

Textbook Alignment to the Utah Core – Eighth Grade Integrated Science

This alignment has been completed using an “Independent Alignment Vendor” from the USOE approved list
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Name of Company and Individual Conducting Alignment:
Nanette Kalis

A “Credential Sheet” has been completed on the above company/evaluator and is (Please check one of the following):

On record with the USOE.

The “Credential Sheet” is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Eighth Grade Integrated Science Core Curriculum

Title: Glencoe Science Level Red © 2008 ISBN#: 978-0-07-877807-0

Publisher: Glencoe McGraw-Hill

Overall percentage of coverage in the *Student Edition (SE)* and *Teacher Edition (TE)* of the Utah State Core Curriculum: _____%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: _____%

STANDARD I: Students will understand the nature of changes in matter.

Percentage of coverage in the *student and teacher edition* for Standard I: _____ %

Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____ %

OBJECTIVES & INDICATORS

Coverage in *Student Edition (SE) and Teacher Edition (TE)* (pg #'s, etc.)

Coverage in *Ancillary Material* (titles, pg #'s, etc.)

***Not covered in TE, SE or ancillaries* ✓**

Objective 1.1: Describe the chemical and physical properties of various substances.

a. Differentiate between chemical and physical properties.

Student Edition:
70-79, 80-86, 93 #21
Get Ready to Read 70B
Table 1 84
Teacher Wraparound Edition:
CC 84; IM 81; TPK 80

b. Classify substances based on their chemical and physical properties (e.g., reacts with water, flammable or nonflammable, hard or soft, flexible or nonflexible, evaporates or melts at room temperature).

Student Edition:
84, 110-111, 257-261
Lab 112, 278-279
Launch Lab 69
MiniLab 261
Science Online 71
Teacher Wraparound Edition:
A 69; DI 78

c.	Investigate and report on the chemical and physical properties of a particular substance.	Student Edition: 75-76, 95 #9 <i>Lab 87</i> <i>MiniLab 23, 73, 261</i> <i>Science Online 71</i> Teacher Wraparound Edition: A 23, 73; ACT 77; CC 74; DI 76; DIS 75; LD 72; VL 73		
Objective 1.2: Observe and evaluate evidence of chemical and physical change.				
a.	Identify observable evidence of a physical change (e.g., change in shape, size, phase).	Student Edition: 74-75, 316-317 <i>MiniLab 23</i> Teacher Wraparound Edition: A 79; ACT 317; DI 83; DIS 76; FF 83; QD 71, 75, 82		
b.	Identify observable evidence of a chemical change (e.g., color change, heat or light given off, change in odor, gas given off).	Student Edition: 81-83, 95 #12, 318-319 <i>Applying Science 85</i> <i>Get Ready to Read 70B</i> <i>MiniLab 261</i> <i>Section Review 86</i> Teacher Wraparound Edition: A 84; ACT 83; FF 83; QD 82, 179; R 86		

c.	Observe and describe chemical reactions involving atmospheric oxygen (e.g., rust, fire, respiration, photosynthesis).	Student Edition: 80-81, 180, 319 <i>Integrate Health</i> 81 Teacher Wraparound Edition: A 89; DI 319; DIS 84; TFYI 81		
d.	Investigate the effects of chemical change on physical properties of substances (e.g., cooking a raw egg, iron rusting, polymerization of a resin).	Student Edition: 80-86, 93 #21, 178-181, 318-319 <i>Design Your Own Lab</i> 88-89 <i>MiniLab</i> 84, 319 <i>Science and History</i> 334 Teacher Wraparound Edition: AIL 88; DI 319; FF 83; IL 85; LD 318; SJ 83		
Objective 1.3: Investigate and measure the effects of increasing or decreasing the amount of energy in a physical or chemical change, and relate the kind of energy added to the motion of the particles.				
a.	Identify the kinds of energy (e.g., heat, light, sound) given off or taken in when a substance undergoes a chemical or physical change.	Student Edition: 74-75, 80-83, 178-181 <i>Applying Science</i> 85 Teacher Wraparound Edition: ATP 68; CC 74; DI 180; QD 75; R 86		
b.	Relate the amount of energy added or taken away from a substance to the motion of molecules in the substance.	Student Edition: 74, 93 #23, 178-179, 349 <i>MiniLab</i> 359 Teacher Wraparound Edition: MM 74, 179; SJ 349; TFYI 73; VL 74		

c.	Measure and graph the relationship between the states of water and changes in its temperature.	Student Edition: 66 #5-#6 <i>Lab</i> 184-185		
d.	Cite evidence showing that heat may be given off or taken in during a chemical change (e.g., striking a match, mixing vinegar and antacid, mixing ammonium chloride and water).	Student Edition: 82-83, 178-181, 265-267 <i>Section Review</i> 86 Teacher Wraparound Edition: ACT 101; QD 181; SCB 160F; TT 68F		
e.	Plan and conduct an experiment, and report the effect of adding or removing energy on the chemical and physical changes.	Student Edition: <i>Lab</i> 118-119, 184-185 <i>MiniLab</i> 359 Teacher Wraparound Edition: ACT 317; DI 328; QD 75; TT 68F		
Objective 1.4: Identify the observable features of chemical reactions.				
a.	Identify the reactants and products in a given chemical change and describe the presence of the same atoms in both the reactants and products.	Student Edition: 180, 377 Teacher Wraparound Edition: DIS 377; SJ 83		
b.	Cite examples of common significant chemical reactions (e.g., photosynthesis, respiration, combustion, rusting) in daily life.	Student Edition: 178-181, 191 #13-#14, 318-319, 377, 391, 481 Teacher Wraparound Edition: DI 319, 377; DIS 377; SCB 68F, 616E, 644E		

c.	Demonstrate that mass is conserved in a chemical reaction (e.g., mix two solutions that result in a color change or formation of a precipitate and weigh the solutions before and after mixing).	Student Edition: 84-86, 94 #8 <i>Applying Science</i> 85 Teacher Wraparound Edition: A 86; DI 85; IL 85; LD 101		
d.	Experiment with variables affecting the relative rates of chemical changes (e.g., heating, cooling, stirring, crushing, concentration).	Student Edition: 182 Teacher Wraparound Edition: A 182; AIL 88; SCB 160F		
e.	Research and report on how scientists or engineers have applied principles of chemistry to an application encountered in daily life (e.g., heat-resistant plastic handles on pans, rust-resistant paints on highway bridges).	Student Edition: 76, 429 <i>Applying Science</i> 85, 115 <i>National Geographic</i> 206, 252-253, 614-615 Teacher Wraparound Edition: CC 181; CD 376; SCB 406F; TFYI 76; VL 76		

STANDARD II: Students will understand that energy from sunlight is changed to chemical energy in plants, transfers between living organisms, and that changing the environment may alter the amount of energy provided to living organisms.

<p>Percentage of coverage in the <i>student and teacher edition</i> for Standard II: _____ %</p>		<p>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard III: _____ %</p>		
<p>OBJECTIVES & INDICATORS</p>		<p>Coverage in <i>Student Edition (SE) and Teacher Edition (TE)</i> (pg #'s, etc.)</p>	<p>Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)</p>	<p><i>Not covered in TE, SE or ancillaries</i> ✓</p>
<p>Objective 2.1: Compare ways that plants and animals obtain and use energy.</p>				
<p>a.</p>	<p>Recognize the importance of photosynthesis in using light energy as part of the chemical process that builds plant materials.</p>	<p>Student Edition: 180, 391, 481 Teacher Wraparound Edition: SCB 616E; TPK 633</p>		
<p>b.</p>	<p>Explain how respiration in animals is a process that converts food energy into mechanical and heat energy.</p>	<p>Student Edition: 480 <i>Section Review</i> 418</p>		
<p>c.</p>	<p>Trace the path of energy from the sun to mechanical energy in an organism (e.g., sunlight - light energy to plants by photosynthesis to sugars - stored chemical energy to respiration in muscle cell - usable chemical energy to muscle contraction- mechanical energy).</p>	<p>Student Edition: 634-635 <i>Applying Skills</i> 635 <i>Integrate Life Science</i> 164 <i>Integrate Physics</i> 634</p>		

Objective 2.2: Generalize the dependent relationships between organisms.			
a.	Categorize the relationships between organisms (i.e., producer/consumer/decomposer, predator/prey, mutualism/parasitism) and provide examples of each.	Student Edition: 391-395, 630, 633-634 <i>Section Review</i> 395 Teacher Wraparound Edition: ACT 393; IM 616F, 639; R 635; SCB 616F; TFYI 630; UP 615; VL 634	
b.	Use models to trace the flow of energy in food chains and food webs.	Student Edition: 401 #22, 634 <i>National Geographic</i> 393 <i>Science Online</i> 392 Teacher Wraparound Edition: CFU 635; MM 391, 634; TFYI 633; VL 634	
c.	Formulate and test a hypothesis on the effects of air, temperature, water, or light on plants (e.g., seed germination, growth rates, seasonal adaptations).	Student Edition: <i>Design Your Own Lab</i> 488-489, 636-637 Teacher Wraparound Edition: A 489, 623; IM 616F	
d.	Research multiple ways that different scientists have investigated the same ecosystem.	Student Edition: <i>Figure 4 9</i> <i>Integrate Career</i> 13 Teacher Wraparound Edition: ACT 398; CD 620, 658; IC 13; TFYI 9; WQ 614	

Objective 2.3: Analyze human influence on the capacity of an environment to sustain living things.			
a.	Describe specific examples of how humans have changed the capacity of an environment to support specific life forms (e.g., people create wetlands and nesting boxes that increase the number and range of wood ducks, acid rain damages amphibian eggs and reduces population of frogs, clear cutting forests affects squirrel populations, suburban sprawl reduces mule deer winter range thus decreasing numbers of deer).	Student Edition: 646-647, 655-662, 663-667 <i>Applying Science</i> 665 <i>Integrate Social Studies</i> 391 Teacher Wraparound Edition: AIL 668; CD 620; R 662; WQ 614	
b.	Distinguish between inference and evidence in a newspaper or magazine article relating to the effect of humans on the environment.	Student Edition: 27-30* *These page references discusses ways to evaluate evidence in general. Teacher Wraparound Edition: AI 42A; WQ 614	
c.	Infer the potential effects of humans on a specific food web.	Student Edition: <i>Applying Science</i> 392 <i>Integrate Social Studies</i> 391 Teacher Wraparound Edition: CB 154; CD 508; DI 393; DIS 392; R 662; V 393; VL 665	
d.	Evaluate and present arguments for and against allowing a specific species of plant or animal to become extinct, and relate the argument to the of flow energy in an ecosystem.	Student Edition: <i>Science and Society</i> 638 Teacher Wraparound Edition: DI 392; DIS 638	

STANDARD III: Students will understand the processes of rock ad fossil formation.

<p>Percentage of coverage in the <i>student and teacher edition</i> for Standard III: _____ %</p>		<p>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard IV: _____ %</p>		
<p>OBJECTIVES & INDICATORS</p>		<p>Coverage in <i>Student Edition(SE) and Teacher Edition (TE)</i> (pg #'s, etc.)</p>	<p>Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)</p>	<p><i>Not covered in TE, SE or ancillaries ✓</i></p>
<p>Objective 3.1: Compare rocks and minerals and describe how they are related.</p>				
<p>a.</p>	<p>Recognize that most rocks are composed of minerals.</p>	<p>Student Edition: 256, 283 #22, 285 #10 <i>Get Ready to Read</i> 256A-B <i>Lab</i> 277 <i>Science Online</i> 274 <i>Section Review</i> 264 Teacher Wraparound Edition: DI 274; SCB 254E-F; TBI 254; TFYI 262; TPK 265; VL 263</p>		
<p>b.</p>	<p>Observe and describe the minerals found in rocks (e.g., shape, color, luster, texture, hardness).</p>	<p>Student Edition: 256-264, 283 #25 <i>Applying Science</i> 261 <i>Lab</i> 255, 278-279 <i>MiniLab</i> 261 Teacher Wraparound Edition: ACT 259; DI 260; QD 260; R 264; SCB 254E</p>		

c.	Categorize rock samples as sedimentary, metamorphic, or igneous.	<p>Student Edition: 265-271, 272-276, 285 #12, #24 <i>Lab 277</i> <i>Science Online 274</i> <i>Section Review 271</i></p> <p>Teacher Wraparound Edition: A 271; LD 266; MM 269; SCB 254E; TFYI 270; USW 266</p>		
Objective 3.2: Describe the nature of the changes that rocks undergo over long periods of time.				
a.	Diagram and explain the rock cycle.	<p>Student Edition: 275-276, 283 #26, 284 #8-9, 285 #26 <i>Communicating Your Data 277</i> <i>Section Review 276</i></p> <p>Teacher Wraparound Edition: MM 269; R 276; VL 275</p>		
b.	Describe the role of energy in the processes that change rock materials over time.	<p>Student Edition: 266-269, 272-276, 282 #11, #13, 285 #20 <i>Integrate Physics 267</i> <i>National Geographic 268</i></p> <p>Teacher Wraparound Edition: DIS 266, 273; SJ 267; TFYI 275; VL 269</p>		

c.	Use a model to demonstrate how erosion changes the surface of Earth.	Student Edition: 323-331, 337 #32 <i>Design Your Own Lab</i> 332-333 <i>Launch Lab</i> 315 <i>National Geographic</i> 324 Teacher Wraparound Edition: A 315; ACT 324, 329; AIL 333; DI 325, 328; MM 327, 329; R 331; SJ 329		
d.	Relate gravity to changes in Earth’s surface.	Student Edition: 304-305, 323-325 <i>National Geographic</i> 324		
e.	Identify the role of weathering of rocks in soil formation.	Student Edition: 320-321 <i>MiniLab</i> 320 <i>Section Review</i> 321 Teacher Wraparound Edition: R 321		
f.	Describe and model the processes of fossil formation.	Student Edition: <i>MiniLab</i> 271 Teacher Wraparound Edition: A 271		
Objective 3.3: Describe how rock and fossil evidence is used to infer Earth’s history.				
a.	Describe how the deposition of rock materials produces layering of sedimentary rocks over time.	Student Edition: 269-270, 285 #22 <i>Accidents in Science</i> 552		

b.	Identify the assumptions scientists make to determine relative ages of rock layers.	Student Edition: <i>Accidents in Science</i> 552 Teacher Wraparound Edition: ATE 552; V 268		
c.	Explain why some sedimentary rock layers may not always appear with youngest rock on top and older rocks below (i.e., folding, faulting).	Student Edition: 285 #25, 300-301 Teacher Wraparound Edition: USW 304		
d.	Research how fossils show evidence of the changing surface of the Earth.	Student Edition: 271 Teacher Wraparound Edition: CB 552		
e.	Propose why more recently deposited rock layers are more likely to contain fossils resembling existing species than older rock layers.	Student Edition: 283 #21* *This page reference discusses why fossils are not found in certain types of rock.		
Objective 3.4: Compare rapid and gradual changes to Earth's surface.				
a.	Describe how energy from the Earth's interior causes changes to Earth's surface (i.e., earthquakes, volcanoes).	Student Edition: 288, 293-297, 299-305 <i>MiniLab</i> 301 <i>Science Online</i> 302 Teacher Wraparound Edition: IES 132; QD 300; SJ 296; TFYI 296, 301		

<p>b.</p>	<p>Describe how earthquakes and volcanoes transfer energy from Earth's interior to the surface (e.g., seismic waves transfer mechanical energy, flowing magma transfers heat and mechanical energy).</p>	<p>Student Edition: 226-227, 288, 293-297, 302-303 <i>Design Your Own Lab</i> 244-245 <i>Science Online</i> 302 Teacher Wraparound Edition: ACT 233; DI 303; TFYI 228; VL 302</p>		
<p>c.</p>	<p>Model the process of energy buildup and release in earthquakes.</p>	<p>Student Edition: 293, 313 #15 <i>MiniLab</i> 295 Teacher Wraparound Edition: A 295; DIS 296; VL 302</p>		
<p>d.</p>	<p>Investigate and report possible reasons why the best engineering or ecological practices are not always followed in making decisions about building roads, dams, and other structures.</p>	<p>Student Edition: <i>Science and Society</i> 432 Teacher Wraparound Edition: ACT 366; CC 330; CD 376; DI 418</p>		
<p>e.</p>	<p>Model how small changes over time add up to major changes to Earth's surface.</p>	<p>Student Edition: 292-297, 299-305, 316-321, 323-331 <i>Integrate Earth Science</i> 132 <i>Launch Lab</i> 315 <i>Science Online</i> 326 Teacher Wraparound Edition: A 315, 319; ACT 294; CC 300; DIS 308; MM 327; SJ 296; TBI 286</p>		

STANDARD IV: Students will understand the relationships among energy, force, and motion.

<p>Percentage of coverage in the <i>student and teacher edition</i> for Standard IV: _____ %</p>		<p>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard VI: _____ %</p>		
<p>OBJECTIVES & INDICATORS</p>		<p>Coverage in <i>Student Edition(SE) and Teacher Edition (TE)</i> (pg #'s, etc.)</p>	<p>Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)</p>	<p><i>Not covered in TE, SE or ancillaries</i> ✓</p>
<p>Objective 4.1: Investigate the transfer of energy through various materials.</p>				
<p>a.</p>	<p>Relate the energy of a wave to wavelength.</p>	<p>Student Edition: 232-235, 249 #17, 385-386 <i>Applying Math</i> 235, 249 <i>Design Your Own Lab</i> 244-245 Teacher Wraparound Edition: A 235; ACT 234; VL 232</p>		
<p>b.</p>	<p>Compare the transfer of energy (i.e., sound, light, earthquake waves, heat) through various mediums.</p>	<p>Student Edition: 226-230, 237-243, 249 #20, 385-386 <i>MiniLab</i> 238 <i>Science Online</i> 235 <i>Section Review</i> 230 Teacher Wraparound Edition: ACT 234; AIL 244; CB 246; CD 238; DI 239; LD 240; SCB 224F; TFYI 239</p>		

c.	Describe the spread of energy away from an energy-producing source.	Student Edition: 226-230, 237-243, 408-409 <i>Launch Lab</i> 225 <i>MiniLab</i> 386 Teacher Wraparound Edition: SCB 224E		
d.	Compare the transfer of heat by conduction, convection, and radiation and provide examples of each.	Student Edition: 174-177, 191 #21, 344-345, 349, 408-409 <i>Section Review</i> 177 Teacher Wraparound Edition: A 177; CD 176; QD 175; R 177		
e.	Demonstrate how white light can be separated into the visible color spectrum.	Student Edition: 239 <i>Figure 1</i> 408-409 Teacher Wraparound Edition: TFYI 239; VL 239		
Objective 4.2: Examine the force exerted on objects by gravity.				
a.	Distinguish between mass and weight.	Student Edition: 53, 66 #3, 67 #13 <i>Using Vocabulary</i> 64 Teacher Wraparound Edition: DIS 53; IM 72; SCB 40E; USW 53		

b.	Cite examples of how Earth’s gravitational force on an object depends upon the mass of the object.	Student Edition: *417 <i>MiniLab</i> 421 Teacher Wraparound Edition: A 421 *This page reference discusses Earth's gravitational force on objects such as satellites (without mentioning mass.)		
c.	Describe how Earth’s gravitational force on an object depends upon the distance of the object from Earth.	Student Edition: *445-446 Teacher Wraparound Edition: TFYI 195 *There page reference discuss how distance affects the gravitational force of Moon and Sun on Earth's tides.		
d.	Design and build structures to support a load.	Teacher Wraparound Edition: A 414; IL 263		
e.	Engineer (design and build) a machine that uses gravity to accomplish a task.	Student Edition: <i>Launch</i> Lab 129 <i>MiniLab</i> 421		
Objective 4.3: Investigate the application of forces that act on objects, and the resulting motion.				
a.	Calculate the mechanical advantage created by a lever.	Student Edition: 146-149 Teacher Wraparound Edition: ACT 148; VL 148		

b.	Engineer a device that uses levers or inclined planes to create a mechanical advantage.	Student Edition: 148-150 Teacher Wraparound Edition: ACT 148, 149; VL 148		
c.	Engineer a device that uses friction to control the motion of an object.	Student Edition: 139 Teacher Wraparound Edition: LD 141		
d.	Design and build a complex machine capable of doing a specified task.	Student Edition: 157 #29 Teacher Wraparound Edition: MM 147; UP 127		
e.	Investigate the principles used to engineer changes in forces and motion.	Student Edition: 136-143, 159 #21, #24, 415-417 <i>Lab 151</i> <i>National Geographic 142</i> Teacher Wraparound Edition: ACT 142; CC 138, 416; DI 138, 142; IL 141; IM 140; QD 416; V 142		
Objective 4.4: Analyze various forms of energy and how living organisms sense and respond to energy.				
a.	Analyze the cyclic nature of potential and kinetic energy (e.g., a bouncing ball, a pendulum).	Student Edition: 164-169, 189 #18 <i>Get Ready to Read 162A</i> <i>Lab 183</i> Teacher Wraparound Edition: A 169; MM 203		

<p>b.</p>	<p>Trace the conversion of energy from one form of energy to another (e.g., light to chemical to mechanical).</p>	<p>Student Edition: 162-163, 191 #14, #25, 214, 481 <i>Applying Skills</i> 635 <i>Integrate Life Science</i> 164 <i>Integrate Physics</i> 634 <i>Launch Lab</i> 161 <i>Section Review</i> 169 Teacher Wraparound Edition: A 161; CC 173; DI 387</p>		
<p>c.</p>	<p>Cite examples of how organisms sense various types of energy.</p>	<p>Student Edition: 229 <i>MiniLab</i> 229 <i>Science Stats</i> 522 Teacher Wraparound Edition: CC 205; CD 238, 548; DI 229, 233, 239; DIS 227; LD 538; TFYI 232</p>		
<p>d.</p>	<p>Investigate and report the response of various organisms to changes in energy (e.g., plant response to light, human response to motion, sound, light, insect’s response to changes in light intensity).</p>	<p>Student Edition: <i>Design Your Own Lab</i> 636-637 <i>MiniLab</i> 517 <i>Science Stats</i> 522 Teacher Wraparound Edition: DI 531; LD 538</p>		

	<p>e. Investigate and describe how engineers have developed devices to help us sense various types of energy (e.g., seismographs, eyeglasses, telescopes, hearing aids).</p>	<p>Student Edition: 410-413 <i>Lab</i> 414 <i>Science Online</i> 478 <i>Section Review</i> 413</p> <p>Teacher Wraparound Edition: A 413; CFU 413; DI 410; QD 410; SCB 406E; SJ 410, 411; TBI 406; TFYI 411</p>		
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