

G L E N C O E

Correlation



***New Mexico Science Content Standards
Grade 7***



NEW MEXICO
Science Content Standards
Grade 7
Life 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. Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis.	SE: 88, 197, 262, 503, 681 TWE: 182, 184E, 262, 480, 482E, 710E 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: 29-34, 36-49
2. Use models to explain the relationships between variables being investigated.	SE: 111, 187, 230, 472, 748 TWE: 165, 183, 698, 728, 756, 774
5-8 Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.	
1. Describe how bias can affect scientific investigation and conclusions.	SE: 810
2. Critique procedures used to investigate a hypothesis.	SE: 8, 29, 351, 800, 810 TWE: 28, 418, 806 HCI: 48
3. Analyze and evaluate scientific explanations.	SE: 7-11, 802 TWE: 802, 809
5-8 Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge.	
1. Understand that the number of data (sample size) influences the reliability of a prediction.	TWE: 807 HCI: 31
2. Use mathematical expressions to represent data and observations collected in scientific investigations.	SE: 832, 842-846 TWE: 807, 808

STANDARDS	PAGE REFERENCES
4. Select and use an appropriate model to examine a phenomenon.	SE: 160, 748, 792 TWE: 698,793 HCI: 27, 40
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.	
1. Explain how matter is transferred from one organism to another and between organisms and their environment (e.g., consumption, the water cycle, the carbon cycle, the nitrogen cycle).	SE: 720-726, 727 TWE: 720, 721, 724, 725, 730 SIL: 3-4, 5-6 New Mexico Science Essentials, Grade 7: Lesson A
2. Know that the total amount of matter (mass) remains constant although its form, location, and properties may change (e.g., matter in the food web).	SE: 720, 728, 729 TWE: 721, 728, 729 SIL: 43-44 New Mexico Science Essentials, Grade 7: Lesson B
3. Identify characteristics of radioactivity, including: <ul style="list-style-type: none"> • decay in time of some elements to others • release of energy • damage to cells. 	SE: 165, 670, 794, 786, 873 TWE: 165, 774 New Mexico Science Essentials, Grade 7: Lesson C
4. Describe how substances react chemically in characteristic ways to form new substances (compounds) with different properties (e.g., carbon and oxygen combine to form carbon dioxide in respiration).	SE: 68-69 TWE: 68, 69 SIL: 53-54 LMS Science Classroom: 19 New Mexico Science Essentials, Grade 7: Lesson D
5. Know that chemical reactions are essential to life processes.	SE: 70, 81-87, 696 TWE: 84, 697 TWE: 244A-244F LMS Science Classroom: 19 New Mexico Science Essentials, Grade 7: Lesson B
5-8 Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.	
1. Know how various forms of energy are transformed through organisms and ecosystems, including: <ul style="list-style-type: none"> • sunlight and photosynthesis • energy transformation in living systems (e.g., cellular processes changing chemical energy to heat and motion) • effect of mankind's use of energy and other activities on living systems (e.g., global warming, water quality). 	SE: 82, 83, 696-697, 726, 733, 754, 778-787 TWE: 82, 83, 727, 778-787 CTL: 8 CTL: 14 New Mexico Science Essentials, Grade 7: Lesson E
5-8 Benchmark III: Describe and explain forces that produce motion in objects.	

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1. Know that forces cause motion in living systems, including: <ul style="list-style-type: none"> • the principle of a lever and how it gives mechanical advantage to a muscular/skeletal system to lift objects • forces in specific systems in the human body (e.g., how the heart generates blood pressure, how muscles contract and expand to produce motion). 	SE: 363, 483, 490, 491, 492, 494, 495, 572 TWE: 491-494, New Mexico Science Essentials, Grade 7: Lesson F
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.	
Populations and Ecosystems	
1. Identify the living and nonliving parts of an ecosystem and describe the relationships among these components.	SE: 685 TWE: 685 RWS: 49-50 CD: 13-14 New Mexico Science Essentials, Grade 7: Lessons G, H
2. Explain biomes (i.e., aquatic, desert, rainforest, grasslands, tundra) and describe the New Mexico biome.	SE: 744-751 TWE: 685, 744-751 New Mexico Science Essentials, Grade 7: Lesson I
3. Explain how individuals of species that exist together interact with their environment to create an ecosystem (e.g., populations, communities, niches, habitats, food webs).	SE: 686-687, 689-695, 699, 728 TWE: 682E, 685-687, 700 RWS: 49-50 CD: 13-14 New Mexico Science Essentials, Grade 7: Lessons G, J
4. Explain the conditions and resources needed to sustain life in specific ecosystems.	SE: 690, 744-759, TWE: 738E, 738F, 758 New Mexico Science Essentials, Grade 7: Lessons I, K
5. Describe how the availability of resources and physical factors limit growth (e.g., quantity of light and water, range of temperature, composition of soil) and how the water, carbon, and nitrogen cycles contribute to the availability of those resources to support living systems.	SE: 712-718, 720-725 TWE: 714, 715, 717, 720, 724, 725 New Mexico Science Essentials, Grade 7: Lessons L, M
Biodiversity	
6. Understand how diverse species fill all niches in an ecosystem.	SE: 699 TWE: 699, 700 CD: 19-20 New Mexico Science Essentials, Grade 7: Lessons J, N

STANDARDS	PAGE REFERENCES
7. Know how to classify organisms: domain, kingdom, phylum, class, order, family, genus, species.	SE: 23, 848-851 TWE: 4E SIL: 19-20 HCI: 43 CTL: 1 New Mexico Science Essentials, Grade 7: Lesson O
5-8 Benchmark II: Understand how traits are passed from one generation to the next and how species evolve.	
Reproduction	
1. Know that reproduction is a characteristic of all living things and is essential to the continuation of a species.	SE: 17 TWE: 17 New Mexico Science Essentials, Grade 7: Lesson P
2. Identify the differences between sexual and asexual reproduction.	SE: 101- 105 TWE: 94E, 94F New Mexico Science Essentials, Grade 7: Lessons P, Q
3. Know that, in sexual reproduction, an egg and sperm unite to begin the development of a new individual.	SE: 104-105 TWE: 94E New Mexico Science Essentials, Grade 7: Lesson Q
4. Know that organisms that sexually reproduce fertile offspring are members of the same species.	SE: 154 New Mexico Science Essentials, Grade 7: Lesson Q
Heredity	
5. Understand that some characteristics are passed from parent to offspring as inherited traits and others are acquired from interactions with the environment.	SE: 136 TWE: 94 New Mexico Science Essentials, Grade 7: Lesson R
6. Know that hereditary information is contained in genes that are located in chromosomes, including: <ul style="list-style-type: none"> • determination of traits by genes • traits determined by one or many genes • more than one trait sometimes influenced by a single gene. 	SE: 112, 130, 135, 136 TWE: 124E CTE: 19 RWS: 51-52 New Mexico Science Essentials, Grade 7: Lesson S
Biological Evolution	
7. Describe how typical traits may change from generation to generation due to environmental influences (e.g., color of skin, shape of eyes, camouflage, shape of beak).	SE: 156 TWE: 152F New Mexico Science Essentials, Grade 7: Lesson T
8. Explain that diversity within a species is developed by gradual changes over many generations.	SE: 154, 158 New Mexico Science Essentials, Grade 7: Lesson T

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9. Know that organisms can acquire unique characteristics through naturally occurring genetic variations.	SE: 158 TWE: 158 New Mexico Science Essentials, Grade 7: Lesson T
10. Identify adaptations that favor the survival of organisms in their environments (e.g., camouflage, shape of beak).	SE: 157, 158, 332,333 TWE: 156 SIL: 7-8 New Mexico Science Essentials, Grade 7: Lesson T
11. Understand the process of natural selection.	SE: 157-158 New Mexico Science Essentials, Grade 7: Lesson T
12. Explain how species adapt to changes in the environment or become extinct and that extinction of species is common in the history of living things.	SE: 160, 161 SIL: 7-8 RWS: 15-16 CD: 3-4, 9-10 New Mexico Science Essentials, Grade 7: Lesson T
13. Know that the fossil record documents the appearance, diversification, and extinction of many life forms.	SE: 163-165, 166-167, TWE: 166, 167 CTE: 12 RWS: 15-16 New Mexico Science Essentials, Grade 7: Lesson U
5-8 Benchmark III: Understand the structure of organisms and the function of cells in living systems.	
Structure of Organisms	
1. Understand that organisms are composed of cells and identify unicellular and multicellular organisms.	SE: 14, 51, 210, 215, 222, 240 TWE: 36E, 208E New Mexico Science Essentials, Grade 7: Lesson V, W
2. Explain how organs are composed of tissues of different types of cells (e.g., skin, bone, muscle, heart, intestines).	SE: 45 TWE: 45 New Mexico Science Essentials, Grade 7: Lesson X
Function of Cells	
3. Understand that many basic functions of organisms are carried out in cells, including: <ul style="list-style-type: none"> • growth and division to produce more cells (mitosis) • specialized functions of cells (e.g., reproduction, nerve-signal transmission, digestion, excretion, movement, transport of oxygen). 	SE: 74-79, 82-85, 104, 105, 595 TWE: 77, 79 New Mexico Science Essentials, Grade 7: Lesson X

STANDARDS	PAGE REFERENCES
4. Compare the structure and processes of plant cells and animal cells.	SE: 41 TWE: 328E New Mexico Science Essentials, Grade 7: Lesson X
5. Describe how some cells respond to stimuli (e.g., light, heat, pressure, gravity).	SE: 15, 311, 312 New Mexico Science Essentials, Grade 7: Lesson Y, Z
6. Describe how factors (radiation, UV light, drugs) can damage cellular structure or function.	SE: 114, 197, 602, 668, 670, 781 TWE: 114 New Mexico Science Essentials, Grade 7: Lesson Y
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.	
1. Explain why Earth is unique in our solar system in its ability to support life.	SE: 684, 685 New Mexico Science Essentials, Grade 7: Lesson AA
2. Explain how energy from the sun supports life on Earth.	SE: 307, 714, 720, 726-729 New Mexico Science Essentials, Grade 7: Lesson H
5-8 Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.	
1. Understand how the remains of living things give us information about the history of Earth, including: <ul style="list-style-type: none"> • layers of sedimentary rock, the fossil record, and radioactive dating showing that life has been present on Earth for more than 3.5 billion years. 	SE: 163-167 TWE: 152E, 164-167 CTP: 11 New Mexico Science Essentials, Grade 7: Lesson U
2. Understand how living organisms have played many roles in changes of Earth's systems through time (e.g., atmospheric composition, creation of soil, impact on Earth's surface).	SE: 369, 720-725, 740-743 New Mexico Science Essentials, Grade 7: Lesson M
3. Know that changes to ecosystems sometimes decrease the capacity of the environment to support some life forms and are difficult and/or costly to remediate.	SE: 778-786 New Mexico Science Essentials, Grade 7: Lesson N
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.	

STANDARDS	PAGE REFERENCES
1. Analyze the contributions of science to health as they relate to personal decisions about smoking, drugs, alcohol, and sexual activity.	SE: 548, 574-576, 662, 663, 670,671 TWE: 574, 575, 662, 663, 670,671, 783 CTL: 17 RWS: 9-10, 31-32
2. Analyze how technologies have been responsible for advances in medicine (e.g., vaccines, antibiotics, microscopes, DNA technologies).	SE: 47-50, 55, 58, 142, 199, 229, 670, 674 TWE: 48, 49, 184F, 674 CTL: 18, 20 CTP: 19, 22 RWS: 9-10, 31-32 CD: 1-2, 15-16
3. Describe how scientific information can help individuals and communities respond to health emergencies (e.g., CPR, epidemics, HIV, bio-terrorism).	SE: 55, 553, 554, 663, 664 SIL: 21-22 RWS: 9-10, 31-32

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