



Physical Science

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STANDARDS

PAGE REFERENCES

Core High School Nature of Science

Indicator 1: Understand the nature and origin of scientific knowledge.

Bloom's Taxonomy Level: Evaluation

9-12.N.1.1. Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.

Examples: telescope, birth control pill, penicillin, electricity

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Recognize scientific knowledge is not merely a set of static facts but is dynamic and affords the best current explanations. Examples: spontaneous generation, relativity, geologic time 	<p>Student Edition: page 7 (Chapter 1, Section 1) pages 45-46 (Chapter 2, Section 1) page 270 (Chapter 9, Section 2) pages 271-276 (Chapter 9, Section 3) pages 506-511 (Chapter 17, Section 1) pages 744-745 (Chapter 24, Section 4) <i>Science and Society</i> page 150 (Chapter 5, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and History</i> page 528 (Chapter 17, Section 3) <i>Science and History</i> page 560 (Chapter 18, Section 4)</p> <p>Teacher Wraparound Edition: A page 45 (Chapter 2, Section 1) CB page 150 (Chapter 5, Section 3) CB page 528 (Chapter 17, Section 3) HS page 560 (Chapter 18, Section 4)</p>
<ul style="list-style-type: none"> Discuss how progress in science can be affected by social issues. 	<p>Student Edition: pages 262-263 (Chapter 9, Section 1) pages 267-269 (Chapter 9, Section 2) page 276 (Chapter 9, Section 3) <i>Science and History</i> page 92 (Chapter 3, Section 3) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and Society</i> page 718 (Chapter 23, Section 3)</p> <p>Teacher Wraparound Edition: CC page 259 (Chapter 9, Section 1) A page 262 (Chapter 9, Section 1) DI page 268 (Chapter 9, Section 2) D page 276 (Chapter 9, Section 3)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Synthesis	
9-12.N.1.2. Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.	
<ul style="list-style-type: none"> Research, communicate, and support a scientific argument. 	<p>Student Edition: pages 7-8 (Chapter 1, Section 1) page 10 (Chapter 1, Section 1) page 22 (Chapter 1, Section 3) <i>Mini LAB</i> page 25 (Chapter 1, Section 3) <i>Science and History</i> page 92 (Chapter 3, Section 3) <i>LAB</i> pages 148-149 (Chapter 5, Section 3) <i>LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and History</i> page 376 (Chapter 12, Section 3) <i>LAB</i> pages 652-653 (Chapter 21, Section 4) <i>LAB</i> pages 778-779 (Chapter 25, Section 3) <i>Science Skill Handbook</i> pages 788-796 <i>Technology Skill Handbook</i> page 816</p> <p>Teacher Wraparound Edition: IL page 12 (Chapter 1, Section 1) A page 23 (Chapter 1, Section 3) QD page 24 (Chapter 1, Section 3) CU page 26 (Chapter 1, Section 3)</p>
<ul style="list-style-type: none"> Recognize and analyze alternative explanations and models. 	<p>Student Edition: page 10 (Chapter 1, Section 1) pages 358-359 (Chapter 12, Section 1) pages 509-511 (Chapter 17, Section 1) page 517 (Chapter 17, Section 3) <i>Science and History</i> page 118 (Chapter 4, Section 2) <i>Science and History</i> page 376 (Chapter 12, Section 3) <i>Accidents in Science</i> page 654 (Chapter 21, Section 4) <i>Accidents in Science</i> page 750 (Chapter 24, Section 4) <i>Science Skill Handbook</i> page 796</p> <p>Teacher Wraparound Edition: D page 8 (Chapter 1, Section 1) SJ page 11 (Chapter 1, Section 1) FYI page 358 (Chapter 12, Section 1)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Evaluate the scientific accuracy of information relevant to a specific issue (pseudo-science). 	<p>Student Edition: page 10 (Chapter 1, Section 1) <i>Science and History</i> page 118 (Chapter 4, Section 2) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Integrate History</i> page 462 (Chapter 15, Section 2) <i>Use the Internet LAB</i> pages 652-653 (Chapter 21, Section 4) <i>Science Skill Handbook</i> page 796 <i>Math Skill Handbook</i> page 823</p> <p>Teacher Wraparound Edition: CC page 10 (Chapter 1, Section 1) DI page 23 (Chapter 1, Section 3)</p>
<p>Indicator 2: Apply the skills necessary to conduct scientific investigations.</p>	
<p>Bloom's Taxonomy Level: Synthesis</p>	
<p>9-12.N.2.1. Students are able to apply science process skills to design and conduct student investigations.</p>	
<ul style="list-style-type: none"> Identify the questions and concepts to guide the development of hypotheses. 	<p>Student Edition: page 8 (Chapter 1, Section 1) <i>Design Your Own LAB</i> pages 58-69 (Chapter 2, Section 3) <i>Integrate Astronomy</i> page 76 (Chapter 3, Section 2) <i>Design Your Own LAB</i> pages 116-117 (Chapter 4, Section 2) <i>Design Your Own LAB</i> pages 214-215 (Chapter 7, Section 3) <i>Design Your Own LAB</i> pages 246-247 (Chapter 8, Section 3) <i>Design Your Own LAB</i> pages 344-345 (Chapter 11, Section 4) <i>Science Skill Handbook</i> page 791</p> <p>Teacher Wraparound Edition: FF page 8 (Chapter 1, Section 1) A page 9 (Chapter 1, Section 1) A page 18 (Chapter 1, Section 2) A page 45 (Chapter 2, Section 1) ML page 330 (Chapter 11, Section 2)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Analyze primary sources of information to guide the development of the procedure. 	<p>Student Edition: page 8 (Chapter 1, Section 1) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and Society</i> page 346 (Chapter 11, Section 4) <i>LAB</i> pages 496-497 (Chapter 16, Section 3) <i>Use the Internet LAB</i> pages 652-653 (Chapter 21, Section 4) <i>Science Skill Handbook</i> page 788</p> <p>Teacher Wraparound Edition: IL page 12 (Chapter 1, Section 1)</p>
<ul style="list-style-type: none"> Select and use appropriate instruments to extend observations and measurements. 	<p>Student Edition: pages 398-399 (Chapter 13, Section 3) pages 432-437 (Chapter 14, Section 3) <i>Science and Society</i> page 150 (Chapter 5, Section 3) <i>Science and History</i> page 248 (Chapter 8, Section 3) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and History</i> page 314 (Chapter 10, Section 3) <i>Model and Invent LAB</i> pages 438-439 (Chapter 14, Section 3) <i>Science Skill Handbook</i> pages 793-795 <i>Extra Try at Home Lab</i> page 800 (Number 1)</p> <p>Teacher Wraparound Edition: FYI page 433 (Chapter 14, Section 3) D page 434 (Chapter 14, Section 3)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Revise explanations and models based on evidence and logic. 	<p>Student Edition: page 7 (Chapter 1, Section 1) pages 8-10 (Chapter 1, Section 1) pages 261-263 (Chapter 9, Section 1) <i>Integrate Earth Science</i> pages 45-46 (Chapter 2, Section 1) <i>Integrate Astronomy</i> page 76 (Chapter 3, Section 2) <i>Science and History</i> page 92 (Chapter 3, Section 3) <i>Science and History</i> page 118 (Chapter 4, Section 2) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and History</i> page 376 (Chapter 12, Section 3) <i>Science Skill Handbook</i> page 796</p> <p>Teacher Wraparound Edition: IL page 12 (Chapter 1, Section 1) A page 45 (Chapter 2, Section 1) DI page 260 (Chapter 9, Section 1) FYI page 265 (Chapter 9, Section 2)</p>
<ul style="list-style-type: none"> Use technology and mathematic skills to enhance investigations, communicate results, and defend conclusions. Examples: computer-based data collection graphical analysis and representation use appropriate technology to display data (i.e., spreadsheets, PowerPoint, web). 	<p>Student Edition: page 11 (Chapter 1, Section 1) page 24 (Chapter 1, Section 3) page 373 (Chapter 12, Section 3) <i>Integrate Earth Science</i> page 11 (Chapter 1, Section 1) <i>Applying Math</i> page 162 (Chapter 6, Section 1) <i>Applying Math</i> page 548 (Chapter 18, Section 3) <i>Technology Skill Handbook</i> pages 813-816 <i>Math Skill Handbook</i> pages 823-831</p> <p>Teacher Wraparound Edition: D page 11 (Chapter 1, Section 1) CYD page 405 (Chapter 13, Section 4) CYD page 525 (Chapter 17, Section 3) CYD page 735 (Chapter 24, Section 2)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Application	
9-12.N.2.2. Students are able to practice safe and effective laboratory techniques.	
<ul style="list-style-type: none"> Handle hazardous materials properly. 	<p>Student Edition: <i>Design Your Own LAB</i> pages 466-467 (Chapter 15, Section 2) <i>LAB</i> pages 496-497 (Chapter 16, Section 3) <i>Mini LAB</i> page 580 (Chapter 19, Section 2) <i>LAB</i> pages 622-623 (Chapter 20, Section 3) <i>LAB</i> page 651 (Chapter 21, Section 4) <i>LAB</i> page 735 (Chapter 24, Section 2) <i>LAB</i> pages 748-749 (Chapter 24, Section 4) <i>Science Skill Handbook</i> pages 797-798</p> <p>Teacher Wraparound Edition: QD page 573 (Chapter 19, Section 1) LD page 579 (Chapter 19, Section 2) QD page 642 (Chapter 21, Section 3) LD page 732 (Chapter 24, Section 2)</p>
<ul style="list-style-type: none"> Use safety equipment correctly. 	<p>Student Edition: <i>LAB</i> page 171 (Chapter 6, Section 2) <i>LAB</i> page 405 (Chapter 13, Section 4) <i>LAB</i> page 484 (Chapter 16, Section 1) <i>LAB</i> pages 622-623 (Chapter 20, Section 3) <i>LAB</i> page 651 (Chapter 21, Section 4) <i>LAB</i> page 680 (Chapter 22, Section 3) <i>LAB</i> page 735 (Chapter 24, Section 2) <i>Science Skill Handbook</i> pages 797-799</p> <p>Teacher Wraparound Edition: <i>Teacher Handbook</i> page 19T</p>
<ul style="list-style-type: none"> Practice emergency procedure. 	<p>Student Edition: <i>Science Skill Handbook</i> page 799</p> <p>Teacher Wraparound Edition: <i>Teacher Handbook</i> page 19T</p> <p>Note: Page 19T describes posting of emergency action plans and evacuation routes. Federal, state, and local emergency regulations must be followed.</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Wear appropriate attire. 	<p>Student Edition: <i>LAB</i> page 171 (Chapter 6, Section 2) <i>LAB</i> page 405 (Chapter 13, Section 4) <i>LAB</i> page 484 (Chapter 16, Section 1) <i>LAB</i> pages 622-623 (Chapter 20, Section 3) <i>LAB</i> page 651 (Chapter 21, Section 4) <i>LAB</i> page 680 (Chapter 22, Section 3) <i>Science Skill Handbook</i> page 798</p> <p>Teacher Wraparound Edition: <i>Teacher Handbook</i> page 19T PR page 651 (Chapter 21, Section 4)</p>
<ul style="list-style-type: none"> Practice safe behaviors. 	<p>Student Edition: <i>LAB</i> page 171 (Chapter 6, Section 2) <i>Design Your Own LAB</i> pages 246-247 (Chapter 8, Section 3) <i>LAB</i> page 405 (Chapter 13, Section 4) <i>LAB</i> page 484 (Chapter 16, Section 1) <i>LAB</i> pages 622-623 (Chapter 20, Section 3) <i>LAB</i> page 651 (Chapter 21, Section 4) <i>LAB</i> page 680 (Chapter 22, Section 3) <i>LAB</i> pages 748-749 (Chapter 24, Section 4) <i>Science Skill Handbook</i> pages 797-799</p> <p>Teacher Wraparound Edition: <i>Teacher Handbook</i> page 19T PR page 651 (Chapter 21, Section 4) PR page 735 (Chapter 24, Section 2)</p>

STANDARDS	PAGE REFERENCES
Indicator 1: Describe structures and properties of, and changes in, matter	
Bloom's Taxonomy Level: Analysis	
9-12.P.1.1. Students are able to use the Periodic Table to determine the atomic structure of elements, valence number, family relationships, and regions (metals, nonmetals, and metalloids).	
<ul style="list-style-type: none"> Determine protons, neutrons, electrons, mass number, and atomic number from the Periodic Table. 	<p>Student Edition: pages 512-514 (Chapter 17, Section 2) pages 518-519 (Chapter 17, Section 3) page 521 (Chapter 17, Section 3) page 524 (Chapter 17, Section 3)</p> <p>Teacher Wraparound Edition: D page 513 (Chapter 17, Section 2) IM page 514 (Chapter 17, Section 2) CU page 515 (Chapter 17, Section 2) A page 518 (Chapter 17, Section 3) VL page 523 (Chapter 17, Section 3)</p>
<ul style="list-style-type: none"> Determine the number of valence electrons for elements in the main (s&p) blocks of the Periodic Table. 	<p>Student Edition: pages 518-519 (Chapter 17, Section 3) pages 520-522 (Chapter 17, Section 3) pages 604-606 (Chapter 20, Section 1) pages 608-612 (Chapter 20, Section 2) LAB page 607 (Chapter 20, Section 1)</p> <p>Teacher Wraparound Edition: DI page 520 (Chapter 17, Section 3) RE page 606 (Chapter 20, Section 1) IL page 611 (Chapter 20, Section 2)</p>
<ul style="list-style-type: none"> Identify the relative metallic character of an element based on its location on the Periodic Table. 	<p>Student Edition: pages 518-519 (Chapter 17, Section 3) page 523 (Chapter 17, Section 3) pages 570-576 (Chapter 19, Section 1) LAB page 583 (Chapter 19, Section 2)</p> <p>Teacher Wraparound Edition: FYI page 518 (Chapter 17, Section 3) FF page 523 (Chapter 17, Section 3)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Comprehension	
9-12.P.1.2. Students are able to describe ways that atoms combine.	
<ul style="list-style-type: none"> Name and write formulas for binary ionic and covalent compounds. Example: sodium chloride (NaCl), carbon dioxide (CO₂) 	<p>Student Edition: pages 602-603 (Chapter 20, Section 1) pages 617-621 (Chapter 20, Section 3) <i>Applying Math</i> page 617 (Chapter 20, Section 3) <i>Applying Science</i> page 618 (Chapter 20, Section 3)</p> <p>Teacher Wraparound Edition: TPK page 615 (Chapter 20, Section 3) IM page 616 (Chapter 20, Section 3) IES page 617 (Chapter 20, Section 3) A page 618 (Chapter 20, Section 3) VL page 618 (Chapter 20, Section 3) D page 619 (Chapter 20, Section 3) CU page 621 (Chapter 20, Section 3)</p>
<ul style="list-style-type: none"> Compare the roles of electrons in covalent, ionic, and metallic bonding. 	<p>Student Edition: pages 570-571 (Chapter 19, Section 1) pages 602-606 (Chapter 20, Section 1) pages 608-614 (Chapter 20, Section 2) <i>LAB</i> page 607 (Chapter 20, Section 1)</p> <p>Teacher Wraparound Edition: VL page 571 (Chapter 19, Section 1) FYI page 603 (Chapter 20, Section 1) VL page 609 (Chapter 20, Section 2) D page 610 (Chapter 20, Section 2) A page 611 (Chapter 20, Section 2)</p>
<ul style="list-style-type: none"> Discuss the special nature of carbon covalent bonds. 	<p>Student Edition: page 585 (Chapter 19, Section 3) pages 726-730 (Chapter 24, Section 1) pages 731-734 (Chapter 24, Section 2) pages 739-741 (Chapter 24, Section 3) <i>National Geographic</i> page 738 (Chapter 24, Section 3)</p> <p>Teacher Wraparound Edition: FYI page 585 (Chapter 19, Section 3) VL page 727 (Chapter 24, Section 1) SJ page 729 (Chapter 24, Section 1) VL page 733 (Chapter 24, Section 2) R page 734 (Chapter 24, Section 2) SJ page 740 (Chapter 24, Section 3)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Application	
9-12.P.1.3. Students are able to predict whether reactions will speed up or slow down as conditions change.	
<p>Examples: temperature, concentration, surface area, and catalysts</p>	<p>Student Edition: page 650 (Chapter 21, Section 4) <i>LAB</i> page 651 (Chapter 21, Section 4)</p> <p>Also see Glencoe's <i>Chemistry: Matter and Change</i> © 2005.</p>
Bloom's Taxonomy Level: Application	
9-12.P.1.4. Students are able to balance chemical equations by applying the Law of Conservation of Matter.	
<ul style="list-style-type: none"> Trace number of particles in diagrams and pictures of balanced equations. Example: Write out an equation with symbols: $Mg + 2HCl \rightarrow MgCl_2 + 2H_2$ 	<p>Student Edition: pages 635-636 (Chapter 21, Section 1) pages 638-640 (Chapter 21, Section 2) page 700 (Chapter 23, Section 1) pages 707-708 (Chapter 23, Section 3) <i>Mini LAB</i> page 636 (Chapter 21, Section 1) <i>LAB</i> pages 748-749 (Chapter 24, Section 4)</p> <p>Teacher Wraparound Edition: FF page 635 (Chapter 21, Section 1) R page 637 (Chapter 21, Section 1) D page 639 (Chapter 21, Section 2) DI page 639 (Chapter 21, Section 2) R page 640 (Chapter 21, Section 2)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Comprehension	
9-12.P.1.5. Students are able to distinguish among chemical, physical, and nuclear changes.	
<ul style="list-style-type: none"> Differentiate between physical and chemical properties used to describe matter. 	<p>Student Edition: pages 458-459 (Chapter 15, Section 2) pages 460-464 (Chapter 15, Section 2) page 465 (Chapter 15, Section 2) pages 477-479 (Chapter 16, Section 1) pages 490-495 (Chapter 16, Section 3) pages 516-524 (Chapter 17, Section 3) page 570 (Chapter 19, Section 1) page 578 (Chapter 19, Section 2) page 584 (Chapter 19, Section 3) pages 604-606 (Chapter 20, Section 1) <i>Integrate Environment</i> page 459 (Chapter 15, Section 2) <i>Launch Lab</i> page 569 (Chapter 19, Section 1) <i>LAB</i> page 583 (Chapter 19, Section 2)</p> <p>Teacher Wraparound Edition: TPK page 458 (Chapter 15, Section 2) LD page 460 (Chapter 15, Section 2) A page 461 (Chapter 15, Section 2) QD page 463 (Chapter 15, Section 2)</p>
<ul style="list-style-type: none"> Identify key indicators of chemical and physical changes. 	<p>Student Edition: pages 460-464 (Chapter 15, Section 2) pages 476-481 (Chapter 16, Section 1) pages 641-645 (Chapter 21, Section 3) pages 646-649 (Chapter 21, Section 4) <i>Mini LAB</i> page 460 (Chapter 15, Section 2) <i>LAB</i> pages 466-467 (Chapter 15, Section 2) <i>LAB</i> page 651 (Chapter 21, Section 4)</p> <p>Teacher Wraparound Edition: IES page 462 (Chapter 15, Section 2) QD page 463 (Chapter 15, Section 2) QD page 464 (Chapter 15, Section 2) QD page 642 (Chapter 21, Section 3) LD page 648 (Chapter 21, Section 4)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Describe the effects of changing pressure, volume, or temperature upon gases. 	<p>Student Edition: page 481 (Chapter 16, Section 1) pages 490-495 (Chapter 16, Section 3) <i>Launch Lab</i> page 475 (Chapter 16, Section 1) <i>Mini LAB</i> page 494 (Chapter 16, Section 3)</p> <p>Teacher Wraparound Edition: QD page 492 (Chapter 16, Section 3) R page 495 (Chapter 16, Section 3)</p>
<ul style="list-style-type: none"> Identify characteristics of a solution and factors that affect the rate of solution formation. 	<p>Student Edition: pages 664-665 (Chapter 22, Section 1) pages 668-670 (Chapter 22, Section 1) pages 673-675 (Chapter 22, Section 2) pages 676-679 (Chapter 22, Section 3) pages 681-685 (Chapter 22, Section 4) <i>Launch Lab</i> page 663 (Chapter 22, Section 1) <i>National Geographic</i> page 666 (Chapter 22, Section 1) <i>LAB</i> page 680 (Chapter 22, Section 3) <i>LAB</i> pages 686-687 (Chapter 22, Section 4)</p> <p>Teacher Wraparound Edition: SJ page 665 (Chapter 22, Section 1) D page 668 (Chapter 22, Section 1) R page 670 (Chapter 22, Section 1) FYI page 673 (Chapter 22, Section 2) SJ page 674 (Chapter 22, Section 2) VL page 677 (Chapter 22, Section 3)</p>
<ul style="list-style-type: none"> Explain the differences among nuclear, chemical, and physical changes at the atomic level. Examples: solute, solvent, concentrated, dilute, saturated, unsaturated, supersaturated Factors affecting rate: agitation, heating, particle size, pictures of particles 	<p>Student Edition: pages 460-464 (Chapter 15, Section 2) pages 476-481 (Chapter 16, Section 1) pages 538-540 (Chapter 18, Section 1) pages 541-545 (Chapter 18, Section 2) pages 551-552 (Chapter 18, Section 4) pages 641-645 (Chapter 21, Section 3) <i>Mini LAB</i> page 460 (Chapter 15, Section 2) <i>LAB</i> pages 466-467 (Chapter 15, Section 2)</p> <p>Teacher Wraparound Edition: IES page 462 (Chapter 15, Section 2) QD page 464 (Chapter 15, Section 2) FF page 544 (Chapter 18, Section 2) LD page 648 (Chapter 21, Section 4)</p>

STANDARDS	PAGE REFERENCES
<p>Indicator 2: Analyze forces, their forms, and their effects on motions.</p>	
<p>Bloom's Taxonomy Level: Analysis</p>	
<p>9-12.P.2.1. Students are able to apply concepts of distance and time to the quantitative relationships of motion using appropriate mathematical formulas, equations, and units.</p>	
<ul style="list-style-type: none"> Evaluate speed, velocity, and acceleration both qualitatively and quantitatively. Examples: Identify the sign (+, -, 0) of an object's acceleration based on velocity information. Predict whether an object speeds up, slows down, or maintains a constant speed based on the forces acting upon it. Calculate acceleration using the equation $A_{avg} = \Delta V / \Delta t$. 	<p>Student Edition: pages 40-42 (Chapter 2, Section 1) pages 47-51 (Chapter 2, Section 2) pages 68-70 (Chapter 3, Section 1) pages 73-74 (Chapter 3, Section 1) pages 77-78 (Chapter 3, Section 2) <i>Mini LAB</i> page 42 (Chapter 2, Section 1) <i>LAB</i> page 57 (Chapter 2, Section 3) <i>Design Your Own LAB</i> pages 58-59 (Chapter 2, Section 3)</p> <p>Teacher Wraparound Edition: D page 41 (Chapter 2, Section 1) DI page 42 (Chapter 2, Section 1) VL page 43 (Chapter 2, Section 1) D page 48 (Chapter 2, Section 2) CU page 51 (Chapter 2, Section 2) SJ page 73 (Chapter 3, Section 2) D page 74 (Chapter 3, Section 1) FYI page 78 (Chapter 3, Section 2)</p>
<ul style="list-style-type: none"> Given distance and time, calculate the velocity or speed of an object. 	<p>Student Edition: pages 39-42 (Chapter 2, Section 1) page 44 (Chapter 2, Section 1) <i>Integrate Earth Science</i> pages 45-46 (Chapter 2, Section 1) <i>Design Your Own LAB</i> pages 58-59 (Chapter 2, Section 3)</p> <p>Teacher Wraparound Edition: DI page 42 (Chapter 2, Section 1) VL page 43 (Chapter 2, Section 1) D page 44 (Chapter 2, Section 1) FYI page 45 (Chapter 2, Section 1)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Create and interpret graphs of linear motion. Example: Given a velocity-time or a distance-time graph with different slopes, determine the motion of an object. 	<p>Student Edition: pages 42-43 (Chapter 2, Section 1) page 50 (Chapter 2, Section 2) <i>National Geographic</i> page 49 (Chapter 2, Section 2) <i>Design Your Own LAB</i> pages 58-59 (Chapter 2, Section 3)</p> <p>Teacher Wraparound Edition: VL page 43 (Chapter 2, Section 1) LD page 50 (Chapter 2, Section 2)</p>
<ul style="list-style-type: none"> Distinguish between velocity and acceleration as related to force. 	<p>Student Edition: pages 47-50 (Chapter 2, Section 2) pages 52-53 (Chapter 2, Section 3) pages 68-70 (Chapter 3, Section 1) <i>LAB</i> page 57 (Chapter 2, Section 3) <i>Design Your Own LAB</i> pages 58-59 (Chapter 2, Section 3)</p> <p>Teacher Wraparound Edition: D page 48 (Chapter 2, Section 2) TPK page 52 (Chapter 2, Section 3)</p>
<p>Bloom's Taxonomy Level: Application</p>	
<p>9-12.P.2.2. Students are able to predict motion of an object using Newton's Laws.</p>	
<ul style="list-style-type: none"> Describe how inertia is related to Newton's First Law. 	<p>Student Edition: pages 54-56 (Chapter 2, Section 3) pages 86-88 (Chapter 3, Section 3) <i>Mini LAB</i> page 54 (Chapter 2, Section 3) <i>LAB</i> page 57 (Chapter 2, Section 3) <i>LAB</i> pages 90-91 (Chapter 3, Section 3)</p> <p>Teacher Wraparound Edition: MM page 54 (Chapter 2, Section 3) A page 55 (Chapter 2, Section 3) FF page 55 (Chapter 2, Section 3) FYI page 86 (Chapter 3, Section 3)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Explain the effect of balanced and unbalanced forces. 	<p>Student Edition: pages 52-53 (Chapter 2, Section 3) pages 54-56 (Chapter 2, Section 3) pages 68-70 (Chapter 2, Section 3) page 74 (Chapter 3, Section 1) <i>LAB</i> page 57 (Chapter 3, Section 1)</p> <p>Teacher Wraparound Edition: IM page 53 (Chapter 2, Section 3) MM page 54 (Chapter 2, Section 3)</p>
<ul style="list-style-type: none"> Identify the forces at work on action/reaction pairs as distinguished from balanced forces. Examples: Draw a linear force diagram for the forces acting on an object in contact with another. Identify action/reaction pairs. 	<p>Student Edition: page 53 (Chapter 2, Section 3) pages 83-84 (Chapter 3, Section 3) <i>National Geographic</i> page 85 (Chapter 3, Section 3)</p> <p>Teacher Wraparound Edition: SJ page 84 (Chapter 3, Section 3) FF page 85 (Chapter 3, Section 3) CU page 88 (Chapter 3, Section 3)</p>
<ul style="list-style-type: none"> Explain how force, mass, and acceleration are related. 	<p>Student Edition: pages 68-70 (Chapter 3, Section 1) pages 73-74 (Chapter 3, Section 1) pages 77-78 (Chapter 3, Section 2) pages 81-82 (Chapter 3, Section 2)</p> <p>Teacher Wraparound Edition: QD page 69 (Chapter 3, Section 1) SJ page 73 (Chapter 3, Section 1) D page 74 (Chapter 3, Section 1) FYI page 78 (Chapter 3, Section 2)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Application	
9-12.P.2.3. Students are able to relate concepts of force, distance, and time to the quantitative relationships of work, energy, and power.	
<ul style="list-style-type: none"> Apply appropriate mathematical formulas and equations to concepts using appropriate units. Examples: Calculate power given force, distance and time. Calculate work done on an object given force and distance. 	<p>Student Edition: pages 102-105 (Chapter 4, Section 1) page 128 (Chapter 5, Section 1) pages 130-131 (Chapter 5, Section 1) pages 134-137 (Chapter 5, Section 2) <i>Applying Math</i> page 102 (Chapter 4, Section 1) <i>LAB</i> page 106 (Chapter 4, Section 1) <i>Applying Math</i> page 128 (Chapter 5, Section 1) <i>Mini LAB</i> page 129 (Chapter 5, Section 1) <i>Applying Math</i> page 130 (Chapter 5, Section 1) <i>Model and Invent LAB</i> pages 148-149 (Chapter 5, Section 3)</p> <p>Teacher Wraparound Edition: DI page 127 (Chapter 5, Section 1) A page 128 (Chapter 3, Section 1) D page 128 (Chapter 3, Section 1) CC page 130 (Chapter 3, Section 1) CU page 131 (Chapter 3, Section 1)</p>

STANDARDS	PAGE REFERENCES
<p>Indicator 3: Analyze interactions of energy and matter.</p>	
<p>Bloom's Taxonomy Level: Application</p>	
<p>9-12.P.3.1. Students are able to describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy.</p>	
<ul style="list-style-type: none"> Describe how energy can be transferred and transformed to produce useful work. Examples: Diagram simple energy transfers, describing the objects and the forms of energy gained and lost. Use simple machines as an example of the transmission of energy. 	<p>Student Edition: pages 102-105 (Chapter 4, Section 1) pages 107-112 (Chapter 4, Section 2) pages 126-129 (Chapter 5, Section 1) page 131 (Chapter 5, Section 1) pages 134-136 (Chapter 5, Section 2) page 141 (Chapter 5, Section 3) pages 176-177 (Chapter 6, Section 3) <i>LAB</i> page 106 (Chapter 4, Section 1) <i>Model and Invent LAB</i> pages 148-149 (Chapter 5, Section 3)</p> <p>Teacher Wraparound Edition: VL page 103 (Chapter 4, Section 1) QD page 104 (Chapter 4, Section 1) VL page 108 (Chapter 4, Section 2) A page 133 (Chapter 5, Section 1) IM page 135 (Chapter 5, Section 2) QD page 135 (Chapter 5, Section 2) A page 141 (Chapter 5, Section 3)</p>
<ul style="list-style-type: none"> Given the formulas, calculate the mechanical advantage and efficiency of selected systems. 	<p>Student Edition: pages 136-137 (Chapter 5, Section 2) pages 141-145 (Chapter 5, Section 3) <i>LAB</i> page 147 (Chapter 5, Section 3) <i>Model and Invent LAB</i> pages 148-149 (Chapter 5, Section 3)</p> <p>Teacher Wraparound Edition: FYI page 136 (Chapter 5, Section 2) TPK page 138 (Chapter 5, Section 3) A page 145 (Chapter 5, Section 3) FF page 146 (Chapter 5, Section 3)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Explain methods of heat transfer. Examples: conduction, radiation, and convection 	<p>Student Edition: pages 164-167 (Chapter 6, Section 2) pages 169-170 (Chapter 6, Section 2) pages 172-174 (Chapter 6, Section 3) <i>Mini LAB</i> page 168 (Chapter 6, Section 2) <i>LAB</i> page 171 (Chapter 6, Section 2) <i>LAB</i> pages 180-181 (Chapter 6, Section 3)</p> <p>Teacher Wraparound Edition: TC page 156 (Chapter 6, Section 1) LD page 165 (Chapter 6, Section 2) CC page 167 (Chapter 6, Section 2) SJ page 168 (Chapter 6, Section 2) CU page 170 (Chapter 6, Section 2) QD page 173 (Chapter 6, Section 1)</p>
<p>Bloom's Taxonomy Level: Comprehension</p>	
<p>9-12.P.3.2. Students are able to describe how characteristics of waves are related to one another.</p>	
<ul style="list-style-type: none"> Relate wavelength, speed, and frequency ($v = \lambda f$). 	<p>Student Edition: pages 296-299 (Chapter 10, Section 2) page 330 (Chapter 11, Section 2) pages 357-359 (Chapter 12, Section 1) pages 360-365 (Chapter 12, Section 2) <i>LAB</i> page 302 (Chapter 10, Section 2) <i>LAB</i> pages 312-313 (Chapter 10, Section 3)</p> <p>Teacher Wraparound Edition: QD page 298 (Chapter 10, Section 2) CC page 299 (Chapter 10, Section 2) QD page 330 (Chapter 11, Section 2) MM page 361 (Chapter 12, Section 2)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Distinguish between transverse and longitudinal waves. Examples: Discuss changes in frequency of waves using the Doppler Effect. Compare the energy of different frequency ranges of waves with in the electromagnetic spectrum. Describe how different colors of light waves have different amounts of energy. 	<p>Student Edition: page 292 (Chapter 10, Section 1) pages 296-297 (Chapter 10, Section 2) pages 298-301 (Chapter 10, Section 2) pages 331-332 (Chapter 11, Section 2) pages 360-365 (Chapter 12, Section 2) <i>Integrate Earth Science</i> page 295 (Chapter 10, Section 1)</p> <p>Teacher Wraparound Edition: A page 292 (Chapter 10, Section 1) R page 295 (Chapter 10, Section 1) VL page 298 (Chapter 10, Section 2) QD page 331 (Chapter 11, Section 2) TC page 352 (Chapter 12, Section 1) R page 359 (Chapter 12, Section 1) D page 365 (Chapter 12, Section 2)</p>
<p>Bloom's Taxonomy Level: Application</p>	
<p>9-12.P.3.3. Students are able to describe electrical effects in terms of motion and concentrations of charged particles.</p>	
<ul style="list-style-type: none"> Relate potential difference to current. 	<p>Student Edition: pages 200-201 (Chapter 7, Section 2) pages 204-205 (Chapter 7, Section 2) pages 210-211 (Chapter 7, Section 3) <i>Integrate Chemistry</i> page 202 (Chapter 7, Section 2)</p> <p>Teacher Wraparound Edition: IM page 203 (Chapter 7, Section 2) R page 205 (Chapter 7, Section 2) SJ page 211 (Chapter 7, Section 3)</p>
<ul style="list-style-type: none"> Describe how static electricity is different from current electricity. 	<p>Student Edition: pages 192-196 (Chapter 7, Section 1) pages 198-199 (Chapter 7, Section 1) pages 200-201 (Chapter 7, Section 2) pages 204-205 (Chapter 7, Section 2) <i>National Geographic</i> page 197 (Chapter 7, Section 1)</p> <p>Teacher Wraparound Edition: TPK page 192 (Chapter 7, Section 1) SJ page 193 (Chapter 7, Section 1) USW page 196 (Chapter 7, Section 1) IM page 204 (Chapter 7, Section 2)</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Interpret and apply Ohm's Law. 	<p>Student Edition: pages 204-205 (Chapter 7, Section 2) pages 207-208 (Chapter 7, Section 3)</p> <p>Teacher Wraparound Edition: R page 205 (Chapter 7, Section 2) TPK page 207 (Chapter 7, Section 3) SJ page 211 (Chapter 7, Section 3)</p>
<ul style="list-style-type: none"> Describe electrical attractions and repulsions. 	<p>Student Edition: pages 192-194 (Chapter 7, Section 1) pages 198-199 (Chapter 7, Section 1) pages 608-610 (Chapter 20, Section 2) pages 676-677 (Chapter 22, Section 3) <i>Mini LAB</i> page 198 (Chapter 7, Section 1)</p> <p>Teacher Wraparound Edition: TPK page 192 (Chapter 7, Section 1) SJ page 193 (Chapter 7, Section 1) CU page 199 (Chapter 7, Section 1) FYI page 610 (Chapter 20, Section 2) QD page 616 (Chapter 20, Section 3)</p>
<ul style="list-style-type: none"> Describe how magnetism originates from motion of charged particles. 	<p>Student Edition: pages 231-235 (Chapter 8, Section 2) pages 243-244 (Chapter 8, Section 2) <i>National Geographic</i> page 241 (Chapter 8, Section 3) <i>Design Your Own LAB</i> pages 246-247 (Chapter 8, Section 3)</p> <p>Teacher Wraparound Edition: FYI page 232 (Chapter 8, Section 2) QD page 233 (Chapter 8, Section 2) FYI page 243 (Chapter 8, Section 3)</p>

STANDARDS	PAGE REFERENCES
Core High School Science, Technology, Environment, and Society	
Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.	
Bloom's Taxonomy Level: Application	
9-12.S.1.1. Students are able to explain ethical roles and responsibilities of scientists and scientific research.	
<p>Examples: sharing of data, accuracy of data, acknowledgement of sources, following laws, animal research, human research, managing hazardous materials and wastes</p>	<p>Student Edition: pages 267-269 (Chapter 9, Section 2) <i>Science and History</i> page 118 (Chapter 4, Section 2) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>LAB</i> pages 466-467 (Chapter 15, Section 2) <i>LAB</i> pages 496-497 (Chapter 16, Section 3) <i>Mini LAB</i> page 580 (Chapter 19, Section 2) <i>LAB</i> pages 622-623 (Chapter 20, Section 3) <i>LAB</i> page 651 (Chapter 21, Section 4) <i>Science and Society</i> page 718 (Chapter 23, Section 3) <i>Science Skill Handbook</i> page 788 <i>Science Skill Handbook</i> pages 797-799</p> <p>Teacher Wraparound Edition: A page 268 (Chapter 9, Section 2) D page 269 (Chapter 9, Section 2) QD page 573 (Chapter 19, Section 1) LD page 579 (Chapter 19, Section 2) QD page 642 (Chapter 21, Section 3) LD page 732 (Chapter 24, Section 2)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Evaluation	
9-12.S.1.2. Students are able to evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues.	
<p>Examples: cloning, stem cells, gene splicing, nuclear power, patenting new life forms, emerging diseases, AIDS, resistant forms of bacteria, biological and chemical weapons, global warming, and alternative fuels</p>	<p>Student Edition: pages 267-269 (Chapter 9, Section 2) pages 271-276 (Chapter 9, Section 3) pages 744-745 (Chapter 24, Section 4) pages 767-770 (Chapter 25, Section 2) pages 771-775 (Chapter 25, Section 3) <i>Science and History</i> page 248 (Chapter 8, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and History</i> page 314 (Chapter 10, Section 3) <i>Science and History</i> page 376 (Chapter 12, Section 3) <i>Science and History</i> page 560 (Chapter 18, Section 4) <i>Science and History</i> page 594 (Chapter 19, Section 3) <i>Accidents in Science</i> page 654 (Chapter 21, Section 4) <i>Science and Society</i> page 780 (Chapter 25, Section 3)</p> <p>Teacher Wraparound Edition: DI page 268 (Chapter 9, Section 2) D page 269 (Chapter 9, Section 2) SJ page 768 (Chapter 25, Section 2)</p>

STANDARDS	PAGE REFERENCES
<p>Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.</p>	
<p>Bloom's Taxonomy Level: Evaluation</p>	
<p>9-12.S.2.1. Students are able to describe immediate and long-term consequences of potential solutions for technological issues. Examples: environmental, communication, internet, entertainment, construction, manufacturing, power and transportation, energy sources, health technology, and biotechnology issues</p>	
<ul style="list-style-type: none"> Describe how the pertinent technological system operates. Example: waste management facility 	<p>Student Edition: pages 267-269 (Chapter 9, Section 2) pages 271-276 (Chapter 9, Section 3) pages 767-768 (Chapter 25, Section 2) pages 771-775 (Chapter 25, Section 3) <i>Science and History</i> page 248 (Chapter 8, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and History</i> page 314 (Chapter 10, Section 3) <i>Accidents in Science</i> page 654 (Chapter 21, Section 4) <i>National Geographic</i> page 769 (Chapter 25, Section 2) <i>Science and Society</i> page 780 (Chapter 25, Section 3)</p> <p>Teacher Wraparound Edition: DI page 268 (Chapter 9, Section 2) D page 269 (Chapter 9, Section 2) SJ page 768 (Chapter 25, Section 2) A page 769 (Chapter 25, Section 2)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Analysis	
9-12.S.2.2. Students are able to analyze factors that could limit technological design.	
<p>Examples: ethics, environmental impact, manufacturing processes, operation, maintenance, replacement, disposal, and liability</p>	<p>Student Edition: pages 262-263 (Chapter 9, Section 1) pages 268-269 (Chapter 9, Section 2) pages 740-741 (Chapter 24, Section 3) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Science and Society</i> page 280 (Chapter 9, Section 3) <i>Science and Society</i> page 346 (Chapter 11, Section 4) <i>Integrate Environment</i> page 364 (Chapter 12, Section 2) <i>Use the Internet LAB</i> pages 652-653 (Chapter 21, Section 4) <i>Integrate History</i> page 713 (Chapter 23, Section 3) <i>Science and Society</i> page 718 (Chapter 23, Section 3) <i>Launch Lab</i> page 757 (Chapter 25, Section 1)</p> <p>Teacher Wraparound Edition: D page 262 (Chapter 9, Section 1) FF page 274 (Chapter 9, Section 3) D page 371 (Chapter 12, Section 3) DI page 738 (Chapter 24, Section 3)</p>

STANDARDS	PAGE REFERENCES
Bloom's Taxonomy Level: Synthesis	
9-12.S.2.3. Students are able to analyze and describe the benefits, limitations, cost, and consequences involved in using, conserving, or recycling resources.	
<p>Examples: mining, agriculture, medicine, school science labs, forestry, energy, disposable diapers, computers, tires</p>	<p>Student Edition: pages 259-261 (Chapter 9, Section 1) pages 262-263 (Chapter 9, Section 1) pages 267-269 (Chapter 9, Section 2) pages 271-276 (Chapter 9, Section 3) page 577 (Chapter 19, Section 1) pages 736-737 (Chapter 24, Section 3) page 741 (Chapter 24, Section 3) <i>LAB</i> page 277 (Chapter 9, Section 3) <i>Use the Internet LAB</i> pages 278-279 (Chapter 9, Section 3) <i>Integrate Environment</i> page 364 (Chapter 12, Section 2)</p> <p>Teacher Wraparound Edition: IL page 260 (Chapter 9, Section 1) A page 262 (Chapter 9, Section 1) R page 263 (Chapter 9, Section 1) D page 273 (Chapter 9, Section 3) D page 276 (Chapter 9, Section 3) CC page 364 (Chapter 12, Section 2) DI page 581 (Chapter 19, Section 2) R page 741 (Chapter 24, Section 3)</p>