. In classifying organisms, biologists consider details of internal and external structures. Biological classification systems are arranged from general (kingdom) to specific (species). Also Covered: LE 1.1c, 1.1d, 1.1e, 1.1g
<ul style="list-style-type: none"> Identify the characteristics of animals. Differentiate between vertebrates and invertebrates. Explain how the symmetry of animals differs. 			
Lesson 23 (45 min)	Investigation/Activity		Homework/Extra Practice
Advanced Planning/Notes to Teachers Lab setup	Launch Lab: <i>Animal Organization</i> , p. 97 Transparency: <i>Jelly Sea</i> MiniLAB: <i>Modeling Octopus Movement</i> , p. 103 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 5-10 minutes		<ul style="list-style-type: none"> Reading Essentials, pp. 43-46 Take Home Science Notebook, pp. 37-40 NY Living Environment boxes, pp. 99, 100 Section Review, p. 100 Complete lab wrap-up questions Read text, pp. 101-108
WEEK 1	Section 2: Invertebrate Animals, pp. 101–108		Alignment with NYS Core Curriculum:
	Objectives		LE 1.1h: Living things are classified by shared characteristics on the cellular and organism level. In classifying organisms, biologists consider details of internal and external structures. Biological classification systems are arranged from general (kingdom) to specific (species). Also Covered: LE 1.1e, 4.1a, 4.3d, 5.1a, 5.1b, 5.1g
	<ul style="list-style-type: none"> Identify invertebrates based on a given set of criteria. Describe the major systems that compose invertebrate animals. Compare and contrast invertebrate animals. 		
Lesson 24 (45 min)	Investigation/Activity		Homework/Extra Practice
Advanced Planning/Notes to Teachers	Transparency: <i>I’ll Have One for Dinner</i> Teaching Transparency: <i>Metamorphosis</i> Virtual Lab: <i>How are mollusks, worms, arthropods, and echinoderms related?</i> , Teacher Edition, p. 107 National Geographic <i>Visualizing Arthropod Diversity</i> , pp. 106-107		<ul style="list-style-type: none"> Reading Essentials, pp. 47-52 Take Home Science Notebook, pp. 41-43 NY Living Environment box, p. 104 Section 2 Review, p. 108 Read text, pp. 109-120

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	<p>Section 3: Vertebrate Animals, pp. 109–120</p> <p>Objectives</p> <ul style="list-style-type: none"> • Classify vertebrate animals. • Identify the major systems that compose vertebrate animals. • Explain the differences between vertebrate animals. 	<p>Alignment with NYS Core Curriculum:</p> <p>LE 1.1h: Living things are classified by shared characteristics on the cellular and organism level. In classifying organisms, biologists consider details of internal and external structures. Biological classification systems are arranged from general (kingdom) to specific (species). Also Covered: LE 1.1e, 4.1a, 4.1d, 4.3d, 5.1a, 5.1b, 5.1g</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">WEEK 1 (continued)</p>	<p>Lesson 25 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Do they have tests?</i> MiniLAB: Inferring <i>How Blubber Insulates</i>, p. 117 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 5-10 minutes Applying Math: How much time?, p. 119</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Reading Essentials, pp. 53-60 – Take Home Science Notebook, pp. 45-48 – Complete lab wrap-up questions – Read text, p. 121
	<p>Lesson 26 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Frog Metamorphosis</i>, p. 121 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – NY Living Environment boxes, pp. 111, 112, 114, 116, 118, – Section 3 Review, p. 120 – Complete lab wrap-up questions – Read text, pp. 122-123
	<p>Lesson 27 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Garbage-Eating Worms</i>, pp. 122-123 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 2 class periods</p>	<p>Homework/Extra Practice</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">WEEK 2</p>	<p>Lesson 28 (45 min) Advanced Planning/Notes to Teachers Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Garbage-Eating Worms</i>, continued Essential Question Activity: Group Analysis, Teacher Edition, p. 125</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 35-36 – Visit glencoe.com for <ul style="list-style-type: none"> ~ Self Check Quiz ~ Chapter Review
	<p>Lesson 29 (45 min) Advanced Planning/Notes to Teachers</p>	<p>Investigation/Activity</p> <p>Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p>Homework/Extra Practice</p>
<p>**Enrichment Chapters Planning Guide</p>			

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Chapter 17: Forces and Fluids, pp. 496–527

Major Understandings: **PS 2.1b** As altitude increases, air pressure decreases. **2.2l** Air masses form when air remains nearly stationary over a large section of Earth’s surface and takes on the conditions of temperature and humidity from that location. Weather conditions at a location are determined primarily by temperature, humidity, and pressure of air masses over that location. **3.1d** Gases have neither a determined shape nor a definite volume. Gases assume the shape and volume of a closed container. **3.1e** A liquid has definite volume, but takes the shape of a container. **3.1h** Density can be described as the amount of matter that is in a given amount of space. **3.1i** Buoyancy is determined by comparative densities. **5.1c** An object’s motion is the result of the combined effect of all forces acting on the object. A moving object that is not subjected to a force will continue to move at a constant speed in a straight line. An object at rest will remain at rest. **5.1d** Force is directly related to an object’s mass and acceleration. The greater the force, the greater the change in motion.

			Section 1: Pressure, pp. 496–505 Objectives <ul style="list-style-type: none"> Define and calculate pressure. Model how pressure varies in a fluid. 			Alignment with NYS Core Curriculum: PS 2.1b As altitude increases, air pressure decreases. 3.1d Gases assume the shape and volume of a closed container. 3.1e A liquid has definite volume, but takes the shape of a container. Also Covered: PS 2.2l, 5.1d		
WEEK 1	Lesson 1 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Launch Lab: <i>Forces Exerted by Air</i> , p. 497 Transparency: <i>Well, This is Deep</i> Applying Math: <i>Calculating Pressure</i> , p. 499			Homework/Extra Practice <ul style="list-style-type: none"> Reading Essentials, pp. 247-252 Take Home Science Notebook, pp. 193-196 Complete lab wrap-up questions 			
	Lesson 1 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity MiniLAB: <i>Interpreting Footprints</i> , p. 500 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 15-20 minutes National Geographic <i>Visualizing Pressure at Varying Elevations</i> , p. 504			Homework/Extra Practice <ul style="list-style-type: none"> NY Physical Setting boxes, pp. 502, 503 Section 1 Review, p. 505 Complete lab wrap-up questions Read text, p. 506-512 			
			Section 2: Why do objects float?, pp. 506–512 Objectives <ul style="list-style-type: none"> Explain how the pressure in a fluid produces a buoyant force. Define density. Explain floating and sinking using Archimedes’ principle. 			Alignment with NYS Core Curriculum: PS 3.1h Density can be described as the amount of matter that is in a given amount of space. 3.1i Buoyancy is determined by comparative densities. 5.1d Force is directly related to an object’s mass and acceleration. Also Covered: PS 5.1c		
	Lesson 3 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Transparency: <i>Connecticut floats?</i> Virtual Lab: <i>Floating</i> , Teacher Edition, p. 508			Homework/Extra Practice <ul style="list-style-type: none"> Reading Essentials, pp. 253-257 Take Home Science Notebook, pp. 197-199 			

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WEEK 1 (continued)	Lesson 4 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Activity: <i>Surface Tension</i> , Teacher Edition, p. 507 Quick Demo: <i>Buoyant Force</i> , Teacher Edition, p. 509 Activity: <i>Density</i> , Teacher Edition, p. 510 Discussion: <i>Floating on Water</i> , Teacher Edition, p. 511 Applying Science: <i>Layering Liquids</i> , p. 510	Homework/Extra Practice – NY Physical Setting boxes, pp. 507, 511 – Section 2 Review, p. 512 – Read text, p. 513
	Lesson 5 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Measuring Buoyant Force</i> , p. 513 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period	Homework/Extra Practice – Complete lab wrap-up questions – Read text, pp. 514-519
Section 3: Doing Work with Fluids, pp. 514–519 Objectives <ul style="list-style-type: none"> • Explain how forces are transmitted through fluids. • Describe how a hydraulic system increases force. • Describe Bernoulli’s principle. 		Alignment with NYS Core Curriculum: PS 5.1d Force is directly related to an object’s mass and acceleration. The greater the force, the greater the change in motion. Also Covered: PS 5.1c	
WEEK 2	Lesson 6 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Transparency: <i>Again with the Fluids</i> Teaching Transparency: <i>Diagram of a Wing</i> MiniLAB: <i>Observing Bernoulli’s Principle</i> , p. 517 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes	Homework/Extra Practice – Reading Essentials, pp. 258-264 – Take Home Science Notebook, pp. 200-204 – NY Physical Setting boxes, pp. 516, 518 – Section 3 Review, p. 519 – Complete lab wrap-up questions – Read text, pp. 520-521
	Lesson 7 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Barometric Pressure and Weather</i> , pp. 520-521 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 class period	Homework/Extra Practice – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 37-38

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WEEK 2 (continued)	Lesson 8 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Essential Question Activity: <i>Compare and Contrast</i> , Teacher Edition, p. 523	Homework/Extra Practice Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review
	Lesson 9 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® <i>Assessment Suite</i> Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	Homework/Extra Practice
Chapter 18: Electricity, pp. 528–557 Major Understandings: PS 3.3a All matter is made up of atoms. Atoms are far too small to see with a light microscope. 4.4d Electrical energy can be produced from a variety of energy sources and can be transformed into almost any other form of energy. 4.4e Electrical circuits provide a means of transferring electrical energy. 4.4f Without touching them, material that has been electrically charged attracts uncharged material, and may either attract or repel other charged material. 5.2b Electric currents and magnets can exert a force on each other.			
WEEK 1	Section 1: Electric Charge, pp. 528–536 Objectives <ul style="list-style-type: none"> Describe how objects can become electrically charged. Explain how an electric charge affects other electric charges. Distinguish between electric conductors and insulators. Describe how electric discharges such as lightning occur. 		Alignment with NYS Core Curriculum: PS 4.4f Without touching them, material that has been electrically charged attracts uncharged material, and may either attract or repel other charged material. Also Covered: PS 3.3a
	Lesson 1 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Launch Lab: <i>Observing Electric Forces</i> , p. 529 Transparency: <i>A Spritely Vision</i> Quick Demo: <i>Attraction and Repulsion</i> , Teacher Edition, p. 531	Homework/Extra Practice Reading Essentials, pp. 265-270 Take Home Science Notebook, pp. 205-208 Complete lab wrap-up questions

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WEEK 1 (continued)	<p>Lesson 2 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Quick Demo: <i>Electric Discharge</i>, Teacher Edition, p. 533 Activity: <i>Conductors v. Insulators</i>, Teacher Edition, p. 534</p>	<p>Homework/Extra Practice – NY Physical Setting box, p. 533 – Section 1 Review, p. 536 – Complete lab wrap-up questions – Read text, pp. 537-541</p>
	<p>Section 2: Electric Current, pp. 537–541 Objectives</p> <ul style="list-style-type: none"> • Relate voltage to the electrical energy carried by an electric current. • Describe a battery and how it produces an electric current. • Explain electrical resistance. 		<p>Alignment with NYS Core Curriculum: PS 4.4e Electrical circuits provide a means of transferring electrical energy. 5.2b Electric currents and magnets can exert a force on each other. Also Covered: PS 4.4d</p>
	<p>Lesson 3 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Transparency: <i>Go with the Flow!</i> Teaching Transparency: <i>Flowing Current</i> MiniLAB: <i>Investigating the Electric Force</i>, p. 538 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes</p>	<p>Homework/Extra Practice – Reading Essentials, pp. 271–275 – Take Home Science Notebook, pp. 209–211 – Complete lab wrap-up questions</p>
	<p>Lesson 4 (45 min) Advanced Planning/Notes to Teachers</p>	<p>Investigation/Activity Virtual Lab: <i>Relationships</i>, Teacher Edition, p. 539</p>	<p>Homework/Extra Practice – NY Physical Setting box, p. 538 – Section 2 Review, p. 541 – Read text, pp. 542-548</p>
	<p>Section 3: Electric Circuits, pp. 542–548 Objectives</p> <ul style="list-style-type: none"> • Explain how voltage, current, and resistance are related in an electric circuit. • Investigate the difference between series and parallel circuits. • Determine the electric power used in a circuit. • Describe how to avoid dangerous electric shock. 		<p>Alignment with NYS Core Curriculum: PS 4.4e Electrical circuits provide a means of transferring electrical energy. Also Covered: PS 4.4d, 5.2b</p>
	<p>Lesson 5 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Transparency: <i>In the Chips</i> Applying Math: <i>Voltage from a Wall Outlet</i>, p. 543 MiniLAB: <i>Identifying Simple Circuits</i>, p. 544 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes</p>	<p>Homework/Extra Practice – Reading Essentials, pp. 276-282 – Take Home Science Notebook, pp. 212-216 – NY Physical Setting box, p. 544 – Complete lab wrap-up questions – Section 3 Review, p. 548</p>

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WEEK 2	Lesson 6 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Applying Math: <i>Electric Power Used by a Lightbulb</i> , p. 546 Quick Demo: <i>Series and Parallel Circuits</i> , Teacher Edition, p. 545	Homework/Extra Practice Read text, p. 549
	Lesson 7 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Current in a Parallel Circuit</i> , p. 549 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period	Homework/Extra Practice – Complete lab wrap-up questions – Read text, pp. 550-551
	Lesson 8 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>A Model for Voltage and Current</i> , pp. 550-551 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 class period	Homework/Extra Practice – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 37-38 – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review
	Lesson 9 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	Homework/Extra Practice Read text, <i>Magnetism</i> , pp. 558-565

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Chapter 19: Magnetism, pp. 558–585

Major Understandings: **PS 4.4d** Electrical energy can be produced from a variety of energy sources and can be transformed into almost any other form of energy. **4.4f** Without touching them, material that has been electrically charged attracts uncharged material, and may either attract or repel other charged material. **4.4g** Without direct contact, a magnet attracts certain materials and either attracts or repels other magnets. The attractive force of a magnet is greatest at its poles. **5.2b** Electric currents and magnets can exert a force on each other.

		<p>Section 1: What Is Magnetism?, pp. 558–565</p> <p>Objectives</p> <ul style="list-style-type: none"> Describe the behavior of magnets. Relate the behavior of magnets to magnetic fields. Explain why some materials are magnetic. 		<p>Alignment with NYS Core Curriculum:</p> <p>PS 4.4g Without direct contact, a magnet attracts certain materials and either attracts or repels other magnets. The attractive force of a magnet is greatest at its poles. Also Covered: PS 5.2b</p>		
WEEK 1	<p>Lesson 1 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Launch Lab: <i>Magnetic Forces</i>, p. 559</p> <p>Transparency: <i>Will he stick to the refrigerator?</i></p> <p>MiniLAB: <i>Observing Magnetic Fields</i>, p. 564 (Lab worksheet available in the Chapter FastFile, p. 3)</p> <p>Suggested Time: 10-15 minutes</p>		<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, pp. 283-287 Take Home Science Notebook, pp. 217-220 Complete lab wrap-up questions Read text, p. 566 		
	<p>Lesson 1 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Make a Compass</i>, p. 566 (Lab worksheet available in the Chapter FastFile, pp. 5-6)</p> <p>Suggested Time: 1 class period</p>		<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> NY Physical Setting box, p. 561 Section 1 Review, p. 565 Complete lab wrap-up questions Read text, pp. 567-577 		
	<p>Section 2: Electricity and Magnetism, pp. 567–577</p> <p>Objectives</p> <ul style="list-style-type: none"> Explain how electricity can produce motion. Explain how motion can produce electricity. 		<p>Alignment with NYS Core Curriculum:</p> <p>PS 4.4d Electrical energy can be produced from a variety of energy sources and can be transformed into almost any other form of energy. 4.4f Without touching them, material that has been electrically charged attracts uncharged material, and may either attract or repel other charged material. Also Covered: PS 4.4g, 5.2b</p>			
	<p>Lesson 3 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Heavy Duty</i></p> <p>Teaching Transparency: <i>Principle of an Electric Generator</i></p> <p>MiniLAB: <i>Assembling an Electromagnet</i>, p. 568 (Lab worksheet available in the Chapter FastFile, p. 4)</p> <p>Suggested Time: 10-15 minutes</p>		<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, pp. 288-296 Take Home Science Notebook, pp. 221-224 Complete lab wrap-up questions Read text, pp. 578-579 		

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WEEK 1 (continued)	Lesson 4 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>How does an electric motor work?</i> pp. 578-579 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 class period	Homework/Extra Practice – NY Physical Setting box, p. 571 – Section 2 Review, p. 577 – Complete lab wrap-up questions
	Lesson 5 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Essential Question Activity: <i>Experimental Design</i> , Teacher Edition, p. 581	Homework/Extra Practice – Fast File: Chapter Review, pp. 31-32 – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review
WEEK 2	Lesson 6 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at glencoe.com For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	Homework/Extra Practice