



**SOUTH DAKOTA
Science Standards Eighth Grade
Earth Science © 2005**

EIGHTH GRADE STANDARDS	REFERENCES
Goal 1 – NATURE OF SCIENCE	
Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.	
Indicator 1: Understand the nature and origin of scientific knowledge.	
1. (C) Differentiate among facts, predictions, theory, and law/principles in scientific investigations.	SE: pages 18-19 (Chapter 1, Section 2) TWE: A page 22 (Chapter 1, Section 2) <i>Chapter 1 (The Nature of Science) Fast File</i> pages 26, 31, 34, 35-36
<ul style="list-style-type: none"> Define fact, predictions, theory, and law/principle. 	SE: pages 18-19 (Chapter 1, Section 2) <i>Chapter 1 (The Nature of Science) Fast File</i> pages 26, 31, 35-36 <i>Reading Essentials</i> pages 9-10
<ul style="list-style-type: none"> Discuss how theory becomes law. 	SE: pages 18-19 (Chapter 1, Section 2) <i>Chapter 1 (The Nature of Science) Fast File</i> page 26
√ Evaluate important contributions to the advancement of science from people of differing cultures, genders, and ethnicity. Examples: Marie Curie-radiation, Hess, Galileo-astronomy, Kepler-astronomy, Newton-physics, Neil Tice-astronomy, Mendeleev-physics	SE: pages 272-275 (Chapter 10, Section 1) page 395 (Chapter 14, Section 1) <i>Science and History</i> page 82 (Chapter 3, Section 3) <i>Science and History</i> page 618 (Chapter 21, Section 2) <i>Science and History</i> page 682 (Chapter 23, Section 3) TWE: SJ page 281 (Chapter 10, Section 3) CC page 466 (Chapter 16, Section 2) CD page 580 (Chapter 20, Section 1) CD page 661 (Chapter 23, Section 1) <i>Chapter 24 (The Solar System) Fast File</i> page 31

* available as a video lab

EIGHTH GRADE STANDARDS	REFERENCES
Indicator 2: Apply the skills necessary to conduct scientific investigations.	
1. (S) Design a replicable scientific investigation.	SE: * <i>Design Your Own Lab</i> pages 52-53 (Chapter 2, Section 3) * <i>Lab</i> page 136 (Chapter 5, Section 2) * <i>Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Lab</i> pages 260-261 (Chapter 9, Section 3) <i>Design Your Own Lab</i> pages 444-445 (Chapter 15, Section 3) TWE: IL page 9 (Chapter 1, Section 1) <i>Chapter 9 (Water Erosion and Deposition) Fast File</i> pages 26-27 <i>Chapter 10 (Plate Tectonics) Fast File</i> pages 13-15 <i>Chapter 21 (Our Impact on Water and Air) Fast File</i> pages 9-10 <i>Science Inquiry Lab Manual</i> pages 5-6, 9-10, 15-16, 25-26, 31-32, 37-38
<ul style="list-style-type: none"> Use appropriate supportive technologies. 	SE: <i>Science Online</i> page 197 (Chapter 7, Section 3) <i>Use the Internet Lab</i> pages 290-291 (Chapter 10, Section 3) <i>Use the Internet Lab</i> pages 562-563 (Chapter 19, Section 3) <i>Use the Internet Lab</i> pages 650-651 (Chapter 22, Section 3) TWE: CYD page 143 (Chapter 5, Section 3) CYD page 229 (Chapter 8, Section 3) CYD page 261 (Chapter 9, Section 3) CYD page 351 (Chapter 12, Section 3)
<ul style="list-style-type: none"> Assess the limits of accuracy inherent in a particular measuring device or procedure. 	SE: pages 20-22 (Chapter 1, Section 2) <i>Launch Lab</i> page 5 (Chapter 1, Chapter Opener) <i>Lab</i> page 45 (Chapter 2, Section 2) * <i>Design Your Own Lab</i> pages 52-53 (Chapter 2, Section 3) <i>Model and Invent Lab</i> pages 172-173 (Chapter 6, Section 3) <i>Use the Internet Lab</i> pages 290-291 (Chapter 10, Section 3) * <i>Model and Invent Lab</i> pages 382-383 (Chapter 13, Section 3) <i>Model and Invent Lab</i> pages 714-715 (Chapter 24, Section 4) TWE: CYD page 45 (Chapter 2, Section 2) <i>Chapter 1 (The Nature of Science) Fast File</i> pages 9-10 <i>Laboratory Activities Manual</i> pages 91-93, 99-102, 107-109

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Control variables to test hypotheses by repeated trials, and by identifying sources of experimental error. 	SE: pages 9-11 (Chapter 1, Section 1) <i>MiniLAB</i> page 11 (Chapter 1, Section 1) <i>Lab</i> pages 24-25 (Chapter 1, Section 2) <i>*Design Your Own</i> pages 52-53 (Chapter 2, Section 3) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Chapter 1 (The Nature of Science) Fast File</i> pages 9-10 <i>Laboratory Activities Manual</i> pages 1-6, 27-29
<ul style="list-style-type: none"> Interpret data to justify predictions or conclusions. 	SE: <i>Lab</i> pages 24-25 (Chapter 1, Section 2) <i>*Lab</i> page 136 (Chapter 5, Section 2) <i>*Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Lab</i> pages 260-261 (Chapter 9, Section 3) <i>Design Your Own Lab</i> pages 444-445 (Chapter 15, Section 3) <i>Chapter 15 (Atmosphere) Fast File</i> pages 9-10 <i>Chapter 23 (The Sun-Earth-Moon System) Fast File</i> pages 13-14 <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 9-12
<ul style="list-style-type: none"> Use research methods to investigate practical and/or personal scientific problems and questions. 	SE: <i>Model and Invent Lab</i> pages 142-143 (Chapter 5, Section 3) <i>Use the Internet Lab</i> pages 290-291 (Chapter 10, Section 3) <i>Use the Internet Lab</i> pages 414-415 (Chapter 14, Section 3) TWE: ACT page 69 (Chapter 3, Section 2) DI page 134 (Chapter 5, Section 2) CD page 156 (Chapter 6, Section 1) CC page 257 (Chapter 9, Section 3) <i>Chapter 8 (Erosional Forces) Fast File</i> page 26
<ul style="list-style-type: none"> Select appropriate scientific equipment and technologies for investigations and experiments. 	SE: <i>Lab</i> page 45 (Chapter 2, Section 2) <i>*Design Your Own Lab</i> pages 52-53 (Chapter 2, Section 3) <i>*Lab</i> page 136 (Chapter 5, Section 2) <i>*Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>Design Your Own Lab</i> pages 444-445 (Chapter 15, Section 3) <i>Design Your Own Lab</i> pages 532-533 (Chapter 18, Section 3) TWE: IL page 308 (Chapter 11, Section 2) <i>Probeware Lab Manual</i> pages 18-21, 24-27, 30-32, 40-43, 45-47, 49-51, 54-56, 59-62

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> • Use proper safety procedures in all investigations. 	SE: <i>Lab</i> page 45 (Chapter 2, Section 2) * <i>Design Your Own Lab</i> pages 52-53 (Chapter 2, Section 3) <i>Lab</i> page 67 (Chapter 3, Section 1) <i>Lab</i> pages 80-81 (Chapter 3, Section 3) * <i>Lab</i> pages 110-111 (Chapter 4, Section 4) * <i>Lab</i> page 136 (Chapter 5, Section 2) * <i>Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Design Your Own Lab</i> pages 444-445 (Chapter 15, Section 3) <i>Science Skill Handbook</i> pages 765-767 <i>Science Inquiry Lab Manual</i> pages iv-v
<ul style="list-style-type: none"> • Wear appropriate attire. 	SE: <i>Lab</i> page 45 (Chapter 2, Section 2) <i>Lab</i> page 67 (Chapter 3, Section 1) * <i>Design Your Own Lab</i> pages 52-53 (Chapter 2, Section 3) <i>Lab</i> pages 80-81 (Chapter 3, Section 3) * <i>Lab</i> pages 110-111 (Chapter 4, Section 4) * <i>Lab</i> page 136 (Chapter 5, Section 2) * <i>Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Design Your Own Lab</i> pages 444-445 (Chapter 15, Section 3)
<ul style="list-style-type: none"> √ Evaluate the benefits and potential of scientific investigations. 	SE: pages 15-17 (Chapter 1, Section 2) <i>Science and Society</i> page 476 (Chapter 16, Section 3) <i>Use the Internet Lab</i> pages 562-563 (Chapter 19, Section 3) TWE: CC page 11 (Chapter 1, Section 1) <i>Critical Thinking/Problem Solving</i> pages 1-2, 5, 9-11, 13, 15, 17-22 <i>Chapter 1 (The Nature of Science) Fast File</i> page 27 <i>Chapter 5 (Earth's Energy and Mineral Resources) Fast File</i> pages 30-31 <i>Chapter 8 (Erosional Forces) Fast File</i> page 28 <i>Chapter 18 (Ocean Motion) Fast File</i> page 28

EIGHTH GRADE STANDARDS	REFERENCES
Goal 2 – PHYSICAL SCIENCE	
Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.	
Indicator 1: Describe structures, properties and changes of matter.	
1. (An) Classify matter as elements, compounds, or mixtures. Example: Na and Cl are elements that, chemically combined, form salt (NaCl) (compound). Example: salt and water form a mixture that can be physically separated.	SE: pages 34-35 (Chapter 2, Section 1) pages 39-44 (Chapter 2, Section 2) <i>MiniLAB</i> page 43 (Chapter 2, Section 2) TWE: MM page 43 (Chapter 2, Section 2) <i>Chapter 2 (Matter) Fast File</i> pages 9-10, 24 <i>Reading Essentials</i> pages 18-22 <i>Laboratory Activities Manual</i> pages 7-8
√ Formulas	SE: <i>Applying Skills</i> page 44 (Chapter 2, Section 2) TWE: SCB page 60E (Chapter 3, Chapter Opener) <i>Chapter 3 (Minerals) Fast File</i> page 23
2. (Ap) Use the Periodic Table to compare and contrast families of elements & to classify elements as metals, metalloids, or non-metals.	SE: <i>MiniLAB</i> page 35 (Chapter 2, Section 1) <i>Science Online</i> page 40 (Chapter 2, Section 2) TWE: CFU page 38 (Chapter 2, Section 1)
• Describe the relationship between the organization and the predictive nature of the periodic table.	TWE: ACT page 36 (Chapter 2, Section 1) DIS page 40 (Chapter 2, Section 2) <i>Chapter 2 (Matter) Fast File</i> page 23 <i>Science Inquiry Lab Manual</i> pages 39-40
• Use the Bohr model to show the arrangement of the subatomic particles of atomic numbers 1 through 18. (Diagram)	SE: page 36 (Chapter 2, Section 1)
√ Compare and contrast other atomic models.	SE: page 36 (Chapter 2, Section 1)
3. (C) Compare properties of matter resulting from physical and chemical changes. Example: weathering, burning, melting, acid rain	SE: pages 50-51 (Chapter 2, Section 3) <i>Launch Lab</i> page 33 (Chapter 2, Chapter Opener) TWE: SCB page 32F (Chapter 2, Chapter Opener) QD page 40 (Chapter 2, Section 2) IL page 41 (Chapter 2, Section 2) R page 44 (Chapter 2, Section 2), QD page 48 (Chapter 2, Section 3) ACT page 50 (Chapter 2, Section 3) CFU page 51 (Chapter 2, Section 3) R page 51 (Chapter 2, Section 3) <i>Laboratory Activities Manual</i> pages 33-34 <i>Science Inquiry Lab Manual</i> pages 37-38 <i>Virtual Lab CD-ROM</i> (state of matter lab)
√ Ionic/covalent bonding	SE: pages 40-42 (Chapter 2, Section 2) TWE: CFU page 44 (Chapter 2, Section 2) <i>Chapter 2 (Matter) Fast File</i> pages 43-44 <i>Content Outline for Teaching</i> page 6 <i>Reading Essentials</i> pages 19-20
Indicator 2: Analyze forces, their forms, and their effects on motion.	
Indicator 3: Analyze various interactions of energy and matter.	

EIGHTH GRADE STANDARDS	REFERENCES
<p>Goal 4 – EARTH/SPACE SCIENCE Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.</p>	
<p>Indicator 1: Understand the various structures and processes of the Earth system.</p>	
<p>1. (Ap) Identify and classify minerals and rocks according to physical and chemical properties. Example: luster, streak, fracture/cleavage, hardness (Mohs Scale,) specific gravity, color, magnetic Example: acid test, flame test, fluorescence</p>	<p>SE: pages 68-72 (Chapter 3, Section 2) pages 73-79 (Chapter 3, Section 3) pages 94-97 (Chapter 4, Section 2) pages 99-102 (Chapter 4, Section 3) pages 103-109 (Chapter 4, Section 4) <i>Applying Science</i> page 70 (Chapter 3, Section 2) <i>*MiniLAB</i> page 72 (Chapter 3, Section 2) <i>Lab</i> pages 80-81 (Chapter 3, Section 3) <i>Lab</i> page 98 (Chapter 4, Section 2) <i>*Lab</i> pages 110-111 (Chapter 4, Section 4) TWE: LD page 70 (Chapter 3, Section 2) QD page 71 (Chapter 3, Section 2) <i>Chapter 3 (Minerals) Fast File</i> pages 17, 23 <i>Chapter 4 (Rocks) Fast File</i> pages 11-12, 27, 30 <i>Reading Essentials</i> pages 27-40, 44-56 <i>Study Guide and Reinforcement</i> pages 7-14 <i>Laboratory Activities Manual</i> pages 17-18 <i>Virtual Lab CD-ROM</i> (rock lab)</p>
<ul style="list-style-type: none"> Rock cycle- relate to Law of Conservation of Matter 	<p>SE: pages 90-93 (Chapter 4, Section 1) <i>Section Review</i> page 93 (Chapter 4, Section 1)</p>
<p>2. (An) Explain the role of plate tectonics in shaping Earth.</p>	<p>SE: pages 272-275 (Chapter 10, Section 1) pages 276-278 (Chapter 10, Section 2) pages 280-289 (Chapter 10, Section 3) <i>Science Online</i> page 282 (Chapter 10, Section 3) TWE: SCB pages 270E-F (Chapter 10, Chapter Opener) V page 283 (Chapter 10, Section 3) <i>Chapter 10 (Plate Tectonics) Fast File</i> pages 19-22, 27-34, 37-42 <i>Reading Essentials</i> pages 137-145 <i>Study Guide and Reinforcement</i> pages 35-37 <i>Laboratory Activities Manual</i> pages 49-51</p>

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<ul style="list-style-type: none"> Plates boundaries 	<p>SE: pages 280-289 (Chapter 10, Section 3) <i>Visualizing</i> page 283 (Chapter 10, Section 3) <i>Integrate Physics</i> page 288 (Chapter 10, Section 3)</p> <p>TWE: USW page 282 (Chapter 10, Section 3) ACT page 283 (Chapter 10, Section 3) VL page 284 (Chapter 10, Section 3) MM page 286 (Chapter 10, Section 3) MM page 287 (Chapter 10, Section 3) A page 289 (Chapter 10, Section 3)</p> <p><i>Chapter 10 (Plate Tectonics) Fast File</i> pages 47-48</p> <p><i>Reading Essentials</i> pages 146-154</p>
<ul style="list-style-type: none"> Volcanoes 	<p>SE: pages 330-335 (Chapter 12, Section 1) pages 336-343 (Chapter 12, Section 2) pages 345-349 (Chapter 12, Section 3) <i>Launch Lab</i> page 329 (Chapter 12, Chapter Opener) <i>MiniLAB</i> page 334 (Chapter 12, Section 1) <i>Lab</i> page 344 (Chapter 12, Section 2) <i>*Design Your Own Lab</i> pages 350-351 (Chapter 12, Section 3)</p> <p>TWE: CC page 287 (Chapter 10, Section 3) SCB pages 328E-F (Chapter 12, Chapter Opener) QD page 333 (Chapter 12, Section 1) CC page 334 (Chapter 12, Section 1)</p> <p><i>Chapter 12 (Volcanoes) Fast File</i> pages 9-20, 25-26, 29-40, 45-47</p> <p><i>Reading Essentials</i> pages 171-182</p> <p><i>Study Guide and Reinforcement</i> pages 43-44</p> <p><i>Laboratory Activities Manual</i> pages 63-68</p> <p><i>Virtual Lab CD-ROM</i> (volcano lab)</p>

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Earthquakes 	SE: pages 300-303 (Chapter 11, Section 1) pages 304-311 (Chapter 11, Section 2) pages 311-319 (Chapter 11, Section 3) <i>Launch Lab</i> page 299 (Chapter 11, Chapter Opener) <i>Lab</i> pages 320-321 (Chapter 11, Section 3) TWE: TPK page 280 (Chapter 10, Section 3) DI page 286 (Chapter 10, Section 3) CC page 287 (Chapter 10, Section 3) DI page 288 (Chapter 10, Section 3) IM page 298F (Chapter 11, Chapter Opener) <i>Chapter 11 (Earthquakes) Fast File</i> pages 9-13, 15-17, 19, 21-24, 29, 34-44 <i>Reading Essentials</i> pages 155-158, 166-170 <i>Study Guide and Reinforcement</i> page 39 <i>Laboratory Activities Manual</i> pages 53-61 <i>Virtual Lab CD-ROM</i> (earthquake lab)
<ul style="list-style-type: none"> √ Seismic waves 	SE: pages 304-311 (Chapter 11, Section 2) <i>Visualizing</i> page 306 (Chapter 11, Section 2) * <i>MiniLAB</i> page 309 (Chapter 11, Section 2) <i>Lab</i> page 312 (Chapter 11, Section 2) TWE: DI page 305 (Chapter 11, Section 2) ACT page 306 (Chapter 11, Section 2) DI page 306 (Chapter 11, Section 2) V page 306 (Chapter 11, Section 2) <i>Chapter 11 (Earthquakes) Fast File</i> pages 30, 33 <i>Reading Essentials</i> pages 159-165 <i>Study Guide and Reinforcement</i> page 40 <i>Virtual Lab CD-ROM</i> (seismograph lab)
<ul style="list-style-type: none"> Mountains 	SE: pages 157-159 (Chapter 6, Section 1) pages 282-284 (Chapter 10, Section 3) TWE: SJ page 158 (Chapter 6, Section 1) CFU page 159 (Chapter 6, Section 1) LD page 282 (Chapter 10, Section 3) V page 283 (Chapter 10, Section 3) <i>Chapter 5 (Earth's Energy and Mineral Resources) Fast File</i> page 32
<ul style="list-style-type: none"> Convection currents in the mantle 	SE: page 285 (Chapter 10, Section 3) <i>MiniLAB</i> page 285 (Chapter 10, Section 3) TWE: A page 285 (Chapter 10, Section 3) R page 289 (Chapter 10, Section 3) <i>Chapter 10 (Plate Tectonics) Fast File</i> pages 13-15

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Changes over time Examples: of “Changes over time”: Adaptations, extinction, geologic time, extinct species, fossils, surface features 	SE: pages 362-369 (Chapter 13, Section 1) pages 370-375 (Chapter 13, Section 2) pages 377-381 (Chapter 13, Section 3) pages 392-399 (Chapter 14, Section 1) pages 400-406 (Chapter 14, Section 2) pages 408-413 (Chapter 14, Section 3) <i>Lab</i> page 376 (Chapter 13, Section 2) TWE: DIS page 397 (Chapter 14, Section 1) SJ page 404 (Chapter 14, Section 2) CFU page 413 (Chapter 14, Section 3) <i>Chapter 10 (Plate Tectonics) Fast File</i> pages 9-12 <i>Chapter 13 (Clues to Earth’s Past) Fast File</i> pages 9-22, 27-42, 47-49 <i>Chapter 14 (Geologic Time) Fast File</i> pages 9-20, 25-40, 45-47 <i>Reading Essentials</i> pages 187-220 <i>Study Guide and Reinforcement</i> pages 47-53 <i>Laboratory Activities Manual</i> pages 45-48, 69-75, 79-82 <i>Virtual Lab CD-ROM</i> (fossil lab)
3. (An) Explain the factors that create weather and the instruments and technologies that assess it. Example: NOAA, AMS	SE: pages 439-443 (Chapter 15, Section 3) pages 454-461 (Chapter 16, Section 1) pages 470-472 (Chapter 16, Section 3) <i>Launch Lab</i> page 453 (Chapter 16, Chapter Opener) * <i>Model and Invent Lab</i> pages 474-475 (Chapter 16, Section 3) TWE: NG page 423 (Chapter 15, Chapter Opener) UP page 423 (Chapter 15, Chapter Opener) SCB pages 452E-F (Chapter 16, Chapter Opener) IL page 464 (Chapter 16, Section 2) <i>Chapter 15 (Atmosphere) Fast File</i> pages 9-12 <i>Chapter 16 (Weather) Fast File</i> pages 13-15, 27, 31-32, 47-48 <i>Reading Essentials</i> pages 239-242, 254-256 <i>Study Guide and Reinforcement</i> pages 59-61 <i>Virtual Lab CD-ROM</i> (weather prediction lab)
<ul style="list-style-type: none"> Differentiate between climate and climate zones Example: air masses, fronts, pressure systems, Coriolis effect, wind systems, humidity, storms 	SE: pages 439-443 (Chapter 15, Section 3) pages 462-469 (Chapter 16, Section 2) pages 484-487 (Chapter 17, Section 1) <i>Science Online</i> page 440 (Chapter 15, Section 3) TWE: ACT page 441 (Chapter 15, Section 3) <i>Chapter 16 (Weather) Fast File</i> pages 17-20, 28-29 <i>Chapter 17 (Climate) Fast File</i> pages 17-19, 27-28, 47-48 <i>Reading Essentials</i> pages 233-238, 257-274 <i>Study Guide and Reinforcement</i> pages 63-65

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√ Affects of the ocean on weather	SE: pages 485-486 (Chapter 17, Section 1) <i>Launch Lab</i> page 483 (Chapter 17, Chapter Opener) <i>Chapter 17 (Climate) Fast File</i> pages 9-11, 32 <i>Chapter 18 (Ocean Motion) Fast File</i> page 27 <i>Laboratory Activities Manual</i> pages 95-97
√ Condensation	SE: page 437 (Chapter 15, Section 2) TWE: CFU page 461 (Chapter 16, Section 1) <i>Chapter 15 (Atmosphere) Fast File</i> page 45 <i>Laboratory Activities Manual</i> pages 87-89
√ Evaporation	SE: page 437 (Chapter 15, Section 2) <i>Chapter 15 (Atmosphere) Fast File</i> page 45
√ Cloud Formation	SE: pages 458-461 (Chapter 16, Section 1) TWE: VL page 458 (Chapter 16, Section 1) R page 461 (Chapter 16, Section 1) <i>Chapter 16 (Weather) Fast File</i> pages 9-11, 30, 49 <i>Reading Essentials</i> pages 242-243
4. (Ap) Examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves. Example: density, temperature, salinity	SE: pages 514-517 (Chapter 18, Section 1) pages 518-523 (Chapter 18, Section 2) pages 524-530 (Chapter 18, Section 3) <i>*Launch Lab</i> page 513 (Chapter 18, Chapter Opener) <i>MiniLAB</i> page 521 (Chapter 18, Section 2) <i>Lab</i> page 531 (Chapter 18, Section 3) TWE: SCB pages 512E-F (Chapter 18, Chapter Opener) MM page 516 (Chapter 18, Section 1) A page 517 (Chapter 18, Section 1) LD page 522 (Chapter 18, Section 2) <i>Chapter 18 (Ocean Motion) Fast File</i> pages 9-18, 23-26, 29-38 <i>Reading Essentials</i> pages 275-287 <i>Laboratory Activities Manual</i> pages 103-104 <i>Study Guide and Reinforcement</i> pages 67-69
√ El Niño	SE: page 493 (Chapter 17, Section 3) <i>MiniLAB</i> page 493 (Chapter 17, Section 3) <i>Visualizing</i> pages 494-495 (Chapter 17, Section 3) TWE: CD page 493 (Chapter 17, Section 3) ACT page 494 (Chapter 17, Section 3) DI page 494 (Chapter 17, Section 3) V page 494 (Chapter 17, Section 3) CB page 495 (Chapter 17, Section 3)
√ Ocean Zones	SE: pages 553-556 (Chapter 19, Section 2) <i>Visualizing</i> page 555 (Chapter 19, Section 2) TWE: CC page 554 (Chapter 19, Section 2) ACT page 555 (Chapter 19, Section 2) <i>Reading Essentials</i> page 300 <i>Performance Assessment in the Science Classroom</i> pages 55-56

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√ Ocean Floor Features	SE: pages 542-547 (Chapter 19, Section 1) <i>Science Online</i> page 543 (Chapter 19, Section 1) * <i>MiniLAB</i> page 545 (Chapter 19, Section 1) <i>Lab</i> page 548 (Chapter 19, Section 1) TWE: ACT page 543 (Chapter 19, Section 1) VL page 543 (Chapter 19, Section 1) SJ page 544 (Chapter 19, Section 1) CFU page 547 (Chapter 19, Section 1) <i>Chapter 19 (Oceanography) Fast File</i> pages 9-11, 17, 20, 22, 27, 39, 47-48 <i>Reading Essentials</i> pages 291-295 <i>Study Guide and Reinforcement</i> page 71 <i>Laboratory Activities Manual</i> pages 107-109 <i>Virtual Lab CD-ROM</i> (ocean floor features lab)
5. (An) Explain the impact of weathering and erosion on the earth.	SE: pages 182-187 (Chapter 7, Section 1) pages 210-214 (Chapter 8, Section 1) pages 222-227 (Chapter 8, Section 3) pages 238-248 (Chapter 9, Section 1) * <i>Design Your Own Lab</i> pages 200-201 (Chapter 7, Section 3) <i>MiniLAB</i> page 211 (Chapter 8, Section 1) <i>Design Your Own Lab</i> pages 228-229 (Chapter 8, Section 3) <i>Science Stats</i> page 230 (Chapter 8, Section 3) TWE: CC page 186 (Chapter 7, Section 1) IM page 208F (Chapter 8, Chapter Opener) IL page 212 (Chapter 8, Section 1) <i>Chapter 7 (Weathering and Soil) Fast File</i> pages 9-10, 16, 23 <i>Chapter 8 (Erosional Forces) Fast File</i> pages 9-10 <i>Chapter 9 (Water Erosion and Deposition) Fast File</i> pages 15-16, 29-31 <i>Reading Essentials</i> pages 87-91, 103-107, 114-118 <i>Study Guide and Reinforcement</i> pages 23, 27, 29-31 <i>Virtual Lab CD-ROM</i> (weathering lab)
soil	SE: pages 188-194 (Chapter 7, Section 2) pages 196-199 (Chapter 7, Section 3) <i>Lab</i> page 195 (Chapter 7, Section 2) TWE: DI page 189 (Chapter 7, Section 2) LD page 192 (Chapter 7, Section 2) CFU page 194 (Chapter 7, Section 2) <i>Chapter 7 (Weathering and Soil) Fast File</i> pages 11-12, 15, 17, 24, 27, 43-44 <i>Reading Essentials</i> pages 92-102 <i>Study Guide and Reinforcement</i> pages 24-25 <i>Virtual Lab CD-ROM</i> (soil erosion lab)

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Deposition (deltas) 	SE: pages 247-248 (Chapter 9, Section 1) TWE: CC page 242 (Chapter 9, Section 1) A page 248 (Chapter 9, Section 1) <i>Chapter 9 (Water Erosion and Deposition) Fast File</i> pages 16, 30 <i>Reading Essentials</i> pages 125, 135
<ul style="list-style-type: none"> Land transformations (Grand Canyon) 	SE: pages 154-159 (Chapter 6, Section 1) page 219 (Chapter 8, Section 2) TWE: SJ page 183 (Chapter 7, Section 1) <i>Chapter 9 (Water Erosion and Deposition) Fast File</i> pages 15-16, 17, 28
<ul style="list-style-type: none"> Glaciation 	SE: pages 215-220 (Chapter 8, Section 2) <i>Lab</i> page 221 (Chapter 8, Section 2) TWE: LD page 216 (Chapter 8, Section 2) UAA page 216 (Chapter 8, Section 2) ACT page 217 (Chapter 8, Section 2) CC page 217 (Chapter 8, Section 2) <i>Chapter 8 (Erosional Forces) Fast File</i> pages 11-12, 16, 24, 27, 43-44 <i>Reading Essentials</i> pages 108-113 <i>Study Guide and Reinforcement</i> page 28 <i>Laboratory Activities Manual</i> pages 39-40 <i>Virtual Lab CD-ROM</i> (glacier lab)
√ Use geospatial technologies to investigate natural phenomena. Example: GPS, GIS, remote sensing	SE: page 170 (Chapter 6, Section 3) <i>Critical Thinking/Problem Solving</i> page 5** **This reference discusses technology.
Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.	
1. (An) Compare celestial bodies within the solar system using composition, size, and orbital motion.	SE: pages 690-694 (Chapter 24, Section 1) pages 696-701 (Chapter 24, Section 2) pages 702-709 (Chapter 24, Section 3) <i>Science Online</i> page 663 (Chapter 23, Section 1) <i>MiniLAB</i> page 667 (Chapter 23, Section 2) <i>Lab</i> page 695 (Chapter 24, Section 1) <i>MiniLAB</i> page 704 (Chapter 24, Section 3) TWE: SCB page 688E (Chapter 24, Chapter Opener) QD page 698 (Chapter 24, Section 2) CC page 705 (Chapter 24, Section 3) ACT page 708 (Chapter 24, Section 3) <i>Chapter 24 (The Solar System) Fast File</i> pages 17, 20, 28-29, 32-33 <i>Reading Essentials</i> pages 373-383

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Describe the composition of the Sun, the planets, asteroids, and comets. 	SE: pages 696-701 (Chapter 24, Section 2) pages 702-709 (Chapter 24, Section 3) pages 710-713 (Chapter 24, Section 4) pages 729-732 (Chapter 25, Section 2) TE: SCB page 688E (Chapter 24, Chapter Opener) <i>Reading Essentials</i> pages 384-386 <i>Study Guide and Reinforcement</i> pages 90-92 <i>Content Outline for Teaching</i> page 90
<ul style="list-style-type: none"> Use of spectroscopic analysis of celestial bodies. 	SE: page 728 (Chapter 25, Section 1) <i>Chapter 22 (Exploring Space) Fast File</i> pages 9-10 <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 13-15 <i>Laboratory Activities Manual</i> pages 125-126, 145-147
<ul style="list-style-type: none"> Measurement in space 	SE: page 698 (Chapter 24, Section 2) page 727 (Chapter 25, Section 1) <i>Model and Invent Lab</i> pages 714-715 (Chapter 24, Section 4) <i>MiniLAB</i> page 742 (Chapter 25, Section 4) <i>*Design Your Own Lab</i> pages 746-747 (Chapter 25, Section 4) TWE: DI page 726 (Chapter 25, Section 1) CC page 727 (Chapter 25, Section 1) DIS page 727 (Chapter 25, Section 1) <i>Reading Essentials</i> page 389
<ul style="list-style-type: none"> Constellations 	SE: page 724-725 (Chapter 25, Section 1) <i>MiniLAB</i> page 725 (Chapter 25, Section 1) TWE: TPK page 724 (Chapter 25, Section 1) IM page 725 (Chapter 25, Section 1) SJ page 725 (Chapter 25, Section 1) TFYI page 725 (Chapter 25, Section 1) CFU page 728 (Chapter 25, Section 1) <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 48, 53-54 <i>Reading Essentials</i> pages 387-388
<ul style="list-style-type: none"> Galaxies 	SE: pages 740-741 (Chapter 25, Section 4) <i>Launch Lab</i> page 723 (Chapter 25, Chapter Opener) TWE: VL page 741 (Chapter 25, Section 3) A page 745 (Chapter 25, Section 4) <i>Reading Essentials</i> page 401

EIGHTH GRADE STANDARDS	REFERENCES
√ Life cycle of a star	SE: pages 734-739 (Chapter 25, Section 3) <i>Science Online</i> page 736 (Chapter 25, Section 3) TWE: VL page 737 (Chapter 25, Section 3) R page 739 (Chapter 25, Section 3) <i>Chapter 25 (Stars and Galaxies) Fast File</i> page 29 <i>Reading Essentials</i> pages 397-400 <i>Study Guide and Reinforcement</i> page 95 <i>Content Outline for Teaching</i> page 93
√ HR Diagram	SE: pages 734-735 (Chapter 25, Section 3) TWE: DI page 735 (Chapter 25, Section 3) <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 36-37, 45 <i>Reading Essentials</i> page 396
√ Law of Gravitation	SE: pages 692-693** TWE: V page 693 <i>Virtual Lab CD-ROM</i> (satellite lab) **These references discuss gravity's effect on satellites and the formation of the solar system.
√ Big Bang Theory	SE: page 745 (Chapter 25, Section 4) <i>Visualizing</i> page 744 (Chapter 25, Section 4) TWE: V page 744 (Chapter 25, Section 4) <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 30, 38, 41-42, 46
√ Doppler Effect	SE: pages 742-743 (Chapter 25, Section 4) TWE: IL page 743 (Chapter 25, Section 4) QD page 743 (Chapter 25, Section 4) R page 745 (Chapter 25, Section 4) <i>Chapter 25 (Stars and Galaxies) Fast File</i> pages 30, 38, 46
2. (An) Differentiate the influences of the relative positions of the earth, moon, and sun.	SE: pages 660-665 (Chapter 23, Section 1) pages 666-670 (Chapter 23, Section 2) <i>Launch Lab</i> page 659 (Chapter 23, Chapter Opener) <i>Lab</i> pages 680-681 (Chapter 23, Section 3) TWE: IM page 658F (Chapter 23, Chapter Opener) ACT page 663 (Chapter 23, Section 1) ACT page 670 (Chapter 23, Section 2) <i>Chapter 23 (The Sun-Earth-Moon System) Fast File</i> pages 25, 28, 47-48 <i>Reading Essentials</i> pages 353-356 <i>Study Guide and Reinforcement</i> page 85

EIGHTH GRADE STANDARDS	REFERENCES
<ul style="list-style-type: none"> Lunar and solar eclipses, moon phases, tides, seasons 	SE: pages 663-665 (Chapter 23, Section 1) pages 666-670 (Chapter 23, Section 2) <i>Science Online</i> page 669 (Chapter 23, Section 2) * <i>Lab</i> page 675 (Chapter 23, Section 2) TWE: QD page 664 (Chapter 23, Section 1) R page 665 (Chapter 23, Section 1) QD page 669 (Chapter 23, Section 2) LD page 670 (Chapter 23, Section 2) R page 674 (Chapter 23, Section 2) <i>Chapter 23 (The Sun-Earth-Moon System) Fast File</i> pages 19, 26, 29, 49 <i>Reading Essentials</i> pages 288-289, 357-362 <i>Study Guide and Reinforcement</i> page 86 <i>Virtual Lab CD-ROM</i> (tide lab)
Goal 5 – SCIENCE, TECHNOLOGY, ENVIRONMENT AND SOCIETY Students will identify and evaluate the relationships and ethical implications of science, upon technology, environment, and society.	
Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.	
1. (C) Describe how science and technology have been influenced by social needs, attitudes, and values. Examples: GPS/GIS, Corps of Engineers (dams), NOAA (weather satellites), NASA (space exploration), USGS (mapping)	SE: pages 12-14 (Chapter 1, Section 1) pages 16-17 (Chapter 1, Section 2) pages 164-170 (Chapter 6, Section 3) pages 470-472 (Chapter 16, Section 3) pages 628-633 (Chapter 22, Section 1) pages 635-642 (Chapter 22, Section 2) pages 643-649 (Chapter 22, Section 3) pages 676-679 (Chapter 23, Section 2) TWE: CD page 16 (Chapter 1, Section 2) SJ page 467 (Chapter 16, Section 2) SCB pages 626E-F (Chapter 22, Chapter Opener) <i>Chapter 12 (Volcanoes) Fast File</i> page 28 <i>Reading and Writing Skill Activities</i> pages 9-10

EIGHTH GRADE STANDARDS	REFERENCES
Indicator 2: Analyze relationships/interactions among science, technology, environment, and society.	
<p>1. (S) Given a scenario, offer solutions to problems created by human activity on the local, regional, or global environment. Example: global warming, deforestation</p>	<p>SE: pages 196-199 (Chapter 7, Section 3) <i>Science Online</i> page 197 (Chapter 7, Section 3) <i>Science and Society</i> page 262 (Chapter 9, Section 3) <i>Science and Society</i> page 592 (Chapter 20, Section 3) <i>Science and Society</i> page 652 (Chapter 22, Section 3)</p> <p>TWE: R page 199 (Chapter 7, Section 3) CFU page 584 (Chapter 20, Section 2) IL page 605 (Chapter 21, Section 1) <i>Chapter 20 (Our Impact on Land) Fast Files</i> pages 9-12 <i>Chapter 21 (Our Impact on Water and Air) Fast Files</i> pages 26, 41-42 <i>Performance Assessment in the Science Classroom</i> pages 43, 63 <i>Laboratory Activities Manual</i> pages 115-118 <i>Reading and Writing Skills Activities</i> pages 23-24 <i>Virtual Lab CD-ROM</i> (water conservation lab)</p>

Codes Used for TWE Pages

A	Assessment
ACT	Activity
CB	Content Background
CC	Curriculum Connection
CD	Cultural Diversity
CFU	Check for Understanding
CYD	Communicating Your Data
DI	Differentiated Instruction
DIS	Discussion
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MM	Make a Model
NG	National Geographic
QD	Quick Demo
R	Reteach
SCB	Science Content Background
SJ	Science Journal
TFYI	Teacher FYI
TPK	Tie to Prior Knowledge
UAA	Use an Analogy
UP	Unit Project
USW	Use Science Words
V	Visualizing
VL	Visual Learning