

Unit 4—Dynamic Equilibrium: Other Organisms

Essential Question: How is homeostasis maintained in other organisms?

Chapter 17: Invertebrate Animals, pp. 480–511

Major Understandings: **LE 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). **1.2c:** The digestive system consists of organs that are responsible for the mechanical and chemical breakdown of food. The breakdown process results in molecules that can be absorbed and transported to cells. **1.2g:** Locomotion, necessary to escape danger, obtain food and shelter, and reproduce, is accomplished by the interaction of the skeletal and muscular systems, and coordinated by the nervous system. **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. **5.1c:** All organisms require energy to survive. The amount of energy needed and the method for obtaining this energy vary among cells. Some cells use oxygen to release the energy stored in food. **5.1d:** The methods for obtaining nutrients vary among organism. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods. **5.1e:** Herbivores obtain energy from plants. Carnivores obtain energy from animals. Omnivores obtain energy from both plants and animals. Decomposers, such as bacteria and fungi, obtain energy by consuming wastes and/or dead animals. **5.1f:** Regulation of an organism’s internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required for survival. Regulation includes a variety of nervous and hormonal feedback systems. **5.1g:** The survival of an organism depends on its ability to sense and respond to its external environment.

WEEK 1	<p>Section 1: What is an animal?, pp. 480–484</p> <p>Objectives:</p> <ul style="list-style-type: none"> Identify the characteristics of animals. Differentiate between vertebrates and invertebrates. Explain how the symmetry of animals differs. 		<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, 1.1g, 1.2c, 1.2g, 5.1a, 5.1c, 5.1d, 5.1e, 5.1f, 5.1g</p>
	<p>Lesson 1 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Essential Question Activity: <i>Class Concept Web</i>, Teacher Edition, p. 480A</p> <p>Launch Lab: <i>How are animals organized?</i>, p. 481</p> <p>Activity: <i>Radial Symmetry</i>, Teacher Edition, p. 483</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – NY Living Environment box, p. 484 – Reading Essentials, pp. 259-262 – Take Home Science Notebook, , pp. 177-180 – Complete lab wrap-up questions – Section 1 Review, p. 484 – Read text, pp. 485-489

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WEEK 1 (continued)	Section 2: Sponges, Cnidarians, Flatworms, and Roundworms, pp. 485–489 Objectives <ul style="list-style-type: none"> Describe the structures that make up sponges and cnidarians. Compare how sponges and cnidarians get food and reproduce. Differentiate between flatworms and roundworms. 		Alignment with NYS Core Curriculum: LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: LE 1.1h, 4.a, 5.1a, 5.1d, 5.1e
	Lesson 2 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Transparency: <i>Rub-a-dub-dub</i> Lab Demonstration, Teacher Edition, p. 486 Activity: <i>Tapeworm Length</i> , Teacher Edition, p. 488	Homework/Extra Practice <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
	Section 3: Mollusks and Segmented Worms, pp. 490–495 Objectives <ul style="list-style-type: none"> Identify the characteristics of mollusks. Compare the similarities and differences between an open and a closed circulatory system. Describe the characteristics of segmented worms. Explain the digestive process of an earthworm. 		Alignment with NYS Core Curriculum: 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. Also Covered: LE 5.1b, 5.1d, 5.1g
	Lesson 3 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Transparency: <i>I’ll Have One for Dinner</i> MiniLAB: <i>Modeling Cephalopod Propulsion</i> , p. 492 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes Applying Science: How does soil management affect earthworms?, p. 494	Homework/Extra Practice <ul style="list-style-type: none"> Reading Essentials, Section 3, pp. 268-272 Take Home Science Notebook, pp. 184-186 Complete lab wrap-up questions
Lesson 4 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Lab: <i>Garbage-Eating Worms</i> , continued Essential Question Activity: <i>Group Analysis</i> , Teacher Edition, p. 125	Homework/Extra Practice <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 	

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		<p>Section 4: Arthropods and Echinoderms, pp. 496–502</p> <p>Objectives</p> <ul style="list-style-type: none"> List the features used to classify arthropods. Explain how the structure of the exoskeleton relates to its function. Identify features of echinoderms. 	<p>Alignment with NYS Core Curriculum:</p> <p>LE 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. Also Covered: LE 5.1b, 5.1d, 5.1g</p>
WEEK 1 (continued)	<p>Lesson 5 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: Olfactory Feet MiniLAB: Observing Sow Bugs, p. 501 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes National Geographic Visualizing Arthropod Diversity, pp. 498-499</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, Section 4, pp. 273-276 Take Home Science Notebook, pp. 187-190 Complete lab wrap-up questions Read text, p. 503
	<p>Lesson 6 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Teaching Transparency: <i>Metamorphosis</i> Lab: <i>Observing Complete Metamorphosis</i>, p. 503 (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 box, p. 497 Section 4 Review, p. 502 Read text, pp. 504-505
	<p>Lesson 7 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Garbage-Eating Worms</i>, pp. 504-505 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 2 class periods</p>	<p>Homework/Extra Practice</p> <p>Read Homeostasis Handbook, <i>Homeostasis in Invertebrates</i></p>
	<p>Lesson 8 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: Garbage-Eating Worms, continued Suggested Time: 2 class period Essential Question Activity: Concept Web, Teacher Edition, p. 507</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> FastFile: Chapter Review, pp. 39-40 Foldable: Students complete Visit glencoe.com for <ul style="list-style-type: none"> Self Check Quiz Chapter Review
WEEK 2	<p>Lesson 9 (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>Read text, <i>Vertebrate Animals</i>, pp. 512-518</p>

Chapter 18: Electricity, pp. 528–557

Major Understandings: **LE 4.1d:** Fertilization and/or development in organisms may be internal or external. **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. **4.3f:** As an individual organism ages, various body structures and functions change. **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. **5.1d:** The methods for obtaining nutrients vary among organism. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods. **5.1e:** Herbivores obtain energy from plants. Carnivores obtain energy from animals. Omnivores obtain energy from both plants and animals. Decomposers, such as bacteria and fungi, obtain energy by consuming wastes and/or dead animals. **5.1f:** Regulation of an organism’s internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required for survival. Regulation includes a variety of nervous and hormonal feedback systems. **5.1g:** The survival of an organism depends on its ability to sense and respond to its external environment.

	<p>Section 1: Chordate Animals, pp. 512–518 Objectives</p> <ul style="list-style-type: none"> Identify the major characteristics of chordates. List the major characteristics common to all vertebrates. Explain the difference between ectotherms and endotherms. Name the characteristics of the three classes of fish. 	<p>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</p>	
<p>WEEK 2</p>	<p>Lesson 10 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Launch Lab: <i>Animals with a Backbone</i>, p. 513 Transparency: <i>Do they have tests?</i> National Geographic <i>Visualizing Fish Diversity</i>, p. 517</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, pp. 277-280 Take Home Science Notebook, pp. 191-194 NY Living Environment box, p. 515 Complete lab wrap-up questions Section 1 Review, p. 518 Read text, pp. 519-523
	<p>Section 2: Amphibians and Reptiles, pp. 519–523 Objectives</p> <ul style="list-style-type: none"> Describe how amphibians have adapted to live in water and on land. Explain what happens during frog metamorphosis. Identify the adaptations that allow reptiles to live on land. 	<p>Alignment with NYS Core Curriculum: LE 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. Also Covered: LE 4.3f, 5.1a, 5.1b</p>	
	<p>Lesson 11 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>On Second Thought, Let’s Eat Something Else</i> Virtual Lab: <i>Aquatic Adaptations</i>, Teacher Edition, p. 518</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, pp. 281-284 Take Home Science Notebook, pp. 195-197 NY Living Environment box, p. 523 Section 2 Review, p. 523 Read text, p. 524

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WEEK 2 (continued)	<p>Lesson 12 (45 min) Advanced Planning/Notes to Teachers</p> <p><i>Lab setup</i></p>	<p>Investigation/Activity Lab: <i>Frog Metamorphosis</i>, p. 524 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 30 minutes</p>	<p>Homework/Extra Practice – Complete lab wrap-up questions – Read text, pp. 525-528</p>
	<p>Section 3: Birds, pp. 525–528 Objectives</p> <ul style="list-style-type: none"> • Identify the characteristics of birds. • Describe the adaptations birds have for flights. • Explain the function of feathers. 	<p>Alignment with NYS Core Curriculum: LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: LE 5.1a, 5.1d, 5.1e</p>	
	<p>Lesson 13 (45 min) Advanced Planning/Notes to Teachers</p> <p><i>Lab setup</i></p>	<p>Investigation/Activity Transparency: <i>Maybe the Scientists Were a Hoax!</i> MiniLAB: <i>Modeling Feather Function</i>, p. 527 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes Quick Demo: <i>Feather Function</i>, Teacher Edition, p. 527</p>	<p>Homework/Extra Practice – Reading Essentials, pp. 285-287 – Take Home Science Notebook, pp. 198-200 – NY Living Environment box, p. 528 – Complete lab wrap-up questions – Section 3 Review, p. 528 – Read text, pp. 529-533</p>

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	<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 style="writing-mode: vertical-rl; transform: rotate(180deg);">WEEK 2 (continued)</p>	<p>Lesson 14 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Midnight Raid on an Anthill</i> MiniLAB: <i>Inferring How Blubber Insulates</i>, p. 530 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes Applying Math: <i>How much time?</i>, p. 531</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Reading Essentials, pp. 288-292 – Take Home Science Notebook, pp. 201-204 – NY Living Environment box, p. 532 – Complete lab wrap-up questions – Section 4 Review, p. 533 – Read text, pp. 534-535 – Read Homeostasis Handbook, <i>Homeostasis in Vertebrates</i>
	<p>Lesson 15 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Homes for Endangered Animals</i>, pp. 534-535 (Lab worksheet available in the Chapter FastFile, p. 7-8) Suggested Time: 1 class period Essential Question Activity: <i>Concept Web</i>, Teacher Edition, p. 537</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 39–40 – Foldable: Students complete – Visit glencoe.com for <ul style="list-style-type: none"> ~ Self Check Quiz ~ Chapter Review
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">WEEK 3</p>	<p>Lesson 16 (45 min) Chapter Assessment Advanced Planning/Notes to Teachers</p>	<p>Investigation/Activity</p> <p>Chapter Assessment Options: Intermediate-Level Science Examination Practice Exam®/View 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>Read text, <i>Plants</i>, pp. 542–549</p>

Chapter 19: Magnetism, pp. 558–585

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. **1.1f:** Many plants have roots, stems, leaves, and reproductive structures. These organized groups of tissues are responsible for a plant’s 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). **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. **4.1a:** Some organisms reproduce asexually. Other organisms reproduce sexually. Some organisms can reproduce both sexually and asexually. **4.1b:** There are many methods of asexual reproduction, including division of a cell into two cells, or separation of part of an animal or plant from the parent, resulting in the growth of another individual. **4.3e:** Patterns of development vary among plants. In seed-bearing plants, seeds contain stored food for early development. Their later development into adulthood is characterized by varying patterns of growth from species to species. **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. **5.1d:** The methods for obtaining nutrients vary among organism. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods. **5.1g:** The survival of an organism depends on its ability to sense and respond to its external environment. **5.2e:** In order to maintain a balanced state, all organisms have a minimum daily intake of each type of nutrient based on species, size, age, sex, activity, etc. An imbalance in any of the nutrients might result in weight gain, weight loss, or a diseased state. **6.2c:** Green plants are the producers of food which is used directly or indirectly by consumers.

WEEK 3 (continued)	Section 1: An Overview of Plants, pp. 544–549 Objectives <ul style="list-style-type: none"> Identify characteristics common to all plants. Explain which plant adaptations make it possible for plants to survive on land. Compare and contrast vascular and nonvascular plants. 		Alignment with NYS Core Curriculum: 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). 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: LE 1.1c, 1.1f, 3.1b, 4.1a, 4.1b, 4.3e, 5.1a, 5.1d, 5.1g, 5.2e, 6.2c
	Lesson 17 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Launch Lab: <i>How do you use plants?</i> , p. 543 Transparency: <i>A Lot Can Happen in 4,000 Years</i> National Geographic <i>Visualizing Plant Classification</i> , p. 548	Homework/Extra Practice <ul style="list-style-type: none"> – Reading Essentials, pp. 293-296 – Take Home Science Notebook, pp. 205-208 – NY Living Environment boxes, p. 545, 547 – Complete lab wrap-up questions – Section 1 Review, p. 549 – Read text, pp. 550-555

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WEEK 3 (continued)	<p>Section 2: Seedless Plants, pp. 550–555</p> <p>Objectives</p> <ul style="list-style-type: none"> • Distinguish between characteristics of seedless nonvascular plants and seedless vascular plants. • Identify the importance of some nonvascular and vascular plants. 		<p>Alignment with NYS Core Curriculum:</p> <p>LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: 1.1c, 4.1b, 5.1d</p>		
	<p>Lesson 18 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>A Fresh Start</i></p> <p>MiniLAB: <i>Measuring Water Absorption by a Moss</i>, p. 551 (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. 297-301 – Take Home Science Notebook, pp. 209-211 – Complete lab wrap-up questions 	
	<p>Lesson 19 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Applying Science: <i>What is the value of rain forests?</i>, p. 552</p> <p>Virtual Lab: <i>The Simple Life</i>, Teacher Edition, p. 553</p>		<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> – NY Living Environment box, p. 551 – Section 2 Review, p. 555 – Read text, p. 556-564 	
	<p>Section 3: Seed Plants, pp. 556–564</p> <p>Objectives</p> <ul style="list-style-type: none"> • Identify the characteristics of seed plants. • Explain the structures and functions of roots, stems, and leaves. • Describe the main characteristics and importance of gymnosperms and angiosperms. • Compare similarities and differences between monocots and dicots. 		<p>Alignment with NYS Core Curriculum:</p> <p>LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: 1.1c, 5.1d</p>		
	<p>Lesson 20 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Rooted in Nature</i></p> <p>Teaching Transparency: <i>Monocots and Dicots</i></p> <p>MiniLab: <i>Observing Water Moving in a Plant</i>, p. 557 (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. 302-306 – Take Home Science Notebook, pp. 212-216 – Complete lab wrap-up questions – Read text, p. 565 	

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WEEK 3 (continued)	<p>Lesson 21 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Lab: <i>Identifying Conifers</i>, p. 565 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period</p>	<p>Homework/Extra Practice – NY Living Environment box, p. 560 – Complete lab wrap-up questions – Section 3 Review, p. 564 – Read text, pp. 566-567</p>
	<p>Lesson 22 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Lab: <i>Plants as Medicine</i>, pp. 566-567 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 3 class periods</p>	<p>Homework/Extra Practice</p>
	<p>Lesson 23 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Lab: <i>Plants as Medicine</i>, continued</p>	<p>Homework/Extra Practice Complete lab wrap-up questions</p>
	<p>Lesson 24 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity Lab: <i>Plants as Medicine</i>, continued</p>	<p>Homework/Extra Practice – Fast File: Chapter Review, pp. 33-34 – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review</p>
WEEK 4	<p>Lesson 25 (45 min) Advanced Planning/Notes to Teachers</p>	<p>Investigation/Activity Chapter Assessment Options: Intermediate-Level Science Examination Practice Exam®View 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>Plant Processes</i>, pp. 574-583</p>

Chapter 20: Plant Processes, pp. 574–599

Major Understandings: **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. **5.1b:** An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. **5.1c:** All organisms require energy to survive. The amount of energy needed and the method for obtaining this energy vary among cells. Some cells use oxygen to release the energy stored in food. **5.1g:** The survival of an organism depends on its ability to sense and respond to its external environment. **6.2a:** Photosynthesis is carried on by green plants and other organisms containing chlorophyll. In this process, the Sun’s energy is converted into and stored as chemical energy in the form of a sugar. The quantity of sugar molecules increases in green plants during photosynthesis in the presence of sunlight. **6.2b:** The major source of atmospheric oxygen is photosynthesis. Carbon dioxide is removed from the atmosphere and oxygen is released during photosynthesis. **6.2c:** Green plants are the producers of food which is used directly or indirectly by consumers.

Section 1: Photosynthesis and Respiration, pp. 574–583

Objectives

- Explain how plants take in and give off gases.
- Compare and contrast photosynthesis and respiration.
- Discuss why photosynthesis and respiration are important.

Alignment with NYS Core Curriculum:

LE 5.1c: All organisms require energy to survive. The amount of energy needed and the method for obtaining this energy vary among cells. Some cells use oxygen to release the energy stored in food. **6.2a:** Photosynthesis is carried on by green plants and other organisms containing chlorophyll. In this process, the Sun’s energy is converted into and stored as chemical energy in the form of a sugar. The quantity of sugar molecules increases in green plants during photosynthesis in the presence of sunlight. **Also Covered:** LE 5.1b, 6.2b, 6.2c

WEEK 4 (continued)

Lesson 26 (45 min)

Advanced Planning/Notes to Teachers
Lab setup

Investigation/Activity

Launch Lab: *Do plants lose water?*, p. 575
Transparency: *Plant Dormitories*
Quick Demo: *Guard Cells*, Teacher Edition, p. 577
Make a Model: *Stoma*, Teacher Edition, p. 577

Homework/Extra Practice

Reading Essentials, pp. 307-312
Take Home Science Notebook, pp. 217-220
Complete lab wrap-up questions

Lesson 27 (45 min)

Advanced Planning/Notes to Teachers
Lab setup

Investigation/Activity

Teaching Transparency: *Leaf Structure*
MiniLAB: *Inferring What Plants Need to Produce Chlorophyll*, p. 579 (Lab worksheet available in the Chapter FastFile, p. 3)
Suggested Time: 10-15 minutes

Homework/Extra Practice

NY Living Environment boxes, pp. 581, 583
Complete lab wrap-up questions
Section 1 Review, p. 583

Lesson 28 (45 min)

Advanced Planning/Notes to Teachers

Investigation/Activity

Virtual Lab: *Photosynthesis*, Teacher Edition, p. 578

Homework/Extra Practice

Read text, p. 584

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WEEK 4 (continued)	Lesson 29 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Stomata in Leaves</i> , p. 584 (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. 585-591
	Section 2: Plant Responses, pp. 585–591 Objectives <ul style="list-style-type: none"> Identify the relationship between a stimulus and a tropism in plants. Compare and contrast long-day and short-day plants. Explain how plant hormones and responses are related. 		Alignment with NYS Core Curriculum: 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. Also Covered: LE 5.1b, 5.1g
	Lesson 30 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Transparency: <i>A Bright Winter</i> Quick Demo: <i>Rooting Hormone</i> , Teacher Edition, p. 588 Applying Math: <i>Growth Hormones?</i> , p. 587	Homework/Extra Practice – Reading Essentials, pp. 313-316 – Take Home Science Notebook, pp. 221-224
	Lesson 31 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity MiniLAB: <i>Observing Ripening</i> , p. 588 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10 minutes National Geographic <i>Visualizing Plant Hormones</i> , p. 589	Homework/Extra Practice – NY Living Environment box, p. 590 – Complete lab wrap-up questions – Section 2 Review, p. 591 – Read text, pp. 592-593
	Lesson 32 (45 min) Advanced Planning/Notes to Teachers Lab setup	Investigation/Activity Lab: <i>Tropism in Plants</i> , pp. 592-593 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 Class Period	Homework/Extra Practice – Complete lab wrap-up questions – Read Homeostasis Handbook, <i>Homeostasis in Plants</i>
	Lesson 33 (45 min) Advanced Planning/Notes to Teachers	Investigation/Activity Essential Question Activity: <i>Concept Web</i> , Teacher Edition, p. 595 Suggested Time: 1 Class Period	Homework/Extra Practice – Fast File: Chapter Review, pp. 33-34 – Visit glencoe.com for ~ Self Check Quiz ~ Chapter Review

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WEEK 5	<p>Lesson 34 (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 <i>Exam®View 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, <i>Bacteria, Protists, and Fungi</i>, pp. 600-608</p>
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Chapter 21: Bacteria, Protists, and Fungi, pp. 600–629

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. **1.2j:** 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. **4.1a:** Some organisms reproduce asexually. Other organisms reproduce sexually. Some organisms can reproduce both sexually and asexually. **5.1b:** An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. **5.1d:** The methods for obtaining nutrients vary among organisms. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods. **5.1e:** Herbivores obtain energy from plants. Carnivores obtain energy from animals. Omnivores obtain energy from both plants and animals. Decomposers, such as bacteria and fungi, obtain energy by consuming wastes and/or dead animals. **6.1a:** Energy flows through ecosystems in one direction, usually from the Sun, through producers to consumers and then to decomposers. This process may be visualized with food chains or energy pyramids. **6.2c:** Green plants are the producers of food which is used directly or indirectly by consumers.

WEEK 5 (continued)	<p>Section 1: Bacteria, pp. 600–608</p> <p>Objectives</p> <ul style="list-style-type: none"> Identify the characteristics of bacterial cells. Name the two major groups of bacteria. Discuss the overall importance of bacteria. 		<p>Alignment with NYS Core Curriculum:</p> <p>LE 1.1d: Some organisms are single cells; others, including humans, are multicellular. 5.1d: The methods for obtaining nutrients vary among organisms. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods. Also Covered: LE 1.1c, 1.2j, 5.1e, 6.1a, 6.2c</p>
	<p>Lesson 26 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Launch Lab: <i>Investigate Bacterial Growth</i>, p. 601 Transparency: <i>A Worm’s World</i> Teaching Transparency: <i>Bacteria</i> Quick Demo: <i>Bacteria</i>, Teacher Edition, p. 604 Applying Math: <i>Bacteria Population</i>, p. 605</p>	<p style="text-align: center;">Homework/Extra Practice</p> <p>– Reading Essentials, pp. 317-322 – Take Home Science Notebook, pp. 225-228 – NY Living Environment boxes, pp. 604, 607 Complete lab wrap-up questions</p>
	<p>Lesson 26 (45 min) Advanced Planning/Notes to Teachers</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Virtual Lab: <i>Germicides</i>, Teacher Edition, p. 605</p>	<p style="text-align: center;">Homework/Extra Practice</p> <p>– Section 1 Review, p. 608 – Read text, pp. 609-613</p>

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WEEK 5 (continued)	<p>Section 2: Protists, pp. 609–613</p> <p>Objectives</p> <ul style="list-style-type: none"> Identify the characteristics common to all protists. Describe the three protist groups and their characteristics. Compare and contrast the three groups of protists. 		<p>Alignment with NYS Core Curriculum:</p> <p>LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: LE 1.1d, 4.1a, 5.1d, 5.1e</p>
	<p>Lesson 37 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Spring into Action</i></p> <p>MiniLAB: <i>Identifying Protists</i>, p. 610 (Lab worksheet available in the Chapter FastFile, p. 3)</p> <p>Suggested Time: 10-15 minutes</p> <p>National Geographic <i>Visualizing Diversity in Protists</i>, p. 611</p>	<p>Homework/Extra Practice</p> <ul style="list-style-type: none"> Reading Essentials, pp. 323-326 Take Home Science Notebook, pp. 229-231 NY Living Environment box, p. 612 Complete lab wrap-up questions Section 2 Review, p. 613 Read text, p. 614
	<p>Lesson 38 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Lab: <i>Comparing Algae and Protozoans</i>, p. 614 (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"> Complete lab wrap-up questions Read text, pp. 615-621
	<p>Section 3: Fungi, pp. 615–621</p> <p>Objectives</p> <ul style="list-style-type: none"> Identify the characteristics shared by all fungi. Classify fungi into groups based on their methods of reproduction. Differentiate among the imperfect fungi and all other fungi. 		<p>Alignment with NYS Core Curriculum:</p> <p>LE 5.1b: An organism’s overall body plan and its environment determine the way that the organism carries out the life processes. Also Covered: 1.1c, 5.1d</p>
	<p>Lesson 39 (45 min)</p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p>Investigation/Activity</p> <p>Transparency: <i>Snuffle for a Truffle</i></p> <p>MiniLAB: <i>Creating Fungus Art</i>, p. 616 (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. 327-330 Take Home Science Notebook, pp. 232-236 NY Living Environment boxes, pp. 617, 619, 620 Section 3 Review, p. 621 Read text, pp. 622-623

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WEEK 5 (continued)	<p>Lesson 40 (45 min) Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Lab: <i>Making Yogurt</i>, pp. 622-623 (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"> – Read Homeostasis Handbook, <i>Homeostasis in Fungi, Bacteria, and Protists</i> – Read Homeostasis Handbook, <i>Importance of Homeostasis</i>
	<p>Lesson 41 (45 min) Advanced Planning/Notes to Teachers</p>	<p style="text-align: center;">Investigation/Activity</p> <p>Essential Question Activity: <i>Concept Web</i>, Teacher Edition, p. 621 Essential Question Activity: <i>Want Ad</i>, Teacher Edition, p. 625 Suggested Time: 1-2 class periods</p>	<p style="text-align: center;">Homework/Extra Practice</p> <ul style="list-style-type: none"> – Fast File: Chapter Review, pp. 35-36 – Visit glencoe.com for <ul style="list-style-type: none"> ~ Self Check Quiz ~ Chapter Review
WEEK 6	<p>Lesson 42 (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 Exam®/View 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 style="text-align: center;">Homework/Extra Practice</p>