



ARIZONA
Earth and Space Science Standards Grades 6 and 7
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OBJECTIVES	PAGE REFERENCES
Strand 6: Earth and Space Science	
Concept 1: Structure of the Earth Describe the composition and interactions between the structure of the Earth and its atmosphere.	
Grade 6	
PO 1. Describe the properties and the composition of the layers of the atmosphere.	SE: 426-433 <i>Applying Science</i> 430 <i>Section Review</i> 433 #1, #2, #4-#6 TWE: TP 426 D 427 TF 427 IM 428
PO 2. Explain the composition, properties, and structure of the Earth's lakes and rivers.	SE: 242-243 <i>Science Online</i> 242 <i>National Geographic Society Visualizing</i> 244-245 <i>Lab</i> 608 TWE: CC 242 AC 243, 244 DI 243, 601 CD 604
PO 3. Explain the composition, properties, and structures of the oceans' zones and layers.	SE: 515-516, 518-523 <i>MiniLab</i> 521 <i>Section Review</i> 523 #1-#3, #5 TWE: TC 512 MA 516 AS 523
PO 4. Analyze the interactions between the Earth's atmosphere and the Earth's bodies of water (water cycle).	SE: 437, 519 <i>Section Review</i> 438 #3, #4 TWE: IM 437 SJ 437 R 438 CD 521
PO 5. Describe ways scientists explore the Earth's atmosphere and bodies of water. (See Strand 2 Concept 1)	SE: 463, 470-472 <i>Section Review</i> 472 #1-#4 <i>Figure 8</i> 520 <i>Integrate Career</i> 522 TWE: DI 428, 444 TF 442 CC 459 IL 464

OBJECTIVES	PAGE REFERENCES
Grade 7	
PO 1. Classify rocks and minerals by the following observable properties: <ul style="list-style-type: none"> • grain • color • texture • hardness 	SE: <i>Applying Science</i> 70 <i>Lab</i> 80-81, 98, 110-111 <i>Science Online</i> 100 TWE: DI 65, 104 QD 71 AS 81, 98
PO 2. Describe the properties and the composition of the following major layers of the Earth: <ul style="list-style-type: none"> • crust • mantle • core 	SE: 280, 285, 309-311 <i>Section Review</i> 311 #3, #5, #6 TWE: CC 309 DI 310 UA 310
PO 3. Explain the following processes involved in the formation of the Earth's structure: <ul style="list-style-type: none"> • erosion • deposition • plate tectonics • volcanism 	SE: 286-288, 333-335 <i>Section Review</i> 214 #2, 248 #4, #5, 278 #4, 335 #1, #3-#6 <i>Integrate Physics</i> 288 TWE: CU 278 CC 287
PO 4. Describe how the rock and fossil record show that environmental conditions have changed over geologic and recent time.	SE: 368-369, 397-399, 401 <i>Integrate Life Science</i> 368 <i>Section Review</i> 399 #5 <i>Integrate Chemistry</i> 401 TWE: VL 368 D 401 SJ 404
Concept 2: Earth's Processes and Systems Understand the processes acting on the Earth and their interaction with the earth systems.	
Grade 6	
PO 1. Explain how water is cycled in nature.	SE: 50-51, 215, 218-219, 238, 249-251, 427, 437 <i>Section Review</i> 270 #5, 438 #3, #4
PO 2. Identify the distribution of water within or among the following: <ul style="list-style-type: none"> • atmosphere • lithosphere • hydrosphere 	SE: 215, 218, 238-239, 251-254, 437 <i>National Geographic Society Visualizing</i> 244-245 TWE: VL 242 DI 243, 250
PO 3. Analyze the effects that bodies of water have on the climate of a region.	SE: 468, 485-486 <i>Section Review</i> 487 #1 <i>National Geographic Society Visualizing</i> 244-245 TWE: CC 485 TF 486

OBJECTIVES	PAGE REFERENCES
PO 4. Analyze the following factors that affect climate: <ul style="list-style-type: none"> • ocean currents • elevation • location 	SE: 484-487 <i>National Geographic Society Visualizing</i> 244-245 <i>Section Review 487 #1-#5</i> Lab 504-505 TWE: AS 487 CC 494
PO 5. Analyze the impact of large-scale weather systems on the local weather.	SE: <i>Section Review 469 #1, #2, #6</i> TWE: CC 464, 468 DI 464 AS 487 NGS 494
PO 6. Create a weather system model that includes: <ul style="list-style-type: none"> • the Sun • the atmosphere • bodies of water 	SE: <i>Science Online 17</i> Lab 473 TWE: IL 464 DI 471 VLB 472 CYD 473
Grade 7	
PO 1. Explain the rock cycle.	SE: 91 <i>MiniLab 91</i> <i>National Geographic Society Visualizing 92</i> <i>Section Review 93 #3-#6</i> TWE: TC 88 D 92 NGS 92
PO 2. Distinguish the components and characteristics of the rock cycle for the following types of rocks: <ul style="list-style-type: none"> • igneous • metamorphic • sedimentary 	SE: <i>Section Review 93 #2, #5, #6, 102 #5</i> <i>MiniLab 91</i> TWE: DI 91 AC 92 AS 109 MA 109
PO 3. Analyze the evidence that lithospheric plate movements occur.	SE: 288-289 <i>Integrate Chemistry 277</i> Lab 279 <i>Science Online 282</i> TWE: DI 277 D 278 VL 284
PO 4. Explain lithospheric plate movement as a result of convection.	SE: 276-277, 285, 295 #21 <i>Section Review 289 #3</i> TWE: AR 285
PO 5. Relate plate boundary movements to their resulting landforms, including: <ul style="list-style-type: none"> • mountains • faults • rift valleys • trenches • volcanoes 	SE: 276-277, 281-282, 284, 286-288 <i>National Geographic Society Visualizing 283</i> TWE: AC 283 CD 285

OBJECTIVES	PAGE REFERENCES
PO 6. Describe how earthquakes are measured.	SE: 307-308, 313-317 <i>National Geographic Society Visualizing</i> 306 <i>Science Online</i> 307 <i>Applying Math</i> 317 TWE: DI 306 NGS 306 IL 308
Concept 3: Earth in the Solar System Understand the relationships of the Earth and other objects in the solar system.	
Grade 6	
No objectives are listed for Grade 6.	
Grade 7	
PO 1. Explain the phases of the Moon in terms of the relative positions of the Earth, Sun, and Moon.	SE: 667-668, 685 #16, #23 TWE: TC 658 US 668 FF 669
PO 2. Construct a model for the relative positions of the Earth, Sun, and Moon as they relate to corresponding eclipses.	SE: 668-670 <i>Science Online</i> 669 <i>Lab</i> 675 TWE: TF 668 VL 668 QD 669 AC 670
PO 3. Explain the interrelationship between the Earth's tides and the Moon.	SE: 527-530 <i>Science Online</i> 527 <i>Section Review</i> 530 #3, #6 TWE: QD 527 AC 528 DI 529 D 530
PO 4. Explain the seasons in the Northern and Southern Hemispheres in terms of the tilt of the Earth's axis relative to the Earth's revolution around the Sun.	SE: 663-665 <i>Science Online</i> 665 <i>Section Review</i> 665 #4 TWE: AC 663 D 664 QD 664 R 665
PO 5. Identify the following major constellations visible (seasonally) from the Northern Hemisphere: <ul style="list-style-type: none"> • Orion • Ursa Major (Great Bear) • Cygnus • Scorpius • Cassiopeia 	SE: 724-725 <i>MiniLab</i> 725 <i>Section Review</i> 728 #2 TWE: IM 725 SJ 725 TF 725
PO 6. Explain the relationship among common objects in the solar system, galaxy, and the universe.	SE: 712-713, 740 <i>Science Online</i> 691 <i>Section Review</i> 713 #4, #5, 745 #2-#6 <i>Model and Invent</i> 714-715 TWE: SJ 711 TP 740

Codes Used for TWE Pages

AC	Activity
AR	Active Reading
AS	Assessment
CC	Curriculum Connection
CD	Cultural Diversity
CU	Check for Understanding
CYD	Communicating Your Data
D	Discussion
DI	Differentiated Instruction
FF	Fun Fact
IL	Inquiry Lab
IM	Identifying Misconceptions
MA	Make a Model
NGS	National Geographic Society Visualizing
QD	Quick Demo
R	Reteach
SJ	Science Journal
TC	Theme Connection
TF	Teacher FYI
TP	Tie to Prior Knowledge
UA	Use an Analogy
US	Use Science Words
VL	Visual Learning
VLB	Virtual Labs