

**Prentice Hall Biology (Miller/Levine) © 2006**  
**Correlated to:**  
**New Jersey Core Curriculum Content Standards for Science**  
**(by the End of Grade 12)**

NEW JERSEY CORE CURRICULUM CONTENT STANDARDS FOR SCIENCE	PAGE(S) WHERE TAUGHT (If submission is not a text, cite appropriate resource(s))
<b>STANDARD 5.1 (SCIENTIFIC PROCESSES)</b> ALL STUDENTS WILL DEVELOP PROBLEM-SOLVING, DECISION-MAKING AND INQUIRY SKILLS, REFLECTED BY FORMULATING USABLE QUESTIONS AND HYPOTHESES, PLANNING EXPERIMENTS, CONDUCTING SYSTEMATIC OBSERVATIONS, INTERPRETING AND ANALYZING DATA, DRAWING CONCLUSIONS, AND COMMUNICATING RESULTS.	
<u>Descriptive Statement:</u> Students best learn science by doing science. Science is not merely a collection of facts and theories but a process, a way of thinking about and investigating the world in which we live. This standard addresses those skills that are used by scientists as they discover and explain the physical universe - skills that are an essential and ongoing part of learning science.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Habits of Mind</b>	
1. When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.	SE/TE: 3-7 (Explain what the goal of science is.; Explain what a hypothesis is.); 8-15 (Describe how scientists test hypotheses.; Explain how a scientific theory develops.); Appendix A, 1060-1065 (Science Skills)SE: Inquiry Activity, Can your procedure be replicated?, 2; Section Assessment 1-1, 7; Biology and History, Major Discoveries, 12-13; 1-2 Section Assessment, 15; Chapter 1 Assessment, 30-33
	TE: Build Science Skills, 4; Build Science Skills, 5; Address Misconceptions, 13;
	TR: Unit Resources: Unit 1: Section Review 1-1; Reading and Study Workbook Section 1-1; Adapted Reading and Study Workbook Section 1-1; Lesson Plans Section 1-1; Biotechnology Manual Concept 1; Section Review 1-1; Section Review 1-2; Reading and Study Workbook Section 1-2; Adapted Reading and Study Workbook Section 1-2; Issues and Decision Making 2; Lesson Plans Section 1-2; Chapter Vocabulary Review, Graphic Organizer; Chapter Tests Levels A and B;

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	TECH: <a href="http://www.phschool.com">www.phschool.com</a> ; Interactive Textbook Section 1-1; Transparencies: 1-1 Interest Grabber, Section Outline, Observation and Inference; Interactive Textbook Section 1-2; Transparencies: 1-2 Interest Grabber, Section Outline, Flowchart, Figure 1-8, Figure 1-10, Figure 1-11; Interactive Textbook, Chapter 1 Assessment; Computer Test Bank Chapter 1
2. Assess the risks and benefits associated with alternative solutions.	<p>SE/TE: 3-7 (Explain what the goal of science is.; Explain what a hypothesis is.); 8-15 (Describe how scientists test hypotheses.; Explain how a scientific theory develops.); Appendix A, 1060-1065 (Science Skills)SE: Inquiry Activity, Can your procedure be replicated?, 2; Section Assessment 1-1, 7; Biology and History, Major Discoveries, 12-13; 1-2 Section Assessment, 15; Chapter 1 Assessment, 30-33</p> <p>TE: Build Science Skills, 4; Build Science Skills, 5; Address Misconceptions, 13;</p> <p>TR: Unit Resources: Unit 1: Section Review 1-1; Reading and Study Workbook Section 1-1; Adapted Reading and Study Workbook Section 1-1; Lesson Plans Section 1-1; Biotechnology Manual Concept 1; Section Review 1-1; Section Review 1-2; Reading and Study Workbook Section 1-2; Adapted Reading and Study Workbook Section 1-2; Issues and Decision Making 2; Lesson Plans Section 1-2; Chapter Vocabulary Review, Graphic Organizer; Chapter Tests Levels A and B;</p> <p>TECH: <a href="http://www.phschool.com">www.phschool.com</a>; Interactive Textbook Section 1-1; Transparencies: 1-1 Interest Grabber, Section Outline, Observation and Inference; Interactive Textbook Section 1-2; Transparencies: 1-2 Interest Grabber, Section Outline, Flowchart, Figure 1-8, Figure 1-10, Figure 1-11; Interactive Textbook, Chapter 1 Assessment; Computer Test Bank Chapter 1</p>

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<p>3. Engage in collaboration, peer review, and accurate reporting of findings.</p>	<p>SE/TE: 24-28 (Describe the measurement system most scientists use.; Explain how light microscopes and electron microscopes are similar and different.; Describe two common laboratory techniques.; Explain why it is important to work safely in biology.); Appendix A, 1064-1065 (Science Skills-Organizing Information);</p>
	<p>TE: Build Science Skills, 25SE: Analyzing Data, Bacterial Reproduction, 27; Exploration, Using a Compound Microscope, 29; 1-4 Section Assessment, 28; Chapter 1 Assessment, 30-33</p>
	<p>TR: Laboratory Manual A Chapter 1; Laboratory Manual B Chapter 1; Core Teaching Resources Section Review 1-4; Core Teaching Resources Chapter 1 Exploration; Reading and Study Workbook Section 1-4; Adapted Reading and Study Workbook Section 1-4; BioDetectives: Investigations in Forensics Investigation 1; Lesson Plans Section 1-4; Section Review 1-4; Chapter Vocabulary Review, Graphic Organizer; Chapter 1 Tests Levels A and B</p>
	<p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 1-4</a></u>; <u><a href="#">Transparencies: 1-4 Interest Grabber, Section Outline, Making a Graph From a Data Table</a></u>; <u><a href="#">Interactive Textbook Chapter 1 Assessment</a></u>; <u><a href="#">Computer Test Bank Chapter 1 Test</a></u></p>

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<p>4. Explore cases that demonstrate the interdisciplinary nature of the scientific enterprise.</p>	<p>SE/TE: Major Discoveries, 12; Success in Conservation, 154; A History of the Cell, 170; Understanding Photosynthesis, 204; Discovering the Role of DNA, 292; Origins of Evolutionary Thought, 374; The Evolution of Agriculture, 624; Insect-Borne Diseases, 730; Human-Fossil Seekers, 836; Cardiovascular Advances, 948; When Scientists Have a Conflict of Interest, 23; Does the Gray Wolf Population Need Protection, 128; Should Creatine Supplements Be Banned, 233; Do Genetically Modified Foods Need Stricter Controls, 330; Who Controls Your DNA?, 354; Should the Use of Antibiotics Be Restricted?, 403; Should Mass Vaccinations Be Required?, 484; Should Herbal Remedies Be Regulated?, 647; What Can Be Done About the Zebra Mussel?, 700; Should Marine Mammals Be Kept in Captivity?, 853; Slowing a Worldwide Epidemic, 1048; Exploring Ecology From Space, 66; Stem Cells: Promises and Problems, 253; The Search for New Species in Tropical Forests, 456; Using Technology to Design Flowers, 617; Using Nature to Produce Sunscreen, 668; Using Remote Sensing to Study Animal Behavior, 877; Making Artificial Skin, 932; Chapter 32 Section 32-3; Chapter 34 Section 34-1; Chapter 35 Section 35-3</p>

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<b>B. Inquiry and Problem Solving</b>	
1. Select and use appropriate instrumentation to design and conduct investigations.	SE/TE: Lab pages: 19; 29; 42; 54; 70; 81; 91; 113; 125; 133; 153; 161; 180; 187; 194; 206; 215; 231; 234; 242; 254; 268; 281; 303; 326; 334; 351; 361; 379; 387; 401; 411; 420; 441; 453; 462; 482; 491; 504; 521; 531; 543; 565; 573; 601; 603; 613; 627; 640; 648; 662; 676; 695; 709; 718; 739; 753; 759; 775; 790; 811; 815; 834; 842; 861; 865; 875; 883; 903; 905; 930; 937; 960; 964; 982; 990; 1022; 1025; 1041; 1055; Appendix: 1079; 1080-1083; 1084-1085LAB A: 19; 23; 27; 31; 35; 41; 45; 49; 55; 59; 65; 69; 73; 79; 85; 91; 95; 101; 107; 113; 119; 123; 131; 137; 143; 147; 153; 161; 165; 171; 177; 183; 189; 195; 201; 207; 211; 217; 225; 231; 237; 243; 249; 255; 261; 267; 273; 279LAB B: 19; 23; 27; 31; 35; 41; 45; 49; 55; 59; 63; 67; 71; 77; 81; 87; 91; 95; 101; 105; 109; 113; 119; 123; 127; 131; 137; 143; 147; 151; 157; 161; 167; 171; 175; 181; 187; 193; 201; 209; 215; 221; 227; 233; 239; 243; 247; 253
2. Show that experimental results can lead to new questions and further investigations.	SE/TE: 3-7; 8-15; Issues in Biology, Do genetically modified foods need stricter controls, 330; 331-333SE: 1-1 Section Assessment, 7; Biology and History, Major Discoveries, 12-13; 1-2 Section Assessment, 15; Chapter 1 Assessment, 30-33; 13-4 Section Assessment, 333; Chapter 13 Assessment, 336-339
	TE: Build Science Skills, 4; Build Science Skills, 5; Address Misconceptions, 13

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	<p>TR: Section Review 1-1; Reading and Study Workbook Section 1-1; Adapted Reading and Study Workbook Section 1-1; Lesson Plans Section 1-1; Biotechnology Manual Concept 1; Section Review 1-2; Enrichment Section 1-2; Reading and Study Workbook Section 1-2; Adapted Reading and Study Workbook Section 1-2; Issues and Decision Making 2; Lesson Plans Section 1-2; Chapter 1 Vocabulary Review; Graphic Organizer Chapter 1; Chapter Tests Levels A and B; Section Review 13-4; Enrichment Section 13-4; Reading and Study Workbook Section 13-4; Adapted Reading and Study Workbook Section 13-4; Issues and Decision Making 18; Biotechnology Manual Lab 17; Biotechnology Manual Issue 4; Lesson Plans 13-4; Chapter 13 Vocabulary Review; Chapter 13 Graphic Organizer; Chapter 13 Levels A and B</p> <p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 1-1</a></u>; <u><a href="#">Transparencies: 1-1 Interest Grabber, Section Outline, Observation and Inference</a></u>; <u><a href="#">Interactive Textbook Section 1-2</a></u>; <u><a href="#">Transparencies: 1-2 Interest Grabber, Section Outline, Flowchart, Figure 1-8, Figure 1-10, Figure 1-11</a></u>; <u><a href="#">Computer Test Bank Chapter 1 Test</a></u>; <u><a href="#">Interactive Textbook Chapter 1 Assessment</a></u>; <u><a href="#">Computer Test Bank Chapter 13 Test</a></u>; <u><a href="#">Interactive Textbook Section 13-4</a></u>; <u><a href="#">Transparencies: 13-4 Interest Grabber, Section Outline, Flowchart, Figure 13-13</a></u>; <u><a href="#">ABC Videotape Library 30 Gene Transfer and Cloning</a></u>; <u><a href="#">Interactive Chapter 13 Assessment</a></u></p>
<b>C. Safety</b>	
1. Understand, evaluate and practice safe procedures for conducting science investigations.	SE/TE: Appendix B, 1066-1067; Appendix D, 1070-1071; Appendix F, 1078LAB A and B; T5-T7; T18-T25; T29-T31; 7-12; 19; 23; 35; 41; 45

NEW JERSEY CORE CURRICULUM CONTENT STANDARDS FOR SCIENCE	PAGE(S) WHERE TAUGHT (If submission is not a text, cite appropriate resource(s))
<b>STANDARD 5.2 (SCIENCE AND SOCIETY)</b> ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF HOW PEOPLE OF VARIOUS CULTURES HAVE CONTRIBUTED TO THE ADVANCEMENT OF SCIENCE AND TECHNOLOGY, AND HOW MAJOR DISCOVERIES AND EVENTS HAVE ADVANCED SCIENCE AND TECHNOLOGY.	
<u>Descriptive Statement:</u> Science is a human endeavor involving successes and failures, trials and tribulations. Students should know that great numbers of people from many cultures have contributed to our understanding of science and that science has a rich and fascinating history. This standard encourages students to learn about the people and events that have shaped or revolutionized important scientific theories and concepts.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Cultural Contributions</b>	
1. Recognize the role of the scientific community in responding to changing social and political conditions and how scientific and technological achievement effect historical events.	SE/TE: 11-13; 23; 66; 95; 128; 140-143; 145-147; 154; 157-159; 169-172; Section 8-2; Section 11-1; 192; 204; 233; 287-290; 292-293; 319; Section 15-1; Section 15-2; 330; 354; 359; 374; 403; 424; 433; 484; 487; 571; Section 18-1; 624-625; 647; 691; 700; 730-731; 836-837; 853; 863; 948; 959; 1048
<b>B. Historical Perspectives</b>	
1. Examine the lives and contributions of important scientists who effected major breakthroughs in our understanding of the natural and designed world.	SE/TE: 8-13; 66; 154; 169-171; 204-206; 212; 251; 253; 263-266; 274; 279-280; 287-294; 333; 369-386; 406-407; 424; 427; 456; 478-479; 617; 624; 668; 730-731; 836; 877; 932; 948-949
2. Discuss significant technological achievements in which science has played an important part as well as technological advances that have contributed directly to the advancement of scientific knowledge.	SE/TE: 12; 37; 66; 95; 154; 170-171; 192; 204; 253; 292; 359; 433; 456; 487; 571; 617; 624; 668; 691; 730; 863; 877; 932; 948; 959
3. Describe the historical origin of important scientific developments such as atomic theory, genetics, plate tectonics, etc., showing how scientific theories develop, are tested, and can be replaced or modified in light of new information and improved investigative techniques.	SE/TE: 11-13; 140-143; 145-147; 154; 157-159; 169-172; Section 8-2; Section 11-1; 204; 287-290; 292-293; 319; Section 15-1; Section 15-2; 374; 424; Section 18-1; 624-625; 730-731; 836-837; 948

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<b>STANDARD 5.3 (MATHEMATICAL APPLICATIONS)</b> ALL STUDENTS WILL INTEGRATE MATHEMATICS AS A TOOL FOR PROBLEM-SOLVING IN SCIENCE, AND AS A MEANS OF EXPRESSING AND/OR MODELING SCIENTIFIC THEORIES.	
<i>Descriptive Statement:</i> Science cannot be practiced or learned without appreciation of the role of mathematics in discovering and expressing natural laws. This standard recognizes the need for students to fully integrate mathematics skills with their learning of science.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Numerical Operations</b>	
<i>Reinforce indicators from previous grade level:</i>	
Express quantities using appropriate number formats, such as:	
· decimals.	SE/TE: Appendix C The Metric System, 1069LAB A and B: Making Metric Measurements, 27
· percents.	LAB A and B: Laboratory Skills 7, Chapter 7 Lab; Chapter 36 Lab
· scientific notation.	N/A
<b>B. Geometry and Measurement</b>	
1. When performing mathematical operations with measured quantities, express answers to reflect the degree of precision and accuracy of the input data.	SE/TE: 29; 42; 54; 167; 231; 235; 368; 411; 603; 815LAB A and B: Laboratory Skills 3; Laboratory Skills 7; Chapter 1 Lab



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<b>C. Patterns and Algebra</b>	
1. Apply mathematical models that describe physical phenomena to predict real world events.	SE/TE: 51; 79; 111; 113; 118; 123; 133; 158; 187; 213; 220; 235; 242; 255; 281; 286; 296; 299; 313; 326; 340; 351; 361; 387; 408; 438; 441; 453; 477; 482; 508; 592; 603; 606; 620; 637; 640; 662; 674; 707; 709; 724; 758; 781; 787; 791; 811; 834; 855; 865; 879; 896; 905; 913; 915; 935; 937; 964; 965; 977; 1025; 1041; 1053 LAB A: 49-54; 57; 63; 67; 71; 76-77; 82; 89; 93; 103; 116; 140; 145; 149-151; 186- 187; 191-192; 227-228; 234; 252; 263-264; 270-271; 284LAB B: 49-54; 65; 69; 75; 121; 124; 129; 136; 139; 164-165; 169; 206- 207; 224; 230; 236
<b>D. Data Analysis and Probability</b>	
1. Construct and interpret graphs of data to represent inverse and non-linear relationships, and statistical distributions.	SE/TE: 51; 79; 111; 113; 118; 123; 133; 158; 213; 220; 235; 296; 408; 438; 453; 508; 592; 603; 620; 627; 674; 707; 709; 724; 787; 834; 855; 865; 879; 913; 935; 977; 1053LAB A and B: Using Graphing Skills, 49

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<b>STANDARD 5.4 (NATURE AND PROCESS OF TECHNOLOGY)</b> ALL STUDENTS WILL UNDERSTAND THE INTERRELATIONSHIPS BETWEEN SCIENCE AND TECHNOLOGY AND DEVELOP A CONCEPTUAL UNDERSTANDING OF THE NATURE AND PROCESS OF TECHNOLOGY.	
<u>Descriptive Statement:</u> This standard has three equally important strands: (1) Developing students' understanding of the interrelationship between science and technology; (2) Introducing students to and expanding their understanding of the nature of technology; and (3) Introducing and developing students' abilities with technological design including experiences in predicting, decision making, critical thinking and ultimately, problem solving.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Science and Technology</b>	
1. Know that scientific inquiry is driven by the desire to understand the natural world and seeks to answer questions that may or may not directly influence humans, while technology is driven by the need to meet human needs and solve human problems.	SE/TE: 11-13; 23; 66; 95; 128; 140-143; 145-147; 154; 157-159; 169-172; Section 8-2; Section 11-1; 192; 204; 233; 253; 287-290; 292-293; 319; Section 15-1; Section 15-2; 330; 354; 359; 374; 403; 424; 433; 456; 484; 487; 571; Section 18-1; 617; 624-625; 647; 668; 691; 700; 730-731; 836-837; 853; 863; 877; 932; 948; 959; 1048
<b>B. Nature of Technology</b>	
1. Assess the impacts of introducing a new technology in terms of alternative solutions, costs, tradeoffs, risks, benefits and environmental impact.	SE/TE: 23; 66; 128; 233; 253; 330; 354; 403; 456; 484; 617; 647; 668; 700; 853; 877; 932; 1048
<b>C. Technological Design</b>	
1. Plan, develop, and implement a proposal to solve an authentic, technological problem.	SE/TE: 224; 271; 343; 541; 553; 750; 799

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<b>STANDARD 5.5 (CHARACTERISTICS OF LIFE)</b> ALL STUDENTS WILL GAIN AN UNDERSTANDING OF THE STRUCTURE, CHARACTERISTICS, AND BASIC NEEDS OF ORGANISMS AND WILL INVESTIGATE THE DIVERSITY OF LIFE.	
<i>Descriptive Statement:</i> The study of science must include the diversity, complexity, and interdependence of life on earth. Students should know how organisms evolve, reproduce, and adapt to their environments.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Matter, Energy and Organization in Living Systems</b>	
1. Relate the structure of molecules to their function in cellular structure and metabolism.	SE/TE: 16-22; 169-173; 174-181; 182-189; 190-193; 459-461; 497-498; 527; 551; 658-659; 810; 822; 854-856; 1000-1001; 1005SE: Quick Lab, 29; Issues in Biology, 23; Inquiry Activity, 168; Biology and History, 170-171; Quick Lab, 180; Quick Lab, 187; Analyzing Data, 188; Exploration, 194-195; Careers in Biology, 192; Section Assessment: 1-3, 7-1, 7-2, 7-3, 7-4, 39-1, Chapter 1, 7, 39 Assessment
	TE: Build Science Skills: 16, 169, 172, 175, 178, 181, 184, 189, 192, 1000-1002; 1005; Demonstration: 185, 186, 1001; Make Connections, 1005
	TR: Chapter 1, 7, 39 Vocabulary Review; Chapter 1, 7, 39 Graphic Organizer; Chapter 1, 7, 39 Tests for Levels A and B; Section Review: 1-3, 7-1, 7-2, 7-3, 7-4, 39-1; Enrichment 7-4; Reading and Study Workbook: Section 1-3, 7-1, 7-2, 7-3, 7-4, 39-1; Adapted Reading and Study Workbook: Section 1-3, 7-1, 7-2, 7-3, 7-4, 39-1; Lesson Plans: 1-3, 7-1, 7-2, 7-3, 7-4, 39-1

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	<p><u>TECH: <a href="http://www.phschool.com">www.phschool.com</a>; Interactive Textbook: Chapter 1, 7, 39 Assessment, Section 1-3, 7-1, 7-2, 7-3, 7-4, 39-1; Computer Test Bank Chapter 1, 7, 39; Transparencies: Interest Grabber: 1-3, 7-1, 7-2, 7-3, 7-4, 39-1; Transparencies: Section Outline 1-3, 7-1, 7-2, 7-3, 7-4; Transparencies: Characteristics of Living Things, Figure 1-21, Prokaryotic and Eukaryotic Cells, Venn Diagrams, Figure 7-6, Figure 7-11, Facilitated Diffusion, Figure: 7-12, 7-15, 7-19, 39-2, 39-4, 39-8, Hormone Action; Levels of Organization; ABC Videotape Library 5 Diffusion and Osmosis, 6 Passive and Active Transport, 7 Endocytosis and Exocytosis; Virtual Labs, 3, 4, 5</u></p>
<p>2. Explain how plants convert light energy to chemical energy.</p>	<p>SE/TE: 18, 68, 77, 201-203; 204-207; 208-214; 216, 232, 474, 505-506, 515, 595-598SE: 8-1, 8-2, 8-3, 23-3 Section Assessment; Chapter 8 and 23 Assessment; Inquiry Activity, 200; Biology and History, 204-205; Quick Lab, 206; Analyzing Data, 213; Design and Experiment, 215</p> <p>TE: Build Science Skills: 595, 597; Demonstration, 210</p> <p>TR: Section Review 8-1, 8-2, 8-3, 23-4; Enrichment: 8-2 and 23-4; Reading and Study Workbook Section 8-1, 8-2, 8-3. 23-4; Adapted Reading and Study Workbook Section 8-1, 8-2, 8-3, 23-4; Lesson Plans Section 8-1, 8-2, 8-3, 23-4; Chapter 8 and 23 Vocabulary Review, Chapter 8 and 23 Graphic Organizer; Chapter 8 and 23 Test A and B; Biotechnology Manual Lab 17 and Issue 4LAB A and B: Chapter 8</p>

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<p>3. Describe how plants produce substances high in energy content that become the primary source of energy for life.</p>	<p>SE/TE: 201-203; 221; 232; 971-977SE: Inquiry Activity, 200; Chapter 8 Assessment, 216-219</p> <p>TE: Build Science Skills, 232</p> <p>TR: Section Review 8-1; Reading and Study Workbook 8-1; Adapted Reading and Study Workbook 8-1; Lesson Plans 8-1; Chapter 8 Vocabulary Review; Chapter 8 Graphic Organizer; Chapter 8 Level A and B Test</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 8-1, Chapter 8 Assessment</a>; <a href="#">Transparencies: 8-1 Interest Grabber, Section 8-1 Outline; ATP, Figure 8-3; ABC Videotape Library 8; Computer Test Bank Chapter 8</a></p>
<p>4. Relate disease in humans and other organisms to infections or intrinsic failures of system.</p>	<p>SE/TE: 13; 480-481; 925; 949-950; 961-963; 988-989; 1015; 1031-1035; 1036-1042; 1043-1048SE: Inquiry Activity, 1039; Quick Lab, 1041; Real-World Lab, 1055; Issues in Biology, 1048; Analyzing Data, 1053; 40-1, 40-2, 40-3 Section Assessment; Chapter 40 Assessment, 1056-1059</p>
	<p>TE: Make Connections, 925, 961-962, 988; Demonstration, 949, 961, 1032, 1037, 1038; Biology and History, 949; Build Science Skills, 950, 962, 1015; BioInsights, 988</p>

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	TR: Section Review 40-1, 40-2, 40-3; Reading and Study Workbook 40-1, 40-2, 40-3; Adapted Reading and Study Workbook 40-1, 40-2, 40-3; Lesson Plans Section 40-1, 40-2, 40-3; Chapter 40 Vocabulary Review; Chapter 40 Graphic Organizer; Chapter 40 Test Levels A and B; Laboratory Assessment 10  TECH: <a href="http://www.phschool.com">www.phschool.com</a> ; <a href="#">Interactive Textbook Section 40-1, 40-2, 40-3</a> ; <a href="#">Interactive Textbook Chapter 40 Assessment</a> ; <a href="#">Computer Test Bank Chapter 40</a> ; <a href="#">Transparencies: 40-1 Interest Grabber, Section Outline 40-1, Koch's Postulated, Figure 40-3, 40-2 Interest Grabber, Section 40-2 Outline, Primary and Secondary Responses, Figure 40-7, Figure 40-8, Figure 40-9, Figure 40-10, 40-3 Interest Grabber, Section 40-3 Outline, Stages of HIV Infection; BioDetectives Videotapes: Influenza—Tracking a Virus, Hantavirus—A Tale of Mice and People; ABC Videotape Library 44, 45, 46</a>
<b>B. Diversity and Biological Evolution</b>	
1. Explain that through evolution the Earth's present species developed from earlier distinctly different species.	SE/TE: 20; 125; 369-372; 373-377; 378-386; 393-396; 397-402; 404-410; 417-422; 423-428; 429-434; 435-440; 452-453; 497-498; 560; 566; 660-663; 716; 772-773; 782-783; 798-799; 807; 821; 834-835; 849-853; 856; 872; SE: Inquiry, 268, 392, 416; Biology History, 374-375; Quick Lab, 379, 401, 420; Exploration, 387, 411, 441; Issues, 403; Analyzing Data, 408, 438; 15-1, 15-2, 15-3, 16-1, 16-2, 16-3 Assessment; Careers, 433; Chapter 15, 16, 17 Assessment
	TE: Demonstration, 370, 377, 382, 417, 424; Build Skills, 382, , 396, 400, 418-419

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	<p>TR: Section Review 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 17-1, 17-2, 17-3, 17-4; Enrichment 15-1, 17-1; Chpt. 15, 17 Exploration; Reading/Study Workbook 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 17-1, 17-2, 17-3, 17-4; Adapted Reading/Study Workbook 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 17-1, 17-2, 17-3, 17-4; Lesson Plans 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 17-1, 17-2, 17-3, 17-4; Chpt. 15, 16, 17 Vocab. Review; Chpt. 15, 16, 17 Graphic Organizer; Chpt. 15, 16, 17 Test A and B; Issues and Decisions 16LAB A and B: Chapter 15 and 16</p> <p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 17-1, 17-2, 17-3, 17-4</a></u>; <u><a href="#">Transparencies: 15-1 through 17-4 Interest Grabbers, Section 15-1 through 17-4 Outline, Giant Tortoises and of the Galapagos Islands, Figures 15-1 through 17-12, Movement of Earth's Crust, Concept Map 15-3 and 16-3, Generic Bell Curve for a Polygenic Trait, Genetic Drift, Compare/Contrast Table, Flowchart, Geologic Time Scale with Key Events</a></u>; <u><a href="#">Interactive Textbook Chapter 15, 16, 17 Assessment</a></u>; <u><a href="#">Computer Text Bank Chapter 15, 16, 17</a></u>; <u><a href="#">Virtual Labs 13, 14, 15</a></u>; <u><a href="#">BioDetectives Videotapes The Galapagos Islands--A Glimpse Into the Past, Mummies—Ties to the Past</a></u></p>
<p>2. Explain how the theory of natural selection accounts for extinction as well as an increase in the proportion of individuals with advantageous characteristics within a species.</p>	<p>SE/TE: 370-372; 378-386; 387-399; 402-403; 404-410; 429; 435-436; 452; ; 668; 747; 768; 772-773; 778-780; 783; 798; 800-802; 808-813; 832; 834; 850-852; 872; SE: Quick Lab, 379, 401; Exploration, 387, 411; Inquiry Activity, 392; Issues in Biology, 403; Analyzing Data, 408; 15-3, 16-1, 16-2, 16-3 Section Assessment; Chapter 15 and 16 Assessment</p>
	<p>TE: Build Science Skills, 382, 396, 400; Demonstration, 382</p>

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	<p>TR: Section Review 15-3, 16-1, 16-2, 16-3; Chapter 15 and 16 Exploration; Reading and Study Workbook Section 15-3, 16-1, 16-2, 16-3; Adapted Reading and Study Workbook Section 15-3, 16-1, 16-2, 16-3; Lesson Plans 15-3, 16-1, 16-2, 16-3; Chapter 15 and 16 Vocabulary Review; Chapter 15 and 16 Graphic Organizer; Chapter 15 and 16 Tests Level A and B; Issues and Decisions 16LAB A and B; Chapter 15 and 16 Lab</p> <p>TECH: <a href="http://www.phschool.com">www.phschool.com</a>; <a href="#">Interactive Textbook Section 15-3, 16-1, 16-2, 16-3</a>; <a href="#">Transparencies: 15-3 through 16-3 Interest Grabbers, Section 15-3 through 16-3 Outline; Concept Map 15-3 and 16-3; Figure 15-14, Figure 15-15, Generic Bell Curve for a Polygenic Trait, Figure 16-2, Figure 16-3, Genetic Drift, Figure 16-6, Figure 16-7, Figure 16-8</a>; <a href="#">Interactive Textbook Chapter 15 and 16 Assessment; Computer Test Bank Chapter 15 and 16; Virtual Lab 13, 14, 15; BioDetectives Videotapes The Galapagos Islands—A Glimpse Into the Past</a></p>
<b>C. Reproduction and Heredity</b>	
1. Describe how information is encoded and transmitted in genetic material.	SE/TE: 263-266; 267-269; 270-274; 275-278; 279-280; 287-294; 295-299; 300-306; 341-348; 349-354; 355-360 SE: Inquiry Activity, 262, 286; Quick Lab, 268, 303; Problem Solving, 271; Exploration, 281, 313; Chapter 11 and 12 Assessment; Section Review 11-1 through 12-3; Biology and History, 292-293; Analyzing Data, 296
	TE: Build Science Skills, 263, 266, 269, 270, 274, 278, 279, 293, 297, 303; Demonstration, 265, 273, 277, 291, 295, 398, 302, 307; Make Connections, 267;



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	<p>TR: Section Review for 11-1 through 12-3; Reading/Study Workbook 11-1 through 12-3; Adapted Reading/Study Workbook 11-1 through 12-3; Lesson Plans 11-1 through 12-3; Enrichment Chapter 12; Chapter 12 Exploration; Chapter 11 and 12 Vocabulary Review; Chapter 11 and 12 Graphic Organizer; Chapter 11 and 12 Tests A and B; Biotechnology Manual Lab 2, Lab 13LABS A and B: Chapter 11 and 12</p> <p><u><a href="http://www.phschool.com">www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 11-1 through 12-3, Chapter 11 and 12 Assessment; Transparencies: 11-1 through 12-3 Interest Grabber, 11-1 through 12-3 Section Outline, Principles of Dominance, Figure 11-3 through 12-18, Tt X Tt Cross, Crossing-Over, Comparative Scale of a Gene Map, Percentage of Bases in Four Organisms, Prokaryotic Chromosome Structure; ABC Videotape Library 19, 20, 21, 25, 26; Lab Simulations CD-Rom: Mendelian Inheritance, Meiosis, DNA Structure and Replication; Computer Test Bank Chapter 11 and 12</a></u></p>
<p>2. Explain how genetic material can be altered by natural and/or artificial means; mutations and new gene combinations may have positive, negative, or no effect on organisms or species.</p>	<p>SE/TE: 319-321; 322-326; 327-329; 331-333SE: Inquiry Activity, 318; Design an Experiment, 334-335; Quick Lab, 326; Issues in Biology, 330; Section 13-1 through 13-4 Section Assessment; Chapter 13 Assessment</p> <p>TE: Demonstration, 324; Build Science Skills, 329</p> <p>TR: 13-1 through 13-4 Section Review; Chapter 13 Design and Experiment; Reading and Study Workbook Section 13-1 through 13-4; Adapted Reading and Study Workbook Section 13-1 through 13-4; Lesson Plans Section 13-1 through 13-4; Issues and Decisions 24, 18; Biotechnology Manual Issue 1 and 4, Labs 8, 9, 12, 14, 15, 17, Concepts 5 and 7; Chapter 13 Vocabulary Review; Chapter 12 Graphic Organizer</p>

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	<p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 13-1 through 13-4, Chapter 13 Assessment</a>; <a href="#">Transparencies: 13-1 to 13-4 Interest Grabber, 13-1 through 13-4 Section Outline, Restriction Enzymes, Figure 13-6 through 13-15, Knockout Genes</a>; <a href="#">Computer Test Bank Chapter 13</a>; <a href="#">ABD Videotape Library, 30 Gene Transfer and Cloning</a>; <a href="#">Virtual Lab 11</a></p>
<p>3. Assess the impact of current and emerging technologies on our understanding of inherited human characteristics.</p>	<p>SE/TE: 309-312; 318-339; 331-333; 355-360            SE: Careers in Biology, 359; Read-World Lab, 361; 14-3 Section Assessment; Chapter 14 Assessment</p> <p>TE: Demonstration, 357</p> <p>TR: Section Review 14-3; Chapter 14 Real-World Lab; Reading and Study Workbook Section 14-3; Adapted Reading and Study Workbook Section 14-3; Issues and Decisions 9, 10, 11, 12; Biotechnology Manual Labs 2, 11, 12; Biotechnology Manual Concepts 2, 3, 4, 6; Lesson Plans Section 14-3; Chapter 14 Vocabulary Review; Chapter 14 Graphic Organizer; Chapter 14 Test Level A and B; Laboratory Assessment 4</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 14-3, Chapter 14 Assessment</a>; <a href="#">Transparencies: 14-3 Interest Grabber, Section Outline 14-3, Locating Genes, Figure 14-18, Figure 14-20</a>; <a href="#">ABC Videotape Library 30</a>; <a href="#">Computer Test Bank Chapter 14</a></p>

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<b>STANDARD 5.6 (CHEMISTRY)</b> ALL STUDENTS WILL GAIN AN UNDERSTANDING OF THE STRUCTURE AND BEHAVIOR OF MATTER.	
<u>Descriptive Statement:</u> Exploring the nature of matter and energy is essential to an understanding of the physical universe. This standard leads students from their experiences with the states and properties of matter, to the development of models of the atom and the underlying principles of chemistry.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Structure and Properties of Matter</b>	
1. Know that atoms are made of a positive nucleus surrounded by negative electrons and that the nucleus, a tiny fraction of the volume of an atom, is composed of protons and neutrons, each almost 2,000 times more massive than an electron.	SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment
	TE: Build Science Skills, 35, 36
	TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1
	<a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment</a> ; <a href="#">Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3</a> ; <a href="#">BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science</a> ; <a href="#">ABC Videotape Library 1, 2, 3</a> ; <a href="#">Computer Test Bank Chapter 2</a>
2. Know that the number of protons in the nucleus defines the element.	SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment
	TE: Build Science Skills, 35, 36

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	<p>TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment</a>; <a href="#">Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3</a>; <a href="#">BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science</a>; <a href="#">ABC Videotape Library 1, 2, 3</a>; <a href="#">Computer Test Bank Chapter 2</a></p>
<p>3. Know that an atom's electron arrangement, particularly the outermost electrons, determines how the atom can interact with other atoms.</p>	<p>SE/TE: 38-39; 40; 44; 47; 49-53SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment</p> <p>TE: Demonstration, 49; Build Science Skills, 52, 53</p> <p>TR: Section Review 2-4; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4; Adapted Reading and Student Workbook Section 2-4; Lesson Plans 2-4; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 2-4, Chapter 2 Assessment</a>; <a href="#">Transparencies: 2-4 Interest Grabber, Section 2-4 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21</a>; <a href="#">ABC Videotape Library 4</a>; <a href="#">Virtual Lab 1</a>; <a href="#">Computer Test Bank Chapter 2</a></p>
<p>5. Explain that atoms form bonds (ionic and covalent) with other atoms by transferring or sharing electrons.</p>	<p>SE/TE: 38-39; 40; 44; 47; 49-53; 222-225SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment</p>

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	<p>TE: Demonstration, 49; Build Science Skills, 52, 53</p> <p>TR: Section Review 2-4; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4; Adapted Reading and Student Workbook Section 2-4; Lesson Plans 2-4; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 2-4, Chapter 2 Assessment</a>; <a href="#">Transparencies: 2-4 Interest Grabber, Section 2-4 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21</a>; <a href="#">ABC Videotape Library 4; Virtual Lab 1; Computer Test Bank Chapter 2</a></p>
<p>6. Explain how the Periodic Table of Elements reflects the relationship between the properties of elements and their atomic structure.</p>	<p>SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment</p> <p>TE: Build Science Skills, 35, 36</p> <p>TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment</a>; <a href="#">Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3</a>; <a href="#">BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science</a>; <a href="#">ABC Videotape Library 1, 2, 3</a>; <a href="#">Computer Test Bank Chapter 2</a></p>

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<p>7. Know that many biological, chemical and physical phenomena can be explained by changes in the arrangement and motion of atoms and molecules.</p>	<p>SE/TE: 21; 35-39; 40-41; 44; 185-189; 201-204; 206; 209-213; 221-229; 424; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment</p> <p>TE: Build Science Skills, 35, 36</p> <p>TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><u><a href="http://www.phschool.com">www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment; Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3; BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science; ABC Videotape Library 1, 2, 3; Computer Test Bank Chapter 2</a></u></p>
<p>8. Recognize that the properties of matter are related to the structure and arrangement of their molecules and atoms, such as in metallic and nonmetallic crystals and carbon compounds.</p>	<p>SE/TE: 35-39; 44-48; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment</p> <p>TE: Build Science Skills, 35, 36, 45</p> <p>TR: Section Review 2-1, 2-3; Reading and Study Workbook Section 2-1, 2-3; Adapted Reading and Study Workbook Section 2-1, 2-3; Lesson Plans 2-1, 2-3; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1LAB A and B; Chapter 2 Lab</p>

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9. Know that different levels of energy are associated with different arrangements of electrons.	SE/TE: 38-39; 40; 44; 47; 49-53SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment
	TE: Demonstration, 49; Build Science Skills, 52, 53
	TR: Section Review 2-4; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4; Adapted Reading and Student Workbook Section 2-4; Lesson Plans 2-4; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1
	<a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 2-4, Chapter 2 Assessment</a> ; <a href="#">Transparencies: 2-4 Interest Grabber, Section 2-4 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21</a> ; <a href="#">ABC Videotape Library 4</a> ; <a href="#">Virtual Lab 1</a> ; <a href="#">Computer Test Bank Chapter 2</a>
<b>B. Chemical Reactions</b>	
1. Explain that the rate of reactions among atoms and molecules depends on how often they encounter one another and that the rate is affected by nature of reactants, concentration, pressure, temperature, and the presence of a catalyst.	SE/TE: 38-39; 40; 44; 47; 49-53SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment

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	<p>TE: Demonstration, 49; Build Science Skills, 52, 53</p> <p>TR: Section Review 2-4; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4; Adapted Reading and Student Workbook Section 2-4; Lesson Plans 2-4; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 2-4, Chapter 2 Assessment; Transparencies: 2-4 Interest Grabber, Section 2-4 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21; ABC Videotape Library 4; Virtual Lab 1; Computer Test Bank Chapter 2</a></u></p>
<p>2. Show that some changes in chemical bonds require a net input or net release of energy.</p>	<p>SE/TE: 18; 38-39; 40; 44; 47; 49-53; 63-65; 190-192; 201-203; 204-207; 208-214; 221-225; 226-232SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment</p> <p>TE: Demonstration, 49; Build Science Skills, 52, 53</p> <p>TR: Section Review 2-4; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4; Adapted Reading and Student Workbook Section 2-4; Lesson Plans 2-4; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 2-4, Chapter 2 Assessment; Transparencies: 2-4 Interest Grabber, Section 2-4 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21; ABC Videotape Library 4; Virtual Lab 1; Computer Test Bank Chapter 2</a></u></p>



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<b>STANDARD 5.7 (PHYSICS)</b> ALL STUDENTS WILL GAIN AN UNDERSTANDING OF NATURAL LAWS AS THEY APPLY TO MOTION, FORCES, AND ENERGY TRANSFORMATIONS.	
<i>Descriptive Statement:</i> Basic principles of physics emerge in this standard, where the study of force and motion leads students to the concept of energy. All forms of energy are introduced and investigated, and principles of transformation and laws of conservation are developed.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Motion and Forces</b>	
1. Apply the mathematical relationship between the mass of an object, the net force exerted on it, and the resulting acceleration.	SE/TE: 36; 38-39; 87-89; 182-189; 897-900
2. Explain that whenever one object exerts a force on another, an equal and opposite force is exerted on the first object.	SE/TE: 41
3. Recognize gravity as a universal force of attraction between masses and that the force is proportional to the masses and inversely proportional to the square of the distance between them.	SE/TE: 38-39; 40-41
4. Recognize that electrically charged bodies can attract or repel each other with a force that depends upon the size and nature of the charges and the distance between them and know that electric forces play an important role in explaining the structure and properties of matter.	SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment
	TE: Build Science Skills, 35, 36
	TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1

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	<a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment</a> ; <a href="#">Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3</a> ; <a href="#">BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science</a> ; <a href="#">ABC Videotape Library 1, 2, 3</a> ; <a href="#">Computer Test Bank Chapter 2</a>
<p>5. Know that there are strong forces that hold the nucleus of an atom together and that significant amounts of energy can be released in nuclear reactions (fission, fusion, and nuclear decay) when these binding forces are disrupted.</p>	<p>SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment</p> <p>TE: Build Science Skills, 35, 36</p> <p>TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 2-1, Chapter 2 Assessment</a>; <a href="#">Transparencies: 2-1 Interest Grabber, Section 2-1 Outline, An Element in the Periodic Table, Figure 2-2, Figure 2-3</a>; <a href="#">BioDetectives Videotapes History's Mystery—An Introduction to Forensic Science</a>; <a href="#">ABC Videotape Library 1, 2, 3</a>; <a href="#">Computer Test Bank Chapter 2</a></p>
<p>6. Explain how electromagnetic, gravitational, and nuclear forces can be used to produce energy by causing chemical, physical, or nuclear changes and relate the amount of energy produced to the nature and relative strength of the force.</p>	<p>SE/TE: 35-39; 44; Appendix G, 1086SE: Inquiry Activity, 34; Careers in Biology, 37; Section 2-1 Assessment; Chapter 2 Assessment</p> <p>TE: Build Science Skills, 35, 36</p> <p>TR: Section Review 2-1; Reading and Study Workbook Section 2-1; Adapted Reading and Study Workbook Section 2-1; Lesson Plans 2-1; Chapter 2 Vocabulary Review; Chapter 2 Graphic Organizer; Chapter 2 Test Level A and B; Laboratory Assessment 1</p>

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7. Demonstrate that moving electric charges can produce magnetic forces and moving magnets can produce electric forces	SE/TE: 38-39; 40-41
8. Recognize that magnetic and electrical forces are different aspects of a single electromagnetic force.	SE/TE: 38-39; 40-41
<b>B. Energy Transformations</b>	
1. Explain how the various forms of energy (heat, electricity, sound, light) move through materials and identify the factors that affect that movement.	SE/TE: 38-39; 40; 44; 47; 49-53; 67-73SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment; Quick Lab, 70
	TE: Demonstration, 49; Build Science Skills, 52, 53, 67, 71
	TR: Section Review 2-4, 3-2; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4, 3-2; Adapted Reading and Student Workbook Section 2-4, 3-2; Lesson Plans 2-4, 3-2; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 and 3Vocabulary Review; Chapter 2 and 3 Graphic Organizer; Chapter 2 and 3 Tests Level A and B; Laboratory Assessment 1
	<a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 2-4, 3-2, Chapter 2 and 3 Assessment</a> ; <a href="#">Transparencies: 2-4 and 3-2 Interest Grabber, Section 2-4 and 3-2 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21, Ecological Pyramids, Figure 3-8</a> ; <a href="#">ABC Videotape Library 4</a> ; <a href="#">Virtual Lab 1</a> ; <a href="#">Computer Test Bank Chapter 2 and 3</a>

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2. Explain that while energy can be transformed from one form to another, the total energy of a closed system is constant.	SE/TE: 38-39; 40; 44; 47; 49-53; 67-73 SE: Analyzing Data, 51; Design an Experiment, 54-55; 2-4 Section Assessment, 53; Chapter 2 Assessment; Quick Lab, 70 TE: Demonstration, 49; Build Science Skills, 52, 53, 67, 71 TR: Section Review 2-4, 3-2; Chapter 2 Design an Experiment; Reading and Student Workbook Section 2-4, 3-2; Adapted Reading and Student Workbook Section 2-4, 3-2; Lesson Plans 2-4, 3-2; Probeware Lab Manual Investigating the Effect of Temperature on Enzyme Activity; Chapter 2 and 3 Vocabulary Review; Chapter 2 and 3 Graphic Organizer; Chapter 2 and 3 Tests Level A and B; Laboratory Assessment 1 TECH: <a href="http://www.phschool.com">www.phschool.com</a> ; <a href="#">Interactive Textbook Section 2-4, 3-2, Chapter 2 and 3 Assessment</a> ; <a href="#">Transparencies: 2-4 and 3-2 Interest Grabber, Section 2-4 and 3-2 Outline, Effect of Enzymes, Figure 2-19, Figure 2-21, Ecological Pyramids, Figure 3-8; ABC Videotape Library 4; Virtual Lab 1; Computer Test Bank Chapter 2 and 3</a>
3. Recognize that whenever mechanical energy is transformed, some heat is dissipated and is therefore unavailable for use.	N/A
4. Explain the nature of electromagnetic radiation and compare the components of the electromagnetic spectrum from radio waves to gamma rays.	N/A

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<b>STANDARD 5.8 (EARTH SCIENCE)</b> ALL STUDENTS WILL GAIN AN UNDERSTANDING OF THE STRUCTURE, DYNAMICS, AND GEOPHYSICAL SYSTEMS OF THE EARTH.	
<u>Descriptive Statement:</u> The study of science should include a study of the planet Earth and its relationship to the rest of the universe. This standard describes what students should know about the composition of the Earth and the forces that shape it, while standard 5.9 describes what students should know about astronomy and space science.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Earth's Properties and Materials</b>	
1. Explain the interrelationship of the geosphere, hydrosphere, and the atmosphere.	SE/TE: 423; 139-143; 74-80SE: Inquiry Activity, 138; 3-3 and 6-1 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79; Real-World Lab, 81
	TE: Make Connections, 76; Build Science Skills, 78
	TR: Section Review 3-3 and 6-1; Reading and Study Workbook Section 3-3 and 6-1; Adapted Reading and Study Workbook Section 3-3 and 6-1; Issues and Decision Making 29; Lesson Plans Section 3-3 and 6-1; Chapter 3 and 6 Vocabulary Review; Chapter 3 and 6 Graphic Organizer; Chapter 3 and 6 Tests Levels A and B; Laboratory Assessment 2; Enrichment Chapter 3; Chapter 3 Exploration; Biotechnology Manual Issue 4LAB A and B; Chapter 3 Lab
	<u>TECH: <a href="http://www.phschool.com">www.phschool.com</a>; Interactive Textbook Section 3-3 and 6-1, Chapter 3 and 6 Assessment; Transparencies: 3-3 and 6-1 Interest Grabber, Section 3-3 and 6-1 Outline, The Water Cycle, Figure 3-13, Figure 3-14; BioDetectives Videotapes Pfiesteria—A Killer in the Water; Computer Test Bank Chapter 3 and 6 Test</u>

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<b>B. Atmosphere and Water</b>	
1. Describe how weather (in the short term) and climate (in the long term) involve the transfer of energy in and out of the atmosphere.	SE/TE: 75; 87-89SE: Inquiry Activity, 86; 4-1 Section Assessment; Chapter 4 Assessment
	TE: Build Science Skills, 88
	TR: Section Review 4-1; Reading and Study Workbook Section 4-1; Adapted Reading and Study Workbook Section 4-1; Biotechnology Manual Concept 8; Lesson Plan 4-1; Chapter 4 Vocabulary Review; Chapter 4 Graphic Organizer; Chapter 4 Test Level A and B
<a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 4-1, Chapter 4 Assessment</a> ; <a href="#">Transparencies: 4-1 Interest Grabber, Section 4-1 Outline, Greenhouse Effect, Figure 4-1, Figure 4-2</a> ; <a href="#">Virtual Lab The Effect of Temperature on Dissolved Oxygen</a> ; <a href="#">Computer Test Bank Chapter 4 Test</a>	
<b>C. Processes that Shape the Earth</b>	
1. Use the theory of plate tectonics to explain the relationship among earthquakes, volcanoes, mid-ocean ridges, and deep-sea trenches.	SE/TE: 15; 374-375; 383; 405; 408-409SE: Biology and History, 374-375
	TE: Make Connections, 375
2. Know that Earth is a system in which chemical elements exist in fixed amounts and move through the solid Earth, oceans, atmosphere, and living things as part of geochemical cycles.	SE/TE: 74-80; 139-143; 423SE: Inquiry Activity, 138; 3-3 and 6-1 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79; Real-World Lab, 81
	TE: Make Connections, 76; Build Science Skills, 78

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	<p>TR: Section Review 3-3 and 6-1; Reading and Study Workbook Section 3-3 and 6-1; Adapted Reading and Study Workbook Section 3-3 and 6-1; Issues and Decision Making 29; Lesson Plans Section 3-3 and 6-1; Chapter 3 and 6 Vocabulary Review; Chapter 3 and 6 Graphic Organizer; Chapter 3 and 6 Tests Levels A and B; Laboratory Assessment 2; Enrichment Chapter 3; Chapter 3 Exploration; Biotechnology Manual Issue 4LAB A and B: Chapter 3 Lab</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 3-3 and 6-1, Chapter 3 and 6 Assessment</a>; <a href="#">Transparencies: 3-3 and 6-1</a>; <a href="#">Interest Grabber, Section 3-3 and 6-1</a>; <a href="#">Outline, The Water Cycle, Figure 3-13, Figure 3-14</a>; <a href="#">BioDetectives Videotapes Pfiesteria—A Killer in the Water</a>; <a href="#">Computer Test Bank Chapter 3 and 6 Test</a></p>
<p>3. Recognize that the evolution of life on Earth has changed the composition of Earth's atmosphere through time.</p>	<p>SE/TE: 74-80; 139-143; 144-149; 157-160; 423SE: Inquiry Activity, 138; 3-3, 6-1, 6-2, and 6-4 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79, 158; Real-World Lab, 81; Design an Experiment, 161</p> <p>TE: Make Connections, 76; Build Science Skills, 78, 148; Demonstration 148</p> <p>TR: Section Review 3-3, 6-1, 6-2, and 6-4; Reading and Study Workbook Section 3-3, 6-1, 6-2, 6-4; Adapted Reading and Study Workbook Section 3-3, 6-1, 6-2, 6-4; Issues and Decision Making 29; Lesson Plans Section 3-3, 6-1, 6-2, 6-4; Chapter 3 and 6 Vocabulary Review; Chapter 3 and 6 Graphic Organizer; Chapter 3 and 6 Tests Levels A and B; Laboratory Assessment 2; Enrichment Chapter 3; Chapter 3 and 6 Exploration; Biotechnology Manual Issue 4LAB A and B: Chapter 3 and 6 Lab; Issues and Decisions 1, 3, 21, 23, 27, 31, 50; Probeware Lab Manual Observing the Effects of Acid Rain</p>

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<b>D. How We Study the Earth</b>	
Analyze the evidence produced by a variety of techniques that is used to understand changes in the Earth that have occurred over time.	
· topography	SE/TE: 94-97; 374-375
· fossils	SE/TE: 37; 370-371; 373; 382-383; 410; 417-422; 425-435; 566; 746; 821; 836-837; 849SE: Inquiry Activity, 416; Quick Lab, 420; History of Science, 420  TE: Demonstration, 417; Build Science Skills, 418-419; Section 17-1 Assessment; Chapter 17 Assessment  TR: Section Review 17-1; Enrichment 17-1; Reading and Study Workbook Section 17-1; Adapted Reading and Study Workbook 17-1; Issues and Decisions Making 14; Lesson Plans 17-1; Chapter 17 Vocabulary Review; Chapter 17 Graphic Organizer; Chapter 17 Test Level A and BLAB A and B: Chapter 17 Lab  <a href="http://www.phschool.com">TECH: www.phschool.com</a> ; <a href="#">Interactive Textbook Section 17-1, Chapter 17 Assessment; Transparencies: 17-1 Interest Grabber, Section 17-1 Outline; Compare/Contrast Table, Figure 17-2, Figure 17-5; BioDetectives Videotapes Mummies—Ties to the Past; Computer Test Bank Chapter 17</a>
· rock stratification	SE/TE: 374-375; 423
· ice cores	SE/TE: 105



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radiometric data	SE/TE: 36-37; 87-89; 418-420 SE: Quick Lab, 420 TE: Build Science Skills, 419
<b>STANDARD 5.9 (ASTRONOMY &amp; SPACE SCIENCE) ALL STUDENTS WILL GAIN AN UNDERSTANDING OF THE ORIGIN, EVOLUTION, AND STRUCTURE OF THE UNIVERSE.</b>	
<u>Descriptive Statement:</u> The study of science should include a study of the planet Earth and its relationship to the rest of the universe. This standard describes what students should know about astronomy and space science, while Standard 5.8 describes what students should know about the composition of the earth and the forces that shape it.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Earth, Moon, Sun System</b>	
Reinforce indicators from previous grade level:	
1. Investigate the Earth, moon, and sun as a system and explain how the motion of these bodies results in the phases of the moon and eclipses.	N/A
2. Explain how the regular and predictable motions of the Earth and moon produce tides.	SE/TE: 110 TE: Build Science Skills, 110
3. Explain how the tilt, rotation, and orbital pattern of the Earth relative to the sun produce seasons and weather patterns.	SE/TE: 74-75; 87-89; 98SE: Inquiry Activity, 86; 4-1 Section Assessment; Chapter 4 Assessment TE: Build Science Skills, 88 TR: Section Review 4-1; Reading and Study Workbook Section 4-1; Adapted Reading and Study Workbook Section 4-1; Biotechnology Manual Concept 8; Lesson Plan 4-1; Chapter 4 Vocabulary Review; Chapter 4 Graphic Organizer; Chapter 4 Test Level A and B

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<b>B. Solar System</b>	
1. Explain that our solar system coalesced from a nebular cloud of gas and dust left from exploding stars.	SE/TE: 386; 423-424
	TE: Build Science Skills, 424
<b>C. Stars</b>	
1. Describe the physical characteristics, stages of development, and the apparent motions of stars.	N/A
<b>D. Galaxies and Universe</b>	
1. Describe data gathering and observation technologies and explain how they are used to explore the solar system and beyond.	N/A
2. Cite evidence to describe the scientific theory of the origin of the universe and the current explanations of its evolution.	SE/TE: 386; 423-424
	TE: Build Science Skills, 424

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<b>STANDARD 5.10 (ENVIRONMENTAL STUDIES)</b> ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE ENVIRONMENT AS A SYSTEM OF INTERDEPENDENT COMPONENTS AFFECTED BY HUMAN ACTIVITY AND NATURAL PHENOMENA.	
Descriptive Statement: Creating an awareness of the need to protect, conserve and preserve natural resources is a goal of science education. This standard calls for students to develop knowledge of environmental issues, including management of natural resources, production and use of energy, waste management, and the interdependence of ecosystems.	
<b>Cumulative Progress Indicators</b>	
<i>Building upon knowledge and skills gained in preceding grades, by the end of Grade 12, students will:</i>	
<b>A. Natural Systems and Interactions</b>	
Distinguish naturally occurring process from those believed to have been modified by human interaction or activity.	
· climate change	SE/TE: 143; 148; 157-160SE: Analyzing Data, 158; Design an Experiment, 161
	TR: Section Review 6-4; Chapter 6 Exploration; Reading and Study Workbook Section 6-4; Adapted Reading and Study workbook 6-4; Issues and Decision Making 1, 3, 50; Lesson Plans 6-4; Probeware Lab Manual Observing the Effects of Acid Rain; Chapter 6 Vocabulary Review; Chapter 6 Graphic Organizer; Chapter 6 Tests for Level A and B; Laboratory Assessment 2LAB A and B; Chapter 6 Lab
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ozone production	<p>SE/TE: 157-160SE: Analyzing Data, 158; Design an Experiment, 161</p> <p>TR: Section Review 6-4; Chapter 6 Exploration; Reading and Study Workbook Section 6-4; Adapted Reading and Study workbook 6-4; Issues and Decision Making 1, 3, 50; Lesson Plans 6-4; Probeware Lab Manual Observing the Effects of Acid Rain; Chapter 6 Vocabulary Review; Chapter 6 Graphic Organizer; Chapter 6 Tests for Level A and B; Laboratory Assessment 2LAB A and B; Chapter 6 Lab</p> <p><u><a href="http://www.phschool.com">TECH: www.phschool.com</a></u>; <u><a href="#">Interactive Textbook Section 6-4, Chapter 6 Assessment; Transparencies: 6-4 Interest Grabber, Section 6-4 Outline, Sustainable Agriculture, Figure 6-22; Computer Test Bank Chapter 6</a></u></p>
erosion and deposition	<p>SE/TE: 74-80; 139-143; 144-149; 157-160; 423SE: Inquiry Activity, 138; 3-3, 6-1, 6-2, and 6-4 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79, 158; Real-World Lab, 81; Design an Experiment, 161</p> <p>TE: Make Connections, 76; Build Science Skills, 78, 148; Demonstration 148</p> <p>TR: Section Review 3-3, 6-1, 6-2, and 6-4; Reading and Study Workbook Section 3-3, 6-1, 6-2, 6-4; Adapted Reading and Study Workbook Section 3-3, 6-1, 6-2, 6-4; Issues and Decision Making 29; Lesson Plans Section 3-3, 6-1, 6-2, 6-4; Chapter 3 and 6 Vocabulary Review; Chapter 3 and 6 Graphic Organizer; Chapter 3 and 6 Tests Levels A and B; Laboratory Assessment 2; Enrichment Chapter 3; Chapter 3 and 6 Exploration; Biotechnology Manual Issue 4LAB A and B; Chapter 3 and 6 Lab; Issues and Decisions 1, 3, 21, 23, 27, 31, 50; Probeware Lab Manual Observing the Effects of Acid Rain</p>

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<p style="text-align: center;">threatened and endangered species</p>	<p>SE/TE: 128, 150-156; 157-158SE: Quick Lab, 153; Biology and History, 154-155; 6-3 Section Assessment, 156; Chapter 6 Assessment</p> <p>TE: Build Science Skills, 151, 156</p> <p>TR: Section Review 6-3; Reading and Study Workbook Section 6-3; Adapted Reading and Study Workbook Section 6-3; Issues and Decisions 22, 25, 26, 30, 32, 34, 36; Lesson Plans Section 6-3; Chapter 6 Vocabulary Review; Chapter 6 Graphic Organizer; Chapter 6 Tests Level A and B; Laboratory Assessment 2</p> <p><a href="http://www.phschool.com">TECH: www.phschool.com</a>; <a href="#">Interactive Textbook Section 6-3, Chapter 6 Assessment; Transparencies: 6-3 Interest Grabber, Section 6-3 Outline, Species Diversity, Figure 6-16; Computer Test Bank Chapter 6</a></p>
<b>B. Human Interactions and Impact</b>	
<p>1. Assess the impact of human activities on the cycling of matter and the flow of energy through ecosystems.</p>	<p>SE/TE: 74-80; 139-143; 144-149; 157-160; 423SE: Inquiry Activity, 138; 3-3, 6-1, 6-2, and 6-4 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79, 158; Real-World Lab, 81; Design an Experiment, 161</p>
	<p>TE: Make Connections, 76; Build Science Skills, 78, 148; Demonstration 148</p>

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2. Use scientific, economic, and other data to assess environmental risks and benefits associated with societal activity.	SE/TE: 74-80; 139-143; 144-149; 157-160; 423SE: Inquiry Activity, 138; 3-3, 6-1, 6-2, and 6-4 Section Assessment; Chapter 3 and 6 Assessment; Analyzing Data, 79, 158; Real-World Lab, 81; Design an Experiment, 161
	TE: Make Connections, 76; Build Science Skills, 78, 148; Demonstration 148

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