

Textbook Alignment to the Utah 8th Grade Integrated Science Core Curriculum Rubric

Title _____ ISBN# _____			
Publisher: _____			
Name of Person(s) conducting alignment and evaluation: _____			
Overall percentage of coverage of the Utah State Core Curriculum: _____%			
Standard I: Students will understand the nature of changes in matter.			
Percentage of coverage for Standard I: %			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1.1: Describe the chemical and physical properties of various substances.	a. Differentiate between chemical and physical properties.		
	b. Classify substances based on their chemical and physical properties (e.g., reacts with water, does not react with water, flammable or nonflammable, hard or soft, flexible or nonflexible, evaporates or melts at room temperature).		
	c. Investigate and report on the chemical and physical		

	properties of a particular substance.		
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).		
	b. Identify observable evidence of a chemical change (e.g., color change, heat or light given off, change in odor, gas given off).		
	c. Observe and describe chemical reactions involving atmospheric oxygen (e.g., rust, fire, respiration, photosynthesis).		
	d. Investigate the effects of chemical change on physical properties of substances (e.g., cooking a raw egg, iron rusting, polymerization of a resin).		
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.		
	b. Relate the amount of energy added or taken away from a substance to the motion of molecules in the substance.		
	c. Measure and graph the		

	relationship between the states of water and changes in its temperature.		
	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).		
	e. Plan and conduct an experiment, and report the effect of adding or removing energy on the chemical and physical changes.		
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.		
	b. Cite examples of common significant chemical reactions (e.g., photosynthesis, respiration, combustion, rusting) in daily life.		
	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).		
	d. Experiment with variables affecting the relative rates of chemical changes (e.g., heating, cooling, stirring, crushing, concentration).		
	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).		
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.			
Percentage of coverage for Standard II: %			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 2.1: Compare ways that plants and animals obtain and use energy.	a. Recognize the importance of photosynthesis in using light energy as part of the chemical process that builds plant materials.		
	b. Explain how respiration in animals is a process that converts food energy into mechanical and heat energy.		
	c. 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).		
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.		
	b. Use models to trace the flow of energy in food chains and food webs.		
	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).		
	d. Research multiple ways that different scientists have investigated the same ecosystem.		
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).		
	b. Distinguish between inference and evidence in a newspaper or magazine article relating to the effect of humans on the environment.		
	c. Infer the potential effects of humans on a specific food web.		
	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.		
Standard III: Students will understand the processes of rock and fossil formation.			
Percentage of coverage for Standard III: %			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 3.1: Compare	a. Recognize that most		

rocks and minerals and describe how they are related.	rocks are composed of minerals.		
	b. Observe and describe the minerals found in rocks (e.g., shape, color, luster, texture, hardness).		
	c. Categorize rock samples as sedimentary, metamorphic, or igneous.		
Objective 3.2: Describe the nature of the changes that rocks undergo over long periods of time.	a. Diagram and explain the rock cycle.		
	b. Describe the role of energy in the processes that change rock materials over time.		
	c. Use a model to demonstrate how erosion changes the surface of Earth.		
	d. Relate gravity to changes in Earth's surface.		
	e. Identify the role of weathering of rocks in soil formation.		
	f. Describe and model the processes of fossil formation.		
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.		
	b. Identify the assumptions scientists make to determine relative ages of rock layers.		

	c. Explain why some sedimentary rock layers may not always appear with youngest rock on top and older rocks below (i.e., folding, faulting).		
	d. Research how fossils show evidence of the changing surface of the Earth.		
	e. Propose why more recently deposited rock layers are more likely to contain fossils resembling existing species than older rock layers.		
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).		
	b. 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).		
	c. Model the process of energy buildup and release in earthquakes.		
	d. 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.		
	e. Model how small changes over time add up to major changes to Earth's surface.		
Standard IV: Students will understand the relationships among energy, force, and motion.			
Percentage of coverage for Standard IV: %			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 4.1: Students will understand the relationships among energy, force, and motion.	a. Relate the energy of a wave to wavelength.		
	b. Compare the transfer of energy (i.e., sound, light, earthquake waves, heat) through various mediums.		
	c. Describe the spread of energy away from an energy-producing source.		
	d. Compare the transfer of heat by conduction, convection, and radiation and provide examples of each.		
	e. Demonstrate how white light can be separated into the visible color spectrum.		
Objective 4.2: Examine the force exerted on objects by gravity.	a. Distinguish between mass and weight.		
	b. Cite examples of how Earth's gravitational force		

	on an object depends upon the mass of the object.		
	c. Describe how Earth's gravitational force on an object depends upon the distance of the object from Earth.		
	d. Design and build structures to support a load.		
	e. Engineer (design and build) a machine that uses gravity to accomplish a task.		
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.		
	b. Engineer a device that uses levers or inclined planes to create a mechanical advantage.		
	c. Engineer a device that uses friction to control the motion of an object.		
	d. Design and build a complex machine capable of doing a specified task.		
	e. Investigate the principles used to engineer changes in forces and motion.		
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).		
	b. Trace the conversion of energy from one form of		

	energy to another (e.g., light to chemical to mechanical).		
	c. Cite examples of how organisms sense various types of energy.		
	d. Investigate and report the response of various organisms to changes in energy (e.g., plant response to light, human response to motion, sound, light, insects' response to changes in light intensity).		
	e. Investigate and describe how engineers have developed devices to help us sense various types of energy (e.g., seismographs, eyeglasses, telescopes, hearing aids).		

General Rubric

Review Category	High Quality - 3	2	1	0	NA	Comments
Curriculum Content Coverage						
Content matches the standards and objectives of the Utah Core Curriculum.	80% of the Utah Core and objectives are covered. Objectives are clearly stated with measurable outcomes.	70% of the Utah Core and objectives are covered. Objectives are clearly stated with measurable outcomes.	50% of the Utah Core and objectives are covered.	Less than 50% of the Utah Core and objectives are covered		
Content is delivered in an appropriate sequence.	80% of the program content is covered in an appropriate	70% of the program content is covered in an appropriate	50% of the program content is covered in an appropriate	Less than 50% of the program content is covered in an		

	sequence matching the Utah Core.	sequence matching the Utah Core.	sequence matching the Utah Core.	appropriate sequence matching the Utah Core.		
Content is covered with appropriate depth.	The program provides 80% or more of the necessary depth needed for appropriate instruction.	The program provides 70% or less of the necessary depth needed for appropriate instruction.	The program provides 50% or less of the necessary depth needed for appropriate instruction.	The program lacks the necessary depth needed for appropriate instruction.		
Content endorses sound research-based practices.	The program utilizes 80% or more of current research-based practices.	The program utilizes 70% or less of current research-based practices.	The program utilizes 50% or less of current research-based practices.	The program does not utilize current research-based practices.		
Content is presented accurately and in an age-appropriate manner.	Materials reflect current content knowledge without content bias. Materials utilize cross-curricular references and experiences. Materials are age appropriate.	Materials have some content inaccuracies, but do not show content bias. Materials utilize some cross-curricular references. Materials are 70% age appropriate	Materials show many content inaccuracies and some content bias. Materials have very limited cross curricular references. Materials are approximately 50% age appropriate.	Materials have major content inaccuracies. Materials have no cross curricular references. Materials are not age appropriate.		
Content is engaging to the student.	80% or more of the materials and activities are interesting and engaging to the student promoting purposeful learning.	Less than 80% of the materials and activities are interesting and engaging to the student promoting purposeful learning.	50% or less of the materials and activities are interesting and engaging to the student promoting purposeful learning.	Very little, if any, of the materials and activities are interesting and engaging to the student promoting purposeful learning.		
Content is differentiated to meet different abilities and	There are appropriate	70% of the program provides appropriate	50% of the program provides appropriate	There are few or no appropriate		

needs.	accommodations for various developmental levels acknowledging prerequisite skills and knowledge.	accommodations for various developmental levels acknowledging prerequisite skills and knowledge.	accommodations for various developmental levels acknowledging prerequisite skills and knowledge.	accommodations for various developmental levels with little acknowledgment of needed prerequisite skills and knowledge.		
Review Category Physical Qualities	High Quality - 3	2	1	0	NA	Comments
Student materials provide appropriate print, illustrations and text features.	Student materials provide appropriate use of font, illustrations and text features, (e.g., illustrations, graphs, tables).	70% of the student material provides appropriate use of font, illustrations and text features, (e.g., illustrations, graphs, tables).	50% of the student material provides appropriate use of font, illustrations and text features, (e.g., illustrations, graphs, tables).	The student materials lack appropriate use of font, illustrations, and text features, (e.g., illustrations, graphs, tables).		
Student materials provide table of contents, glossary, index, and etc.	Student materials provide necessary table of contents, indices, glossaries, and other references to assist and guide students, parents, and teachers.	Student materials provide some table of contents, indices, glossaries, and other references to assist and guide students, parents, and teachers.	Student materials provide a limited amount of table of contents, indices, glossaries, and other references to assist and guide students, parents, and teachers.	Student materials provide very little, if any, table of contents, indices, glossaries, and other references to assist and guide students, parents, and teachers.		
Student materials are durable.	Student materials are securely bound and reinforced.	Student materials are adequately hardbound.	Student materials have secure bindings.	Student materials have inferior bindings.		
Teacher materials are easy to use.	Teacher materials are well organized with easy to read font and good correlation with student materials.	Teacher materials are organized with easy to read font, and follow correlation with student materials.	Teacher materials are somewhat organized with hard to read font and layout. Materials provide difficult to follow correlation with student materials.	Materials are disorganized with hard to read font for teachers. Layout provides little or no correlation to student materials.		

Teacher material is durable.	Teacher materials are securely bound and reinforced while staying open and flat for teaching.	Teacher materials are adequately hardbound while staying open and flat for teaching	Teacher materials have secure bindings but do not open and lay flat to facilitate teaching.	Teacher materials have inferior bindings but do lay flat to facilitate teaching.		
Review Category Technology Qualities	High Quality - 3	2	1	0	NA	Comments
Technology provided is user friendly.	Program provides menus that are easy to read and follow. Program is user-friendly to install and requires a minimal level of computer expertise. Manuals and directions are understandable.	Program provides menus that are generally easy to read and follow. Installation requires little computer expertise. Manuals and directions are simple to understand.	Program menus are easy to read. Manuals might have to be read in detail to understand operation of technology, (e.g., laser remote, software). Installation might require some knowledge or expertise. Manuals are included.	Menus are not descriptive and hard to follow. Installation requires expertise. No manuals or written instructional materials are provided.		
Technology provided enhances the learning experience.	Technology provided is appropriate giving additional support for student learning.	Technology provided is appropriate giving some additional support for student learning.	Limited technology is provided giving little support for student learning.	No technology is provided.		
Technology has quality audio/visual attributes.	Program provides high quality audio and visual effects.	Program provides good audio and visual effects.	Program audio and visual effects are of poor quality.	No technology is available.		
Review Category Ancillary Materials	High Quality - 3	2	1	0	NA	Comments
Student ancillary	Program provides	Program provides	Program provides	The program		

materials provide appropriate supplemental instruction.	high quality student ancillary materials that enhance and supplement the delivery of instruction.	adequate student ancillary materials to enhance and supplement the delivery of instruction.	some student ancillary materials that are of limited value to supplement and enhance the delivery of instruction.	provides no student ancillary materials or student ancillary materials are of such poor quality and have little correlation to learning objectives that they are of no value.		
Student ancillary materials are easy to access and utilize.	Student ancillary materials are easy to access, are durable and easy to utilize.	Student ancillary materials are easy to access, are somewhat durable requiring some modification to utilize.	Student ancillary materials are difficult to access and require modification to utilize.	Student ancillary materials are of such poor quality or difficult to prepare or access that they are of little or no value.		
Parent ancillary materials are appropriate and support desired student learning	Parent ancillary materials are appropriate providing good support for desired student learning through home activities, homework, and practice opportunities.	Parent ancillary materials are appropriate providing adequate support for desired student learning through a variety of opportunities and activities.	Parent ancillary materials are not always appropriate nor do they provide adequate support through a variety of opportunities for student learning.	There are no parent ancillary materials available.		
Review Category Assessment Materials	High Quality - 3	2	1	0	NA	Comments
A variety of assessment options are provided.	Program provides multiple assessment measures to monitor individual student progress at regular intervals.	Program provides some assessment measures to monitor individual student progress at regular intervals.	Program provides limited assessment measures to monitor individual student progress at regular intervals.	Program provides no assessment measures or measures are of such poor quality or correlation to student learning to be of any value.		

Assessment tools are appropriate to inform instruction and are aligned with the program, the Utah Core curriculum, and U-PASS.	Assessment tools are appropriate to inform the major areas of instruction and are aligned with the program and the Utah Core curriculum and U-PASS.	Assessment tools are appropriate to inform some areas of the instructional program and are adequately aligned with the program and the Utah Core curriculum and U-PASS.	Assessment tools are appropriate to inform limited areas of the instructional program and are poorly aligned with the program and the Utah Core curriculum and U-PASS.	Assessment tools are not appropriate to inform areas of the instructional program and are not aligned with the program and the Utah Core curriculum and U-PASS.		
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Assessment tools are easily accessible and utilized.	Assessment tools are easily accessible with a limited amount of training or expertise.	Assessment tools are accessible with some amount of training or expertise needed.	Assessment tools are difficult to access and require extensive training.	Assessment tools are not accessible.		
Category Universal Access	High Quality - 3	2	1	0	NA	Comments
Program content accurately reflects diverse populations.	Program provides ways to adapt curriculum for all students, (e.g., special learning needs, learning disabilities, ELL, and advanced learners).	Program provides some ways to adapt curriculum to meet special learning needs of students.	Program provides limited strategies to assist special learning needs of students.	Program provides no strategies to assist special learning needs of students.		
Program contents provides for the development of healthy attitudes and values.	Program accurately portrays and promotes understanding of cultural, racial, religious and diversity in society.	Program accurately portrays and promotes some understanding of cultural, racial, religious and diversity in society.	Program accurately portrays and promotes a limited understanding of cultural, racial, religious and diversity in society.	Program does not accurately portray or promote an understanding of cultural, racial, religious and diversity in society.		

I have reviewed the above program and recommend the following use: (Choose one category only.)

- (1) Instructional materials are in alignment with content philosophy and instructional strategies of the Utah Core. Materials provide comprehensive coverage of course content and support U-PASS. Materials may be used for **primary course instruction**.
 - (2) Instructional materials provide limited alignment with the Utah Core or U-PASS or have a narrow or restricted scope and sequence. Use of these materials must be supplemented with necessary missing program elements for effective instruction. Materials may be used on a **limited basis with accompanying plan** for use with additional appropriate materials to assure coverage of core requirements.
 - Materials could be used to support primary course instruction - **Tier I** of the **Utah Model for Instruction and Intervention**.
 - Materials could be used to support intervention instruction - **Tier II** of the **Utah Model for Instruction and Intervention**.
 - Materials could be used to support intervention instruction - **Tier III** of the **Utah Model for instruction and Intervention**.
 - (3) Materials are not for student instructional use, but may only be used only as **teacher resource material**.
 - (4) Materials are aligned to the core, developmentally appropriate, may contain valuable content information, but are not intended to be used as the source for primary instruction, but **only as student resource material**.
- Materials have been reviewed, but **not adopted** because of lack of alignment, inaccurate content, misleading connotations, undesirable presentation, or are in conflict with existing law and rules, or otherwise unsuitable for use by students. **School districts are strongly cautioned against using these materials.** Materials were included in the publisher bid, but **not sampled** to the USOE or Textbook commission.
- Materials were not reviewed**, but may be purchased in accordance with the law and Rule **277-469-6**: Advanced placement materials, International materials, concurrent enrollment materials, library or trade books, reference materials, teacher professional materials which are not components of an integrated instructional program. Galley proofs or unfinished copies are not reviewed.

Evaluator Signature: _____

Date: _____