



# Life Science

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STANDARDS	PAGE REFERENCES
<b>Standard A: Science Connections</b>	
<b>By the end of grade eight, students will:</b>	
<p>A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems</p>	<p><b>Student Edition:</b> 22-23, 39-45, 74-78, 126, 152, 156-159, 684-687</p> <p><b>Teacher Wraparound Edition:</b> 16T; TBI 4, 36, 64, 124, 682, 710</p> <p>Each Teacher Wraparound Edition chapter opening spread includes "The Big Idea" marginal feature that ties the larger science themes to the chapter content.</p>
<p>A.8.2 Describe limitations of science systems and give reasons why specific science themes are included in or excluded from those systems</p>	<p>The following page references can be incorporated into discussion of origins of life and evolution with regards to religious and cultural belief systems and ethical behavior.</p> <p><b>Student Edition:</b> 21, 155-157, 171-173</p>
<p>A.8.3 Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them</p>	<p><b>Student Edition:</b> 154-157, 167-169, 170-173, 658</p> <p><i>Section Review</i> 21 (#2), 169 (#4), 173 (#1)</p> <p><b>Teacher Wraparound Edition:</b> CFU 169; IM 155; MM 658; SJ 16</p>

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<p>A.8.4 Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time</p>	<p><b>Student Edition:</b>  19, 21, 47, 51, 110-111, 127, 155-157, 657-658  <i>Lab</i> 730-731  <i>National Geographic</i> 20, 129  <i>Time: Science and History</i> 560  <b>Teacher Wraparound Edition:</b>  TFYI 127</p>
<p>A.8.5 Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)</p>	<p><b>Student Edition:</b>  19, 21, 47, 51, 110-111, 127, 155-157, 657-658  <i>Lab</i> 730-731  <i>National Geographic</i> 20, 129  <i>Time: Science and History</i> 560  <b>Teacher Wraparound Edition:</b>  TFYI 127</p>
<p>A.8.6 Use models and explanations to predict actions and events in the natural world</p>	<p><b>Student Edition:</b>  <i>Applying Math</i> 131  <i>Lab</i> 80, 133, 530-531, 787  <i>Lab: Design Your Own</i> 702-703  <i>MiniLab</i> 111, 159, 579  <b>Teacher Wraparound Edition:</b>  VL 139</p>
<p>A.8.7 Design real or thought investigations to test the usefulness and limitations of a model</p>	<p>The following page references can be incorporated to meet this standard.  <b>Student Edition:</b>  <i>Applying Math</i> 131  <i>Lab</i> 80, 133, 530-531, 787  <i>Lab: Design Your Own</i> 702-703  <i>MiniLab</i> 111, 159, 579  <b>Teacher Wraparound Edition:</b>  VL 139</p>
<p>A.8.8. Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world</p>	<p><b>Student Edition:</b>  725, 740-741, 743, 780-781  <i>Lab</i> 753, 787  <i>National Geographic</i> 742  <b>Teacher Wraparound Edition:</b>  DI 674; VL 728</p>

STANDARDS	PAGE REFERENCES
<b>Standard B: Nature of Science</b>	
<p>B.8.1 Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences</p>	<p><b>Student Edition:</b> 19, 21, 22-23, 51, 110-111, 127, 154-157, 160-161, 657-658 <i>National Geographic</i> 20 <i>Section Review</i> 21 (#1), 161 (#1) <i>Time: Science and History</i> 560 <b>Teacher Wraparound Edition:</b> CB 561; CC 113; DIF 659; RE 560</p>
<p>B.8.2 Identify and describe major changes that have occurred over in conceptual models and explanations in the earth and space, life and environmental, and physical sciences and identify the people, cultures, and conditions that led to these developments</p>	<p><b>Student Edition:</b> 19, 21, 22-23, 51, 110-111, 127, 154-157, 160-161, 657-658 <i>National Geographic</i> 20 <i>Section Review</i> 161 (#1) <i>Time: Science and History</i> 560 <b>Teacher Wraparound Edition:</b> CB 561; CC 9, 113; DIF 659; RE 560</p>
<p>B.8.3 Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications</p>	<p><b>Student Edition:</b> 6-11 <i>Science Skill Handbook</i> 802-810 <i>Section Review</i> 13 (#1) <b>Teacher Wraparound Edition:</b> DIF 11; IM 10; TFYI 9, 10; TTPK 6</p>
<p>B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world</p>	<p><b>Student Edition:</b> 6-7 <b>Teacher Wraparound Edition:</b> LD 8; SJ 6; TTPK 6</p>
<p>B.8.5 Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time</p>	<p><b>Student Edition:</b> 10 <i>Science Skill Handbook</i> 810 <b>Teacher Wraparound Edition:</b> AC 11</p>
<p>B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues</p>	<p>The following page references can be incorporated to meet this standard. <b>Student Edition:</b> 788-791 <i>Oops! Accidents in Science</i> 474, 504 <i>Time: Science and Society</i> 532 <b>Teacher Wraparound Edition:</b> CC 464</p>

STANDARDS	PAGE REFERENCES
<b>Standard C: Science Inquiry</b>	
<p>C.8.1 Identify* questions they can investigate* using resources and equipment they have available</p>	<p><b>Student Edition:</b> 7 <i>Lab</i> 318-319, 384-385, 730-731 <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703 <i>Lab: Use the Internet</i> 446-447 <i>Science Skill Handbook</i> 802 <b>Teacher Wraparound Edition:</b> AIL 28, 174, 292, 418</p>
<p>C.8.2 Identify* data and locate sources of information including their own records to answer the questions being investigated</p>	<p><b>Student Edition:</b> 8 <i>Lab</i> 318-319, 384-385, 730-731 <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703 <i>Lab: Use the Internet</i> 446-447 <i>Science Skill Handbook</i> 802-805 <b>Teacher Wraparound Edition:</b> AIL 28, 174, 292, 418</p>
<p>C.8.3 Design and safely conduct investigations* that provide reliable quantitative or qualitative data, as appropriate, to answer their questions</p>	<p><b>Student Edition:</b> 8-9 <i>Lab</i> 318-319, 384-385, 730-731 <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703 <i>Lab: Use the Internet</i> 446-447 <i>Science Skill Handbook</i> 805-809 <b>Teacher Wraparound Edition:</b> AIL 28, 174, 292, 418</p>
<p>C.8.4 Use inferences* to help decide possible results of their investigations, use observations to check their inferences</p>	<p><b>Student Edition:</b> <i>Lab</i> 318-319, 384-385, 730-731 <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703 <i>Lab: Use the Internet</i> 446-447 <i>Science Skill Handbook</i> 806, 810 <b>Teacher Wraparound Edition:</b> AIL 28, 174, 292, 418; LD 8</p>

STANDARDS	PAGE REFERENCES
<p>C.8.5 Use accepted scientific knowledge, models*, and theories* to explain* their results and to raise further questions about their investigations*</p>	<p><b>Student Edition:</b>            9-11  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810  <b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
<p>C.8.6 State what they have learned from investigations*, relating their inferences* to scientific knowledge and to data they have collected</p>	<p><b>Student Edition:</b>            10  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810  <b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
<p>C.8.7 Explain* their data and conclusions in ways that allow an audience to understand the questions they selected for investigation* and the answers they have developed</p>	<p><b>Student Edition:</b>            10  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810  <b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
<p>C.8.8 Use computer software and other technologies to organize, process, and present their data</p>	<p>Can be incorporated into the following:  <b>Student Edition:</b>  <i>Lab: Design Your Own</i> 28-29, 174-175, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810  <i>Technology Skill Handbook</i> 828-831  <b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>

STANDARDS	PAGE REFERENCES
C.8.9 Evaluate*, explain*, and defend the validity of questions, hypotheses, and conclusions to their investigations*	<p><b>Student Edition:</b>  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810</p> <p><b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults	<p><b>Student Edition:</b>  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447  <i>Science Skill Handbook</i> 810</p> <p><b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
C.8.11 Raise further questions which still need to be answered	<p><b>Student Edition:</b>  <i>Lab</i> 318-319, 384-385, 730-731  <i>Lab: Design Your Own</i> 28-29, 174-175, 200-201, 292-293, 418-419, 702-703  <i>Lab: Use the Internet</i> 446-447</p> <p><b>Teacher Wraparound Edition:</b>            AIL 28, 174, 292, 418</p>
<b>F. Life and Environmental Science</b>	
<b>STRUCTURE AND FUNCTION IN LIVING THINGS</b>	
F.8.1 Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms	<p><b>Student Edition:</b>            14, 38-45, 484, 496-498, 525-529, 540-545, 570-571, 577-580  <i>Chapter Review</i> 61 (#24)  <i>Section Review</i> 45 (#3), 529 (#3)  <i>Standardized Test Practice</i> 63 (#17)</p> <p><b>Teacher Wraparound Edition:</b>            TTPK 38</p>
F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments	<p><b>Student Edition:</b>            156-159, 242-243, 331-333, 401, 429-431  <i>Lab</i> 162, 398  <i>MiniLab</i> 171, 332, 748  <i>Section Review</i> 161 (#5), 335 (#1)</p> <p><b>Teacher Wraparound Edition:</b>            DIF 333; LD 243; VL 333</p>

STANDARDS	PAGE REFERENCES
F.8.3 Differentiate between single-celled and multiple-celled organisms (humans) through investigation, comparing the cell functions of specialized cells for each type of organism	<b>Student Edition:</b> 14, 38-39, 45, 187, 210, 240-241, 253, 330, 551, 595 <i>Section Review 45 (#4)</i> <b>Teacher Wraparound Edition:</b> QD 39
<b>REPRODUCTION AND HEREDITY</b>	
F.8.4 Investigate and explain that heredity is comprised of the characteristic traits found in genes within the cell of an organism	<b>Student Edition:</b> 12, 14, 126-128, 130-132 <i>National Geographic 129</i> <b>Teacher Wraparound Edition:</b> IL 127; TTPK 126; VL 127
F.8.5 Show how different structures both reproduce and pass on characteristics of their group	<b>Student Edition:</b> 104-105, 223, 276-279, 281-288, 338, 628-629, 633-636 <b>Teacher Wraparound Edition:</b> LD 284; VL 223
<b>REGULATION AND BEHAVIOR</b>	
F.8.6 Understand that an organism is regulated both internally and externally	<b>Student Edition:</b> 15, 74-78, 303, 403, 545, 572, 577-580, 595, 622-623, 626 <i>Applying Math 623</i> <i>Lab 398</i> <i>Launch Lab 567, 621</i> <i>MiniLab 438, 579</i> <i>National Geographic 79, 624-625</i> <i>Science Online 15</i> <b>Teacher Wraparound Edition:</b> AC 624; UA 15
F.8.7 Understand that an organism's behavior evolves through adaptation to its environment	<b>Student Edition:</b> 158, 333, 456-458, 462-464, 468-470 <i>Science Online 468</i> <i>Section Review 470 (#1)</i> <b>Teacher Wraparound Edition:</b> LD 458

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<b>POPULATIONS AND ECOSYSTEMS</b>	
<p>F.8.8 Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet</p>	<p><b>Student Edition:</b>  688-693, 695, 696-700  <i>Applying Science</i> 691  <i>Lab: Design Your Own</i> 702  <i>MiniLab</i> 689  <i>National Geographic</i> 694  <b>Teacher Wraparound Edition:</b>  AC 691, 694; RT 695</p>
<b>DIVERSITY AND ADAPTATIONS OF ORGANISMS</b>	
<p>F.8.9 Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species</p>	<p><b>Student Edition:</b>  725, 749, 778-786  <i>Lab</i> 787  <i>Lab: Use the Internet</i> 446-447  <b>Teacher Wraparound Edition:</b>  CB 30; TFYI 780</p>
<p>F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends</p>	<p><b>Student Edition:</b>  725, 770-777, 778-786, 788-791  <i>Integrate Social Studies</i> 773  <i>Lab</i> 787  <i>MiniLab</i> 772  <i>Section Review</i> 786 (#4)  <b>Teacher Wraparound Edition:</b>  DIF 789; TFYI 774, 781</p>
<b>Standard G: Science Applications</b>	
<p>G.8.1 Identify* and investigate* the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need</p>	<p><b>Student Edition:</b>  <i>Integrate Career</i> 83, 97, 137, 303, 634  <b>Teacher Wraparound Edition:</b>  IC 83, 137, 634; IE 142; UP 3, 327</p>
<p>G.8.2 Explain* how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers</p>	<p><b>Student Edition:</b>  141-143  <i>Integrate Career</i> 50, 137, 228  <i>National Geographic</i> 48-49  <b>Teacher Wraparound Edition:</b>  IC 50, 137</p>

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<p>G.8.3 Illustrate* the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life</p>	<p><b>Student Edition:</b>            141-143, 582, 772-776, 780-781  <i>Integrate Environment</i> 142  <i>National Geographic</i> 777  <i>Oops! Accidents in Science</i> 504  <i>Section Review</i> 143 (#3)  <i>Time: Science and Society</i> 294, 532, 762</p> <p><b>Teacher Wraparound Edition:</b>            CDIV 142; IE 142</p>
<p>G.8.4 Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show* how the design (or re-design) might work, including potential side-effects</p>	<p><b>Student Edition:</b>  <i>Lab: Model and Invent</i> 472-473, 792-793  <i>Oops! Accidents in Science</i> 504</p> <p><b>Teacher Wraparound Edition:</b>            AC 777; IN 504</p>
<p>G.8.5 Investigate* a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction</p>	<p><b>Student Edition:</b>  <i>Lab: Model and Invent</i> 792-793  <i>Time: Science and Society</i> 232, 532, 762</p> <p><b>Teacher Wraparound Edition:</b>            DI 762; DIF 775; TFYI 775</p>
<p>G.8.6 Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify* examples of how scientific discoveries have resulted in new technology</p>	<p>The following page references can be incorporated to meet this standard.</p> <p><b>Student Edition:</b>            47, 54  <i>Time: Science and History</i> 560  <i>Time: Science and Society</i> 294, 762</p> <p><b>Teacher Wraparound Edition:</b>            AC 504; CC 655; DIF 65; VL 49</p>
<p>G.8.7 Show* evidence* of how science and technology are interdependent, using some examples drawn from personally conducted investigations*</p>	<p><b>Student Edition:</b>            47, 50, 111, 141-143, 657-658, 775-776  <i>Lab: Design Your Own</i> 56-57  <i>National Geographic</i> 48-49, 659, 777  <i>Section Review</i> 51 (#1)  <i>Time: Science and Society</i> 294, 762</p> <p><b>Teacher Wraparound Edition:</b>            DIF 11. 50</p>

STANDARDS	PAGE REFERENCES
<b>Standard H: Science in Personal and Social Perspectives</b>	
<p>H.8.1 Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press, and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources</p>	<p>The following page references can be incorporated to meet this standard.</p> <p><b>Student Edition:</b>  <i>Lab: Use the Internet</i> 116-117, 262-263  <i>Science Skill Handbook</i> 802-803, 810</p> <p><b>Teacher Wraparound Edition:</b>  AC 11; CC 782; DIF 775; SJ 101, 112, 114</p>
<p>H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision</p>	<p>The following page references can be incorporated to meet this standard.</p> <p><b>Student Edition:</b>  <i>Lab: Design Your Own</i> 200-201  <i>Lab: Model and Invent</i> 472-473, 792-793  <i>Oops! Accidents in Science</i> 504</p> <p><b>Teacher Wraparound Edition:</b>  AIL 446; AYD 473; DIF 791; IN 504</p>
<p>H.8.3 Understand the consequences of decisions affecting personal health and safety</p>	<p><b>Student Edition:</b>  514, 515, 548, 575-576, 600, 602, 671  <i>Applying Science</i> 516  <i>Section Review</i> 521 (#3)</p> <p><b>Teacher Wraparound Edition:</b>  CFU 500; IM 516, 671; LD 574; TFYI 499</p>