

**GLENCOE CORRELATION**  
**LIFE SCIENCE**  
**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: 7-11 <i>Activity: Design Your Own Experiment 28-29, 294-295, 422-423, 618-619</i> <i>Skill Builder Activities 102, 474</i> <i>Science Skill Handbook 836-845</i>
2. select and accurately use appropriate equipment and technology to measure (in SI units), gather, process and analyze data from a scientific investigation.	SE: 12 <i>Activity 27, 507, 648-649, 738-739, 795</i> <i>Activity: Design Your Own Experiment 174-175</i> <i>Science Skill Handbook 839-840</i> TWE: QD 12
3. communicate and defend results of investigations; question results of investigations if different from predicted.	SE: <i>Activity 86-87, 312, 320-321</i> <i>Activity: Design Your Own Experiment 294-295, 422-423, 618-619, 678-679</i>
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: 39-44, 503, 546-551, 628-629, 632 <i>Activity 80, 555, 760, 795</i> TWE: UAA 503 DI 632
5. create models to illustrate scientific concepts and use the model to predict change (e.g., computer simulation, a stream table, graphic representation).	SE: <i>Activity 80, 162, 402, 795</i> <i>MiniLab 111, 290, 407, 534</i> <i>Activity: Model and Invent 476-477, 590-591</i>
6. distinguish between controlled and uncontrolled experiments by consistency of results.	SE: 8-9 <i>Activity: Design Your Own Experiment 28-29, 294-295, 422-423</i> <i>Science Skill Handbook 837</i>
<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: 68-69, 70-71, 787 <i>MiniLab 787</i> TWE: QD 69
2. classify, describe, and model matter in terms of elements, compounds, mixtures, atoms and molecules.	SE: 66-71 TWE: IS 67 QD 69 VL 69 RT 73

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3. model and explain that states of matter, solids, liquids and gases, are dependent upon the quantity of energy present in the system.	See Glencoe's <i>Introduction to Physical Science</i> SE: 104-108, 108-117 <i>National Geographic</i> 112 <i>MiniLAB</i> 114 <i>Activity</i> 117 TWE: IM 111 E 112
4. identify and predict what will change and what will remain unchanged when matter experiences an external force or energy change.	See Glencoe's <i>Introduction to Physical Science</i> SE: 194-199, 200-206, 207-211 <i>Design Your Own Experiment</i> 214-215 TWE: IM 202 D 202 LD 211 A 504
5. identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex machines).	SE: 497 <i>National Geographic</i> 498 TWE: TFYI 497 AC 497, 498 EX 498
6. define energy and compare and contrast the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves.	SE: 15, 42, 613 TWE: AC 613 DI 613
<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: 39, 41, 42, 189 <i>Activity</i> 46 TWE: AC 39 DI 39 VL 41 RT 45 AS 45
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: 15, 42, 77, 81-85, 307-311 <i>Activity</i> 86 TWE: IM 82 CH 85 QD 309 AS 311
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: 101-102, 104-107, 130-131, 225, 276-277 <i>MiniLab</i> 101 <i>Math Skills Activity</i> 131 TWE: MAM 107
4. investigate and explain the interdependent nature of biological systems in the environment and how they are affected by human interaction.	SE: 728-731, 733, 786-794 <i>National Geographic</i> 732 <i>Time: Science and Society</i> 770-771 <i>Activity</i> 795 TWE: RT 794

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5. use a basic classification scheme to identify local plants and animals.	SE: 22-26 <i>Explore Activity 5</i> <i>Activity 27, 263</i> <i>Activity: Model and Invent 232-233</i> <i>National Geographic 246</i> TWE: AC 26
<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.	See Glencoe's <i>Earth Science</i> SE: 284-293, 304-307, 313-315, 337-339, 778-781 <i>Science Online 287</i> TWE: CB 274E-F MM 314 C 339
2. differentiate between rocks and classify rocks by how they are formed.	SE: 164 TWE: AC 164
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: 21, 163-164 <i>Earth Science Integration 21</i>
4. describe the water cycle, the composition and structure of the atmosphere, and the impact of oceans on large scale weather patterns.	SE: 721, 728-279 TWE: SJ 729 IM 729
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: 723
6. describe the Earth, Moon, planets and other objects in space in terms of size, structure, and movement in relation to the Sun.	See Glencoe's <i>Earth Science</i> SE: 537-538, 672-677, 678-682, 702-706, 708-713, 714-721, 722-725 <i>MiniLab 679</i> <i>Activity 687, 726-727</i>
<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: 6 <i>Career Connection 89, 323, 391, 624, 803</i> TWE: CC 89, 323, 391, 621, 803
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, 21, 155-156 <i>Activity: Design Your Own Experiment 294-295, 564-565</i> <i>Activity: Model and Invent 800</i> <i>National Geographic 21</i> <i>Time: Science and Society 538-539</i> TWE: CH 13 SJ 156

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3. investigate local problems and/or issues and propose solutions or products that address a need, which considers variables (e.g., environmental risks).	SE: 796-799 <i>Activity: Use the Internet 768-769</i> TWE: AC 771, 797 DI 781 CH 799 AS 799
4. apply scientific knowledge and process skills to understand issues and everyday events.	SE: <i>Activity 202-203, 671, 795</i> <i>MiniLab 504, 521, 666, 787</i> <i>Explore Activity 657, 777</i> <i>Problem-Solving Activity 250, 522</i>
<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: 19, 21, 51, 110-111, 154-157, 663-664 <i>National Geographic 20</i> TWE: TFYI 21 CH 51
2. identify major milestones in science that have impacted science, technology and society.	SE: 19, 20, 51, 127, 155-157, 663-664, 666 <i>National Geographic 48-49</i> TWE: CH 21 CB 49

### Codes Used for TWE Pages

AC	Activity
AS	Assessment
CB	Content Background
CC	Career Connection
CH	Challenge
DI	Discussion
EX	Extension
IM	Identifying Misconceptions
IS	Inclusion Strategy
MAM	Make a Model
QD	Quick Demo
RT	Reteach
SJ	Science Journal
TFYI	Teacher FYI
UAA	Use an Analogy
VL	Visual Learning