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

BENCHMARKS	PAGE REFERENCES
Science Content Standard 1	
Students design, conduct, evaluate and communicate scientific investigations.	
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: *Design Your Own Experiment* 56-57, 260-261, 350-351, 594-595, 624-625, 654-655 *Use the Internet* 28-29 TWE: EA 29
2. select and accurately use appropriate equipment and technology to measure (in SI units), gather, process and analyze data from a scientific investigation.	SE: *Design Your Own Experiment* 56-57 *Use the Internet* 28-29 *Minilab* 40 *Activity* 51, 399 TWE: AS 29, 399 CY 51
3. communicate and defend results of investigations; question results of investigations if different from predicted.	SE: *Use the Internet* 410-411 TWE: EA 471 CY 119, 136, 469, 675
4. analyze the processes, parts and sub- systems of familiar (e.g., electrical circuits, bacteria) and infer cause and effect relationships among components of the system.	SE: 71-77 *Section Assessment* 77 #3-5, 7; 274 #1, 4-6 *National Geographic Society Visualizing* 272-273 TWE: D 276 AC 272 VL 404 CC 407 AS 409
5. create models to illustrate scientific concepts and use the model to predict change (e.g., computer simulation, a stream table, graphic representation).	SE: *Minilab* 278 *Math Skills Activity* 305 *Activity* 307 *Section Assessment* 314 #6 *Use the Internet* 410-411 TWE: IS 406
6. distinguish between controlled and uncontrolled experiments by consistency of results.	SE: 13-19, 21-23 *Design Your Own Experiment* 56-57, 260-261, 350-351, 594-595 TWE: AC 22 AS 261 EA 595

BENCHMARKS	PAGE REFERENCES
Science Content Standard 2	
Students demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	
1. examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties.	SE: *Activity* 529, 551 *Section Assessment* 535 #7 *Design Your Own Experiment* 536-537 *Try at Home Minilab* 555 TWE: SJ 519 QD 524, 553 AS 551
2. classify, describe, and model matter in terms of elements, compounds, mixtures, atoms and molecules.	SE: *Try at Home Minilab* 519 *Minilab* 527 TWE: AC 521 QD 524 D 524 CD 525 MA 527, 547 R 528
3. model and explain that states of matter, solids, liquids and gases, are dependent upon the quantity of energy present in the system.	SE: *Science Online* 532 *National Geographic Society Visualizing* 533 *Section Assessment* 535 #1, 2 TWE: E 533 IS 533 AC 534
4. identify and predict what will change and what will remain unchanged when matter experiences an external force or energy change.	SE: *Chemistry Integration* 397 *Minilab* 405, 421 *National Geographic Society Visualizing* 426 *Section Assessment* 434 #6 TWE: LD 548 CC 553 E 556
5. identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex machines).	SE: *National Geographic Society Visualizing* 80-81 *Design Your Own Experiment* 88-89 TWE: AS 89 MA 683, 684 CH 685
6. define energy and compare and contrast the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves.	SE: 604-608, 634-638 *Astronomy Integration* 610 *Section Assessment* 638 #1, 4-6; 647 #5 TWE: TP 604 E 612 IM 605, 638

BENCHMARKS	PAGE REFERENCES
Science Content Standard 3	
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.	
1. compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.).	SE: 71 *Figure 2* 71 *Figure 6* 73 *Section Assessment* 77 #5, 6 TWE: D 71 QD 71 VL 73 MA 75
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: 113-117, 128-135, 137-140 *Section Assessment* 117 #1, 2; 143 #1, 2, 4-6 TWE: TF 134 AS 135
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: *Section Assessment* 223 #1, 5, 6; 243 #7; 259 #1 *Science Online* 242, 301 *National Geographic Society Visualizing* 303 *Math Skills Activity* 305 TWE: E 242 VL 251
4. investigate and explain the interdependent nature of biological systems in the environment and how they are affected by human interaction.	SE: *Section Assessment* 335 #7; 348 #1-3, 5-7 *Try at Home Minilab* 337 TWE: CD 333 AC 334, 346 R 335 D 345 UA 346
5. use a basic classification scheme to identify local plants and animals.	SE: *Field Guide* 698-701 TWE: FA 698 QD 699 D 699 SJ 701
Science Content Standard 4	
Students demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	
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: *Minilab* 405 *Section Assessment* 409 #1-3, 5; 441 #1-5 TWE: E 401 AC 402, 403 CC 407, 705 MA 440 VL 703
2. differentiate between rocks and classify rocks by how they are formed.	SE: 544 *Explore Activity* 545

BENCHMARKS	PAGE REFERENCES
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: 393-394 *Science Connection* 389 *Try at Home Minilab* 394 *Section Assessment* 395 #2, 4 TWE: INT 389 TF 394
4. describe the water cycle, the composition and structure of the atmosphere, and the impact of oceans on large scale weather patterns.	SE: 154, 368-369 *Figure 13* 52 *Section Assessment* 373 #1; 461 #5 TWE: TP 368 D 458 CH 461 R 461
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: 482-485 *Section Assessment* 485 #1, 2, 4, 6 TWE: E 482 LD 482 VL 484 R 485
6. describe the Earth, Moon, planets and other objects in space in terms of size, structure, and movement in relation to the Sun.	SE: 486-492 *Section Assessment* 494 #1, 2, 5, 6; 503 #1, 3, 5-7 *Science Online* 500 TWE: MA 487 D 490 QD 491 CC 498 R 503
Science Content Standard 5	
Students understand how scientific knowledge and technological developments impact society.	
1. identify the specific fields of scientific endeavor and related occupations within those fields.	SE: *Section Assessment* 27 #7 *Career Connection* 121, 147, 413, 473 TWE: CD 10 CA 31, 413, 473
2. model collaborative problem solving and give examples of how scientific knowledge is shared, critiqued, and scrutinized by other scientists and the public.	SE: 10-11, 27, 395 *Section Assessment* 27 #3, 5, 6; 395 #7 TWE: QD 10 AC 15 E 20 AS 395
3. investigate local problems and/or issues and propose solutions or products that address a need, which considers variables (e.g., environmental risks).	SE: *Environmental Science Integration* 76, 252 TWE: E 263 CO 263, 507 ITI 263, 507
4. apply scientific knowledge and process skills to understand issues and everyday events.	SE: *Science Connection* 67, 207, 329 TWE: SJ 215 ITI 263 CD 316 CO 657

BENCHMARKS	PAGE REFERENCES
Science Content Standard 6	
Students understand historical developments in science and technology.	
1. trace developments that demonstrate scientific knowledge is subject to change as new evidence becomes available.	SE: 396-398 TWE: D 91, 500 HS 91, 445, 657 CH 398 MA 497
2. identify major milestones in science that have impacted science, technology and society.	SE: 26, 520 *Section Assessment* 27 #7 *Science Stats* 320-321 TWE: CC 644 CD 650, 677 HS 657

Codes Used for TWE Pages

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