Washoe County School District K-5 Science
2020 Instructional Materials Evaluation Rubric
(Certified Teaching Professional Form)

Category 1: Designed for Three-Dimensional Learning

Criterion 1A: Phenomena and Problems

Instructional materials focus on students making sense of phenomena or designing solutions to problems which drives student learning.

- Students are engaged with phenomena or problems that can be explained or solved through the application of the three-dimensions.
- A good phenomenon builds on everyday student experiences and targets grade appropriate learning goals.
- Anchoring, investigative and everyday phenomena may be present.
- Engineering lessons require students to use elements of the science core ideas together with elements of core ideas from engineering design to solve problems.

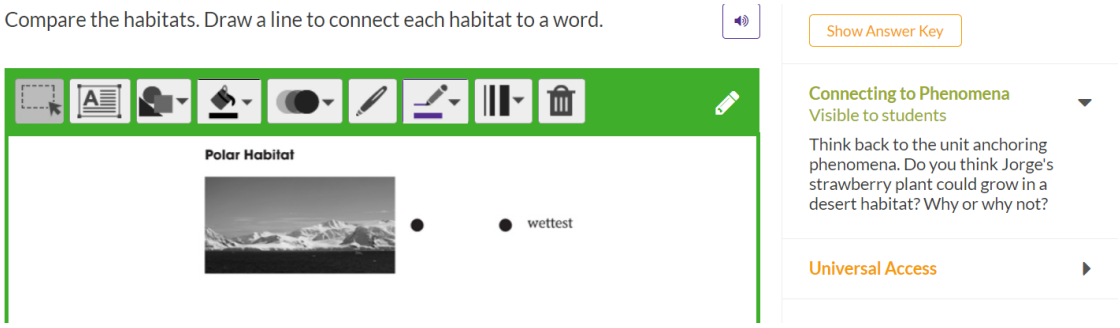
Less of this:	**More** of this:
Phenomena are just for the initial hook.	Phenomena drives the learning.
Phenomena are fun or flashy to engage students.	Phenomena that builds on everyday experiences supports engagement.
Phenomena are brought in after students develop the science ideas so they can apply what they learned.	The development of science ideas is anchored in investigations of phenomena.
Engineering problems are unrelated to the science learning.	Engineering involves designing solutions to problems that arise from phenomena.

Examples of Evidence:

- ◊ Photographs of trash washed up on a beach that leads into a unit on waves in 4th grade physical science unit. (A first-hand experience, video, photograph or data set to start a learning sequence that becomes the "why" for further study grounded in everyday student experiences.)
- ◊ A time lapse video of a badger decomposing is shown to start a life science unit on matter and energy in ecosystems. Students return to the video throughout to explain what is happening.
- ◊ Garbage from the lunchroom is examined to start a unit on matter and how it changes in the 5th grade physical science unit.
- ◊ 3rd grade students explore balloons, aluminum cans, styrofoam beads, and transparent tape to make observations and generate questions about static electricity in the physical science unit, lesson 3.
- ◊ Students address the problem of communicating at a distance without sound following a study of light in the 1st grade physical science unit.

Specific Evidence from Materials
--Unit 1 "Plant and Animal Survival" has the anchoring phenomenon of "One strawberry plant grew berries. One wilted". Students engage with this by watching a brief video (40 sec.) with the storyline of boy who plants two strawberry plants. One grows, the other doesn't.

--Each lesson has a separate phenomenon that loosely relates to the anchoring phenomenon. For example, lesson 1.1 focuses on, “Living thing aren’t at just the top of a pond” and lesson 1.4 focuses on, “Penguins move around in ways other than flying”. Each lesson phenomenon is introduced with student observations of an image and short video (~30 secs).
--In lesson 1.3 students engineer hand pollinators to mimic pollination. This is meant to support the lesson phenomenon of, “A beetle comes to a flower to eat nectar. Then it leaves with something stuck to its body”.
--Every lesson ends with a “Making Sense of the Phenomenon” section (~5 mins) where students return to the lesson phenomenon and answer it based on what they learned during the lesson.
--Phenomena are listed and found only on the individual digital lesson plans.
--As part of the unit assessment, students briefly (~5 min) revisit the unit phenomenon independently and answer individually.
--Individual lessons refer back to the unit phenomenon once during the lesson, but the connection is not explicit and hard to access by educators. For example, in lesson 1.4, teachers are prompted to connect back to the unit phenomenon but this connection is located only on the drop-down menu on the sidebar. See evidence below. This



To what extent do the materials support Criterion 1A? Include your reasoning.
The materials support Criterion 1A “Phenomena and Problems” to a good extent. Each unit has an anchoring phenomenon and each lesson has its own, separate phenomenon. Lesson phenomena do drive the instruction within the individual lesson and the lesson phenomena are briefly revisited at the end of each lesson. The unit phenomenon is listed at the beginning of the unit and students do interact with it to initially engage in the unit. However, the unit phenomenon does not drive daily instruction and is not referred to explicitly during the lessons. Teachers must be on the hunt for the connection to the unit phenomenon which is located on the sidebar of the activity descriptions. It is up to teachers how and when to ask the guiding question and how and where they record revised student thinking of the unit phenomenon. The materials in each lesson are more activity based than phenomenon based.

Criterion 1B: Integrating the Three-Dimensions

Instructional materials integrate elements of the Science and Engineering Practices, Crosscutting Concepts and Disciplinary Core Ideas.

- Students develop and use multiple grade-appropriate elements of each dimension.
- The dimensions are integrated to work together and are not taught in isolation.
- Learning experiences integrate multiple different pairings of the dimensions to build understanding of the targeted performance expectations.
- Engineering is integrated with at least once per domain of science.

Less of this:	**More** of this:
Students only engage in a single practice element in a lesson.	The lesson helps students use and develop multiple practice elements.
Lessons teach the dimensions separately or only address them at the general level.	Lessons integrate grade-appropriate elements for each dimension.
Engineering lessons focus on trial and error activities that don't require science or engineering knowledge.	Grade-appropriate elements of engineering design and science core ideas are integrated with the other dimensions.
Engineering consists of challenges or step-by-step directions to build something.	Engineering is integrated into the grade-appropriate science core ideas and use explanations of phenomena to design solutions.

Examples of Evidence:

- ◊ 4th grade students conduct an investigation using fair tests in which variables are controlled and the number of trials considered, including collecting measurements and representing data in tables, with balls and ramps to determine cause and effect relationships of speed and energy in unit 2 lesson 4.
- ◊ Students ask questions about waves moving objects and collaboratively investigate how to make different looking waves in water and analyze how these waves affect a floating object in the physical science unit.
- ◊ 3rd grade students generate, test and refine solutions to keep two moving objects from touching each other by applying ideas learned about magnets in lesson 9.
- ◊ With teacher guidance, kindergarten students conduct an investigation with peers to compare the effects of different directions of pushes and pulls on playground balls, student chairs and erasers on different surfaces in the physical science unit, lesson 3.

Specific Evidence from Materials
--Most lessons are "investigation based" with hands-on materials. --In Grade 2, Unit 1 "Plant and Animal Survival", lesson 1.1 has students observe and categorize the living things in an area. They make a graph of their observations and share with the class. --In lesson 1.2, students grow plants with and without water or light to determine whether plants need water and light to grow. --In lesson 1.3, students engineer a tool to pollinate a flower by hand to mimic a bee pollinating a flower. They test it on a model of a flower (sand in a Petri dish). --In lesson 1.8, students gather information about an ocean animal by going to Ocean Data Centers (bar graphs, charts, etc.). They use this data to write a report.

--Some lessons use videos as a mode of investigation. For example, in lesson 1.5 students visit a rainforest habitat through multiple videos (11 videos) to identify the plants and animals that live there.
--3D Learning statements are available at the top of every lesson. This section clearly lists the SEPs, CCCs, and DCIs addressed in the lesson.
--3D Learning progression lists all lessons and the DCIs, SEPs, and CCCs for each lesson in the units (p. 51-58 of print teacher manual).

To what extent do the materials support Criterion 1B? Include your reasoning.
The materials support Criterion 1B "Integrating the Three-Dimensions" to a large extent. Each lesson has an investigation where students are required to use specific SEPs to explore the content and CCCs. Developing and using models, planning and carrying out investigations, and analyzing and interpreting data are SEPs used heavily in Grade 2 Unit 1. Students have multiple opportunities to work with materials first-hand. These SEPs drive inquiry and are used to engage with the concepts before content is learned through reading or direct teacher instruction. Further, the 3D Learning section at the top of each lesson make the targeted SEPs, CCCs, and DCIs of the lesson very clear and explicit to the instructor. This is important because teachers are able to identify the three dimensions of the lesson easily which allows them to make these explicit to students in the lesson. However, addressing the SEP's and CCC's with students is made less clear to the educator as compared to making the DCIs apparent to students. The responsibility to find when, where, and how to explicitly address the SEP's and CCC's with the students falls on the educator as no support is given by the program (i.e., guiding questions, prompts, sample scripts).

Criterion 1C: Coherence

Instructional materials help students develop increasingly sophisticated understandings within and across grade-levels.

- Lessons fit together to target a set of performance expectations with multiple opportunities for students to revise understandings over time.
- Instructional materials make connections between lessons, units and grade levels.
- Lessons build on students' prior learning in all three dimensions.
- Students engage in learning experiences with explicit connections to other science disciplines and other subjects with intention.

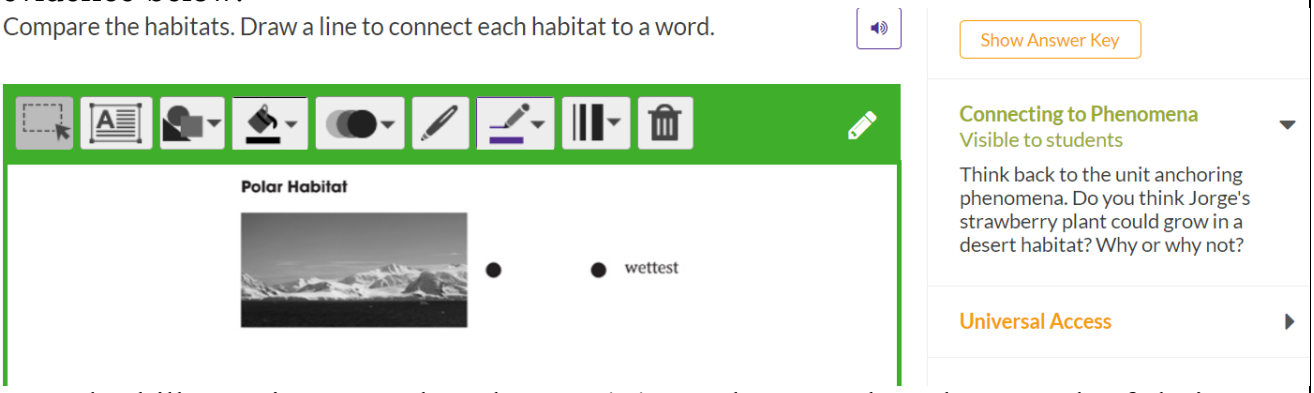
Less of this:	**More** of this:
Lessons are unrelated.	Lessons are presented in a logical sequence to develop understandings.
Lessons build on prior learning but only for the DCIs.	Lessons work together with students' foundational knowledge and practice from prior lessons and grade levels.
Science domains are taught in isolation.	When appropriate, science domains are integrated to show connections.
Other subjects, when included, are not intentionally chosen to support grade-level standards.	Grade-level appropriate standards from ELA, math or other subject areas are integrated with science learning.

Examples of Evidence:

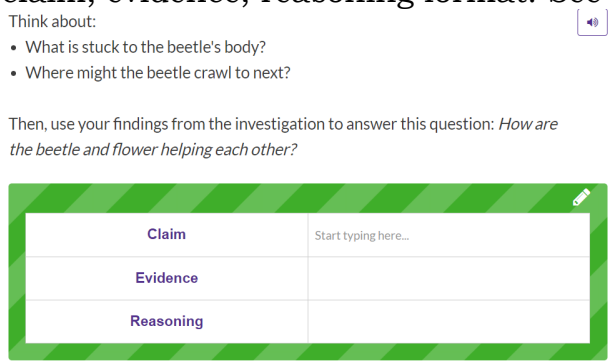
- ◊ In the first unit, students address the physical science standards around the phenomena of garbage and partially address a life science standard related to decomposers. In the second unit on ecosystems, students extend and apply their understanding of decomposers which leads to an engineering problem about materials such as plastics that do not decompose.
- ◊ 5th grade students are investigating water sources around the Earth and make connections to properties of matter in both the physical science and earth science units and prior learning about weather and climate from 3rd grade.
- ◊ 2nd grade students plan and conduct an investigation with water and earth materials as a whole class in one lesson and then in the next lesson students work with a small group to plan and conduct another investigation with wind and earth materials to further learning of core ideas and practices.
- ◊ Students apply ELA learning to write a set of directions for conducting an investigation in the earth science unit, lesson 6.
- ◊ Students use line plots to analyze climate data in grade 3, unit 4.

Specific Evidence from Materials
--Each unit has an anchoring or unit phenomenon. Each lesson has a separate lesson phenomenon. This is loosely connected to the unit phenomenon. Lesson phenomena are not connected to other lesson phenomena. --Every lesson ends with a "Making Sense of the Phenomenon" section (~5 mins) where students return to the lesson phenomenon and answer it based on what they learned during the lesson. --Individual lessons refer back to the unit phenomenon once during the lesson, but the connection is not explicit and hard to access by educators. For example, in lesson 1.4, teachers are prompted to connect back to the unit phenomenon but

this connection is located only on the drop-down menu on the sidebar. See evidence below.



--Math skills are integrated. In lesson 1.1, students make a bar graph of their observations of plants in a local habitat. In lesson 1.8 students analyze and interpret graphs, diagrapms, and charts to gather information about ocean animals and the habitat.
--Reading skills are incorporated through the reading of a digital text book and "Super Simple Science" passages that have corresponding videos where the text is read aloud.
--Students have an opportunity to construct agruments in some lessons using the claim, evidence, reasoning format. See example from lesson 1.3 below.



To what extent do the materials support Criterion 1C? Include your reasoning.
The materials support Criterion 1C to a medium-low extent. Math skills are intentionally incorporated to address the content (as seen in grade 2 lessons 1.1 and 1.8). The materials also provide an opportunity for students to engage in argumentation using the claim, evidence, and reasoning format at the end of some lessons. This is structured in an intentional way, although that may be unclear to come educators as no other supports or instructions are provided. See evidence from lesson 1.8 above. However, the logical sequence of the lesson is unclear and does not build from earlier lessons in a coherent way. Lessons are presented with a unique and separate phenomenon that are not connected to the unit phenomenon in any explicit way. Lessons act as individual learning experiences. These lessons introduce and revisit a lesson phenomenon well. However, lessons do not reference other lessons and those phenomena are independent of one another. Further, the unit phenomenon is referred to only once in each lesson and this reference is located in the

sidebar of teacher references that is fairly hidden and hard to find. It is up to the teacher to be cognizant of the unit phenomenon and take extra planning and measure to address it while teaching. This connection is easily ignored or forgotten otherwise. Additionally, this connection feels forced and comes across as an afterthought. This is due to the placement of the connection in lesson materials, one limited guiding question that prompts the connection, and the variety in topic of lesson phenomena.

Overall, the integration of math and reading is present but a lack of coherence dissembles the unit into 8 separate lesson (referring to Grade 2, Unit 1) rather than one cohesive unit.

Category 2: Instructional Supports

Criterion 2A: Assessing the Three-Dimensions

Instructional materials support monitoring student progress in all three dimensions.

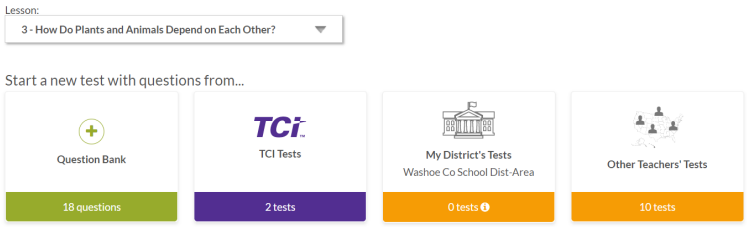
- Multiple and varied assessments allow students to demonstrate learning in all three dimensions including application of knowledge in performance tasks.
- Formative assessments, including teacher, self and peer assessments, are embedded throughout to inform instruction.
- Assessments are unbiased and elicit direct, observable evidence from all students.
- A phenomena or problem drives tasks, and information from the task is required to complete it.
- Rubrics and scoring guidelines are provided for interpreting student performance including sample student responses

Less of this:	**More** of this:
Checks for understanding elicit only a few student responses or rely primarily on group projects.	Individual student artifacts are used to measure student understanding of each dimension.
Only summative assessments that measure the end point of understanding are provided.	Formative assessments provide feedback to adjust instruction and inform students of their progress.
Assessments are primarily rote memorization of facts and terminology.	Assessments reflect application of all three dimensions including tasks that are driven by phenomena or problems.
Only multiple-choice tests are given.	Multiple measures and types of assessment are used throughout.

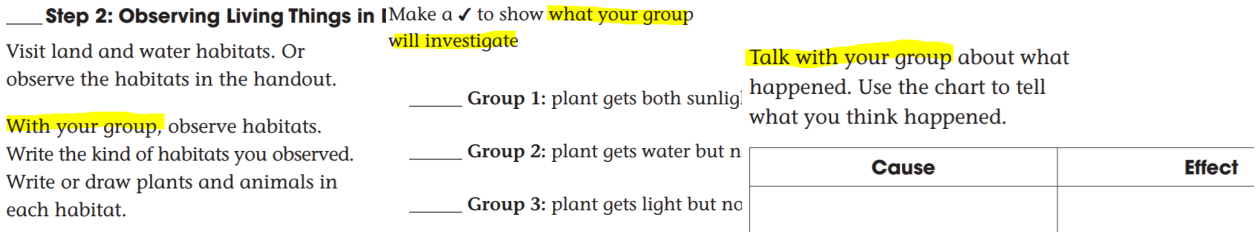
Examples of Evidence:

- ◊ As students are engaged in a performance task in unit 3, lesson 2, there are indicators for teachers to look for and information about possible responses. This information is embedded in the lesson.
- ◊ In unit 1, there are two performance assessments, peer feedback throughout, exits slips, a summative assessment, and a prewrite.
- ◊ Individual student learning is assessed using written work that answers the driving question of the unit. (Earth Science, p. 76)

Specific Evidence from Materials
--"Checkpoints" are used at the beginning of the unit as a preassessment. Students engage with the anchoring phenomenon. This is located at the beginning of student science journals. --"Checkpoints" has students record what they know and wonder about the anchoring phenomenon, continue with a chart of "checkpoints" for each lesson, and include a claim, evidence, reasoning for the end of the unit. These are suggested to be done whole-class or independently. A little unclear. --Assessment tab on the left-hand side bar allows teachers to access assessments per lesson. Assessments created by the program, by other teachers, by the district, or by the test item bank are available. See evidence below.



--The assessments for each lesson are predominantly multiple choice, multiple select, and fill in the blank. These are not performance tasks and address only the DCIs.
--At the end of each unit, a performance task is provided. For example, in unit 1 "Plant and Animal Survival" students are required to observe living things in nearby habitats, investigate what plants need to live, make a model that shows how animals move seeds, and plan a food garden for their school (11 pages!).
--The performance task is a group task and is intended to be completed with a group, not individually. See evidence below.
--The performance task does require students to use SEPs to address DCIs.



To what extent do the materials support Criterion 2A? Include your reasoning.
The materials support Criterion 2A "Assessing the Three Dimensions" to a medium extent. Most assessments are limited to assessing DCIs and the performance task is group-based, lacking the ability to evaluate individual student understanding.

Criterion 2B: Instructional Experiences

Instructional materials support equitable access to science knowledge and practice for all students.

- Students engage with direct (preferably first-hand), shared experiences that are relevant and authentic, serve as the basis for learning and meet the developmental needs of elementary students.
- Students' questions, prior experiences and diverse backgrounds related to the phenomenon or problem drive learning.
- Materials provide an opportunity to learn by allowing for the development of scientific understandings over time using multiple modalities.
- Materials provide opportunities for students to make connections to and explore the natural world outside the classroom.

Less of this:	**More** of this:
The lesson focuses on a topic that some students have experienced.	Direct experiences in the classroom provide access and equity for all students.
Student questions and prior experiences are not connected to the learning.	Materials provide supports for connecting students' own questions to the targeted learning.
Students read about what others have done.	Students learn through concrete experiences.
Only one or two modalities are used.	Multiple modalities are used throughout each instructional segment.

Examples of Evidence:

- ◊ Students develop physical models of a landfill as open and closed systems to observe during the 5th grade garbage unit.
- ◊ Students identify components of garbage disposal in their homes and communities which connects the phenomena that started the unit.
- ◊ Students conduct a first-hand investigation of erosion and deposition using a stream table, observe time-lapse videos of landslides, engage in a virtual investigation, read accounts of earth changes by wind and record changes to the playground after a snow event in the 4th grade earth science unit.
- ◊ Students raise trout from eggs in the classroom and make observations over time as part of their study of traits in the life science unit.

Specific Evidence from Materials
--In Grade 2, Unit 1 "Plant and Animal Survival", lesson 1.1 has students observe and categorize the living things in an area. They make a graph of their observations and share with the class. --In lesson 1.2, students grow plants with and without water or light to determine whether plants need water and light to grow. --In lesson 1.3, students engineer a tool to pollinate a flower by hand to mimic a bee pollinating a flower. They test it on a model of a flower (sand in a Petri dish). --In lesson 1.8, students gather information about an ocean animal by going to Ocean Data Centers (bar graphs, charts, etc.). They use this data to write a report. --Phenomena used, both at the unit and lesson level, are surface level wonderings rather than authentic real-world problems.

--For example, the Unit 1 “Plant and Animal Survival” phenomenon is “One strawberry plant grew berries. The other wilted”. This is not a problem within the community, whether local or fictional.
--Investigation and other hands-on experiences drive many lessons.
--Informative texts and reading are limited to student interactive journals and “Super Simple Science” passages. No other resources are utilized with instruction.
--Students engage with first-hand experiences, images, videos, graphs and data, as well as limited print sources throughout the unit.

To what extent do the materials support Criterion 2B? Include your reasoning.
The materials support Criterion 2B “Instructional Experiences” to a medium extent. Lack of authentic phenomenon driving instruction and lack of variety of text sources limit student experiences.

Criterion 2C: Student Sense-making

Instructional materials support equitable access to science knowledge and practice for all students.

- Materials support student sense-making at both an individual and group level.
- Classroom discourse focuses on expressing and clarifying student reasoning with opportunities for students to share ideas and feedback with each other that supports the iterative and collaborative co-construction of explanations.
- Materials include supports for oral and written language processing to involve students in scientific discourse for sense-making including a language-in-use approach.

Less of this:	**More** of this:
The teacher tells students what they need to know.	Students figure out explanations through classroom discourse with each other.
The teacher calls on a few students to share reasoning.	All students have the opportunity to share their thinking orally or in writing.
The focus is only on getting the "right" answer.	Sense-making begins with initial student ideas that progress in sophistication.
Vocabulary is front-loaded. All students are provided with sentence frames.	Specialized vocabulary is embedded in the instructional sequence with multiple opportunities to use and development over time. Writing supports are differentiated.

Examples of Evidence:

- ◊ 5th grade students develop models of how scents travel that are refined over the course of a three weeks using a combination of visual and written language providing multiple opportunities to develop precise vocabulary in the physical science unit.
- ◊ 3rd grade students answer questions in their notebook individually using pictures and words to explain their initial ideas about how static electricity works and have the opportunity to revise this after discussing with a peer and the whole class in the physical science unit.
- ◊ The teacher facilitates a class discussion using a word wall where kindergarten students share observations with a shoulder partner and the whole group about the kinds of things in their homes to figure out that the things we need come from nature.
- ◊ Suggested sentence frames are included to support oral and written responses when needed with the goal of independence.

Specific Evidence from Materials
--Vocabulary is not embedded within the instruction. Key vocabulary is listed at the very end of the lesson and students engage with a vocabulary activity in their science notebooks as a concluding activity. --Vocabulary is not emphasized within teacher plans and does not explicitly place the formal introduction of vocabulary into lesson outlines. Teachers must be cognizant of vocabulary instruction and do this independently of the program.

To what extent do the materials support Criterion 2C? Include your reasoning.
Click or tap here to enter text.

Criterion 2D: Teacher Supports

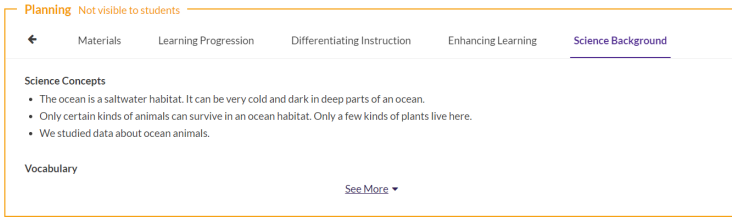
Instructional materials support teacher planning and instruction.

- Materials include background knowledge in both science content and pedagogy and student preconceptions.
- Materials have clear and concise instructional directions and connections to the standards.
- Materials provide guidance to support differentiated instruction, extra support and extensions at the appropriate level for a broad range of learners.
- Materials include professional learning and additional instructional planning resources.
- Materials have supports for families to extend learning and offers suggestions for how to help their student(s) at home.

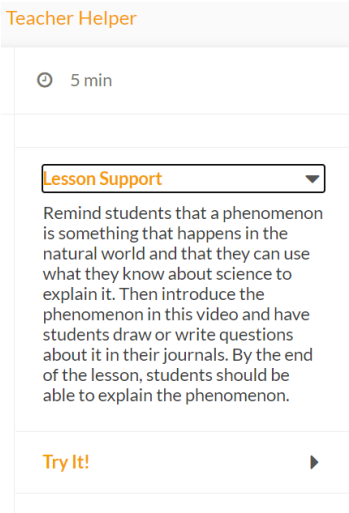
Examples of Evidence:

- ◊ Information prior to lessons gives teachers things to except that students may already know in unit 1 p.12 in addition to how their understandings will build.
- ◊ 1st grade students have a choice to investigate different variables related to shadows, and suggestions are included as well as extensions to do at home. (Light unit, p. 40)
- ◊ The assessments include recommendations for additional supports when students don't meet expectations. "Students may struggle to articulate that scientists look back at the data they collect to look for patterns and to draw conclusions about phenomena. One way to support them in this thinking might be to share an anecdote such as, "When I was growing up, my mom used to measure my height by marking it on the wall in the pantry. When I look back at those marks, I notice patterns, like that I grew faster between the ages of 5 and 8 than I did when I was older."" (p.14)
- ◊ Students make observations of the sky with their families, looking for patterns over time. Families are provided with background information on how to record observations and what patterns to expect.

Specific Evidence from Materials
--Teacher supports are confusing and unclear. Both online and print teacher manuals provide only small descriptions of what students will be doing in the activity. --Teacher guides are not user friendly and very hard to understand. The sequence of the lesson and progression of activities within the lesson are muddled to the reader. A lot of time is needed to sift through the activities and organize what instruction will look like. --Few guiding questions, instructions, or suggested scripts are provided for teachers. --Physical teacher guides are of low quality. Pages are very thin and are sure to rip from spiral binding after a few uses. Further, the format of the print teacher manual is confusing and contains a lot of screen shots of the online manual. The print manual seems to be an afterthought and is unclear and frustrating to navigate. --Science background information, lesson overview, materials, learning progression, differentiation, and enhancement sections are included for each lesson. They are limited. See evidence below.



--"Teacher Helper" is located on the right-hand side of the online lesson guides. These tabs provide small hints regarding lesson support, NGSS, Math and ELA opportunities for integration, ELD tips, and connections to phenomenon (mostly lesson, some unit). These are very brief notes for the educator. See evidence below.



--The left-hand sidebar also includes more teacher supports. "Toolkits" provides more information SEPs, science safety, summary of in-class investigations, strategies for differentiation, NGSS info, "claim, evidence, and reasoning planner", as well as literacy in science and strategies for integrating ELA. These are separate PDFs for teachers to access.
--Pacing guides for each unit is also located on the sidebar.

To what extent do the materials support Criterion 2D? Include your reasoning.
The materials support Criterion 2D to a low extent. The teacher guides are very unclear and limited.

Category 3: Student Materials

Criterion 3A: Program Design

Instructional materials represent a comprehensive K-5 core program.

- Materials provide instruction that correlates to our recommended instructional minutes for science.
- Materials are available in both English and Spanish.
- Graphic organizers and templates for science notebooks are included.
- Teacher and student materials have resources both in print and online.
- Multimedia supports are included such as videos, tutorials and simulations and when appropriate reflect the diversity of our students and society in a culturally responsive manner including different genders and sexual orientations, from many cultures and nations, both contemporary and historical.
- Technology options are appropriate for both classroom and home use possibly including translation capabilities.

Examples of Evidence:

◊ There are four units, each representing nine weeks of instruction at 180 minutes a week. This is short of our recommended minutes of 240 minutes a week for 5th grade.

◊ There are 132 60-min lessons for the whole year. This correlates to our recommended instructional minutes of 220 minutes per week for grades K-2. (3-4 60-min lessons per week)

Specific Evidence from Materials
--Grade 2 includes three units, one for each science domain. Life science has a total of 8 lessons, physical science has a total of 6 lessons, and earth and space science has a total of 7 lessons. --Each lesson has a “Fast Track” and “Master” option. --The “Fast Track” version is a condensed lesson with many sections left out. These lessons vary in Grade 2, Unit 1 from 39 minutes to 64 minutes (44 minutes average). --The “Master” version is an extended lesson with all sections present. These lessons vary in Grade 2, Unit 1 from 67 minutes to 137 minutes (90 minutes average). --Looking at the whole year, there are 21 90-minute lessons (if choosing the “Master” version. This is substantially less than the recommended minutes of science instruction. At best, all units could be taught within 10-14 weeks depending if science is taught 4 days a week or 3 days a week. --Very short videos are present (no more than 1 minute in length) for most lessons. --Science notebooks and interactive journal templates are available in print or online. --Informative text provided is in a textbook format. Students can highlight, listen to, and annotate on the digital textbook. --A “video lesson” is available for all lessons but is simply the “Super Simple Science” informative text read aloud.

--Biographies of diverse scientists are provided but are optional and not incorporated in the lesson activities (in Grade 2, Unit 1).
--Interactive science journals, science notebooks, and online informative texts are provided in both English and Spanish versions.

To what extent do the materials support Criterion 3A? Include your reasoning.
The materials support Criterion 3A "Program Design" to a poor extent. This is primarily due to the limited number of lessons per unit. There are only a total of 21 lessons for the entire Grade 2 program which simply would not satisfy the recommended instruction minutes for science instruction. If stretch out, teachers would have at most 14 weeks of instruction which would fill only 1.5 quarters of instruction. This would require the district or schools to develop supplementary instruction and curriculum in addition to the program. Further, the text options are limited to a "textbook" format. This is less engaging for students and provides little diversity in the way information is acquired through text. Video and text options are simply lacking in variety and would become repetitive and unengaging to students over time.

Criterion 3B: Science Equipment

Instructional materials include hands-on materials and equipment that support three-dimensional learning.

- Enough materials are included to allow students to do the investigations themselves.
- Materials are of a quality that will last through many uses.
- Materials include the tools necessary to make observations and measurements and conduct investigations.

Examples of Evidence:

- ◊ There are enough thermometers, graduated cylinders, balances, magnifying glasses and measuring tapes for a whole class to use in small groups.
- ◊ Everything is included to engage in the lessons except for things that would already be found in the classroom like tape and colored pencils.

Specific Evidence from Materials
--Limited amounts of materials such as cardboard strips, aluminum foil, wax paper, 1 spray bottle, and 2 sponges. Not enough for an entire class. --Only 2 rock collections (6 rocks each) present. Very limited. --Posters list essential questions rather than lesson/unit phenomena. --Science notebooks in print are of low quality. Pages are very thin, and you can see the text from the other side through the paper. --All informative texts in print are provided in the science notebooks so the informative text is of low physical quality as well. Very fragile and thin and would be difficult for second graders to manage. --Placards are sturdy and made of cardstock.

To what extent do the materials support Criterion 3B? Include your reasoning.
The materials support Criterion 3B “Science Equipment” to a low extent. Limited physical materials, informative text materials, and low quality.

Criterion 3C: Reading Materials

Instructional materials include grade-appropriate texts that support three-dimensional learning.

- A range of text types and genres, both print and online, are embedded in learning experiences.
- Texts support context-specific academic vocabulary.
- Materials reflect the diversity of our students and society in a culturally responsive manner including different genders and sexual orientations, from many cultures and nations, both contemporary and historical.
- Materials include supports for reading comprehension for a variety of student needs including high-quality questions.

Examples of Evidence:

- ◊ Texts include an interview of Sylvia Earle and profiles of Chien Shiung Wu and Benjamin Banneker. These highlight the connections to the science students are learning. Pictures of scientists working in the field represent the diversity of our students.
- ◊ Cultural myths about the sun and stars are included in the earth/space science unit.
- ◊ Vocabulary is highlighted in the reading that follows a concrete experience where the vocabulary is first introduced.

Specific Evidence from Materials
--Science notebooks and interactive journal templates are available in print or online. --Science notebooks in print are colorful and easily formatted for students. The quality of these print notebooks is low. --Informative text provided is in a textbook format. Students can highlight, listen to, and annotate on the digital textbook. --Informative texts and reading are limited to student interactive journals and "Super Simple Science" passages. No other resources are utilized with instruction. --Informative text is not clearly "embedded" within instruction. When and how to use student-text is unclear in the teacher/lesson materials. --Biographies of diverse scientists are provided but are optional and not incorporated in the lesson activities (in Grade 2, Unit 1). --Interactive science journals, science notebooks, and online informative texts are provided in both English and Spanish versions.

To what extent do the materials support Criterion 1A? Include your reasoning.
The materials support Criterion 3C "Reading Materials" to a medium-low extent. Lack of quantity and variety limit student learning.

Referenced, adapted and formatted from the following documents:

Achieve, Inc. (2016). EQuIP Rubric, Version 3.0.

Achieve, Inc. (2018). Science Task Prescreen.

Achieve, Inc. (2016). Using Phenomena in NGSS-Designed Lessons and Units.

Achieve, Inc. (2017). Primary Evaluation of Essential Criteria (PEEC) for Next Generation Science Standards Instructional Materials Design.

Brennan et al. (2017) *Priority Features of NGSS-Aligned Instructional Materials: Recommendations for Publishers, Reviewers and Educators* [White paper].

BSCS (2017). Guidelines for the Evaluation of Instructional Materials in Science.

BSCS Science Learning (2018). NextGen TIME

MacDonald et al. (2020). *Design Principles for Engaging Multilingual Learners in Three-Dimensional Science* Wisconsin Center for Education Research (WCER) Working Paper No. 2020-1. https://wcer.wisc.edu/docs/working-papers/WCER_Working_Paper_No_2020_1.pdf

National Academies of Sciences, Engineering, and Medicine (NASEM) (2017). *Seeing Students Learn Science: Integrating Assessment and Instruction in the Classroom.* Washington, DC: The National Academies Press.

National Research Council (NRC) (2012). *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas.* Washington, DC: The National Academies Press.

NGSS Lead States (2013). *Next Generation Science Standards: For States, By States.* Washington, DC: The National Academies Press.

Nolan, C. (2015). *Getting their hands dirty: Engaging learners in authentic science practices outside the classroom* (Practice Brief No. 20). STEM Teaching Tools.

Washoe County School District Needs Evaluation

Washoe County School District. (2020). Request for Instructional Material Submission RFP 2020A.