

GLENCOE CORRELATION
SCIENCE: AN INTRODUCTION TO
THE LIFE, EARTH, AND PHYSICAL SCIENCES
SOUTH DAKOTA
Science Standards Sixth Grade

STANDARDS	PAGE REFERENCES
SIXTH GRADE NATURE OF SCIENCE STANDARDS	
STUDENTS WILL:	SE: 212-214, 216 <i>Using Technology</i> 64
1. explain how scientific knowledge and processes have evolved over time.	TWE: CB 64 TPK 212
2. base conclusions on scientific evidence obtained from a variety of sources.	SE: <i>Science & Society</i> 82-83 <i>Internet Project</i> 372-373
3. understand the need for continual re-evaluation of scientific knowledge.	SE: <i>Internet Project</i> 372-373, 522-523
4. discuss the limitations of scientific study.	SE: 214-215 <i>Internet Project</i> 522-523
5. examine the scientific contributions of various cultures.	TWE: AC 76 CDiv 190 SJ 213 CB 224, 388
6. describe the limits of accuracy inherent in a particular measuring device or measurement procedure.	SE: <i>MiniLAB</i> 267 <i>Using Technology</i> 64 TWE: CB 217
7. manipulate one variable over time with many repeated trials to test an hypothesis.	SE: <i>Activity: Design Your Own Experiment</i> 94-95, 160-161
8. construct and interpret graphs from data to make predictions.	SE: <i>Activity: Design Your Own Experiment</i> 160-161, 330-331, 356-357, 418-419
9. use research methods to investigate practical and/or personal scientific problems and questions.	SE: 14-23 <i>Activity: Design Your Own Experiment</i> 24-25, 94-95 TWE: GF 25
10. use appropriate scientific equipment for investigations.	SE: <i>Activity</i> 71, 271 <i>Activity: Design Your Own Experiment</i> 246-247, 302-303, 330-331
11. use proper safety procedures in all investigations.	SE: <i>Activity: Design Your Own Experiment</i> 40-41, 246-247, 330-331, 418-419 <i>Activity</i> 444
SIXTH GRADE PHYSICAL SCIENCE STANDARDS	
1. understand that all matter is made up of atoms containing electrons, protons, and neutrons.	SE: 212, 217-219, 222 TWE: MM 222
2. classify materials as elements, compounds, or mixtures.	SE: 223-225, 227-229 TWE: MAM 227
3. analyze the relationship among mass, weight, volume, and density.	SE: 239-241, 266-268 <i>MiniLAB</i> 239 <i>Using Math</i> 240 TWE: USW 266
4. compare and contrast mixtures, compounds, and elements.	SE: <i>Activity</i> 226 <i>MiniLAB</i> 228 TWE: VL 226

STANDARDS	PAGE REFERENCES
5. investigate and describe how matter can change.	SE: 241, 252-256, 258 <i>MiniLAB 255</i> <i>Activity 257</i> TWE: Dis 254
6. describe how push/pull forces acting on objects can either reinforce, oppose, or have no effect on each other.	SE: 276-277, 279, 282-283 <i>Activity: Design Your Own Experiment 280-281</i>
7. demonstrate how all forces have magnitude and direction.	SE: 300-302, 304-306 <i>Activity: Design Your Own Experiment 302-303</i>
8. describe and graphically represent motion of objects in terms of direction and/or position in relation to time.	SE: 269-270, 272-273 <i>Activity 271</i> TWE: Re 274
9. investigate and describe types and sources of energy. (example: potential/kinetic, mechanical, heat, electrical/nuclear)	SE: 320-325, 328-329, 332-337, 365 <i>Activity: Design Your Own Experiment 320-321</i> <i>MiniLAB 333</i>
10. identify types of energy transformations. (example: mechanical to electrical, chemical to light)	SE: 320-325 <i>Activity 326</i> TWE: CB 322 CU 325
11. explain basic concepts of electricity. (example: sources, relationship to magnetism, types of current and circuits, and ways to measure electricity)	SE: 346-356, 358-360, 362-365 <i>MiniLAB 348</i> <i>Activity: Design Your Own Experiment 356-357</i> <i>Activity 361</i> <i>Using Technology 364</i> <i>Science & Society 366-367</i> TWE: SJ 361 CB 364
12. explain how electric circuits are a means of transferring energy.	SE: 351-356, 358 <i>MiniLAB 352</i> <i>Activity: Design Your Own Experiment 356-357</i> TWE: VL 352 Dem 353
SIXTH GRADE LIFE SCIENCE STANDARDS	
1. describe basic cell structures and related functions.	SE: 66-70, 72-73 <i>MiniLAB 69</i> <i>Activity 71</i> TWE: Act 71 En 67 IS 68
2. describe structure and function of the human skeletal, muscular, digestive, respiratory, circulatory, and reproductive systems.	SE: 75, 80-81, 96-97

STANDARDS	PAGE REFERENCES
3. identify basic parts of plant and animal cells. (example: nucleus, cytoplasm, chloroplast, cell membrane, cell wall)	SE: 66-70, 72-73 <i>MiniLAB</i> 69 <i>Activity</i> 71 TWE: Act 67 En 67 IS 68
4. understand that cells are the building blocks of living things.	SE: 36-37, 62
5. identify the basic life processes that occur in cells. (example: growth, energy, reproduction, waste elimination).	SE: 64-70 TWE: UA 65 VL 65 CC 70
6. describe the difference between a hybrid and a purebred organism.	SE: 106-109 TWE: BS 108
7. describe the reproduction process for various organisms and its importance to the survival of given species.	SE: 37, 89-93, 96-99 <i>MiniLAB</i> 92 <i>Activity: Design Your Own Experiment</i> 94-95 <i>Using Technology</i> 98 TWE: CB 37
8. investigate how variation in each species is due to the exchange and interaction of genetic information as it is passed from parent to offspring.	SE: 110-111, 124-125, 128-129 TWE: BS 108 CB 110
9. investigate how the fossil record that has occurred over time provides evidence of changes in the kinds of plants and animals in the environment.	SE: 130, 136-137, 453
10. investigate the process of energy transformation in photosynthesis.	SE: 72-73, 155 TWE: VL 72 TPK 169
11. analyze how organisms depend on other organisms and on the nonliving components of the environment.	SE: 152-156 TWE: SJ 152
12. describe the roles of producers, consumers and decomposers in a system.	SE: 168 TWE: VL 169 Re 169
13. analyze energy use in food webs and food pyramids.	SE: 169 <i>Using Computers</i> 170 TWE: CB 169
14. model cycles in ecosystems. (example: water, carbon dioxide/oxygen, nitrogen)	SE: 468-469 <i>Using Computers</i> 474 TWE: Re 193
SIXTH GRADE EARTH/SPACE SCIENCE STANDARDS	
1. describe the spheres of Earth and their composition. (example: lithosphere, hydrosphere, atmosphere)	SE: 415-431, 438-449, 452-461, 468-471, 474-477, 479-487, 496-507, 510-511, 514-517 <i>Activity: Design Your Own Activity</i> 472-473
2. explain how the resources of Earth support a variety of life.	SE: 177, 180-181

STANDARDS	PAGE REFERENCES
3. analyze the role of water in all three states in shaping Earth.	SE: 468-471, 474-477, 479-480 <i>MiniLAB 477</i> <i>Activity 478</i> TWE: Act 476 Dem 476
4. investigate and describe major geologic processes that have shaped the South Dakota landscape.	This objective can be met during teacher/class discussions.
5. understand the organization of the solar system and the relationships among the various bodies that comprise it. (example: sun, moon, Earth, other planets, and their moons, meteors, asteroids, and comets)	SE: 378-380, 382-389, 392, 396-400 TWE: UA 379 RM 388 CU 389
6. describe how Earth's motions and tilt on its axis lead to daily and seasonal changes.	SE: 378-379 TWE: RP 379 AC 379 Re 383
7. analyze the mechanics of day and night and the phases of the moon.	SE: 380 <i>Activity 381</i>
8. relate the lunar orbit to the phases of the moon and to the gravitational effects it produces on Earth.	SE: 380 <i>Activity 381</i>
9. compare revolution and rotation of other planets to Earth's.	TWE: CU 389
SIXTH GRADE SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS	
1. discuss science issues. (example: cloning, aging, farming, mining, timber)	SE: 176 <i>Science & Society 82-83, 100-101, 366-367, 424-425, 488-489</i> <i>Using Technology 413</i>
2. determine how science helps drive research and provides knowledge for better understanding.	SE: <i>Science & Society 100-101, 366-367, 394-395</i>
3. investigate how cultural backgrounds and beliefs of different groups can affect scientific thinking.	SE: <i>Science & Society 100-101, 394-395, 424-425, 488-489</i>
4. explain how society and need can affect the direction taken by science.	SE: <i>Science & Society 82-83, 100-101, 284-285, 312-313, 338-339, 366-367, 394-395, 424-425, 488-489</i> <i>Using Technology 335</i>
5. determine scientific advancements that have had an impact on the environment.	SE: 185-187, 190-194 <i>Science & Society 250-251, 338-339, 366-367, 424-425, 488-489</i>
6. determine the importance of public access to scientific discoveries.	SE: <i>Science & Society 82-83, 284-285, 312-313, 338-339, 366-367</i>
7. identify ways that medical technologies have affected life. (example: X-rays, vaccines, stethoscopes)	SE: <i>Using Technology 64</i> TWE: CB 64
8. investigate the possible consequences of various alternative decisions for technological-related issues.	SE: <i>Science & Society 100-101, 284-284, 366-367, 488-489</i>

STANDARDS	PAGE REFERENCES
9. discuss a solution for a problem or a need.	SE: <i>Science & Society</i> 82-83, 100-101, 166-167, 284-285, 312-313, 338-339, 366-367, 488-489 <i>Using Technology</i> 335
10. describe the role of technology in developing natural resources.	SE: <i>Using Technology</i> 413, 454, 485, 516

Codes Used for TWE Pages

Act	Activity
AC	Across the Curriculum
BS	Brainstorming
CB	Content Background
CC	Community Connection
CDiv	Cultural Diversity
CU	Check for Understanding
Dem	Demonstration
Dis	Discussion
En	Enrichment
GF	Go Further
IS	Inclusion Strategies
MAM	Making a Model
MM	Making Models
Re	Reteach
RM	Revealing Misconceptions
RP	Revealing Preconceptions
TPK	Tying to Prior Knowledge
UA	Using an Analogy
USW	Using Science Words
VL	Visual Learning