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
Each of the three units contain a "Progress Build" which describes the way in which students' explanations of the central phenomenon should develop and deepen over the course of a unit. All three units "Progress Build" documents include prior knowledge (preconceptions) and building across levels, and may also

include foundational knowledge. Example: p.6 shows building across levels; Level 1: Growth is increasing in size or having new parts and Level 3: Plants also need to get light with their leaves.
The "Overview" of each lesson pinpoints specific "Unit Anchor Phenomenon" and "Chapter-level Anchor Phenomenon" to support Science. Example: p. 34 (Needs of Plants and Animals). Example: Anchor Phenomenon: There are no monarch caterpillars in the Mariposa Grove community garden since a vegetable garden was planted.
The "Overview" of each lesson pinpoints "Unit Design Problems," "Chapter Design Problems," and "Investigative Phenomenon" to support Engineering design.
Images from Lesson 1.1 of children, field, caterpillar, and garden support building off of everyday experiences to engage students in becoming scientists to investigate why there are no monarch caterpillars since the Field was made into the Garden.
In Chapter 4 lesson 4.3, students work in partners to design a Garden Planter Plan to decide which plants to include in the garden. While designing the Garden is an engineering design task, it requires students to consider how the plants they select can impact which animals can give in the Garden. Their solution arises from the scientific phenomena they acquired while their investigation drove their learning. P. 522-532
In the Sunlight and Weather Unit, chapter 1, lesson 1.1, there are projections or a PPT slide of different types of weather to enable students to apply their developing understanding about types of weather.
Each unit has its own "Coherence Flowchart" which maps how students figure out a phenomenon by asking questions, gathering evidence, and coming up with an explanation of how the phenomenon works. The Coherence Flowchart visually represents the storyline of the unit, showing the coherent flow of questions based on phenomena, evidence, and ideas that support students as they build complex explanations of the unit's anchor phenomenon. The Coherence Flowchart on the following pages (one chapter per page) can be used to see the connections between the phenomena and questions that drive students' experiences, the evidence they gather, the ideas they figure out, and the new questions that those ideas generate. P.1-5 of the NPA_Resource_Coherence_Flowchart.pdf
Units use real world questions and problems in each unit, relatable to most students of varying backgrounds, if not it is supported with examples from videos, pictures, and PPT slides to generate knowledge.

To what extent do the materials support Criterion 1A? Include your reasoning.
The materials fully support Criterion 1A: Phenomena and Problems because they focus on students making sense of phenomenon or designing solutions to problems and ultimately drive student learning throughout the unit. The phenomenon used in the lessons build on Kindergarten students' everyday experiences with seeds, plants, gardens, and butterflies, pinballs, and the playground. The three AmplifyScience Units for Kindergarten support students using elements of the science core ideas with those of engineering design to solve problems as is evident in the tasks of students designing a prototype of a pinball machine (Box Model) and Class Pinball Machine, redesigning the garden in Mariposa Grove to accommodate the needs of both humans and

monarchs, and by designing solutions to solve a school's problem of severe weather on the playground. The students books that are embedded in each unit further drives student engagement with phenomenon or problems that can be explained or solved by applying the three-dimensions.

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
Each lesson contains a "lesson brief" that states a 3D statement which integrates the NGSS practices, DCIs, and CCCs into an academic task or goal for the students in that lesson. Each of the three areas are then listed by topic. The lesson briefs list the standards that will be covered in ELA and math in the activities. P.36-42 of Lesson 1.1 (Needs of Plants and Animals). In the teacher's guided, under the section of teacher references, there is a goals section where there is a learning trajectory which describes how student's reasoning about the phenomenon will build in complexity through different grade level end points, namely Kindergarten, grade 2, grade 5, into middle school.p. 544-552 The three units each have a different focus. The "Needs of Plants and Animals" focuses on investigation, "Sunlight and Weather" focuses on modeling, and

"Pushes and Pulls" focuses on unit design. Although these units have a primary focus, students still engage in other practices throughout the unit as is stated in the 3D statement in the lesson brief.
All three units integrate engineering within the domain of science, deigning a garden for life science, a pinball machine for physical science, and a model for earth/space science.
The "unit map" for each chapter of lesson provides a section titled, "How they figure it out." This details the vast integration of SEP, DCI, and CCCs into a goal statement of what they students will accomplish across the unit. P4-5 (Needs of Plants and Animals).

To what extent do the materials support Criterion 1B? Include your reasoning.
The materials fully support Criterion 1B: Integrating the Three-Dimensions because the examples found show that students develop and use multiple grade-appropriate elements of each dimension. The dimensions are integrated to work together and are not taught in isolation. The learning experiences of in the curriculum integrate multiple pairings of the dimensions to build understanding of the targeted performance expectations. Engineering is integrated with all domains of science.

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
Throughout Unit 1 (Needs of Plants and Animals), in chapters 1-4, students observe plants and develop their understanding of their needs which progresses in complexity over time. Students begin with simple observations of the Garden, then begin to conduct investigations to examine that plants require water and light to grow. Next they observe monarch life cycles and migration patterns. In conclusion, students use their knowledge to construct a new plan for the Garden in which humans can make choices to sustain plant and animal life. Chapter questions are purposeful in succession because they focus students on engaging in the topic with increasing sophistication to arrive at a design solution

to the problem. Each unit contains a "coherence flowchart" which ensures a logical sequence of unit to develop students' understandings of phenomenon.
The instructional guide for some activities in the chapter directs the teacher to "connect today's learning to prior learning" with specific questions intended to elicit reflecting on a prior lesson. The lessons are connected under the umbrella of the NGSS and each are specific to a different domain of science.
In the Pushes and Pulls Unit, lesson 1.2, activity 3, students learn how to connect events using a "because" language frame. The units contain word cards and a specific vocabulary section of word wall.
The Sunlight and Weather Unit, lesson 1.1, activity 2, asks students to make predictions about a text using the illustrations on the texts cover. Click or tap here to enter text.

To what extent do the materials support Criterion 1C? Include your reasoning.
The materials fully support Criterion 1C: Coherence because the lessons fit together to target a set of performance expectations with multiple opportunities for students to revise their understandings over time. The instructional materials make connections between lessons, units, and grade levels. The 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.

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
Each unit has an “embedded formative assessments” section which help teachers monitor and support student progress throughout the unit “Needs of Plants and Animals” P.573-581. This includes two sections, “Look for” which indicates specific concepts and practices to look or listen for as students engage in learning experiences. Example: p. 573 Lesson 1.5, Activity 3, Students decide if their animal can live in a place as they identify if the food that it eats is there. It also includes a “Now what?” section which provides suggestions to the teacher of what to do, based on what was observed. Example: If students are not able to justify their thinking about why something is a plant or animal, teacher can offer them additional support with the Living Things student cards from Lesson 1.2. This also includes a “possible responses” section that provides information on how to evaluate student work.

The first activity in each lesson is a "pre-unit-assessment, and is carried out through a conversation. P.47-48 "Needs of Plants and Animals." The teacher reads aloud the unit question, "What do living things need to live and grow?" and directs students to discuss with partners through a Shared Listening routine with sentence stems.
Under "assessment system" there is a guide that shows each assessment opportunity, where it is found in the lessons, describes the assessment type, and provides guidance on evaluation. P. 557-572, Needs of Plants and Animals Unit.
Entry level and Summative assessments measure growth from where student's were initially in their thinking in the beginning versus at the end of the unit; growth over time. P. 566-567 Example of entry level assessment: In lesson 1.1 students discuss what they know about what plants and animals need to live in a place after learning that a group of students need their help to figure out why there are no monarch caterpillars in an area that has changed from a field to a vegetable garden. P.567 Example of summative assessment: In lesson 4.4 the teacher has a one-on-one conversation with each students to share their explanations of how their newly designed garden will support caterpillars and milkweed to solve the unit question.
Monitoring Progress gives formative assessments that provide teachers with information and suggestions for keeping students on track and even self-monitor. P. 567-570.
Assessments and Grading give suggestions on using the data for providing students with grades but notes that the Pre-Unit Assessment, Critical Juncture Assessment and On-the-Fly Assessments are NOT recommended for grading. P. 571-572
Plants and Animals Unit, lesson 1.7 contains a "Clipboard Assessment Tool" which provides the teacher with specific questions, possible answers, and a place for notes.
Plants and Animals Unit, lesson 1.7, activity 1, asks the students to do a paired self-assessment. "What is one idea that you know that you did not know before?"

To what extent do the materials support Criterion 2A? Include your reasoning.
The materials mostly support Criterion 2A: Assessing the Three-Dimensions. There are multiple and varied assessments to allow students to demonstrate progress in all there dimensions including application of knowledge in performance tasks. Formative assessments from the teacher, self and peer assessments, are embedded throughout to inform instruction. Assessments are unbiased and elicit direct, observable evidence from all students. A phenomenon or problem drives tasks, and information from the task is required to complete it. I could not find evidence of rubrics and scoring guides for interpreting student performance including sample student responses.

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 "Needs and of Plants and Animals" Kindergarten students are tasked with discovering and designing a solution to why there are no longer Monarchs in the neighborhood garden. Students care about the disappearance of plants and animals and want to act on upon that concern. In "Pushes and Pulls" students further investigate their experiences with everyday objects that have pushes and pulls and further their already innate knowledge of force to understand how forces act upon the motion of a ball. In "Sunlight and Weather" students engage in foundational learning of temperature and effects of sunlight to design a solution to their playground which is a direct context of their world. In lesson 1.1 of Sunlight and Weather, students engage in a Shared Listening routine that scaffolds students to discuss what they know about weather. This

activity helps them activate prior knowledge and share their diverse backgrounds related to the topic.
In lesson 1.2, activity 3 of Sunlight and Weather students use thermometers in cups of water to make predictions and measurements of temperature.
In lesson 1.3, activity 3 of Pushes and Pulls students conduct investigations to make one object move another.
The lessons support different modalities of learning throughout a unit. For example, students learn kinesthetically when they play Sunlight Over Time Game in chapter 1 of Sunlight and Weather, visually as they use photographs to engage in a Think and Walk about types of weather in lesson 1.1, activity 3, auditorily when they use vocabulary cards and sentence frames, and through tactile means as they use thermometers and cups of weather with warm and cold temperatures in lesson 1.2, activity 3.
The lessons of a unit contain a "hands on" component to facilitate them engaging directly with the content and share experiences with peers that are relevant and authentic. Students are asked questions to prompt thinking. Each "unit map" contains an overarching driving question plus specific questions to guide learning in each chapter of the unit.

To what extent do the materials support Criterion 2B? Include your reasoning.
The materials fully support Criterion 2B: Instructional Supports. Students engage with direct, first-hand, shared experiences that are relevant and authentic, serve as a basis for learning and meet the developmental needs of elementary students. Students' questions, prior experiences and diverse learning backgrounds relate to the phenomenon or problem are used to drive learning. The materials provide an opportunity to learn by allowing for the development of scientific understandings over time using multiple modalities. The materials also provide opportunities for students to make connections to and explore the natural world outside the classroom.

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 work with partners to share their ideas about weather in a Shared Listening prompt in Sunlight and Weather lesson 1.1, activity 1. Additionally, they use sentences frames to engage in the discussion. This is termed a student-student discussion. In Sunlight and Weather, lesson 1.4, activity 4 students participate in a teacher-led discussion to create a What We Know About Weather chart. In lesson 1.2, activity 3 students use notebooks to predict and measure temperatures. In lesson 1.4, activity 3 students are lead through shared writing regarding the weather on two playgrounds.

The teacher records student ideas on the What We Know About Weather chart that begins with students' initial knowledge before the lessons and is continually added to and revised based on new understandings attained from each activity. The knowledge that is recorded increase in sophistication as students engage in the phenomenon.

To what extent do the materials support Criterion 2C? Include your reasoning.
The materials fully support Criterion 2C: Student Sense-Making. This supports 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 interactive 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.

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
The teacher's guides for all three units in the phase "Planning for the Unit" there is an "Unit Overview." This includes a summary of the science background of the unit, why its important in the scheme of student learning, and a rationale for the method in which students will learn the content. This is broken down further as a summary for each chapter of the unit. The teachers' guides for all three units, again under the section "Planning for the Unit," is a "Unit Map." This describes the content the students will learn in each chapter and the means through which they will arrive at the understanding. In the teachers' guides for all three units, under "Planning for the Unit" is a section focused on "Getting Ready to Teach" which describes specific suggestions for what teachers need to do before, while, and after presenting the lesson. In the teacher's guides for all three units, under "Planning for the Unit" is a strong section regarding the required "Science Background" teachers will need to have to appropriately help students with the lessons, activities, and content. The document contains the sections which directly discuss the disciplinary core ideas, science and engineering practices, and cross cutting concepts that teachers must understand to support student learning and their journey of scientific discovery.

The last section of all three units teacher's guides is "Standards at a Glance" where the NGSS, Common Core ELA, and Common Core Math standards of the unit are listed for reference.
The "Lesson Guides' contain many concepts that direct teachers to implement the activities. The "Chapter Overview" includes the chapter question, investigation questions, and key concepts. The activities in each chapter lay out the lessons and acknowledge their structure as either student-to-student discussion, reading, hands-on, teacher-led discussion, class, or writing. Each lesson has a "brief" which houses many important details. For example it notes the materials required for the classroom wall and class, vocabulary, digital resources, and preparation required a day before the lesson, immediately before the lesson, and at the end of the day. The "brief" also discusses differentiation including embedded supports for diverse learners, potential challenges to the lesson, specific differentiation strategies for English Language Learners, students who need more support, and students the need more challenge.
In all three teacher's guides, under "Teacher References" the curriculum specifies the 3D statements from the unit level to the chapter level, and concludes at the lesson level.
In lesson 1.1, activity 1 of "Sunlight and Weather" there is a section titled "Teacher Support" that gives a rational and describes the pedagogical goals for designating wall space for central ideas, the unit question to focus student's attention, the formal pre-unit assessment for understanding student background to build off and tracking student knowledge growth over time, and posing questions to promote student investigations.
In every unit one or more activities are designed to be completed at home with family member. K-5 has "home investigations" designed to encourage interaction and discussion between students and their families about science concepts. These are located in each unit's "Copy Master Complication" and mirror the Investigation Notebook used in class in format.
The link for "important themes" of keeping parents and guardians informed about the NGSS and "informing parents about student progress" get error "404 nothing found."
In the printable resources for Sunlight and Weather there is document titled "Information about NGSS for Parents and Guardians of Kindergarteners" which discusses what are the NGSS standards and Three-Dimensional Learning in the Amplify Science Kindergarten Course.
The "Progress Build" section of all three unit's teacher's guides includes "Prior Knowledge" or preconceptions which gives an assumption of what students are generally aware of and have some experience with the science content and phenomenon driving instruction.
In the "Program Hub" there are "unit extensions" for all three units that discuss various opportunities for extension. The first extension is field trips and other resources. This suggests organizing student experiences such as a field trip, guest speaker, or virtual field trip. The second suggestion is media and library extensions which include information literacy and library/media research or a

research project. The last suggestions is a STEAM extension with details of specific activities. These could support a time extension of these instructional materials.

To what extent do the materials support Criterion 2D? Include your reasoning.
The materials fully support Criterion 2D: Teacher Supports. The materials include background knowledge in both science content and pedagogy and student preconceptions. The materials have a clear and concise instructional directions and connections to the standards. The materials provide guidance to support differentiated instruction, extra support, and extensions at the appropriate level for a broad range of learners. The materials include professional learning and additional instructional planning resources. The materials have supports of families to extend learning and offers suggestions for how to help their student(s) at home.

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
In the Unit on Needs of Plants and Animals, there are 5 chapters. Chapters 1-4 contain 4 lessons running 45 minutes each, totaling 180 minutes per week. This does not support our recommended instructional allotment of 220 minutes per week. However, it is noted that the author's suggest that teachers at all grade levels can expand or contract their timing to fit their needs however specific suggestions or alterations are not given to do this. Chapter 5 contains 6 lesson that are 45 minutes each which goes over our recommended instructional allotment by 30 minutes. Each of the three units have 22 lessons equaling 66 total lessons for the year. However, our school calendar has 170 instructional days for Kindergarten. Even with some reteach or catch up days this program design falls short of district's recommendations. In the online platform there is the option to access the materials in Spanish. If you press the bottom to convert the language over it only seems to change the digital resources which includes PPT slides, google slides, projections, and posters. It changes the "Generate Lesson Planning Guide" link but it does not load, being 22 pages in English and creating only on blank page for Spanish for Chapter 5, for all lessons of Sunlight and Weather. For chapter 1, lesson 1.1 it opens in English and does not convert. On the user interface of digital materials the there is a button called "Classroom Language Settings" which allows the teacher to change all or specific students language settings to English or Spanish and can even allow students to take

control of that function. With this being demo, it is not clear that these options work.
In the "tool" section there are "student apps" which link to student books for each of the chapters of all three units, the digital books do work for English and Spanish.
Likewise under "tools" there is a "library" which contains working digital books in English and Spanish.
All of the "Science Apps" which allow for teacher's to do demonstrations work in both English and Spanish.
Under "Program Components" there is a section regarding "Spanish-language materials" and there are Spanish kits that offer Spanish versions of all student-facing print materials, and digital licenses. A digital Spanish teacher license gives teachers access to media of lesson projections and Classroom slides, downloadable PDFs of print materials such as classroom wall materials, investigation notebooks, and assessments, and recommended teacher talk moments. K-5 Spanish add on kits for elementary classrooms provide Spanish versions of student books, investigation notebooks, classroom print materials, and student-facing copy masters including assessments.
All three units do include a downloadable and printable student investigation notebook with graphic organizers and templates. The notebooks include, a high amount of text that the teacher would need to read, some illustrations for students use, and a glossary that is not picture supported.
In Sunlight and Weather students use a book titled "Handbook of Models which depicts scientists that are diverse in heritage and gender.

To what extent do the materials support Criterion 3A? Include your reasoning.
The materials mostly support Criterion 3A: Program Design. The materials are available in both English and Spanish, although some digital links do not work. The 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, from many cultures and nations, both contemporary and historical. Technology options are appropriate for both classroom and home use, including translation capabilities. The materials provide instruction that does not exactly correlate to our recommended instructional minutes for science but can be expanded and contracted to do so. It should be noted in the "Getting Ready to Teach" section of the teacher's guides, under "Before you Present the Lesson" that the program suggests that teachers involve adult volunteers to prepare class materials to save time. Under the section regarding, "While You Present the Lesson" it also suggests inviting adults and older students to help during lessons to help with the class and materials management and with reading and writing. This is not equitable for all teachers.

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
In the "Getting Ready to Teach section of the teacher's guides, under "Before you Present the Lesson" it suggests that teachers involve adult volunteers to prepare class materials to save time. Under the section regarding "While you present the lesson" it also suggests inviting adults and older students to help during the lessons to help with the class and materials management and with reading and writing. This is not equitable for all teachers. In "Materials at a Glance" for Sunlight and Weather it lists that all of the kit-provided materials will cover a class of 36 students twice for the entire unit. It can be reordered through Amplify Science. The materials lists also notes consumable items, and items to be provided by the teacher.

To what extent do the materials support Criterion 3B? Include your reasoning.
The materials mostly support Criterion 3B: Science Equipment. There is enough materials to allow students to do the investigations themselves. The materials are of quality and will last through many uses. The materials include tools necessary to make observations and measurements and conduct investigations.

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
"What is Weather Like Today" from lesson 1.2, activity 2 of Sunlight and Weather is a fictional text that includes characters of different cultures. The lesson that accompanies the text asks students to make predictions which supports reading comprehension and supports content specific academic vocabulary. "Handbook of Models" from lesson 2.2, activity 2 of Sunlight and Weather is a nonfiction text that again depicts scientist of diverse backgrounds, ethnicities, and ages. The lesson that accompanies this text focuses on the purpose of the contents page and provides the teacher with specific comprehension questions to scaffold student understanding. This text supports content specific academic vocabulary.

To what extent do the materials support Criterion 1A? Include your reasoning.
The materials fully support Criterion 3C: Reading Materials. The program uses a range of type of texts and genres, both print and online, and are embedded in learning experiences. The texts support content-specific academic vocabulary. The materials reflect the diversity of our students and society in a culturally responsive manner including different genders, from many cultures and nations, both contemporary and historical. The materials include supports for reading comprehension for a variety of student needs include high-quality questions.

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Washoe County School District Needs Evaluation

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