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
Vision and Light Unit Anchor Phenomenon: Conservation biologists, students analyze photos to address the issue of why "The population of Tokay geckos in a rain forest in the Philippines has decreased since the installation of new highway lights."

Earth Changes Unit Anchor Phenomenon: Students take on the role as geologists to investigate how a dinosaur fossil found in the fictional Desert Rocks National Park formed through photos.

Energy Conversions Unit Anchor Phenomenon: Students take on the role of system engineers to design a solution for the power outages in fictional town, anchor phenomenon introduced through photos.

To what extent do the materials support Criterion 1A? Include your reasoning.
Students take on a real life role such as biologists, geologists,or engineers to analyze real world problems and determine the cause of these problems. In only one of five units, do the students design a solution to address the problem. They are introduced to the real world problem through photos and discussion for each unit. There is only one unit that has students engineering a solution related to the phenomena.

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
SEPs and CCCs are referenced in their Assessment System Document. SEPs and CCCs that were not referenced in the Assessment Objectives Document are listed under each specific assessment. In the Vision and Light unit there is an additional CCC (structure and function) and 1 additional SEP (Analyzing and Interpreting Data) that are addressed that were not referenced in the Assessment Objective Documents. SEP practice of engaging in argument from evidence and using mathematical and computational thinking are not evident in the Vision and Light Unit. Flexstension in Vision and Light is to design an ear structure.

To what extent do the materials support Criterion 1B? Include your reasoning.
Students engage in tests with variables in the "sim" for the vision and light unit where they are testing amount light, pupil size, and light direction to see a prey. They engage in an engineering

task where they design a solution. The Vision and Light Unit incorporates 5 SEPS and 1 CCC. The Energy Conversions Unit incorporates 2 SEPs and 1 CCC. The Waves unit incorporates 2 SEPS and 1 CCC. Earth Changes unit incorporates 1 SEP and 0 CCC. Engineering is imbedded in one domain only. There is a limited variety of pairings as well as only 5 of 8 of the SEPS and 3 of the 7 CCCs are used for the entire forth grade curriculum. These CCC and SEPs are listed several times on the Assessment Objectives Overview documents for each domain, however upon closer examination the listings are repetitive for the same lessons already listed in another domain's document.
Flexstension allows for engineering of an ear structure in the Vision and Light unit, but it is not solving a problem; it is an isolated task that is not related to the anchor phenomenon.

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
In the Vision and Light Unit there is a progression of the investigative phenomena that builds on one another from chapter to chapter to reach content understanding to then understand the unit phenomenon and apply their knowledge. These chapters each have about 5 lessons with 3-5 activities that allow for students to build foundational knowledge. ELA is integrated into almost every lesson through writing and/or reading of the provided reader (narrative and informational). Evidence of math integration was not found in any units. Science domains are integrated as evidenced in the Vision and Light unit; it incorporates a physical science standard of light reflecting in the eye allows objects to be seen

with the two life sciences standards addressing survival, reproduction, behavior and growth from internal and external structures and functions and that animals receive information in their brain and process that information and then respond. There is evidence of cross grade levels by building on students knowledge of needs for survival and growth from the second grade unit and the knowledge of how environments affect animals survival, growth, behavior, and reproduction from the third grade unit. The fourth grade unit allows foundational knowledge of conservationism to prepare them for the fifth grade unit ecosystem restoration.

To what extent do the materials support Criterion 1C? Include your reasoning.
Students do have multiple opportunities to build their foundational knowledge in each grade level as well as throughout the units. Lessons build on students' prior learning for some of the three dimensions and have many opportunities to connect to only one other content discipline, ELA.

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
Students have opportunities to engage in written, task driven assessments where students use their knowledge of content learned during the lessons to complete the embedded assessments. For example, in the Vision and Light unit, there is use of formative assessments in each chapter; most commonly they are “on the fly” assessments or “Critical juncture” assessments. These are written explanation assessments completed in the students “investigation journal”. These assessments look for both content knowledge as well as CCC and SEP components. There is evidence of one pre-assessment, two self assessments, zero peer assessments, one investigation assessment, and one unit assessment for the Vision and Light Unit. The investigation assessment asseses students’ abilities to plan and conduct investigations and analyze and interpret data (SEPs) through written form and the unit assessment assesses students conclusions about why

the gecko has trouble seeing and thus hunting at night through written explanation. Both of the summative assessments (investigation and unit) have rubrics to use for grading. The assessments throughout the unit address 5 of the 7 SEPs and 2 CCCs (structure and function and cause and effect).

To what extent do the materials support Criterion 2A? Include your reasoning.
The materials support 2A because the multitude of formative assessments allow for adjustment of instruction opportunities, feedback, address SEP, CCC and DCI with the task driven assessments. Multiple opportunities are scheduled but with usually only written expression as the assessment type. The assessments are related to a phenomena that connects back to the unit phenomenon. Two summative assessments are provided one for the unit and one for the investigation (SEP) aspect; these have rubrics for scoring.

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 the Energy Conversions unit, the students are given the opportunity to build a simple electrical system with wires, solar panel, a fan, and a motor through an investigation, they are to determine. This is an example of a direct, concrete experience. In the Vision and Light students utilized "sims" for all of the learning experiences. These sims are models of predator/prey relationships related to vision variables (amount of light, direction of light, and size of pupil), color shading, and digital sequencing activity. The students are provided a hands on experience of using a box and manipulating variables to see the object through the hole. Students are given the opportunity to make changes to the cardboard box to test variables as well as test variables through the predator/prey "sim". Students do not have any hands on experiences with living things for the Life Science Domain unit.

To what extent do the materials support Criterion 2B? Include your reasoning.
Students are provided investigative opportunities through experiences, albeit they are often not hands on, but simulations. There are few opportunities where students engage in physical sorts, sequencing, or manual manipulation of materials. The experiences are usually relevant in the large picture of the unit learning. It does not appear to allow for students to drive the learning much based on their background knowledge. Students in a school with limited nature knowledge would do better at the shared experiences that are provided, whereas students that have more knowledge of living things and nature may find some of the experiences “low level”. The simulations are interesting to test variables, but it is disappointing that with a life science unit the students do not have any interaction with anything alive. I question if the simulations are concrete enough and I found them somewhat confusing to access and use.

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
Students engage in classroom and partner discourse during phenomenon understanding and think-write-pair-share tasks as evidenced in the Vision and Light Unit. There are vocabulary slides presented in the beginning stages of the lessons or units, in other words front loaded. The teacher is provided guiding questions to facilitate classroom and peer discussion. Students are provided opportunities to write down their thoughts in their investigation journal during stages of each lesson. Students are provided daily reflection questions as well as some opportunities to draw their thinking as an option. The students are given reading tasks for the provided reader in their investigation notebook, as evidenced several times, in the Vision and Light unit, the notebook gives the students two

meanings of the vocabulary word and they are to read and identify the meaning used in the text, titled Multiple Meaning Words.

In the introduction unit: The teacher is directed to explain the term environment (aid of vocabulary card and students list examples of non/living things), conservation, the role of a conservation biologist (through visual aids), and conservation group, there are evident prompts for students to infer or determine the meaning of these words. In contrast to this observation, in lesson 1.1 this is stated in the teacher support section; "Throughout the unit, words are often formally introduced after students have had multiple opportunities to hear and see them in context. Exposure to words in print and conversation is a first step in making connections to their meanings. As an example, in this lesson the word *sense* is not formally introduced (it will be introduced in Lesson 1.2)."

To what extent do the materials support Criterion 2C? Include your reasoning.
Writing expectations are not naturally differentiated, the prompts and examples are not rigorous explanations; the questions are broken down into simple questions and students are not always required to explain their thinking behind their conclusion. Students do have opportunities to engage in discourse and written explanations. The vocabulary is front loaded during the introduction of each lesson but is introduced when the phenomena is presented. The teacher is directed to "explain" the meanings of the words. Vocabulary is again somewhat front loaded during the reading tasks by giving students 2 meanings of the same word and then they have to use deduction to figure out the meaning used in the context of the 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
There is a document for families that explain the NGSS standards and the three dimensions related to 4th grade standards and content. Lesson 1.1 of Vision and Light offers a support ideas related to language supports for English Learners. There are broad suggestions for accommodations for students with IEPs and 504s. For students that need more of a challenge, the recommended step up is to add labels to the monkey illustration. In lesson 4.3 of Vision and Light a recommendation for students that need more is to have them select a predator that is not from the text and make predictions about what they eat based on the characteristics of their eyes and their habits. It does not say that after their predictions they would research, but it implies that after their research is done they will make connections to animals that were similar in the text and provide rationale. The recommended support for EL students is to have them summarize after each phase of the sim. The recommended support for other struggling learners is to provide more time. Each step or activity of each lesson has a teacher support tab where it provides the teacher background knowledge, such as information on the specific geckos from the Philippines that the anchor phenomenon is connected to. There are pedagogical goals that explain the purpose for the fictional scenario, inhabiting

the role of a biologist, and the importance of dedicating wall space to the unit.
There are rationales, instructional suggestions, and background information related to a specific text, or strategy, such as vocabulary. There is also a separate section for teachers of "possible responses" that students may give for some of the activities in the lessons. It appears that the differentiation is hit or miss with the recommendations; it almost seems that the step ups are either really good or mediocre and the guage downs are not specific to the lessons and are best practices of teaching and may already be designated supports. There is a before you teach section for the unit that gives recommendations on specific scenarios and aspects to plan and prepare for.
There are coherence flow charts, a lesson overview (list of each lesson title), a unit map (summary of each chapter of the unit), standards and goals document (lists each standard and SEP as well as a vertical coherence piece for across grade levels), progress builds (how the understanding of the phenomena builds throughout the unit), lists standards that connect with unit to specific standards in other disciplines such as math [apply only to extension activities] and ELA) that are an additional instructional resource.

There is a science background section at the beginning of the unit that provides information for the teacher of conceptual and deeper understanding of the concept, such as the structure of vision (nervous system level), information on conservation biology, the cross cutting concept, and controlling variables. It gives "pedagogical considerations" of what and how much information to teach the students.

Additional Professional Learning (videos, tutorials) and family extensions were not found. The physical teacher manual is hardbound and has tabs for the chapters and lessons in the units, but not the activities for each lesson. The organization and coloring do not appear to be designed with quick referencing in mind. The organization is chronological but not easy to find specific components of a lesson, such as the text portion, or investigation portion compared to the discussion or notebook components. There is one manual for each unit. Teacher hands on materials and consumables are in clear tubs, organized by unit, with a packing list, but not have a label of what materials are in each box on the side or lid.

To what extent do the materials support Criterion 2D? Include your reasoning.
Family extensions are non-existent, family support of understanding the standards in the only family resource. There are several planning resources, instructional suggestions, and background information for teachers at a deeper level. These resources do not seem to provide creative or out of the ordinary suggestions; quite often there are common modifications or accommodations (like more time). There are not video resources for the teacher or suggested resources for further professional development or resources. Their extension activities are hit or miss and the low level ones should be standard in the lessons, like labeling. At times the enrichment activities are not meaningful and seem to provide busy work, or additional work that is not meaningful. They do provide components where they address pre-conceptions or mis-conceptions for the content. The pedagogical focused mostly on the strategies and tasks rather than the content itself. The materials are fairly clear to follow, the resources online are somewhat easy to follow, but not user friendly to pick up where you left off. The digital resources and sims are bit confusing to find and use.

The standards address most of the content, for example, the standard 4LS1.1 reads to learn about the internal and external structures that support survival, growth, behavior, and reproduction for plants AND animals. The entire unit focuses on animals only, and really hones in on the gecko specifically. Again with 4LS1.2 the standard reads that animals different types of information through their senses to process information; there is a large focus on vision specifically with some integration to humans using their senses, but not really much connection to other animals that use different senses. It is misleading that the standards at a glance include math standards that are only addressed in an extension activity that I was not even able to find.
The teacher materials such as the tubs and manual are okay. They are usable but not all that teacher friendly. Teachers do not have time to move tubs around to find things and would have to label the tubs themselves, they would also need to use highlighters or tabs in the teacher manual to make lesson components stand out to find easily. The materials divided up by units is a pro, and makes it easier to carry a smaller manual around and only pull out the specific tubs needed.

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
There are 22 lessons for each of the 4 units. Each lesson is 60 minutes meaning that in theory 4 lessons should be taught per week, making each unit last about 5-6 weeks. With 4 units in total that is about 12 weeks shy. If you look at annual minutes, it is recommend to teach 240 minutes per week which is 8,640 minutes per school year, and this curriculum is about 5,280 minutes per year. Materials are available in English and Spanish for students and some instructional materials are available in Spanish for teachers. The science notebook itself is included that includes graphic organizers and writing prompts, assessments, and investigation recording. Materials are available in print and online for student notebook, student stories, teacher manual, and instructional documents. These items are not "interactive or personal to the student" though. They are readable or printable. There are videos and simulations for every unit.

To what extent do the materials support Criterion 3A? Include your reasoning.
This program is a bit short in theory for lesson time, but in a more realistic manner, 240 minutes of science is on the high end for most schools. So this would definitely allow for some flexibility. Each unit could take a quarter approximately, this would allow for those times of the year that are irregular, such as the beginning of school, conferences, holidays, testing season, and end of the year (SHARE, performances, school events etc). It could also allow for the flextensions or other enrichment extensions to be done for teachers/schools that need more.

Overall materials are pretty well supplied for Spanish and English as well as online and in print. Students could use the student journal at home and access the online sims and videos. The notebook would be a pro for distance learning.

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
There are 20 copies of the student readers and 5-6 books per unit. The majority of the materials that are for hands on learning are for individual students or small groups, such as balls, tapes, film canisters. Many of the resources are digital and require student devices; not all schools have enough devices in every class for even groups on a full time schedule. The student books are thick laminated magazine style books and would hold up to several uses well. Investigation activities can be completed with the materials that are provided; the materials are sturdy (film canisters, balls, etc).

To what extent do the materials support Criterion 3B? Include your reasoning.
The materials are okay. There are not that many materials considering much of the experiences are sims online. I do have concerns for our schools that do not have devices in each classroom or even each grade level. In order to teach the content on schedule and with regularity, 15 or so devices would be required to be accessible regularly for each classroom for the entire year (even during testing times). There are not enough books for the average 3-5 grade class in WCSD. Additional books would need to be purchased or there would need to be flexibility with block scheduling and non-covid related regulations on materials for students to share books with other students or classes.

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
In Vision and Light unit the texts include: "Investigating Animal Senses: Inspired by a real class field trip, *Investigating Animal Senses* follows elementary students engaged in the practices of scientific investigation. This text is representative of a wide range of ethnicities in the photographs. I See What You Mean: Framed with a narrative about two friends exploring light at home, *I See What You Mean* traces the path of light in vision, from source to object to eye. Crow Scientist: *Crow Scientist* profiles prominent wildlife biologist John Marzluff. The book focuses on Marzluff's investigation of the American crow's ability to recognize individual human faces. **Seeing Like a Shrimp and Smelling Like a Snake: book explores all five senses focusing on a different animal for each. Handbook of Animal Eyes: Reference book that cross section diagrams eyes."** **For the "Investigating Animal senses" text the students complete an anticipation guide, they record questions while reading, there is a specific vocabulary support page, the questions are literal comprehension questions about the events of the text. In the second text, "I see what you mean", the format of pre-reading, and during reading, and post reading are the same. The**

questions are more inferential in nature and do require the students to explain.

To what extent do the materials support Criterion 1A? Include your reasoning.
Texts are diverse in representation, genre, and format. They have reading comprehension and vocabulary supports and comprehension questions that are both literal and inferential. The texts are related to the focus of each lesson/chapter. There are scientist or project profiles that are around the world, there are historical components, there are student learner experiences, reference or guide books, and informational texts. The vocabulary supports are specific to multiple meaning words for each book, and not always centered around academic content, specific words.

Referenced, adapted and formatted from the following documents:

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