

G L E N C O E

Correlation



*New Mexico Science Content Standards
Grade 6*



NEW MEXICO
Science Content Standards
Grade 6
Earth Science © 2005

STANDARDS	PAGE REFERENCES
Strand I: Scientific Thinking and Practice	
Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.	
5-8 Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.	
1. Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated.	SE: 9-11, 15, 18-19, 636 TWE: 4E HCI : 26, 27, 36, 40
2. Examine the reasonableness of data supporting a proposed scientific explanation.	SE: 20-21 HCI : 48
3. Justify predictions and conclusions based on data.	SE: 23, 25, 45, 53, 67, 81, 98, 111, 136, 143, 171, 173, 195, 201, 221, 229, 259, 261, 279, 291, 312, 321, 344, 351, 376, 383, 407, 415, 434, 445, 473, 475, 503, 505, 531, 533, 548, 585, 563, 591, 608, 617, 634, 651, 675, 681, 695, 715, 733, 747 SIL: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60 LMS: 69-75
5-8 Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.	
1. Understand that scientific knowledge is continually reviewed, critiqued, and revised as new data become available.	SE: 15, 18-19, 20-21 TWE: 4E, 4F

STANDARDS	PAGE REFERENCES
2. Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations.	SE: 23, 24-25, 45, 52-53, 67, 80-81, 98, 110-111, 136, 142-143, 171, 172-173, 195, 200-201, 221, 228-229, 259, 261, 279, 290-291, 312, 320-321, 344, 350-351, 376, 382-383, 407, 414-415, 434, 444-445, 473, 474-475, 503, 504-505, 531, 532-533, 548, 585, 562-563, 590-591, 608, 616-617, 634, 650-651, 675, 680-681, 695, 714-715, 733, 746-747 SIL: 1-2, 3-4, 5-6, 7-8, 9-10, 11-12, 13-14, 15-16, 17-18, 19-20, 21-22, 23-24, 25-26, 27-28, 29-30, 31-32, 33-34, 35-36, 37-38, 39-40, 41-42, 43-44, 45-46, 47-48, 49-50, 51-52, 53-54, 55-56, 57-58, 59-60 LMS: 69-75 HCI: 30-34, 36-49
3. Understand that not all investigations result in defensible scientific explanations.	SE: 20-21
5-8 Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge.	
1. Evaluate the usefulness and relevance of data to an investigation.	SE: 10, 23, 24, 45, 52, 67, 80, 98, 110, 136, 142-, 171, 172, 195, 200, 221, 228, 259, 261, 279, 290, 312, 320, 344, 350, 376, 382, 407, 414, 434, 444, 473, 474, 503, 504, 531, 532, 548, 585, 562, 590, 608, 616, 634, 650, 675, 680, 695, 714, 733, 746 SIL: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59 LMS : 69-75 HCI : 30-34
2. Use probabilities, patterns, and relationships to explain data and observations.	SE: 23, 25, 45, 53, 67, 81, 98, 111, 136, 143, 171, 173, 195, 201, 221, 229, 259, 261, 279, 291, 312, 321, 344, 351, 376, 383, 407, 415, 434, 445, 473, 475, 503, 505, 531, 533, 548, 585, 563, 591, 608, 617, 634, 651, 675, 681, 695, 715, 733, 747 SIL: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60 LMS : 69-75 HCI: 26, 27, 36-49
Strand II: Content of Science Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.	
5-8 Benchmark I: Know the forms and properties of matter and how matter interacts.	

STANDARDS	PAGE REFERENCES
1. Understand that substances have characteristic properties and identify the properties of various substances (e.g., density, boiling point, solubility, chemical reactivity).	SE: 46, 47 TWE: 32E, 32F SIL: 43-44, 57-58 New Mexico Science Essentials, Grade 6: Lesson A
2. Use properties to identify substances (e.g., for minerals: the hardness, streak, color, reactivity to acid, cleavage, fracture).	SE: 62, 68-71, 72-74, 78, 80, 81, 83 TWE: 60E New Mexico Science Essentials, Grade 6: Lesson B
3. Know that there are about 100 known elements that combine to produce compounds in living organisms and nonliving substances.	SE: 40, 41-43 CTP: 13 New Mexico Science Essentials, Grade 6: Lesson C
4. Know the differences between chemical and physical properties and how these properties can influence the interactions of matter.	SE: 40, 45, 46, 50, 52, 53 SIL: 43-44, 57-58 New Mexico Science Essentials, Grade 6: Lesson D
5-8 Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.	
1. Identify various types of energy (e.g., heat, light, mechanical, electrical, chemical, nuclear).	SE: 127-129, 130, 131, 132 TWE: 118E SIL: 9-10 LMS: 18, 19, 20 CTE: 10 CTP: 20 New Mexico Science Essentials, Grade 6: Lessons E, F
2. Understand that heat energy can be transferred through conduction, radiation and convection.	SE: 436, 437 TWE: 624E SIL: 55-56 New Mexico Science Essentials, Grade 6: Lesson G
3. Know that there are many forms of energy transfer but that the total amount of energy is conserved (i.e., that energy is neither created nor destroyed).	New Mexico Science Essentials, Grade 6: Lesson H
4. Understand that some energy travels as waves (e.g., seismic, light, sound), including: <ul style="list-style-type: none"> • the sun as source of energy for many processes on Earth • different wavelengths of sunlight (e.g., visible, ultraviolet, infrared) • vibrations of matter (e.g., sound, earthquakes) • different speeds through different materials. 	SE: 304-306, 310, 311, 429, 524, 526, 628, 629 New Mexico Science Essentials, Grade 6: Lessons I, J
5-8 Benchmark III: Describe and explain forces that produce motion in objects.	

STANDARDS	PAGE REFERENCES
1. Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides).	SE: 520, 529, 530 New Mexico Science Essentials, Grade 6: Lessons K, L
2. Know that gravitational force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass.	New Mexico Science Essentials, Grade 6: Lesson L
Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.	
5-8 Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.	
1. Understand how organisms interact with their physical environments to meet their needs (i.e., food, water, air) and how the water cycle is essential to most living systems.	SE: 437 RWS: 29-30 New Mexico Science Essentials, Grade 6: Lessons M, N
2. Describe how weather and geologic events (e.g., volcanoes, earthquakes) affect the function of living systems.	SE: 465-469 SIL: 39-40 CTP: 16 RWS: 27-28 CD: 47-48 New Mexico Science Essentials, Grade 6: Lessons O, P, Q
3. Describe how organisms have adapted to various environmental conditions.	SE: 394 New Mexico Science Essentials, Grade 6: Lesson R
5-8 Benchmark II: Understand how traits are passed from one generation to the next and how species evolve.	
1. Understand that the fossil record provides data for how living organisms have evolved.	SE: 397 CD: 13-14 New Mexico Science Essentials, Grade 6: Lesson S
2. Describe how species have responded to changing environmental conditions over time (e.g., extinction, adaptation).	SE: 394, 397 CTE: 12 New Mexico Science Essentials, Grade 6: Lesson R
5-8 Benchmark III: Understand the structure of organisms and the function of cells in living systems.	
1. Explain how fossil fuels were formed from animal and plant cells.	SE: 120-121, 122-123 TWE: 118E SIL: 33-34 CTE: 17 CD: 45-46 New Mexico Science Essentials, Grade 6: Lesson E

STANDARDS	PAGE REFERENCES
2. Describe the differences between substances that were produced by living organisms (e.g., fossil fuels) and substances that result from nonliving processes (e.g., igneous rocks).	SE: 120-127, 90-97, 99-102, 103-109 SIL: 33-34 CTE: 4 CD: 45-46 New Mexico Science Essentials, Grade 6: Lesson T
Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.	
5-8 Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.	
Universe	
1. Describe the objects in the universe, including: <ul style="list-style-type: none"> billions of galaxies, each containing billions of stars different sizes, temperatures, and colors of stars in the Milky Way galaxy. 	SE: 724-728, 729-732, 734-739, 740-745 TWE: 722E, 722F CTP: 4 New Mexico Science Essentials, Grade 6: Lessons U, V
Solar System	
2. Locate the solar system in the Milky Way galaxy.	SE: 740 TWE: 722F New Mexico Science Essentials, Grade 6: Lessons U, V
3. Identify the components of the solar system, and describe their defining characteristics and motions in space, including: <ul style="list-style-type: none"> sun as a medium sized star sun's composition (i.e., hydrogen, helium) and energy production nine planets, their moons, asteroids. 	SE: 696-701, 702-709, 729-732 TWE: 688E CTP: 4 CD: 71-72 New Mexico Science Essentials, Grade 6: Lessons W, X, Y, Z
4. Know that the regular and predictable motions of the Earth-moon-sun system explain phenomena on Earth, including: <ul style="list-style-type: none"> Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides, and shadows moon's orbit around Earth once in 28 days in relation to the phases of the moon. 	SE: 662-665, 666, 667-670 TWE: 658E CD: 71-72 New Mexico Science Essentials, Grade 6: Lessons AA, BB
5-8 Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.	
Structure of Earth	
1. Know that Earth is composed of layers that include a crust, mantle, and core.	SE: 285, 309, 311 New Mexico Science Essentials, Grade 6: Lesson CC
2. Know that Earth's crust is divided into plates that move very slowly, in response to movements in the mantle.	SE: 498 New Mexico Science Essentials, Grade 6: Lesson CC

STANDARDS	PAGE REFERENCES
3. Know that sedimentary, igneous, and metamorphic rocks contain evidence of the materials, temperatures, and forces that created them.	SE: 94-95, 96-97, 99-100, 100-102, 103, 104-107 TWE: 88E, 88F CTE: 4 RWS: 21-22 New Mexico Science Essentials, Grade 6: Lessons DD, EE, FF, GG
Weather and Climate	
4. Describe the composition (i.e., nitrogen, oxygen, water vapor) and strata of Earth's atmosphere, and differences between the atmosphere of Earth and those of other planets.	SE: 426-427, 428 TWE: 424E RWS: 3-4 New Mexico Science Essentials, Grade 6: Lessons W, X, HH
5. Understand factors that create and influence weather and climate, including: <ul style="list-style-type: none"> • heat, air movement, pressure, humidity, oceans • how clouds form by condensation of water vapor • how weather patterns are related to atmospheric pressure • global patterns of atmospheric movement (e.g., El Niño) • factors that can impact Earth's climate (e.g., volcanic eruptions, impacts of asteroids, glaciers). 	SE: 454, 455-456, 457, 458, 462, 463, 484-487, 493-495 TWE: 452E, 452F, 482E SIL: 7-8, 27-28 CTE: 9 RWS: 3-4, 19-20 New Mexico Science Essentials, Grade 6: Lessons O, II, JJ, KK
6. Understand how to use weather maps and data (e.g., barometric pressure, wind speeds, humidity) to predict weather.	SE: 470-472 SIL: V LMS: 20 RWS: 3-4, 13-14, 45-46 New Mexico Science Essentials, Grade 6: Lesson LL
Changes to Earth	
7. Know that landforms are created and change through a combination of constructive and destructive forces, including: <ul style="list-style-type: none"> • weathering of rock and soil, transportation, deposition of sediment, and tectonic activity • similarities and differences between current and past processes on Earth's surface (e.g., erosion, plate tectonics, changes in atmospheric composition) • impact of volcanoes and faults on New Mexico geology. 	SE: 154-159, 172-173, 280-289, 300-303, 304-311, 330-335, 345-349 CTE: 7, 9 RWS: 21-22 New Mexico Science Essentials, Grade 6: Lessons MM, NN, OO, PP

STANDARDS	PAGE REFERENCES
8. Understand the history of Earth and how information about it comes from layers of sedimentary rock, including: <ul style="list-style-type: none"> • sediments and fossils as a record of a very slowly changing world • evidence of asteroid impact, volcanic and glacial activity. 	SE: 362-369, 370-375, 376, 377-381, 382-383, 392-399, 400-406, 408-413 CTE: 11, 12 RWS: 21 New Mexico Science Essentials, Grade 6: Lessons NN, PP, RR, SS
Strand III: Science and Society Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.	
5-8 Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies.	
1. Examine the role of scientific knowledge in decisions (e.g., space exploration, what to eat, preventive medicine and medical treatment).	SE: 37, 38, 82, 129, 132, 138, 649 SIL: 21-22 CTL: 5, 8, 18, 20 CTE: 2, 19 CTP: 5, 8, 14, 17, 20, 22 RWS: 11-12, 31-32, 33-34, 51-52 CD: 1-2, 25-26
2. Describe the technologies responsible for revolutionizing information processing and communications (e.g., computers, cellular phones, Internet).	SE: 127-129, 152, 170, 470, 429, 635-636, 643-644, 706, 707, 711, 738, 745 TWE: 636F CTL: 14 RWS: 9

Key to Abbreviations

- SE: Student Edition
 TWE: Teacher Wraparound Edition
 SIL: Science Inquiry Labs
 LMS: Laboratory Management and Safety in the Science Classroom
 HCI: Home and Community Involvement in the Science Classroom
 CTL: Critical Thinking/Problem Solving Life Science
 CTE: Critical Thinking/Problem Solving Earth Science
 CTP: Critical Thinking/Problem Solving Physical Science
 RWS: Reading and Writing Skill Activities
 CD: Cultural Diversity Activities for the Science Classroom