

**GLENCOE CORRELATION**  
**SCIENCE LEVEL BLUE**  
**MONTANA**  
Standards for Science – End of Grade 8

BENCHMARKS	PAGE REFERENCES
<b>Science Content Standard 1</b>	
<b>Students design, conduct, evaluate and communicate scientific investigations.</b>	
Students will:	
1. identify a question, formulate a hypothesis, control and manipulate variables, devise and safely conduct experiments, predict outcomes and compare and analyze results.	SE: 6, 12-20, 746-755 <i>Activity</i> 31, 32-33, 160-161, 248-249, 366-367, 560-561, 616-617
2. select and accurately use appropriate equipment and technology to measure (in SI units), gather, process and analyze data from a scientific investigation.	SE: 44-47, 748-754 <i>Activity</i> 64-65, 94-95, 147, 160-161 <i>Math Skills Activity</i> 303, 667 <i>MiniLab</i> 417, 633
3. communicate and defend results of investigations; question results of investigations if different from predicted.	SE: 27-30, 514-517, 753-755 <i>Activity</i> 64-65, 212, 239, 560-561, 616-617 <i>Problem Solving Activity</i> 244, 267
4. analyze the processes, parts and sub-systems of familiar systems (e.g., electrical circuits, bacteria) and infer cause and effect relationships among components of the system.	SE: 8-9, 80-84, 104-108, 180-185, 213-219, 230-235, 246-247, 298-303, 444-449, 516-519
5. create models to illustrate scientific concepts and use the model to predict change (e.g., computer simulation, a stream table, graphic representation).	SE: 21-26, 347-353, 516-519 <i>Activity</i> 94-95, 128-129, 220-221, 248-249, 495, 588-589, 678-679
6. distinguish between controlled and uncontrolled experiments by consistency of results.	SE: 18, 28-30, 747 <i>Activity</i> 31, 32-33, 248-249, 328, 366-367, 398-399, 588-589
<b>Science Content Standard 2</b>	
<b>Students demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.</b>	
1. examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties.	SE: 148-149, 178, 480, 753 <i>Activity</i> 248-249 <i>MiniLab</i> 8 TWE: AS 353 FYI 359 UA 573
2. classify, describe, and model matter in terms of elements, compounds, mixtures, atoms and molecules.	SE: 516-519, 540-544, 547-556, 578-583 <i>Activity</i> 520, 559, 587, 615
3. model and explain that states of matter, solids, liquids and gases, are dependent upon the quantity of energy present in the system.	SE: 449, 598 <i>National Geographic</i> 448 <i>Physics Integration</i> 478
4. identify and predict what will change and what will remain unchanged when matter experiences an external force or energy change.	SE: 213-219, 461-464, 514-517, 660-661, 664-668, 671-676, 704-709 <i>Accidents in Science</i> 130-131 <i>Activity</i> 94-95, 430-431

BENCHMARKS	PAGE REFERENCES
5. identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex machines).	SE: 44, 769 <i>Activity</i> 31, 48, 64-65, 430-431, 466-467, 648-649, 703 <i>MiniLab</i> 76
6. define energy and compare and contrast the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves.	SE: 42-43, 299, 301, 410-414, 484-485, 491-492, 604-607 <i>Activity</i> 430-431 <i>National Geographic</i> 2-3, 415
<b>Science Content Standard 3</b>	
<b>Students demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.</b>	
1. compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.).	SE: 219, 240-245, 262, 268, 322-324, 327
2. explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions and how they respond to stimuli (e.g., photosynthesis, respiration).	SE: 202-209, 219, 289, 408 TWE: DI 606 SC 171
3. communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., Punet squares).	SE: 320-325, 327, 329-335 <i>National Geographic</i> 326
4. investigate and explain the interdependent nature of biological systems in the environment and how they are affected by human interaction.	SE: 380-390, 392-397, 418-419, 421-424, 493-494 <i>Activity</i> 391 <i>Chemistry Integration</i> 417 <i>National Geographic</i> 626-627 <i>Science and Society</i> 400-401 TWE: AS 399
5. use a basic classification scheme to identify local plants and animals.	SE: 753 <i>Field Guide</i> 730-733 TWE: AS 353 UA 573
<b>Science Content Standard 4</b>	
<b>Students demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.</b>	
1. model and explain the internal structure of the Earth and describe the formation and composition of Earth's external features in terms of the rock cycle and plate tectonics.	SE: 74-76, 355-359, 490 <i>Physics Integration</i> 85
2. differentiate between rocks and classify rocks by how they are formed.	SE: 359 <i>Science and History</i> 498-499 TWE: A 356
3. explain scientific theories about the origin and evolution of the Earth and Solar System by describing how fossils are used as evidence of climatic change over time.	SE: 355-357, 359 <i>National Geographic</i> 358

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4. describe the water cycle, the composition and structure of the atmosphere, and the impact of oceans on large scale weather patterns.	SE: 444-447, 449-457, 463, 477-479, 485 <i>Activity</i> 465 <i>National Geographic</i> 448, 486-487
5. describe and model the motion and tilt of Earth in relation to the Sun, and explain the concept of day, night, seasons, year.	SE: 75-79, 484-485 <i>Activity</i> 94-95, 109 <i>Explore Activity</i> 73 <i>Physics Integration</i> 108 TWE: CD 118 TPK 104
6. describe the Earth, Moon, planets and other objects in space in terms of size, structure, and movement in relation to the Sun.	SE: 74-77, 80-84, 91-93, 104-105, 108, 110-121, 124-127 <i>Activity</i> 89, 109 <i>Explore Activity</i> 73
<b>Science Content Standard 5</b>	
<b>Students understand how scientific knowledge and technological developments impact society.</b>	
1. identify the specific fields of scientific endeavor and related occupations within those fields.	SE: 9-11, 55-56 <i>Career Connection</i> 309, 433, 563, 591, 713 <i>Science and History</i> 34-35, 250-251, 368-369
2. model collaborative problem solving and give examples of how scientific knowledge is shared, critiqued, and scrutinized by other scientists and the public.	SE: 58, 517 <i>Activity</i> 64-65, 160-161, 297, 391, 530-531 TWE: DI 45 EX 51
3. investigate local problems and/or issues and propose solutions or products that address a need, which considers variables (e.g., environmental risks).	SE: <i>Accidents in Science</i> 194-195 <i>Activity</i> 391, 430-431 <i>National Geographic</i> 170-171, 626-627 <i>Problem Solving Activity</i> 244 <i>Science and History</i> 368-369 <i>Science and Society</i> 222-223, 400-401, 680-681
4. apply scientific knowledge and process skills to understand issues and everyday events.	SE: 9-11, 27-30 <i>Accidents in Science</i> 194-195 <i>Activity</i> 391, 430-431 <i>National Geographic</i> 170-171, 626-627 <i>Science and History</i> 368-369 <i>Science and Society</i> 222-223, 400-401
<b>Science Content Standard 6</b>	
<b>Students understand historical developments in science and technology.</b>	
1. trace developments that demonstrate scientific knowledge is subject to change as new evidence becomes available.	SE: 26, 74-75, 490, 510-519, 540-541, 699-701 <i>Physics Integration</i> 106, 108 <i>Science and History</i> 250-251, 368-369
2. identify major milestones in science that have impacted science, technology and society.	SE: 320-321, 347-353, 511-519, 540-541, 660, 664 <i>Physics Integration</i> 106, 108 TWE: EX 330 FYI 527

## Codes Used for TWE Pages

A	Activity
AS	Assessment
CD	Cultural Diversity
DI	Discussion
EX	Extension
FYI	Teacher FYI
SC	Science Connection
TPK	Tie to Prior Knowledge
UA	Use an Analogy