



MONTANA
Standards for Science – End of Grade 8
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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: 7-10, 788-796 <i>Lab</i> 90-91, 106, 302, 686-687, 735 <i>Launch Lab</i> 353 TWE: DI 8 FF 8 AC 9 AIL 28
2. select and accurately use appropriate equipment and technology to measure (in SI units), gather, process and analyze data from a scientific investigation.	SE: 14-21 <i>Lab</i> 28-29, 90-91, 277
3. communicate and defend results of investigations; question results of investigations if different from predicted.	SE: 10, 796 <i>Labs</i> 147, 312-313, 405, 496-497, 706 TWE: COM 57
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: 207-210, 235-240 <i>National Geographic</i> 241 <i>MiniLAB</i> 259
5. create models to illustrate scientific concepts and use the model to predict change (e.g., computer simulation, a stream table, graphic representation).	SE: 11, 509-511, 520 <i>Lab</i> 148-149, 558-559 <i>MiniLAB</i> 509, 552, 729, 765 <i>National Geographic</i> 510 TWE: AC 11 DI 11 MM 507 CU 511
6. distinguish between controlled and uncontrolled experiments by consistency of results.	SE: 8-10 TWE: DI 8 AC 9 RC 9

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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: 458-464 <i>Lab 466-467</i> <i>Launch Lab 569</i> <i>MiniLAB 486, 759</i> TWE: QD 459 LD 460 AC 461 SJ 462 QD 464
2. classify, describe, and model matter in terms of elements, compounds, mixtures, atoms and molecules.	SE: 450-456 <i>National Geographic 451</i> <i>MiniLAB 453</i> <i>Lab 457</i> TWE: RC 452
3. model and explain that states of matter, solids, liquids and gases, are dependent upon the quantity of energy present in the system.	SE: 11, 476-480 <i>Lab 484</i> TWE: DIN 477 IL 479 FYI 480 SJ 482
4. identify and predict what will change and what will remain unchanged when matter experiences an external force or energy change.	SE: 68-74, 83-84, 235-238 <i>National Geographic 85</i> TWE: QD 69 FF 85 VL 87
5. identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex machines).	SE: 132-146 <i>MiniLAB 134</i> <i>Lab 147</i> <i>Lab 148-149</i> TWE: FYI 136 DLV 137 QD 139 MM 141 DI 146
6. define energy and compare and contrast the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves.	SE: 100-103, 107-108, 207-213, 224-227, 322-326, 384-388 TWE: SCB 98E SJ 101 QD 108 MM 210 QD 226 DI 323 FYI 386

BENCHMARKS	PAGE REFERENCES
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: 30, 325, 370, 520, 576, 743
2. model collaborative problem solving and give examples of how scientific knowledge is shared, critiqued, and scrutinized by other scientists and the public.	SE: 11 <i>Lab 57, 180-181, 206, 557, 748-749</i>
3. investigate local problems and/or issues and propose solutions or products that address a need, which considers variables (e.g., environmental risks).	SE: 228, 262-263, 269 <i>Lab 652-653</i> TWE: AC 262 DLV 263 FYI 268 DI 269
4. apply scientific knowledge and process skills to understand issues and everyday events.	SE: 7, 176-178, 256-263, 267-269, 271-276 <i>Science and History 248</i> <i>Science and Society 280, 346, 718</i> <i>Use the Internet Lab 278-279</i>
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: 7, 76, 517, 591 <i>National Geographic 590</i> <i>Accidents in Science 624, 654, 750</i> TWE: RC 7 FYI 517 CB 624
2. identify major milestones in science that have impacted science, technology and society.	SE: 76, 509-511 <i>Lab 438-439</i> <i>National Geographic 510</i> TWE: FYI 358 DIN 359

Codes Used for TWE Pages

AC	Activity
AIL	Alternative Inquiry Lab
CB	Content Background
COM	Communicating Your Data
CU	Check for Understanding
DI	Discussion
DIN	Differentiated Instruction
DLV	Daily Intervention
FF	Fun Fact
FYI	Teacher FYI
IL	Inquiry Lab
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
RC	Reading Check
SCB	Science Content Background
SJ	Science Journal
VL	Visual Learning