

## Textbook Alignment to the Utah 4<sup>th</sup> Grade Science Core Curriculum Rubric

| <b>Title</b> _____ <b>ISBN#</b> _____  |  |                                  |                      |
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| <b>Publisher:</b> _____  |  |                                  |                      |
| <b>Name of Person(s) conducting alignment and evaluation:</b> _____  |  |                                  |                      |
| <b>Overall percentage of coverage of the Utah State Core Curriculum:</b> _____%                                      |  |                                  |                      |
| <b>Standard I: Students will understand that water changes state as it moves through the water cycle.</b>            |  |                                  |                      |
| <b>Percentage of coverage for Standard I:</b> %  |  |                                  |                      |
| Objectives   | Indicators   | If covered, appropriate page #'s | Comments on coverage |
| <b>Objective 1.1: Describe the relationship between that energy, evaporation and condensation of water on Earth.</b> | a. Identify the relative amount and kind of water found in various locations on Earth (e.g., oceans have most of the water, glaciers and snowfields contain most fresh water). |                                  |                      |
|  | b. Identify the sun as the source of energy that evaporates water from the surface of the Earth.   |                                  |                      |
|  | c. Compare the processes of evaporation and condensation of water.   |                                  |                      |

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|  | d. Investigate and record temperature data to show the effects of heat energy on changing the states of water.   |   |                             |
| <b>Objective 1.2: Describe the water cycle.</b>  | a. Locate examples of evaporation and condensation in the water cycle (e.g., water evaporates when heated and clouds or dew forms when vapor is cooled). |   |                             |
|  | b. Describe the processes of evaporation, condensation, and precipitation as they relate to the water cycle.   |   |                             |
|  | c. Identify locations that hold water as it passes through the water cycle (e.g., oceans, atmosphere, fresh surface water, snow, ice, and ground water). |   |                             |
|  | d. Construct a model or diagram to show how water continuously moves through the water cycle over time.  |   |                             |
|  | e. Describe how the water cycle relates to the water supply in you community.  |   |                             |
| <b>Standard II: Students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.</b> |  |   |                             |
| <b>Percentage of coverage for Standard II:    %</b>  |  |   |                             |
| <b>Objectives</b>  | <b>Indicators</b>  | <b>If covered, appropriate page #'s</b> | <b>Comments on coverage</b> |
| <b>Objective 2.1: Observe,</b>   | a. Identify basic cloud types  |   |                             |

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| <b>measure, and record the basic elements of weather.</b>                  | (i.e., cumulus, cirrus, stratus clouds).   |  |  |
|  | b. Observe, measure, and record data on the basic elements of weather over a period of time (i.e., precipitation, air temperature, wind speed and direction, and air pressure).            |  |  |
|  | c. Investigate evidence that air is a substance (e.g., takes up space, moves as wind, temperature can be measured).  |  |  |
|  | d. Compare the components of severe weather phenomena to normal weather conditions (e.g., thunderstorm with lightning and high winds compared to rainstorm with rain showers and breezes). |  |  |
| <b>Objective 2.2: Interpret recorded weather data for simple patterns.</b> | a. Observe and record effects of air temperature on precipitation (e.g., below freezing results in snow, above freezing results in rain).  |  |  |
|  | a. Observe and record effects of air temperature on precipitation (e.g., below freezing results in snow, above freezing results in rain).  |  |  |
|  | b. Graph recorded data to show daily and seasonal  |  |  |

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|  | patterns in weather.  |   |                             |
|  | c. Infer relationships between wind and weather change (e.g., windy days often precede changes in the weather; south winds in Utah often precede a cold front coming from the north). |   |                             |
| <b>Objective 2.3: Evaluate weather predictions based upon observational data.</b>  | a. Identify and use the tools of a meteorologist (e.g., measure rainfall using rain gauge, measure air pressure using barometer, measure temperature using a thermometer).            |   |                             |
|  | b. Describe how weather and forecasts affect people's lives.  |   |                             |
|  | c. Predict weather and justify prediction with observable evidence.   |   |                             |
|  | d. Evaluate the accuracy of student and professional weather forecasts.   |   |                             |
|  | e. Relate weather forecast accuracy to evidence or tools used to make the forecast (e.g., feels like rain vs. barometer is dropping).   |   |                             |
| <b>Standard III: Students will understand the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.</b> |   |   |                             |
| <b>Percentage of coverage for Standard III:    %</b>   |   |   |                             |
| <b>Objectives</b>  | <b>Indicators</b>   | <b>If covered, appropriate page #'s</b> | <b>Comments on coverage</b> |

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| <b>Objective 3.1: Identify the basic properties between minerals and rocks.</b>  | a. Describe the differences between minerals and rocks.  |  |  |
|  | b. Observe rocks using a magnifying glass and draw shapes and colors of the minerals.  |  |  |
|  | c. Sort rocks by appearance according to the three basic types: sedimentary, igneous and metamorphic (e.g., sedimentary-rounded-appearing mineral and rock particles that are cemented together, often in layers; igneous-with or without observable crystals that are not in layers or with or without air holes or glasslike; metamorphic-crystals/minerals, often in layers). |  |  |
|  | d. Classify common rocks found in Utah as sedimentary (i.e., sandstone, conglomerate, shale), igneous (i.e., basalt, granite, obsidian, pumice) and metamorphic (i.e., marble, gneiss, schist).  |  |  |
| <b>Objective 3.2: Explain how the processes of weathering and erosion change and move materials that becomes soil.</b> | a. Identify the processes of physical weathering and erosion change and move materials that become soil.   |  |  |
|  | b. Distinguish between weathering (i.e., wearing   |  |  |

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|   | down and breaking of rock surfaces) and erosion (i.e., the movement of materials).   |  |  |
|   | c. Model erosion of Earth materials and collection of these materials as part of the process that leads to soil (e.g., water moving sand in a playground area and depositing this sand in another area). |  |  |
|   | d. Investigate layers of soil in the local area and predict the sources of the sand and rocks in the soil.   |  |  |
| <b>Objective 3.3: Observe the basic components of soil and relate the components to plant growth.</b> | a. Observe and list the components of soil (i.e., minerals, rocks, air, water, living and dead organisms) and distinguish between the living, nonliving, and once living components of soil.             |  |  |
|   | b. Diagram or model a soil profile showing topsoil, subsoil, and bedrock, and how the layers differ in composition.  |  |  |
|   | c. Relate the components of soils to growth of plants in soil (e.g., mineral nutrients, water).  |  |  |
|   | d. Explain how plants may help control the erosion of soil.  |  |  |
|   | e. Research and investigate  |  |  |

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|  | ways to provide mineral nutrients for plants to grow without soil (e.g., grow plants in wet towels, grow plants in wet gravel, grow plants in water).                     |   |                             |
| <b>Standard IV: Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.</b> |   |   |                             |
| <b>Percentage of coverage for Standard IV:    %</b>  |   |   |                             |
| <b>Objectives</b>  | <b>Indicators</b>   | <b>If covered, appropriate page #'s</b> | <b>Comments on coverage</b> |
| <b>Objective 4.1: Describe Utah fossils and explain how they were formed.</b>  | a. Identify features of fossils that can be used to compare them to living organisms that are familiar (e.g., shape, size and structure of skeleton, patterns of leaves). |   |                             |
|  | b. Describe three ways fossils are formed in sedimentary rock (i.e., preserved organisms, mineral replacement of organisms, impressions or tracks).                       |   |                             |
|  | c. Research locations where fossils are found in Utah and construct a simple fossil map.  |   |                             |
| <b>Objective 4.2: Explain how fossils can be used to make inferences about past life, climate, geology, and environments.</b>                      | a. Explain why fossils are usually found in sedimentary rock.   |   |                             |
|  | b. Based on the fossils found in various locations, infer how Utah environments have changed over time (e.g.,   |   |                             |

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|   | trilobite fossils indicate that Millard County was once covered by a large shallow ocean; dinosaur fossils and coal indicate that Emery and Uintah County were once tropical and swampy). |   |                             |
|   | c. Research information on two scientific explanations for the extinction of dinosaurs and other prehistoric organisms.   |   |                             |
|   | d. Formulate questions that can be answered using information gathered on the extinction of dinosaurs.  |   |                             |
| <b>Standard V: Students will understand the physical characteristics of Utah’s wetlands, forests, and deserts and identify common organisms for each environment.</b> |   |   |                             |
| <b>Percentage of coverage for Standard V:    %</b>  |   |   |                             |
| <b>Objectives</b>   | <b>Indicators</b>   | <b>If covered, appropriate page #'s</b> | <b>Comments on coverage</b> |
| <b>Objective 5.1: Describe the physical characteristics of Utah’s wetlands, forests, and deserts.</b>   | a. Compare the physical characteristics (e.g., precipitation, temperature, and surface terrain) of Utah’s wetlands, forests, and deserts.   |   |                             |
|   | b. Describe Utah’s wetlands (e.g., river, lake, stream, and marsh areas where water is a major feature of the environment), and deserts (e.g., areas where the lack of water provided an  |   |                             |

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|   | environment where plants needing little water are a major feature of the environment).   |  |  |
|   | c. Locate examples of areas that have characteristics of wetlands, forests, or deserts in Utah.  |  |  |
|   | d. Based upon information gathered, classify areas of Utah that are generally identified as wetlands, forests, or deserts.   |  |  |
|   | e. Create models of wetlands, forest, and deserts.   |  |  |
| <b>Objective 5.2: Describe the common plants and animals found in Utah environments and how these organisms have adapted to the environment in which they live.</b> | a. Identify common plants and animals that inhabit Utah's forests, wetlands, and deserts.  |  |  |
|   | b. Cite examples of physical features that allow particular plants and animals to live in specific environments (e.g., duck has webbed feet, cactus has waxy coating).   |  |  |
|   | c. Describe some of the interactions between animals and plants of a given environment (e.g., woodpecker eats insects that live on trees of a forest, brine shrimp of the Great Salt Lake eat algae and birds feed on brine shrimp). |  |  |
|   | d. Identify the effect   |  |  |

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|  | elevation has on types of plants and animals that live in a specific wetland, forest, or desert.  |  |  |
|  | e. Find examples of endangered Utah plants and animals and describe steps being taken to protect them.  |  |  |
| <b>Objective 5.3: Use a simple scheme to classify Utah plants and animals.</b> | a. Explain how scientists use classification schemes.   |  |  |
|  | b. Use a simple classification system to classify unfamiliar Utah plants or animals (e.g., fish/amphibians/reptile/bird/mammal, invertebrate/vertebrate, tree/shrub/grass, deciduous/conifers). |  |  |
| <b>Objective 5.4: Observe and record the behavior of Utah animals.</b>         | a. Observe and record the behavior of birds (e.g., caring for the young, obtaining food, surviving winter).   |  |  |
|  | b. Describe how the behavior and adaptations of Utah mammals help them survive winter (e.g., obtaining food, building homes, hibernation, migration).   |  |  |
|  | c. Research and report on the behavior of a species of Utah fish (e.g., feeding on the bottom or surface, time of year and movement of fish to spawn, types of food and how it is obtained).    |  |  |

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|  | d. Compare the structure and behavior of Utah amphibians and reptiles.          |  |  |
|  | e. Use simple classification schemes to sort Utah's common insects and spiders. |  |  |

### General Rubric

| Review Category<br><b>Curriculum Content Coverage</b>                     | High Quality - 3   | 2  | 1   | 0  | NA | Comments |
|---|--|--|---|--|----|----------|
| 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 sequence matching the Utah Core.                 | 70% of the program content is covered in an appropriate sequence matching the Utah Core.                 | 50% of the program content is covered in an appropriate sequence matching the Utah Core.    | Less than 50% of the program content is covered in an 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.                                     |    |          |

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| 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 needs.              | There are appropriate accommodations for various developmental levels acknowledging prerequisite skills and knowledge.  | 70% of the program provides appropriate accommodations for various developmental levels acknowledging prerequisite skills and knowledge.                      | 50% of the program provides appropriate accommodations for various developmental levels acknowledging prerequisite skills and knowledge.                                  | There are few or no appropriate accommodations for various developmental levels with little acknowledgment of needed prerequisite skills and knowledge. |    |          |
| Review Category<br><b>Physical Qualities</b>                                  | 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   | 70% of the student material provides appropriate use of font, illustrations   | 50% of the student material provides appropriate use of font, illustrations and   | The student materials lack appropriate use of font, illustrations,  |    |          |

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|  | features, (e.g., illustrations, graphs, tables).  | and text features, (e.g., illustrations, graphs, tables).  | text features, (e.g., illustrations, graphs, tables).   | 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.   |    |          |
| <b>Review Category<br/>Technology Qualities</b>                        | 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  | Program provides menus that are generally easy to read and follow. Installation requires   | Program menus are easy to read. Manuals might have to be read in detail to understand operation   | Menus are not descriptive and hard to follow. Installation requires expertise.   |    |          |

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|   | and requires a minimal level of computer expertise. Manuals and directions are understandable.                     | little computer expertise. Manuals and directions are simple to understand.                                  | of technology, (e.g., laser remote, software). Installation might require some knowledge or expertise. Manuals are included.       | 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.   |    |          |
| <b>Review Category<br/>Ancillary Materials</b>                            | High Quality - 3   | 2  | 1  | 0   | NA | Comments |
| Student ancillary materials provide appropriate supplemental instruction. | Program provides high quality student ancillary materials that enhance and supplement the delivery of instruction. | Program provides adequate student ancillary materials to enhance and supplement the delivery of instruction. | Program provides some student ancillary materials that are of limited value to supplement and enhance the delivery of instruction. | The program 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          | 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  |    |          |

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|  |   | utilize.  |  | 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.  |    |          |
| <b>Review Category<br/>Assessment Materials</b>  | 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. |    |          |
| Assessment tools are easily accessible and utilized.   | Assessment tools are easily accessible with a limited   | Assessment tools are accessible with some amount of   | Assessment tools are difficult to access and require extensive   | Assessment tools are not accessible.  |    |          |

|  | amount of training or expertise.   | training or expertise needed.  | training.   |  |    |          |
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| Category<br><b>Universal Access</b>  | 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: \_\_\_\_\_