



STANDARDS	PAGE REFERENCES
<b>COMPETENCIES AND OBJECTIVES:</b>	
<b>INQUIRY</b>	
<b>1. Apply inquiry-based and problem-solving processes and skills to scientific investigations.</b>	
<p>a. Conduct a scientific investigation demonstrating safe procedures and proper care of laboratory equipment. (DOK 2)</p> <ul style="list-style-type: none"> <li>Safety rules and symbols</li> </ul>	<p><b>Student Edition:</b> 13 <i>Lab</i> 310, 665, 730-731 <i>Lab: Design Your Own</i> 28-29, 350-351, 558-559 <i>MiniLab</i> 71, 723 <i>Science Skill Handbook</i> 811-813 <b>Teacher Wraparound Edition:</b> 19T, AS 13</p>
<ul style="list-style-type: none"> <li>Proper use and care of the compound light microscope, slides, chemicals, etc.</li> </ul>	<p><b>Student Edition:</b> <i>Lab</i> 46, 86-87, 310, 522 <i>Lab: Design Your Own</i> 56-57, 558-559 <i>Reference Handbook</i> 847 <b>Teacher Wraparound Edition:</b> AS 57</p>

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<ul style="list-style-type: none"> <li>Accuracy and precision in using graduated cylinders, balances, beakers, thermometers, and rulers</li> </ul>	<p><b>Student Edition:</b>  <i>Lab 86-87</i>, 501, 530-531, 642-643, 730-731  <i>Lab: Design Your Own 174-175</i>, 418-419  <i>Math Skill Handbook 844</i>  <i>MiniLab 9</i>  <i>Science Skill Handbook 807-809</i></p> <p><b>Teacher Wraparound Edition:</b>            QD 12</p>
<p>b. Identify questions that can be answered through scientific investigations. (DOK 3)</p>	<p><b>Student Edition:</b>            7, 11  <i>Applying Science 198</i>  <i>Lab 384-385</i>, 730-731  <i>Lab: Design Your Own 28-29</i>, 174-175, 200-201, 418-419, 672-673, 702-703  <i>Science Skill Handbook 805-806</i></p> <p><b>Teacher Wraparound Edition:</b>            AIL 28, 200, 418</p>
<p>c. Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <ul style="list-style-type: none"> <li>Predicting, gathering data, drawing conclusions</li> </ul>	<p><b>Student Edition:</b>            7-10  <i>Lab 384-385</i>, 730-731  <i>Lab: Design Your Own 28-29</i>, 174-175, 200-201, 292-293, 418-419, 672-673, 702-703  <i>Science Skill Handbook 805-810</i></p> <p><b>Teacher Wraparound Edition:</b>            AIL 28, 200, 418</p>
<ul style="list-style-type: none"> <li>Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</li> </ul>	<p><b>Student Edition:</b>  <i>Lab 86-87</i>, 133, 642-643  <i>Lab: Design Your Own 174-175</i>, 702-703  <i>Lab: Model and Invent 792-793</i>  <i>Lab: Use the Internet 262-263</i>, 446-447</p> <p><b>Teacher Wraparound Edition:</b>            FOAI 202; WAI 146</p>
<ul style="list-style-type: none"> <li>Critically analyzing current investigations/problems using periodicals and scientific scenarios</li> </ul>	<p><b>Student Edition:</b>  <i>Applying Science 11</i>  <i>Oops! Accidents in Science 118</i>  <i>Science Stats 674</i>  <i>Science Skill Handbook 802</i>  <i>Time: Science and Society 232</i>, 531</p> <p><b>Teacher Wraparound Edition:</b>            AC 11; DI 118, 232</p>

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<p>d. Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p>	<p><b>Student Edition:</b>  <i>Applying Math</i> 623  <i>Lab</i> 642-643, 787  <i>Lab: Design Your Own</i> 174-175, 292-293, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Math Skill Handbook</i> 845-846  <b>Teacher Wraparound Edition:</b>            VL 674</p>
<p>e. Analyze procedures and data to draw conclusions about the validity of research. (DOK 3)</p>	<p><b>Student Edition:</b>            9-10  <i>Applying Science</i> 11  <i>Oops! Accidents in Science</i> 118  <i>Lab: Design Your Own</i> 28-29, 174-175, 292-293, 418-419, 702-703  <i>Science Skill Handbook</i> 802  <b>Teacher Wraparound Edition:</b>            AC 11; DI 118; EA 29, 175, 293, 419, 703</p>
<p>f. Formulate and revise scientific explanations and models using logic and evidence (data analysis). (DOK 3)</p>	<p><b>Student Edition:</b>            9-11  <i>Applying Science</i> 11, 439  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-202, 292-293, 418-419, 672-673, 702-703  <i>Science Skill Handbook</i> 810  <b>Teacher Wraparound Edition:</b>            TFYI 10</p>
<p>g. Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p>	<p><b>Student Edition:</b>            10  <i>Lab</i> 87, 318-319, 642-643, 730-731  <i>Lab: Design Your Own</i> 174-175, 702-703  <i>Lab: Model and Invent</i> 231  <i>Math Skills Handbook</i> 845-846  <i>Science Skill Handbook</i> 811  <b>Teacher Wraparound Edition:</b>            AIL 292; AS 319; CYD 703</p>

STANDARDS	PAGE REFERENCES
<b>PHYSICAL SCIENCE</b>	
<b>2. Investigate and summarize the chemical basis of life.</b>	
a. Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)	<b>Student Edition:</b> 66-73 <b>Teacher Wraparound Edition:</b> AC 70; DI 68; DIF 67; TFYI 69
b. Classify pH solutions (e.g., acids, bases, neutrals) and explain the importance of pH in living systems. (DOK 2)	<b>Student Edition:</b> 527, 779 <i>Integrate Chemistry</i> 499 <i>MiniLab</i> 779
c. Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)	<b>Student Edition:</b> 70-71, 77, 81, 82, 111-113 <i>Integrate Health</i> 77 <i>MiniLab</i> 71 <i>National Geographic</i> 79 <i>Section Review</i> 73 (#3)
d. Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)	<b>Student Edition:</b> 82-85 <i>Lab</i> 86-87 <b>Teacher Wraparound Edition:</b> AS 85; VL 85
<b>LIFE SCIENCE</b>	
<b>3. Investigate and explain how organisms interact with their environment.</b>	
a. Describe the criteria that must be present to distinguish between living and nonliving. (DOK 1) <ul style="list-style-type: none"> <li>• Homeostasis, adaptation, and response to stimuli</li> </ul>	<b>Student Edition:</b> 15 <b>Teacher Wraparound Edition:</b> DIF 15
<ul style="list-style-type: none"> <li>• Growth, development, reproduction, energy use</li> </ul>	<b>Student Edition:</b> 15-17 <b>Teacher Wraparound Edition:</b> TFYI 16
<ul style="list-style-type: none"> <li>• Levels of organization</li> </ul>	<b>Student Edition:</b> 14 <b>Teacher Wraparound Edition:</b> DIF 15

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<p>b. Analyze and explain the interactions among organisms for each level of biological organization. (DOK 2)</p> <ul style="list-style-type: none"> <li>Biotic and abiotic</li> </ul>	<p><b>Student Edition:</b>  685, 712-718  <i>Lab 719</i>  <i>Launch Lab 711</i>  <i>MiniLab 714</i>  <i>Section Review 718 (#1, #2)</i>  <b>Teacher Wraparound Edition:</b>  AC 713; TTPK 712</p>
<ul style="list-style-type: none"> <li>Predation, competition, symbiosis, mutualism, commensalism, parasitism, etc.</li> </ul>	<p><b>Student Edition:</b>  698, 700  <i>Chapter Review 707 (#27)</i>  <i>Section Review 700 (#1, #5)</i>  <b>Teacher Wraparound Edition:</b>  AC 698; ATP 682; DIF 698; UAA 698</p>
<ul style="list-style-type: none"> <li>Food chains, food webs, and food pyramids</li> </ul>	<p><b>Student Edition:</b>  696-697, 727-729  <i>Chapter Review 735 (#17, #23)</i>  <b>Teacher Wraparound Edition:</b>  AC 727; AS 729; CFU 729; MAM 698; VL 728</p>
<p>c. Analyze energy flow through an ecosystem by assessing the roles of carnivores, omnivores, herbivores, producers, and decomposers and determine their effects on an ecosystem. (DOK 2)</p>	<p><b>Student Edition:</b>  696-697, 726-729  <i>Lab 701, 719, 730-731</i>  <i>Section Review 729 (#1–#4)</i>  <b>Teacher Wraparound Edition:</b>  DI 727; DIF 727, 728</p>
<p>d. Predict the impact of human activities (e.g., recycling, pollution, overpopulation) on the environment. (DOK 3)</p>	<p><b>Student Edition:</b>  725, 749, 754, 772, 778-786, 788-791  <i>Lab 787</i>  <i>Launch Lab 769</i>  <i>MiniLab 772</i>  <i>National Geographic 724</i>  <i>Time: Science and Society 762</i>  <b>Teacher Wraparound Edition:</b>  DI 741; DIF 790</p>

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<b>4. Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</b>	
a. Compare and contrast cell structures, functions, and methods of reproduction to analyze the similarities and differences among cell types. (DOK 2) <ul style="list-style-type: none"> <li>• Prokaryotic/eukaryotic</li> </ul>	<b>Student Edition:</b> 39-44, 101, 104-105, 187-188 <i>Section Review</i> 191 (#3) <b>Teacher Wraparound Edition:</b> MAM 188; QD 39
<ul style="list-style-type: none"> <li>• Unicellular/multicellular</li> </ul>	<b>Student Edition:</b> 14, 45, 101-102, 187 <i>Section Review</i> 45 (#45) <b>Teacher Wraparound Edition:</b> IM 188
<ul style="list-style-type: none"> <li>• Plant/animal/bacterial/protist/fungal</li> </ul>	<b>Student Edition:</b> 39-44, 187, 210, 241 <i>Lab</i> 46 <i>Section Review</i> 45 (#5) <b>Teacher Wraparound Edition:</b> AS 45; DIF 42; QD 39; RS 45; VL 41
b. Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)	<b>Student Edition:</b> 39-44 <i>MiniLab</i> 40 <b>Teacher Wraparound Edition:</b> DIF 41; MAM 43; UAA 39, 41
c. Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)	<b>Student Edition:</b> 74-78 <i>Lab</i> 80 <i>Launch Lab</i> 65 <i>National Geographic</i> 79 <b>Teacher Wraparound Edition:</b> IL 76; TTPK 74; UAA 77; VL 79
d. Compare and contrast the processes and results of mitosis and meiosis. (DOK 2)	<b>Student Edition:</b> 98-100, 104-107 <i>Section Review</i> 109 (#5) <b>Teacher Wraparound Edition:</b> AS 109; TTPK 104

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<b>5. Analyze the roles DNA and RNA play on the mechanism of inheritance.</b>	
a. Utilize genetic terminology and principles to solve monohybrid crosses involving dominant and recessive traits. (DOK 2)	<b>Student Edition:</b> 130-131 <i>Applying Math</i> 131 <i>Chapter Review</i> 149 (#19) <i>National Geographic</i> 129 <i>Section Review</i> 132 (#6) <b>Teacher Wraparound Edition:</b> DI 130
b. Identify inheritance patterns using pedigrees and karyotypes. (DOK 2)	<b>Student Edition:</b> 137, 139-140 <i>Standardized Test Practice</i> 151 (#16) <b>Teacher Wraparound Edition:</b> VL 139
c. Explain and distinguish among the roles of DNA and RNA in replication, transcription, and translation. (DOK 1)	<b>Student Edition:</b> 112-114 <i>MiniLab</i> 111 <i>Section Review</i> 115 (#1–#7) <b>Teacher Wraparound Edition:</b> AC 113; MAM 113; QD 113; VL 113
<b>6. Apply the concept of evolution to the diversity of organisms.</b>	
a. Classify organisms into groups based on their unique characteristics (e.g., cell type, nutrition, reproductive methods, organism examples, etc.) and trace the evolutionary relationships among the groups. (DOK 2)	<b>Student Edition:</b> 22-23, 39, 245, 256-257, 334-335, 696-697, 698 <i>Lab</i> 27, 46, 280 <i>Lab: Model and Invent</i> 230 <i>Launch Lab</i> 5 <i>National Geographic</i> 244 <i>Science Online</i> 23, 334 <b>Teacher Wraparound Edition:</b> AC 334; AS 335; IL 23

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<p>b. Describe how natural selection relates to adaptation, survival, and speciation. (DOK 1)</p>	<p><b>Student Edition:</b>  155-159, 170-173  <i>Applying Science</i> 157  <i>Lab</i> 162  <i>Launch Lab</i> 153  <i>MiniLab</i> 159  <i>Science Online</i> 156</p> <p><b>Teacher Wraparound Edition:</b>  AC 156; DIF 156, 157; QD 156; VL 157</p>