

GLENCOE CORRELATION
SCIENCE LEVEL GREEN
SOUTH DAKOTA
Science Standards
Seventh Grade

STANDARDS	PAGE REFERENCES
SEVENTH GRADE NATURE OF SCIENCE STANDARDS	
STUDENTS WILL:	
1. analyze societal response to major scientific findings or theories. (example: Einstein's, Galileo's, Madame Curie's)	SE: <i>Science and Society</i> 262-263 <i>Science and History</i> 656-657 TWE: HS 91, 173 E 263 ITI 263 D 393 CH 398 MA 497
2. understand the need for continual re-evaluation of scientific knowledge.	SE: 22 <i>Science Online</i> 8 <i>Section Assessment</i> 398 #5 TWE: AC 22 D 91 CH 494 AS 537
3. describe the limitations of scientific study.	SE: <i>Connections</i> 263 <i>Science Connection</i> 389 <i>Section Assessment</i> 503 #5 TWE: SJ 215 D 500, 502, 507
4. investigate uses of hypotheses in science. (example: evaluating relevance of data, determining data to be obtained, interpreting old and new data directly, identifying the need for new information)	SE: 21, 492-493 <i>Section Assessment</i> 23 #2, 5 <i>National Geographic Society Visualizing</i> 493 TWE: D 19 AC 21, 493 AS 23, 411
5. evaluate the conclusions to scientific investigations.	SE: <i>Use the Internet</i> 29, 411 <i>Connections</i> 91 <i>Section Assessment</i> 494 #7 <i>Design Your Own Experiment</i> 351
6. determine the limits of accuracy inherent in a particular measuring device or procedure.	SE: <i>Minilab</i> 40 <i>Design Your Own Experiment</i> 56-57, 594-595 <i>Activity</i> 529 TWE: SC 3 D 41 EA 471 AS 471 CY 529

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7. control variables to test hypotheses by repeated trials.	SE: <i>Design Your Own Experiment</i> 56-57 <i>Activity</i> 586 TWE: D 19 AC 22 CH 23 AS 537
8. identify sources of experimental error.	SE: 40-45 <i>Design Your Own Experiment</i> 56-57 <i>Activity</i> 529 TWE: EA 443, 471, 595 CY 529
9. interpret to make predictions and/or justify conclusions.	SE: <i>Section Assessment</i> 306 #6, 314 #6, 434 #6 <i>Math Skills Activity</i> 305 <i>Design Your Own Experiment</i> 471 TWE: AS 655
10. use research methods to investigate practical and/or personal scientific problems and questions.	SE: <i>Science Connection</i> 67, 207, 573 <i>Activity</i> 529 TWE: IS 20 E 81 AC 199
11. demonstrate appropriate use of apparatus and technologies for investigations.	SE: <i>Use the Internet</i> 28-29, 410-411 <i>Design Your Own Experiment</i> 88-89, 260-261, 536-537 <i>Model and Invent</i> 196-197
12. use proper safety procedures in all investigations.	SE: <i>Activity</i> 169, 195, 435, 551 <i>Model and Invent</i> 504-505 <i>Design Your Own Experiment</i> 654-655
SEVENTH GRADE PHYSICAL SCIENCE STANDARDS	
1. describe how the particle theory of matter aids in understanding the structure of matter.	SE: 518-522 <i>Section Assessment</i> 522 #2, 3, 5, 7 TWE: VL 520 TF 521 CH 522 R 522
2. classify matter based on observable properties.	SE: <i>Minilab</i> 527 TWE: QD 524 AS 527 D 531 AC 533 E 533 IS 533, 534
3. investigate how to use the periodic table of elements as a tool to describe elements.	SE: 542 #14 <i>Try at Home Minilab</i> 519 <i>Science Online</i> 524 TWE: CH 522 D 524 AC 538

STANDARDS	PAGE REFERENCES
4. analyze the differences in particle motion in solids, liquids, and gases. (example: intermolecular bonds in solids restrict the molecules to vibratory motion)	SE: 531-532 <i>Science Online</i> 532 <i>National Geographic Society Visualizing</i> 533 <i>Section Assessment</i> 535 #1, 2 TWE: E 531 TF 531 IS 533
5. apply the Law of Conservation of Matter and Energy to investigate and understand changes in matter.	SE: 561 <i>Section Assessment</i> 117 #7, 561 #4, 5, 7 <i>Activity</i> 378-379 <i>Chemistry Integration</i> 498 TWE: TF 376
6. understand that the differentiation between homogeneous mixtures (solutions) and heterogeneous mixtures is a matter of scale.	SE: 527-528 <i>Minilab</i> 527 <i>Section Assessment</i> 528 #4-7 TWE: TF 526 MA 527
7. describe the physical effects of heat transfer, chemical reaction, and mechanical energy on matter.	SE: 534-535, 548, 550, 554-558, 561 <i>Section Assessment</i> 535 #2; 561 #4, 5, 7 TWE: AC 534 LD 548
8. investigate and describe scientific principles and technological applications of work, force, and motion.	SE: 456-461, 462-468, 482-485 <i>Physics Integration</i> 408 <i>Minilab</i> 421 <i>National Geographic Society Visualizing</i> 426 TWE: IS 422 MA 425, 497
9. describe mechanical advantage in relation to work, force, and motion.	SE: <i>Physics Integration</i> 246
10. differentiate between distance, displacement, speed, velocity, and acceleration.	SE: 421, 424 <i>Minilab</i> 421 <i>National Geographic Society Visualizing</i> 426 <i>Science Online</i> 635 TWE: CC 424 CH 638
11. identify Newton's Laws of Motion.	SE: 635 <i>Physics Integration</i> 365, 439
12. compare and contrast the fundamental forces. (example: gravity, electrical, magnetic, nuclear)	SE: 465-468, 481, 635-638 <i>National Geographic Society Visualizing</i> 493 <i>Science Online</i> 635 <i>Section Assessment</i> 638 #3 TWE: CH 468
13. describe methods of heat transfer. (example: conduction, radiation, convection)	SE: 114, 363-365, 456-461 <i>Minilab</i> 405 TWE: IS 365 AR 405

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14. relate waves to the transfer of energy. (example: earthquake waves, sound waves, water waves, and electromagnetic waves)	SE: 422-425, 462-463, 576-580 <i>National Geographic Society Visualizing</i> 426, 464 <i>Section Assessment</i> 580 #5 TWE: E 426 AC 464 VL 582 CD 588 D 605
15. explain the physical interactions of light and matter. (example: transmission, refraction, reflection, polarization)	SE: 587-589, 642-643, 664-668 <i>Try at Home Minilab</i> 588 <i>Physics Integration</i> 671 TWE: QD 589 VL 589 CH 668 E 673
16. explain basic principles of electricity and magnetism including static, current, circuits, magnetic fields, and electromagnetism.	SE: 634-637 <i>Science Online</i> 635 <i>Try at Home Minilab</i> 637 TWE: QD 635 SJ 635 IM 636 MA 636
17. describe characteristics of sound waves. (example: wave length, frequency, amplitude, intensity, loudness)	SE: 604-610, 612-613 <i>Science Online</i> 609 <i>Section Assessment</i> 613 #1, 2 TWE: TF 607, 608 D 608 IM 610 E 611
SEVENTH GRADE LIFE SCIENCE STANDARDS	
1. relate types of cells to their specialized structure and function. (example: nerve cells, muscle cells)	SE: 70-71, 114-117, 131-132, 134, 157, 218-221 TWE: UA 71 VL 134 MA 221
2. demonstrate how structures and functions of cells, tissues, organs, and body systems relate to each other.	SE: 71-77 <i>Section Assessment</i> 77 #4, 7 <i>National Geographic Society Visualizing</i> 111, 272-273 <i>Try at Home Minilab</i> 158 TWE: UA 73 AR 76 IM 76 AC 272
3. compare and contrast plant and animal cells.	SE: <i>Figure</i> 6 73 <i>Section Assessment</i> 77 #6 <i>Activity</i> 78 TWE: CC 71 QD 71 VL 73 AS 77 R 77

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4. recognize the need for organized classification systems in the study of plant and animal life.	SE: 70-71, 250-256 <i>Activity 78</i> <i>Field Guide 698-701</i> TWE: QD 71 R 77
5. describe factors that determine species. (example: reproductive viability, physical characteristics, genetic code)	Implied references to species determination are found on the following pages: SE: 218-221, 223, 275 <i>Chemistry Integration 219</i> <i>Problem-Solving Activity 221</i>
6. compare and contrast sexual and asexual reproduction in plants and animals.	SE: 215-216, 218-221, 240-242, 244-247, 249-256 <i>Section Assessment 223 #1</i> <i>Science Online 242</i> TWE: E 242 CH 243
7. identify limiting factors that impact animal and plant populations.	SE: 338-339 <i>Problem-Solving Activity 339</i> TWE: TP 336 AC 339 CC 339
8. identify population disturbances and various other factors that threaten or enhance species survival.	SE: 336-339 <i>Try at Home Minilab 337</i> <i>Section Assessment 343 #3-6</i> TWE: AS 337, 343 IS 340 AR 341
9. describe processes by which matter and energy flow through an ecosystem.	SE: 114-117, 344-345, 374-377 <i>Section Assessment 117 #2, 3, 5, 7</i> <i>Activity 378-379</i> TWE: MA 376 TF 376 UA 376
10. explain the effects of environmental changes on dynamic equilibrium in physical and biological systems.	SE: 109, 164, 274 <i>National Geographic Society Visualizing 111</i> <i>Section Assessment 335 #6</i> TWE: UA 109 AC 272
11. explain different relationships among living organisms. (example: competition, symbiosis, producer/ consumer/ decomposer, predator/prey)	SE: 333-335, 336, 344-348 <i>Section Assessment 335 #4, 7; 348 #1-3, 5-7</i> <i>Try at Home Minilab 337</i> TWE: R 335, 348 AS 337 IS 346
12. investigate interactions among populations in a biological community. (example: relationships among producers, consumers, and decomposers in food chains and food webs)	SE: <i>Section Assessment 335 #7</i> <i>Activity 349</i> TWE: R 335 CC 339 E 342 AC 346, 375

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13. model cycles in ecosystems. (example: water, carbon dioxide/oxygen, nitrogen)	SE: 360-362, 368-371, 373 <i>National Geographic Society Visualizing</i> 372 TWE: SJ 369 IS 370 CD 371 E 372 R 373
SEVENTH GRADE EARTH/SPACE SCIENCE STANDARDS	
1. investigate the origin and evolution of the atmosphere.	TWE: CH 503
2. describe how the interrelationship of geologic processes, biologic processes, and human activity affects the atmosphere.	SE: 361, 366, 373 <i>National Geographic Society Visualizing</i> 372 <i>Section Assessment</i> 373 #3 TWE: E 155 QD 365 IS 365
3. describe the effects of pollution on watersheds, river systems, and oceans.	TWE: TF 15 CC 17
4. analyze how freshwater resources are influenced by geologic processes and by human activities.	SE: 369 <i>Environmental Science Integration</i> 15 TWE: IM 369
5. compare and contrast characteristics of the sun, planets, their moons, comets, meteors, and asteroids.	SE: 496-502 <i>Section Assessment</i> 485 #7; 503 #1, 2, 4, 6, 7 <i>Life Science Integration</i> 487 <i>Science Online</i> 500 TWE: SJ 487
6. describe the role of gravity in the solar system.	SE: 465-468, 481, 503 <i>National Geographic Society Visualizing</i> 493 <i>Science Online</i> 635 TWE: QD 465 MA 497
7. compare masses within the solar system using composition, size, and orbital motion.	SE: <i>Chemistry Integration</i> 498 <i>Science Online</i> 500 <i>Section Assessment</i> 503 #1, 2, 6, 7 TWE: CC 498 AS 503 CH 503
SEVENTH GRADE SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS	
1. discuss science issues. (example: cloning, aging, farming, mining, timber)	SE: <i>Science and Society</i> 262-263 TWE: SJ 215, 226 E 263 ITI 263
2. investigate how science helps drive research and provides knowledge for better understanding.	SE: 13-19, 21-23 TWE: TP 13 D 91 HS 91, 173, 657
3. describe how cultural backgrounds and beliefs of different groups can affect scientific thinking.	SE: <i>Unit Opener</i> 2-3 <i>Science and Language Arts</i> 146-147 TWE: SJ 215 CD 288, 316

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4. describe how society and need can affect the direction taken by science.	SE: <i>Science and History</i> 90-91, 172-173, 444-445, 656-657 <i>Science and Society</i> 262-263 TWE: CO 657
5. describe scientific advancements that have had an impact on the environment.	SE: 373, 644 <i>Science and Society</i> 262-263 <i>National Geographic Society Visualizing</i> 372 <i>Section Assessment</i> 373 #3
6. explain the importance of public access to scientific discoveries.	SE: 10-11, 27 <i>Section Assessment</i> 27 #3, 5, 6 TWE: QD 10
7. analyze health recommendations concerning nutrition and drugs.	SE: <i>Health Integration</i> 109, 129, 347, 521 <i>Science Connection</i> 67 TWE: CC 71
8. determine the risks associated with natural and biological hazards.	SE: 424-425, 427-428 <i>National Geographic Society Visualizing</i> 426 <i>Section Assessment</i> 428 #3, 5-7 TWE: AC 426 E 426 SJ 427 R 428 CH 428 VL 431
9. describe the possible consequences of various alternative decisions for technological-related issues.	SE: <i>Science and Society</i> 262-263 TWE: E 263 ITI 263, 507 CO 263 D 507
10. design a solution or product for a problem or a need considering constraints. (example: cost, time, materials, environmental/societal trade-off)	SE: <i>Model and Invent</i> 196-197 TWE: SC 3 CY 29 AC 426 CO 507 AC 689

Codes Used for TWE Pages

AC	Activity
AR	Active Reading
AS	Assessment
CC	Curriculum Connection
CD	Cultural Diversity
CH	Challenge
CO	Connections
CY	Communicating Your Data
D	Discussion
E	Extension
EA	Error Analysis
HS	Historical Significance
IM	Identifying Misconceptions
IS	Inclusion Strategies
ITI	Investigate the Issue
LD	Lab Demonstration
MA	Make A Model
QD	Quick Demo
R	Reteach
SC	Science Connection
SJ	Science Journal
TF	Teacher FYI
TP	Tie to Prior Knowledge
UA	Use An Analogy
VL	Visual Learning