



### Reminder

Here is a list of the Live Materials you will need to order from Science Kit for Unit 3 and Unit 4. Look for instructions at the end of Unit 2 in this Planning Guide.

*Be sure to order at least 2 weeks prior to doing the lab.*

CHAPTER	LAB	UNIT / LESSON	LIVE MATERIALS
Chapter 8	Comparing Cells	Unit 3 / Lesson 12	Aquaria Plant Set (5 gallon)
Chapter 11	What Environment Do House Plants Need	Unit 4 / Lesson 13	Geranium Plants (set of 6)
Chapter 11	Modeling Freshwater Environments	Unit 4 / Lesson 21	Mixed Pond Culture (classroom set)

### Time to order your live specimens for Unit 1.

Please order your live specimens now to help ensure they arrive on time.

Placing your live specimen order online with Science Link is quick and easy.

Just click on the link provided below.

Be sure to complete the information with the date you want your specimens to arrive at your school.

<http://www.vwreducation.com/glencoe/nyc8-request.html>

## Unit 1—Reproduction, Heredity, and Evolution


**Essential Question: How does continue and adapt in response to environmental change?**

### Chapter 1: The Nature of Science, pp. 4–35

**Major Understandings:** (All process standards addressed in Chapter 1.)

**AID M3.1a:** use appropriate scientific tools to solve problems about the natural world; **S1.1a:** formulate questions about natural phenomena; **S1.1c:** refine and clarify questions so that they are subject to scientific investigation; **S1.2b:** propose a model of a natural phenomenon; **S1.3:** Represent, present, and defend their proposed explanations of everyday observations so that they can be understood and assessed by others. **S2.1d:** use appropriate tools and conventional techniques to solve problems about the natural world, including: measuring, observing, describing, classifying, sequencing; **S2.2a:** include appropriate safety procedures; **S2.2b:** design scientific investigations (e.g. observing, describing, and comparing; collecting samples; seeking more information, conducting a controlled experiment; discovering new objects or phenomena; making models); **S2.2c:** design a simple controlled experiment; **S2.2d:** identify independent variables (manipulated), dependent variables (responding), and constants in a simple controlled experiment; **S2.2e:** choose appropriate sample size and number of trials; **S2.3c:** collect quantitative and qualitative data; **S3.1a:** organize results, using appropriate graphs, diagrams, data tables, and other models to show relationships; **S3.2a:** accurately describe the procedures used and the data gathered; **S3.2b:** identify sources of error and the limitations of data collected; **S3.2d:** formulate and defend explanations and conclusions as they relate to scientific phenomena; **ED T1.1a:** identify a scientific or human need that is subject to a technological solution which applies scientific principles; **IS 3.2:** Describe applications of information technology in mathematics, science, and other technologies that address needs and solve problems in the community. **ICT 2.2:** Use models to study processes that cannot be studied directly (e.g. when the real process is too slow, too fast, or too dangerous for direct observation). **IPS 1.1:** Analyze science/technology/society problems and issues at the local level and plan and carry out a remedial course of action. **1.3:** Design solutions to real-world problems of general social interest related to home, school, or community using scientific experimentation to inform the solution and applying mathematical concepts and reasoning to assist in developing a solution.

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WEEK 1	<p><b>Section 1: What is science?</b> pp. 4–11</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>Identify how science is a part of your everyday life.</li> <li>Describe what skills and tools are used in science.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>AID M3.1a:</b> use appropriate scientific tools to solve problems about the natural world; <b>ED T1.1a:</b> identify a scientific or human need that is subject to a technological solution which applies scientific principles; <b>Also Covered:</b> AID S1.1a, S1.3, S2.1d, IPS 1.1</p>	
	<p><b>Lesson 1 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Essential Question Activity: <i>Class Brainstorm</i>, Teacher Edition, p. 4A</p> <p>Launch Lab: <i>Measure Using Tools</i>, p. 5</p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>Read text, pp. 4-11</li> <li>NY AID box, p. 10</li> </ul>
	<p><b>Lesson 2 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p> <b>Last Chance</b>—Place your order for live materials for Unit 1, Lessons 17, 19, and 27.</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Transparency: <i>Where'd it go?</i></p> <p>MiniLAB: <i>Inferring from Pictures</i>, p. 9 (Lab worksheet available in the Chapter FastFile, p. 3)</p> <p><b>Suggested Time: 10-15 minutes</b></p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>Reading Essentials, pp. 1-4</li> <li>Take Home Science Notebook, pp. 1-4</li> <li>Complete lab wrap-up questions</li> <li>Section 1 Review, p. 11</li> <li>Read text, p. 12</li> </ul>
	<p><b>Lesson 3 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Lab: <i>Battle of the Beverage Mixed</i>, p. 12 (Lab worksheet available in the Chapter FastFile, pp. 5-6)</p> <p><b>Suggested Time: 1 class period</b></p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>Complete lab wrap-up questions</li> <li>Read text, pp. 13-23</li> </ul>
	<p><b>Section 2: Science in Action,</b> pp. 13–23</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>Examine the steps used to solve a problem in a scientific way.</li> <li>Explain how a well-designed investigation is developed.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>AID S2.2b:</b> design scientific investigations, S2.2c: design a simple controlled experiment, S2.2d: identify independent variables, dependent variables, and constants in a simple controlled experiment. <b>Also covered:</b> AID S1.1a, S1.1b, S1.1c, S1.2a, S1.2b, S1.2c, S2.1a, S2.1d, S2.2a, S3.1a</p>	
	<p><b>Lesson 4 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Transparency: <i>The Nobel Prize for Cookies</i></p> <p>MiniLAB: <i>Comparing Paper Towels</i>, p. 18 (Lab worksheet available in the Chapter FastFile, p. 4)</p> <p><b>Suggested Time: 10-15 minutes</b></p> <p>Applying Science: <i>Problem-Solving Skills</i>, p. 14</p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>NY AID boxes, pp. 16, 20, and 21</li> <li>Reading Essentials, pp. 5-11</li> <li>Take Home Science Notebook, pp. 5-7</li> <li>Complete lab wrap-up questions</li> <li>Section 2 Review, p. 23</li> <li>Read text, pp. 24-27</li> </ul>

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	<p><b>Section 3: Science and Technology, pp. 24–29</b>  <b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Determine how science and technology influence your life.</li> <li>• Analyze how modern technology allows scientific discoveries to be communicated worldwide.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b>  <b>IS 3.2</b> Describe applications of information technology in mathematics, science, and other technologies that address needs and solve problems in the community. <b>Also Covered:</b> AID M3.1a, IPS 1.3</p>	
<p><b>WEEK 2</b></p>	<p><b>Lesson 5 (45 min)</b>                  Advanced Planning/Notes to Teachers                  Lab setup</p>	<p><b>Investigation/Activity</b>                  Lab: <i>When is the Internet the busiest?</i>, pp. 28-29                  (Lab worksheet available in the Chapter FastFile, pp. 7-8)                  Suggested Time: 2 class periods</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– NY IS box, p. 24</li> <li>– Reading Essentials, pp. 12-14</li> <li>– Take Home Science Notebook, pp. 8-12</li> <li>– Section 3 Review, p. 27</li> </ul>
	<p><b>Lesson 6 (45 min)</b>                  Advanced Planning/Notes to Teachers                  Lab setup</p>	<p><b>Investigation/Activity</b>                  Lab: <i>When is the Internet the busiest?</i>, continued</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– Complete lab wrap-up questions</li> <li>– FastFile: Chapter Review, pp. 35-36</li> <li>– Foldable: Students complete</li> <li>– Visit <a href="http://glencoe.com">glencoe.com</a> for                         <ul style="list-style-type: none"> <li>~ Self Check Quiz</li> <li>~ Chapter Review</li> </ul> </li> </ul>
	<p><b>Lesson 7 (45 min)</b>                  Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b>  <b>Chapter Assessment Options:</b>                  Intermediate-Level Science Examination Practice                  ExamView® Assessment Suite                  Chapter Review at <a href="http://glencoe.com">glencoe.com</a>                  For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p><b>Homework/Extra Practice</b>                  Read text, <i>Cell Reproduction</i>, pp. 36-44</p>

## Chapter 2: Cell Reproduction, pp. 36–65

**Major Understandings: LE 1.1b:** The way in which cells function is similar in all living things. Cells grow and divide, producing more cells. Cells take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or an organism needs. **1.2:** Each system is composed of organs and tissues which perform specific functions and interact with each other, e.g., digestion, gas exchange, excretion, circulation, locomotion, control, coordination, reproduction, and protection from disease. **2.1b:** Each gene carries a single unit of information. A single inherited trait of an individual can be determined by one pair or by many pairs of genes. A human cell contains thousands of different genes. **2.1c:** Each human cell contains a copy of all the genes needed to produce a human being. **2.1d:** In asexual reproduction, all the genes come from a single parent. Asexually produced offspring are genetically identical to the parent. **2.1e:** In sexual reproduction typically half of the genes come from each parent. Sexually produced offspring are not identical to either parent. **2.2a:** In all organisms, genetic traits are passed on from generation to generation. **3.1a:** The processes of sexual reproduction and mutation have given rise to a variety of traits within a species. **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. **4.1c:** Methods of sexual reproduction depend upon the species. All methods involve the merging of sex cells to begin the development of a new individual. In many species, including plants and humans, eggs and sperm are produced. **4.2a:** The male sex cell is the sperm. The female sex cell is the egg. The fertilization of an egg by a sperm results in a fertilized egg. **4.2b:** In sexual reproduction, sperm and egg each carry one-half of the genetic information for the new individual. Therefore, the fertilized egg contains genetic information from each parent. **4.3a:** Multicellular organisms exhibit complex changes in development, which begin after fertilization. The fertilized egg undergoes numerous cellular divisions that will result in a multicellular organism, with each cell having identical genetic information. **4.4a:** In multicellular organisms, cell division is responsible for growth, maintenance, and repair. In some one-celled organisms, cell division is a method of asexual reproduction. **4.4b:** In one type of cell division, chromosomes are duplicated and then separated into two identical and complete sets to be passed to each of the two resulting cells. In this type of cell division, the hereditary information is identical in all the cells that result. **4.4c:** Another type of cell division accounts for the production of egg and sperm cells in sexually reproducing organisms. The eggs and sperm resulting from this type of cell division contain one-half of the hereditary information.

<b>WEEK 2 (continued)</b>	<b>Section 1: Cell Division and Mitosis, pp. 36–54</b> <b>Objectives</b> <ul style="list-style-type: none"> <li>• Explain why mitosis is important.</li> <li>• Examine the steps of mitosis.</li> <li>• Compare mitosis in plant and animal cells.</li> <li>• List two examples of asexual reproduction.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <b>LE 2.1d</b> In asexual reproduction, all the genes come from a single parent. Asexually produced offspring are genetically identical to the parent. <b>Also Covered:</b> LE 1.1b, 4.1b, 4.4b
	<b>Lesson 8 (45 min)</b> Advanced Planning/Notes to Teachers  Lab setup	<b>Investigation/Activity</b> Launch Lab: <i>Infer About Seed Growth</i> , p. 37 Transparency: <i>Growth Spurt</i> Teaching Transparency: <i>Animal Cell Division</i> MiniLAB: <i>Modeling Mitosis</i> , p. 43 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 15-21</li> <li>– Take Home Science Notebook, pp. 13-16</li> <li>– NY Living Environment boxes, pp. 39, 42, 43</li> <li>– Complete lab wrap-up questions</li> <li>– Section 1 Review, p. 44</li> <li>– Read text, p. 45</li> </ul>

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<b>WEEK 3</b>	<p><b>Lesson 9 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Lab: <i>Mitosis in Plant Cells</i>, p. 45 (Lab worksheet available in the Chapter FastFile, pp. 5-6) <b>Suggested Time: 1 class period</b></p>	<p><b>Homework/Extra Practice</b> – Complete lab wrap-up questions – Section 1 Review, p. 44 – Read text, pp. 46-51</p>
	<p><b>Section 2: Sexual Reproduction and Meiosis, pp. 46–51</b> <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Describe the stages of meiosis and how sex cells are produced.</li> <li>• Explain why meiosis is needed for sexual reproduction.</li> <li>• Name the cells that are involved in fertilization.</li> <li>• Explain how fertilization occurs in sexual reproduction.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b> <b>LE 4.2a</b> The fertilization of an egg by a sperm results in a fertilized egg. <b>LE 4.3a</b> Multicellular organisms exhibit complex changes in development, which begin after fertilization. <b>Also Covered:</b> LE 2.1e, 4.1c, 4.2b, 4.4c</p>
	<p><b>Lesson 10 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Transparency: <i>I Think He Has Your Eyes</i> Applying Science: <i>How can chromosome numbers be predicted?</i>, p. 49 National Geographic <i>Visualizing Polyploidy in Plants</i>, p. 50</p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 21-25 – Take Home Science Notebook, pp. 17-19 – NY Living Environment boxes, pp. 47, 48, 49 – Complete lab wrap-up questions – Section 2 Review, p. 51 – Read text, pp. 52-57</p>

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	<b>Section 3: DNA, pp. 52–57</b> <b>Objectives:</b> <ul style="list-style-type: none"> <li>Identify the parts of a DNA molecule and its structure.</li> <li>Explain how DNA copies itself.</li> <li>Describe the structure and function of each kind of RNA.</li> </ul>	<b>Alignment with NYS Core Curriculum:</b> <b>LE 2.1b</b> Each gene carries a single unit of information. A single inherited trait of an individual can be determined by one pair or by many pairs of genes. A human cell contains thousands of different genes. <b>Also Covered:</b> LE 2.1a, 2.1c, 2.2a, 3.1a	
WEEK 3 (continued)	<b>Lesson 11 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Transparency: <i>Curly Cat</i> MiniLAB: <i>Modeling DNA Replication</i> , p. 53 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10–15 minutes	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>Reading Essentials, pp. 26–30</li> <li>Take Home Science Notebook, pp. 20–24</li> <li>Complete lab wrap-up questions</li> <li>Read text, pp. 58–59</li> </ul>
	<b>Lesson 12 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Lab: <i>Mutations</i> , pp. 52–53 (Lab worksheet available in the Chapter FastFile, pp. 7–8) Suggested Time: 2–3 class periods	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>NY Living Environment box, p. 55</li> <li>Section 3 Review, p. 57</li> </ul>
	<b>Lesson 13 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Lab: <i>Mutations</i> , p. 52–53, continued	<b>Homework/Extra Practice</b>
	<b>Lesson 14 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Lab: <i>Mutations</i> , p. 52–53, continued	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>Complete lab wrap-up questions</li> <li>Fast File: Chapter Review, pp. 35–36</li> <li>Foldable: Students complete</li> <li>Visit <a href="http://glencoe.com">glencoe.com</a> for <ul style="list-style-type: none"> <li>Self Check Quiz</li> <li>Chapter Review</li> </ul> </li> </ul>
WEEK 4	<b>Lesson 14 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> <b>Chapter Assessment Options:</b> Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at <a href="http://glencoe.com">glencoe.com</a> For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	<b>Homework/Extra Practice</b> Read text, <i>Plant Reproduction</i> , pp. 66–71

### Chapter 3: Plant Reproduction, pp. 66–95

**Major Understandings:** **LE 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. **4.1c:** Methods of sexual reproduction depend upon the species. In many species, including plants and humans, eggs and sperm are produced. **4.1d:** Fertilization and/or development in organisms may be internal or external. **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.

<b>WEEK 4 (continued)</b>	<b>Section 1: What is energy?, pp. 42–46</b> <b>Objectives</b> <ul style="list-style-type: none"> <li>▪ Distinguish between the two types of plant reproduction. Describe the two stages in a plant’s life cycle.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <b>LE 4.1b</b> 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. <b>4.1c:</b> Methods of sexual reproduction depend upon the species. In many species, including plants and humans, eggs and sperm are produced. <b>Also Covered:</b> LE 4.1a, 4.3e
	<b>Lesson 16 (45 min)</b> Advanced Planning/Notes to Teachers  Lab setup	<b>Investigation/Activity</b> Launch Lab: <i>Do all fruits contain seeds?</i> , p. 67 Transparency: <i>It’s a Jungle Out There</i> MiniLAB: <i>Observing Asexual Reproduction</i> , p. 69 (Lab worksheet available in the Chapter FastFile, p. 3) Suggested Time: 10-15 minutes	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 31-33</li> <li>– Take Home Science Notebook, pp. 25-28</li> <li>– NY Living Environment box, p. 70</li> <li>– Complete lab wrap-up questions</li> <li>– Section 1 Review, p. 71</li> <li>– Read text, pp. 72-75</li> </ul>
<b>WEEK 5</b>	<b>Section 2: Seedless Reproduction, pp. 72–76</b> <b>Objectives:</b> <ul style="list-style-type: none"> <li>• Examine the life cycles of a moss and a fern.</li> <li>• Explain why spores are important to seedless plants.</li> <li>• Identify some special structures used by ferns for reproduction.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <b>LE 4.1d</b> Fertilization and/or development in organisms may be internal or external. <b>Also Covered:</b> LE 4.1a, 4.3e
	<b>Lesson 17 (45 min)</b> Advanced Planning/Notes to Teachers	<b>Investigation/Activity</b> Transparency: <i>It’s Raining; It’s Sproring</i> Visual Learning, <b>Figure 6</b> , Teacher Edition, p. 73 Visual Learning, <b>Figure 8</b> , Teacher Edition, p. 75 Make a Model: <i>Life Cycles</i> , Teacher Edition, p. 74	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 34-37</li> <li>– Take Home Science Notebook, pp. 29-31</li> <li>– Read text, p. 76</li> </ul>

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<b>WEEK 5 (continued)</b>	<p><b>Lesson 18 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Lab: <i>Comparing Seedless Plants</i>, p. 76 (Lab worksheet available in the Chapter FastFile, pp. 5-6) <b>Suggested Time: 1 class period</b></p>	<p><b>Homework/Extra Practice</b> – NY Living Environment box, p. 73 – Complete lab wrap-up questions – Section 2 Review, p. 75 – Read text, p. 77-87</p>
	<p><b>Section 3: Seed Reproduction, pp. 77–87</b> <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Examine the life cycles of typical gymnosperms and angiosperms.</li> <li>• Describe the structure and function of the flower.</li> <li>• Discuss methods of seed dispersal in seed plants.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b> <b>LE 4.1c</b> Methods of sexual reproduction depend upon the species. All methods involve the merging of sex cells to begin the development of a new individual. <b>4.3e</b> Patterns of development vary among plants. Their later development into adulthood is characterized by varying patterns of growth from species to species. <b>Also Covered:</b> LE 4.1d</p>
	<p><b>Lesson 19 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Transparency: <i>A Bee’s-Eye View</i> MiniLAB: <i>Modeling Seed Dispersal</i>, p. 84 (Lab worksheet available in the Chapter FastFile, p. 4) <b>Suggested Time: 10–15 minutes</b> Essential Question Activity: <i>Provide Examples</i>, Teacher Edition, p. 91</p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 38-42 – Take Home Science Notebook, pp. 32-36 – NY Living Environment boxes, pp. 78, 80, 82 – Complete lab wrap-up questions – Section 3 Review, p. 87 – Read text, pp. 88–89</p>
	<p><b>Lesson 19 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Lab: <i>Germination Rate of Seeds</i>, pp. 88–89 (Lab worksheet available in the Chapter FastFile, pp. 7–8) <b>Suggested Time: 1 class period</b></p>	<p><b>Homework/Extra Practice</b> – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 35-36 – Visit <a href="http://glencoe.com">glencoe.com</a> for ~ Self Check Quiz ~ Chapter Review</p>
	<p><b>Lesson 19 (45 min)</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> <b>Chapter Assessment Options:</b> Intermediate-Level Science Examination Practice ExamView® <i>Assessment Suite</i> Chapter Review at <a href="http://glencoe.com">glencoe.com</a> For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p><b>Homework/Extra Practice</b> Read text, <i>Classifying Animals</i>, pp. 96-100</p>

**\*Chapter 4 Classifying Animals (Review Chapter) Planning Guide can be found at the end of this document.**

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**Chapter 5: Heredity, pp. 130–157**

**Major Understandings:** **LE 2.1a:** Hereditary information is contained in genes. Genes are composed of DNA that makes up the chromosomes of cells. **2.1b:** Each gene carries a single unit of information. A single inherited trait of an individual can be determined by one pair or by many pairs of genes. A human cell contains thousands of different genes. **2.2a:** In all organisms, genetic traits are passed on from generation to generation. **2.2b:** Some genes are dominant and some are recessive. Some traits are inherited by mechanisms other than dominance and recessiveness. **2.2c:** The probability of traits being expressed can be determined using models of genetic inheritance. Some models of prediction are pedigree charts and Punnett squares. **3.1a:** The processes of sexual reproduction and mutation have given rise to a variety of traits within a species. **3.1b:** Changes in environmental conditions can affect the survival of individual organisms with a particular trait. **3.1c:** Human activities such as selective breeding and advances in genetic engineering may affect the variations of species. 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. **4.4b:** In one type of cell division, chromosomes are duplicated and then separated into two identical and complete sets to be passed to each of the two resulting cells. In this type of cell division, the hereditary information is identical in all the cells that result.

<b>WEEK 6</b>	<p><b>Section 1: Genetics, pp. 130–138</b>  <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Explain how traits are inherited.</li> <li>• Identify Mendel’s role in the history of genetics.</li> <li>• Use a Punnett square to predict the results of crosses.</li> <li>• Compare and contrast the difference between an individual’s genotype and phenotype.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b>  <b>LE 2.1a:</b> Hereditary information is contained in genes. <b>2.2a:</b> In all organisms, genetic traits are passed on from generation to generation. <b>2.2c:</b> The probability of traits being expressed can be determined using models of genetic inheritance. <b>Also Covered:</b> LE 2.1b, 2.2b, 3.1c, 4.4b</p>		
	<p><b>Lesson 30 (45 min)</b>                  Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Launch Lab: <i>Who around you has dimples?</i>, p. 131                  Transparency: <i>Pass It On</i>                  MiniLAB: <i>Comparing Common Traits</i>, p. 134                  (Lab worksheet available in the Chapter FastFile, p. 3)  <b>Suggested Time: 10-15 minutes</b></p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 61-66</li> <li>– Take Home Science Notebook, pp. 49-52</li> <li>– Complete lab wrap-up questions</li> <li>– Read text, p. 139</li> </ul>
	<p><b>Lesson 31 (45 min)</b>                  Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <p>Lab: <i>Predicting Results</i>, p. 139 (Lab worksheet available in the Chapter FastFile, pp. 5-6)  <b>Suggested Time: 1 class period</b></p>		<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– NY Living Environment boxes, pp. 133, 136</li> <li>– Complete lab wrap-up questions</li> <li>– Section 1 Review, p. 138</li> <li>– Read text, pp. 140-146</li> </ul>
	<p><b>Section 2: Genetics Since Mendel, pp. 141–146</b>  <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Explain how traits are inherited by incomplete dominance.</li> <li>• Compare multiple alleles and polygenic inheritance, and give examples of each.</li> <li>• Describe two human genetic disorders and how they are inherited.</li> <li>• Explain how sex-linked traits are passed to offspring.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b>  <b>LE 2.2b:</b> Some genes are dominant and some are recessive. Some traits are inherited by mechanisms other than dominance and recessiveness. <b>3.1a:</b> The processes of sexual reproduction and mutation have given rise to a variety of traits within a species. <b>3.1b:</b> Changes in environmental conditions can affect the survival of individual organisms with a particular trait. <b>Also Covered:</b> LE 2.1a, 2.2c</p>		

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WEEK 6 (continued)	<p><b>Lesson 32 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Transparency: <i>Dog Days</i> Teaching Transparency: <i>Pedigree</i> MiniLAB: <i>Interpreting Polygenic Inheritance</i>, p. 142 (Lab worksheet available in the Chapter FastFile, p. 4) <b>Suggested Time: 1-15 minutes</b></p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 67-71 – Take Home Science Notebook, pp. 53-55 – NY Living Environment boxes, pp. 141, 142, 144 – Complete lab wrap-up questions – Section 2 Review, p. 146 – Read text, pp. 147-149, 150-151</p>
	<p><b>Section 3: Advances in Genetics, pp. 147–149</b> <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Evaluate the importance of advances in genetics.</li> <li>• Sequence the steps in making genetically engineered organisms.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b> <b>LE 3.1c:</b> Human activities such as selective breeding and advances in genetic engineering may affect the variations of species.</p>
	<p><b>Lesson 33 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Transparency: <i>Two Quarts of Oil and a Side Salad</i>, Please Lab: <i>Tests for Color Blindness</i>, pp. 150–151 (Lab worksheet available in the Chapter FastFile, p. 7-8) <b>Suggested Time: 1-2 class periods</b></p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 72-74 – Take Home Science Notebook, pp. 56-60 – NY Living Environment box, p. 149 – Section 3 Review, p. 149</p>
	<p><b>Lesson 34 (45 min)</b> Advanced Planning/Notes to Teachers <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Lab: Tests for Color Blindness, continued</p>	<p><b>Homework/Extra Practice</b> – Complete lab wrap-up questions – Fast File: Chapter Review, pp. 33-34 – Visit <a href="http://glencoe.com">glencoe.com</a> for ~ Self Check Quiz ~ Chapter Review</p>
	<p><b>Lesson 35 (45 min)</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> <b>Chapter Assessment Options:</b> Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at <a href="http://glencoe.com">glencoe.com</a> For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p><b>Homework/Extra Practice</b> Read text, Regulation and Reproduction, pp. 158-164</p>

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**Chapter 6: Regulation and Reproduction, pp. 158–187**

**Major Understandings:** **LE 1.2a:** Each system is composed of organs and tissues which perform specific functions and interact with each other, e.g., digestion, gas exchange, excretion, circulation, locomotion, control, coordination, reproduction, and protection from disease. **1.2h:** The nervous and endocrine systems interact to control and coordinate the body’s responses to changes in the environment, and to regulate growth, development, and reproduction. Hormones are chemicals produced by the endocrine system; hormones regulate many body functions. **1.2i:** The male and female reproductive systems are responsible for producing sex cells necessary for the production of offspring. **4.1c:** Methods of sexual reproduction depend upon the species. All methods involve the merging of sex cells to begin the development of a new individual. In many species, including plants and humans, eggs and sperm are produced. **4.1d:** Fertilization and/or development in organisms may be internal or external. **4.2a:** The male sex cell is the sperm. The female sex cell is the egg. The fertilization of an egg by a sperm results in a fertilized egg. **4.3a:** Multicellular organisms exhibit complex changes in development, which begin after fertilization. The fertilized egg undergoes numerous cellular divisions that will result in a multicellular organism, with each cell having identical genetic information. **4.3b:** In humans, the fertilized egg grows into tissue which develops into organs and organ systems before birth. **4.3c:** Various body structures and functions change as an organism goes through its life cycle. **4.3f:** As an individual organism ages, various body structures and functions change. **4.4c:** Another type of cell division accounts for the production of egg and sperm cells in sexually reproducing organisms. The eggs and sperm resulting from this type of cell division contain one-half of the hereditary information.

<b>WEEK 7</b>			<p><b>Section 1: The Endocrine System, pp. 158–164</b></p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Define how hormones function.</li> <li>• Identify different endocrine glands and the effects of the hormones they produce.</li> <li>• Describe how a feedback system works in your body.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>LE 1.2h:</b> The nervous and endocrine systems interact to control and coordinate the body’s responses to changes in the environment, and to regulate growth, development, and reproduction. Hormones are chemicals produced by the endocrine system; hormones regulate many body functions. <b>Also Covered:</b> LE 1.2a</p>
			<p><b>Lesson 36 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p><b>Investigation/Activity</b></p> <p>Launch Lab: <i>Model a Chemical Message</i>, p. 159</p> <p>Transparency: <i>Living with Diabetes</i></p> <p>Teaching Transparency: <i>A Negative-Feedback System</i></p> <p>Applying Math: <i>Glucose Levels</i>, p. 161</p> <p>National Geographic Visualizing the Endocrine System, pp. 162-163</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 75-77</li> <li>– Take Home Science Notebook, pp. 61-64</li> <li>– NY Living Environment box, p. 161</li> <li>– Complete lab wrap-up questions</li> <li>– Section 1 Review, p. 164</li> <li>– Read text, pp. 165-169</li> </ul>
<b>WEEK 7</b>			<p><b>Section 2: The Reproductive System, pp. 165–169</b></p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Identify the function of the reproductive system.</li> <li>• Compare and contrast the major structures of the male and female reproductive systems.</li> <li>• Sequence the stages of the menstrual cycle.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>LE 1.2i:</b> The male and female reproductive systems are responsible for producing sex cells necessary for the production of offspring. <b>4.2a:</b> The male sex cell is the sperm. The female sex cell is the egg. The fertilization of an egg by a sperm results in a fertilized egg. <b>Also Covered:</b> LE 1.2h</p>
			<p><b>Lesson 37 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p><b>Investigation/Activity</b></p> <p>Transparency: <i>Sprint to Home</i></p> <p>MiniLAB: <i>Graphing Hormone Levels</i>, p. 168 (Lab worksheet available in the Chapter FastFile, p. 3)</p> <p><b>Suggested Time: 10-15 minutes</b></p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 78-82</li> <li>– Take Home Science Notebook, pp. 65-67</li> <li>– Complete lab wrap-up questions</li> <li>– Read text, p. 170</li> </ul>

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WEEK 7 (continued)	<b>Lesson 38 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Lab: <i>Interpreting Diagrams</i> , p. 170 (Lab worksheet available in the Chapter FastFile, pp. 5-6) Suggested Time: 1 class period	<b>Homework/Extra Practice</b> NY Living Environment box, p. 167 Complete lab wrap-up questions Section 2 Review, p. 169 Read text, p. 171-179
	<b>Section 3: Simple Machines, pp. 85-91</b> <b>Objectives</b> <ul style="list-style-type: none"> <li>Describe the fertilization of a human egg.</li> <li>List the major events in the development of an embryo and fetus.</li> <li>Describe the developmental stages of infancy, childhood, adolescence, and adulthood.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <b>LE 4.2a:</b> The male sex cell is the sperm. The female sex cell is the egg. The fertilization of an egg by a sperm results in a fertilized egg. <b>4.3a:</b> Multicellular organisms exhibit complex changes in development, which begin after fertilization. The fertilized egg undergoes numerous cellular divisions that will result in a multicellular organism, with each cell having identical genetic information. <b>Also Covered:</b> LE 4.1c, 4.1d, 4.3b, 4.3c, 4.4c
	<b>Lesson 39 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Transparency: <i>Keep on Running</i> MiniLAB: <i>Interpreting Fetal Development</i> , p. 174 (Lab worksheet available in the Chapter FastFile, p. 4) Suggested Time: 10-15 minutes Essential Question Activity: Journal, Teacher Edition, p. 183	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 83-88</li> <li>– Take Home Science Notebook, pp. 68-72</li> <li>– NY Living Environment boxes, pp. 173, 176</li> <li>– Complete lab wrap-up questions</li> <li>– Section 3 Review, p. 179</li> <li>– Read text, pp. 180-181</li> </ul>
	<b>Lesson 40 (45 min)</b> Advanced Planning/Notes to Teachers Lab setup	<b>Investigation/Activity</b> Lab: <i>Changing Body Proportions</i> , pp. 180-181 (Lab worksheet available in the Chapter FastFile, pp. 7-8) Suggested Time: 1 class period	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>– Complete lab wrap-up questions</li> <li>– Fast File: Chapter Review, pp. 35-36</li> <li>– Visit <a href="http://glencoe.com">glencoe.com</a> for                         <ul style="list-style-type: none"> <li>~ Self Check Quiz</li> <li>~ Chapter Review</li> </ul> </li> </ul>
WEEK 8	<b>Lesson 41 (45 min)</b> Advanced Planning/Notes to Teachers	<b>Investigation/Activity</b> <b>Chapter Assessment Options:</b> Intermediate-Level Science Examination Practice ExamView® Assessment Suite Chapter Review at <a href="http://glencoe.com">glencoe.com</a> For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.	<b>Homework/Extra Practice</b> Read text, <i>Adaptations over Time</i> , pp. 188-197

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**Chapter 7: Adaptations Over Time, pp. 188–217**

**Major Understandings:** **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). **2.2a:** In all organisms, genetic traits are passed on from generation to generation. **3.1b:** Changes in environmental conditions can affect the survival of individual organisms with a particular trait. 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 a species is common. Fossils are evidence that a great variety of species existed in the past. **3.2c:** Many thousands of layers of sedimentary rock provide evidence for the long history of Earth and for the long history of changing lifeforms whose remains are found in rocks. Recently deposited rock layers are more likely to contain fossils resembling existing species. **3.2d:** Although the time needed for change in a species is usually great, some species of insects and bacteria have undergone significant change in just a few years. **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. **7.2b:** The environment may be altered through the activities of organisms. Alterations are sometimes abrupt. Some species may replace others over time, resulting in long-term gradual changes (ecological succession). **PS 2.1f:** Fossils are usually found in sedimentary rocks. Fossils can be used to study past climates and environments.

<b>WEEK 8 (continued)</b>	<p><b>Section 1: Ideas About Evolution, pp. 188–198</b></p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>Describe Lamarck’s hypothesis of acquired characteristics and Darwin’s theory of natural selection.</li> <li>Identify why variations in organisms are important.</li> <li>Compare and contrast gradualism and punctuated equilibrium.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>LE 3.1b:</b> Individual organisms with certain traits are more likely to survive and have offspring than individuals without those traits. <b>3.2d:</b> Although the time needed for change in a species is usually great, some species of insects and bacteria have undergone significant change in just a few years.</p> <p><b>Also Covered:</b> LE 7.1a, 7.2b</p>
	<p><b>Lesson 42 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p><b>Investigation/Activity</b></p> <p>Launch Lab: <i>Adaptation for a Hunter</i>, p. 189</p> <p>Transparency: <i>A Family Reunion</i></p> <p>MiniLAB: <i>Relating Evolution to Species</i>, p. 195 (Lab worksheet available in the Chapter FastFile, p. 3)</p> <p>Suggested Time: 10-15 minutes</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– Reading Essentials, pp. 89-94</li> <li>– Take Home Science Notebook, pp. 73-76</li> <li>– Complete lab wrap-up questions</li> <li>– Read text, p. 198</li> </ul>
	<p><b>Lesson 43 (45 min)</b></p> <p>Advanced Planning/Notes to Teachers</p> <p>Lab setup</p>	<p><b>Investigation/Activity</b></p> <p>Lab: <i>Hidden Frogs</i>, p. 198 (Lab worksheet available in the Chapter FastFile, pp. 5-6)</p> <p>Suggested Time: 1 class period</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>– NY Living Environment boxes, pp. 191, 196</li> <li>– Complete lab wrap-up questions</li> <li>– Section 1 Review, p. 197</li> <li>– Read text, pp. 199-205</li> </ul>
<b>WEEK 8</b>	<p><b>Section 2: Clues About Evolution, pp. 199–205</b></p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>Identify the importance of fossils as evidence of evolution.</li> <li>Explain how relative and radiometric dating are used to estimate the age of fossils.</li> <li>List examples of five types of evidence for evolution.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><b>LE 3.2b:</b> Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to permit its survival. <b>PS 2.1f:</b> Fossils can be used to study past climates and environments. <b>Also Covered:</b> LE 3.2c</p>

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<b>WEEK 9 (continued)</b>	<p><b>Lesson 44 (45 min)</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> Transparency: <i>A Bird of a Different Feather</i> Virtual Lab: <i>Natural Selection</i>, Teacher Edition, p. 193 National Geographic <i>Visualizing the Geologic Time Scale</i>, p. 202</p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 95-99 – Take Home Science Notebook, pp. 77-79 – NY Living Environment boxes, pp. 200, 204 – Section 2 Review, p. 205 – Read text, pp. 206-209</p>
	<p><b>Section 3 The Evolution of Primates, pp. 206–211</b> <b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Describe the differences among living primates.</li> <li>• Identify the adaptations of primates.</li> <li>• Discuss the evolutionary history of modern primates.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b> <b>LE 3.1b</b> Changes in environmental conditions can affect the survival of individual organisms with a particular trait. Individual organisms with certain traits are more likely to survive and have offspring than individuals without those traits. <b>Also Covered:</b> LE 1.1h, 2.2a, 7.2b</p>
	<p><b>Lesson 45 (45 min)</b> Advanced Planning/Notes to Teachers  <b>Lab setup</b></p>	<p><b>Investigation/Activity</b> Transparency: <i>Will my brain evolve before lunch?</i> MiniLAB: <i>Living Without Thumbs</i>, p. 207 (Lab worksheet available in the Chapter FastFile, p. 4) <b>Suggested Time: 10-15 minutes</b></p>	<p><b>Homework/Extra Practice</b> – Reading Essentials, pp. 100-102 – Take Home Science Notebook, pp. 80-84 – Complete lab wrap-up questions – Read text, pp. 210-211</p>
	<p><b>Lesson 46 (45 min)</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> Lab: <i>Recognizing Variation in a Population</i>, pp. 210-211 (Lab worksheet available in the Chapter FastFile, pp. 7-8) <b>Suggested Time: 1 class period</b></p>	<p><b>Homework/Extra Practice</b> – Chapter Study Guide, p. 95 – Chapter Review, pp. 96-97 – Text: Intermediate-Level Science Examination Practice, pp. 98-99</p>
	<p><b>Lesson 47 (45 min)</b> <b>Chapter Review</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> Essential Question Activity: <i>Experimental Design</i>, Teacher Edition, p. 213</p>	<p><b>Homework/Extra Practice</b> – Fast File: Chapter Review, pp. 35-36 – Visit <a href="http://glencoe.com">glencoe.com</a> for ~ Self Check Quiz ~ Chapter Review</p>
	<p><b>Lesson 48 (45 min)</b> <b>Chapter Review</b> Advanced Planning/Notes to Teachers</p>	<p><b>Investigation/Activity</b> Chapter Assessment Options: Intermediate-Level Science Examination Practice <i>ExamView® Assessment Suite</i> Chapter Review at <a href="http://glencoe.com">glencoe.com</a> For additional assessment options, refer to <i>Performance Assessment in the Science Classroom</i> for rubrics and task lists.</p>	<p><b>Homework/Extra Practice</b> Read text, <i>Conserving Resources</i>, pp. 220-229</p>