



Earth Science

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STANDARDS	PAGE REFERENCES
<p>Standard A: Science Connections</p>	
<p>By the end of grade eight, students will:</p>	
<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>Student Edition: <i>Launch Lab</i> 33 <i>Lab</i> 80-81 <i>Model and Invent Lab</i> 142-143, 474-475 <i>Use the Internet Lab</i> 290-291, 414-415, 562-563 <i>National Geographic</i> 494-495 <i>Design Your Own Lab</i> 616-617 Teacher Wraparound Edition: A 291; ACT 126; DI 37, 166; IL 253, 337, 464; SJ 105; TBI 4; UP 151, 269</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>Student Edition: 15-22, 128-129, 164-170, 313-319 <i>Launch Lab</i> 5 <i>Integrate Career</i> 20 <i>Applying Science</i> 21 <i>Science and Society</i> 476 Teacher Wraparound Edition: DI 394; QD 165; SJ 20</p>

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<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>Student Edition: <i>Lab 98, 136, 221, 680-681</i> <i>Model and Invent Lab 142-143, 172-173, 382-383, 474-475, 714-715</i> <i>Design Your Own Lab 200-201, 228-229, 444-445</i> <i>Use the Internet Lab 650-651</i></p> <p>Teacher Wraparound Edition: ACT 133, 213; IL 101; MM 132</p>
<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>Student Edition: 18-19, 36, 272-275, 276-278, 280-289, 660-661, 673-674 <i>Science Online 273</i></p> <p>Teacher Wraparound Edition: A 275; CFU 694; DIS 273; TFYI 691; TPK 690</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>Student Edition: 18-19, 36, 272-275, 276-278, 280-289, 394-399, 673-674, 690-694, 742-745 <i>MiniLAB 274</i> <i>Lab 279</i></p> <p>Teacher Wraparound Edition: ACT 744; CFU 275; DI 274, 277; SJ 281, 692; TFYI 274; UAA 745</p>
<p>A.8.6 Use models and explanations to predict actions and events in the natural world</p>	<p>Student Edition: 34-38, 437-438, 690-691 <i>Launch Lab 119, 299, 391, 659, 689</i> <i>Model and Invent Lab 172-173, 383-384</i> <i>Design Your Own Lab 200-201, 444-445</i> <i>Lab 260-261, 407, 503</i></p> <p>Teacher Wraparound Edition: IL 308; MM 432; QD 36, 107</p>
<p>A.8.7 Design real or thought investigations to test the usefulness and limitations of a model</p>	<p>Student Edition: <i>Model and Invent Lab 142-143, 172-173, 474-475, 714-715</i> <i>Launch Lab 181, 209</i> <i>Design Your Own Lab 200-201</i> <i>MiniLAB 211, 704, 725</i> <i>Applying Science 282</i> <i>Use the Internet Lab 650-651</i> <i>Extra Try at Home Labs 771</i></p> <p>Teacher Wraparound Edition: IL 101, 515; QD 165</p>

STANDARDS	PAGE REFERENCES
A.8.8. Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world	<p>Student Edition: 39-44, 90-93, 182-187, 396-399, 462-469, 492-502 <i>Design Your Own Lab</i> 200-201, 228-229 <i>Lab</i> 260-261, 407 <i>Use the Internet Lab</i> 290-291 <i>MiniLAB</i> 363, 579 <i>Science Online</i> 404</p> <p>Teacher Wraparound Edition: A 469; CFU 93; DI 742; IL 404; R 399</p>
Standard B: Nature of Science	
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>Student Edition: 18-19, 36, 272-275, 276-278, 280-289, 635-642, 643-649, 673-674, 676-679, 690-694, 742-745</p> <p>Teacher Wraparound Edition: CD 636; DI 277, 700</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>Student Edition: 18-19, 36, 272-275, 276-278, 280-289, 394-399, 673-674, 690-694, 742-745 <i>Science and History</i> 618</p> <p>Teacher Wraparound Edition: ACT 744; DI 735, 743; SJ 281, 692, 744</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>Student Edition: 6-14, 15-22 <i>Integrate Life Science</i> 10 <i>MiniLAB</i> 11, 19 <i>Design Your Own Lab</i> 200-201, 616-617 <i>Science Skill Handbook</i> 756-764</p> <p>Teacher Wraparound Edition: CC 21; DIS 18; IL 9; R 14; SJ 20</p>
B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world	<p>Student Edition: <i>Science and Language Arts</i> 202, 292, 446, 534 <i>Lab</i> 434 <i>Science and History</i> 682 <i>Science Skill Handbook</i> 760</p> <p>Teacher Wraparound Edition: ACT 20; TPK 6</p>

STANDARDS	PAGE REFERENCES
<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>Student Edition: 14, 15-22, 280-289, 742-745 <i>Lab 23</i> <i>Accidents in Science</i> 384 <i>Science Skill Handbook</i> 764 Teacher Wraparound Edition: ACT 744; CC 11; DI 277; R 22; TBI 270; TFYI 19</p>
<p>B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues</p>	<p>Student Edition: 15-22, 317-319, 600-607, 609-615, 649 <i>Science and Society</i> 112, 262, 476, 592, 652 <i>Science and History</i> 618 Teacher Wraparound Edition: A 607; CD 16; CFU 14; R 502</p>
<p>Standard C: Science Inquiry</p>	
<p>C.8.1 Identify* questions they can investigate* using resources and equipment they have available</p>	<p>Student Edition: <i>MiniLAB</i> 11, 402, 699 <i>Lab 24-25, 45, 80-81, 136, 503, 590-591, 680-681</i> <i>Design Your Own Lab</i> 52-53, 200-201, 228-229, 444-445, 532-533 <i>Model and Invent Lab</i> 142-143 <i>Use the Internet Lab</i> 290-291, 414-415, 562-563 Teacher Wraparound Edition: IL 193</p>
<p>C.8.2 Identify* data and locate sources of information including their own records to answer the questions being investigated</p>	<p>Student Edition: <i>Lab 24-25, 45, 80-81, 136, 503, 680-681</i> <i>Design Your Own Lab</i> 52-53, 200-201, 228-229, 444-445, 616-617 <i>Model and Invent Lab</i> 142-143 <i>Science Online</i> 197 <i>Use the Internet Lab</i> 290-291, 414-415, 562-563 <i>Science Online</i> 409 Teacher Wraparound Edition: AIL 229, 350</p>

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<p>C.8.3 Design and safely conduct investigations* that provide reliable quantitative or qualitative data, as appropriate, to answer their questions</p>	<p>Student Edition: <i>MiniLAB</i> 11 <i>Lab</i> 24-25, 80-81, 136, 221, 503, 680-681 <i>Design Your Own Lab</i> 52-53, 200-201, 228-229, 444-445, 532-533, 616-617 <i>Use the Internet Lab</i> 290-291, 650-651 <i>Model and Invent Lab</i> 714-715 Teacher Wraparound Edition: ACT 241; AIL 229; IL 253</p>
<p>C.8.4 Use inferences* to help decide possible results of their investigations, use observations to check their inferences</p>	<p>Student Edition: <i>Lab</i> 24-25, 80-81, 98, 136, 260-261, 503, 585, 675, 746-747 <i>Design Your Own Lab</i> 200-201, 228-229, 444-445 <i>Use the Internet Lab</i> 414-415 <i>MiniLAB</i> 431 Teacher Wraparound Edition: AIL 290; IL 430</p>
<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>Student Edition: <i>MiniLAB</i> 19, 699 <i>Design Your Own Lab</i> 52-53, 200-201, 228-229, 444-445, 532-533 <i>Lab</i> 136, 320-321, 503, 680-681 <i>Model and Invent Lab</i> 142-143, 172-173 <i>Use the Internet Lab</i> 650-651 Teacher Wraparound Edition: AIL 532, 650; IL 743</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>Student Edition: <i>Design Your Own Lab</i> 52-53, 200-201, 228-229, 444-445, 532-533, 616-617 <i>Lab</i> 80-81, 136, 221, 320-321, 503, 504-505, 680-681 <i>Communicating Your Data</i> 98 <i>Use the Internet Lab</i> 290-291, 414-415 <i>Model and Invent Lab</i> 474-475 Teacher Wraparound Edition: A 434, 563; AIL 616; IL 337, 605</p>

STANDARDS	PAGE REFERENCES
<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>Student Edition: <i>Communicating Your Data</i> 25, 53, 67, 143, 291, 351, 445, 503, 747 <i>Lab</i> 221, 504-505, 590-591, 680-681 <i>Design Your Own Lab</i> 228-229, 532-533 Teacher Wraparound Edition: A 585, 617; IL 515</p>
<p>C.8.8 Use computer software and other technologies to organize, process, and present their data</p>	<p>Student Edition: <i>Lab</i> 136 <i>Use the Internet Lab</i> 290-291, 414-415, 562-563, 650-651 <i>Communicating Your Data</i> 591, 617 Teacher Wraparound Edition: A 98; CYD 25, 53, 229, 321, 351, 445, 505, 747; IL 515</p>
<p>C.8.9 Evaluate*, explain*, and defend the validity of questions, hypotheses, and conclusions to their investigations*</p>	<p>Student Edition: <i>Communicating Your Data</i> 229 <i>Design Your Own Lab</i> 350-351, 444-445, 532-533, 616-617 <i>Use the Internet Lab</i> 414-415, 650-651 <i>Model and Invent Lab</i> 474-475, 714-715 <i>Lab</i> 504-505 Teacher Wraparound Edition: A 475, 531, 533; CYD 715; IL 464</p>
<p>C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults</p>	<p>Student Edition: <i>Communicating Your Data</i> 23, 53, 261, 617 <i>Design Your Own Lab</i> 200-201, 228-229 <i>Use the Internet Lab</i> 414-415, 562-563 <i>Lab</i> 434, 503, 746-747 <i>MiniLAB</i> 699 Teacher Wraparound Edition: A 23; DI 302</p>
<p>C.8.11 Raise further questions which still need to be answered</p>	<p>Student Edition: <i>Lab</i> 260-261, 279, 320-321, 680-681, 733 Teacher Wraparound Edition: A 53, 261; AIL 229, 260, 290, 532, 562, 616; IL 64, 253, 337, 464</p>

STANDARDS	PAGE REFERENCES
Standard E: Earth and Space Science	
STRUCTURE OF EARTH SYSTEM	
<p>E.8.1 Using the science themes, explain and predict changes in major features of land, water, and atmospheric systems</p>	<p>Student Edition: 182-187, 210-214, 215-220, 238-248, 300-303, 336-343, 432-433, 462-469, 492-502, 557-561 <i>Lab</i> 221, 260-261 <i>Design Your Own Lab</i> 228-229 <i>Use the Internet Lab</i> 290-291 <i>Science and History</i> 506</p> <p>Teacher Wraparound Edition: A 221; AIL 290; DIS 506</p>
<p>E.8.2 Describe underlying structures of the earth that cause changes in the earth's surface</p>	<p>Student Edition: 157-159, 272-275, 276-278, 280-289, 300-303, 304-311, 330-335, 336-343, 345-349 <i>Lab</i> 279 <i>Science Online</i> 282 <i>MiniLAB</i> 334 <i>Design Your Own Lab</i> 350-351</p> <p>Teacher Wraparound Edition: A 159; ACT 283; CC 287; CFU 159; SJ 158</p>
<p>E.8.3 Using the science themes during the process of investigation, describe climate, weather, ocean currents, soil movements and changes in the forces acting on the earth</p>	<p>Student Edition: 182-187, 210-214, 215-220, 492-498, 518-523 <i>Science Online</i> 185 <i>MiniLAB</i> 211, 437, 456, 471, 485 <i>Lab</i> 221, 503 <i>Design Your Own Lab</i> 228-229, 444-445 <i>Model and Invent Lab</i> 474-475</p> <p>Teacher Wraparound Edition: DI 19; IL 464; LD 522</p>
<p>E.8.4 Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks</p>	<p>Student Edition: 182-187, 188-191, 196-199, 401, 432-433, 609-615 <i>Section Review</i> 187 <i>Science Online</i> 197 <i>MiniLAB</i> 611</p> <p>Teacher Wraparound Edition: CC 184; DI 198; DIS 401; LD 610; SCB 180E, 424E; SJ 611; VL 197</p>

STANDARDS	PAGE REFERENCES
EARTH'S HISTORY	
<p>E.8.5 Analyze the geologic and life history of the earth, including change over time, using various forms of scientific evidence</p>	<p>Student Edition: 362-369, 370-375, 377-381, 392-399, 400-406, 408-413 <i>Science Online</i> 371, 374 <i>Lab</i> 376 <i>MiniLAB</i> 402, 412 <i>Use the Internet Lab</i> 414-415 Teacher Wraparound Edition: AIL 414; D 397; DI 409; IL 374; R 375; SJ 404</p>
<p>E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources</p>	<p>Student Edition: 73-79, 120-129, 130-135, 137-141, 578-584, 586-589, 600-607 <i>MiniLAB</i> 127 <i>Applying Science</i> 140 <i>Use the Internet Lab</i> 562-563 <i>Science Online</i> 606 Teacher Wraparound Edition: ACT 126, 133; CFU 135; IL 133; MM 132; QD 131; SCB 118E-F</p>
EARTH IN THE SOLAR SYSTEM	
<p>E.8.7 Describe the general structure of the solar system, galaxies, and the universe, explaining the nature of the evidence used to develop current models of the universe</p>	<p>Student Edition: 690-694, 696-701, 702-709, 710-713, 724-728, 729-732, 734-739, 740-745 <i>Science Online</i> 691 <i>MiniLAB</i> 704, 742 <i>Model and Invent Lab</i> 714-715 <i>National Geographic</i> 744 Teacher Wraparound Edition: DI 693, 742, 743; IL 743; QD 743; R 745; SJ 744; UAA 745; V 744</p>
<p>E.8.8 Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists</p>	<p>Student Edition: 492-493, 660-665, 694 <i>Launch Lab</i> 659 <i>Get Ready to Read</i> 660 A-660 B <i>Science Online</i> 663, 665 <i>Lab</i> 695 Teacher Wraparound Edition: QD 664; R 665; SCB 658E</p>

STANDARDS	PAGE REFERENCES
Standard G: Science Applications	
<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>Student Edition: <i>Integrate Career</i> 106, 197, 239, 287, 315, 522, 550, 604, 638, 671 Teacher Wraparound Edition: DI 9, 166; IES 202; UP 151, 268, 422, 624</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>Student Edition: 170, 470-472, 628-633, 635-642, 643-649 <i>Science Online</i> 17, 168 <i>Science and History</i> 82 Teacher Wraparound Edition: DI 9; SCB 4E-F</p>
<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>Student Edition: 12-14, 313-319, 432-433, 499-502, 649 <i>National Geographic</i> 13 <i>Science and History</i> 82 <i>Science and Society</i> 262, 476 Teacher Wraparound Edition: CD 16; CFU 14; DI 638; DIS 637; LD 124; TS 140; V 13, 126</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>Student Edition: <i>Model and Invent Lab</i> 142-143 <i>MiniLAB</i> 318 <i>Lab</i> 634 Teacher Wraparound Edition: A 318, 634; ACT 442, 652; DI 516; IL 133, 308, 515; MM 133, 645; R 319</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>Student Edition: 605-607, 613-615, 621 #25 <i>Make Posters</i> 618 Teacher Wraparound Edition: ACT 133; AIL 616; IL 605; R 199</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>Student Edition: 12-14, 288-289, 377-381, 628-633 <i>Science Online</i> 133 Teacher Wraparound Edition: CC 36; DI 37</p>

STANDARDS	PAGE REFERENCES
<p>G.8.7 Show* evidence* of how science and technology are interdependent, using some examples drawn from personally conducted investigations*</p>	<p>Student Edition: 12-14, 16-17, 170, 276-278, 307-311, 628-633, 635-642, 643-649, 676-679 <i>National Geographic</i> 13 <i>Integrate Earth Science</i> 26 <i>Integrate Physics</i> 166 <i>Science Online</i> 168, 380 Teacher Wraparound Edition: CB 82; D 12; DI 277, 747</p>
<p>Standard H: Science in Personal and Social Perspectives</p>	
<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>Student Edition: 20-22, 29 #27 <i>Applying Science</i> 21 <i>Lab</i> 23, 434 <i>Science Skill Handbook</i> 756 Teacher Wraparound Edition: A 23; CC 21; D 16, 69; SJ 20</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>Student Edition: 196-199, 224, 561, 586-589, 606-607 <i>Design Your Own Lab</i> 142-143 <i>Section Review</i> 214 <i>Science Online</i> 224 <i>Debate</i> 476, 652 Teacher Wraparound Edition: ACT 197, 652; AIL 616; IL 515, 605; LD 246; R 199, 607, 615</p>
<p>H.8.3 Understand the consequences of decisions affecting personal health and safety</p>	<p>Student Edition: 612-613 <i>MiniLAB</i> 613 <i>Science Skill Handbook</i> 765-767 Teacher Wraparound Edition: CC 612</p>