Instructional Materials Evaluation Tool for Alignment in Science Grades K – 12 (IMET)

FULL CURRICULUM
Instructional Materials

Strong science instruction requires that students:

- Apply content knowledge to explain real world phenomena and to design solutions,
- Investigate, evaluate, and reason scientifically, and
- Connect ideas across disciplines.

Title: **Science4Us**

Grade/Course: **2**

Publisher: **Science4Us**

Copyright: **2018**

Overall Rating: **Tier III, Not representing quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
	1. Three-dimensional Learning (Non-Negotiable)
	2. Phenomenon-Based Instruction (Non-Negotiable)

To evaluate each set of submitted materials for alignment with the standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicator in Column 2, then the materials receive a "No" in Column 1. Submissions must meet Criteria 1 and 2 for the review to continue to Criteria 3 and 4. Submissions must meet all of the non-negotiable criteria in order for the review to continue to Section II.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 8.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria, but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet Criteria 1 and 2 for the review to continue to Criteria 3 and 4. Submissions must meet all of the non-negotiable criteria in order for the review to continue to Section II.			
Non-Negotiable **1. THREE-DIMENSIONAL LEARNING:** Students have multiple opportunities throughout each unit to develop an understanding and demonstrate application of the three dimensions. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials are designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials teach the science and engineering practices, crosscutting concepts and disciplinary core ideas separately when necessary but they are most often integrated to support deeper learning.	**No**	Materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials do not explicitly reference or adequately address the three dimensions of the Louisiana Student Standards for Science separately or in an integrated manner. For example, in the Physical Science Unit, "Observing Matter," "Explain (Show What You Know)" and "Explore (Brainy Bots)" students identify whether observation tools (i.e., senses or measurement tools) are used to make qualitative or quantitative observations. This lesson set does not adequately address any Disciplinary Core Idea (DCI) from the Louisiana Student Standards for Science (LSSS), nor does it support student engagement in Science and Engineering Practices (SEP) as called for by the standards. Finally, it does not require students to build or apply understanding of any Crosscutting Concepts (CCC) such as "Cause and Effect." In the Physical Science Unit, "States of Matter," "Explore (Show What You Know)" and "Elaborate (Fact Lab)" students identify solids, liquids, and gases. In "States of Matter," "Elaborate (What Doesn't Belong)" students identify which object doesn't fit with the other objects pictured. There is no evidence of opportunity to support students in developing scientific content knowledge and skills through engagement with the three dimensions, either separately or in an integrated manner. In these activities, students do not identify patterns (CCC) in the properties of solids, liquids, or gases and do not use those patterns of properties to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			explain why a substance belongs (or doesn't belong) in a certain group. Furthermore, the materials do not provide student engagement with the SEPs or CCCs to explain how changes in temperature affect the states of matter as called for by the DCI LE.PS1A.c. In the Life Science Unit, "Living and Nonliving," "Explore" students build virtual living things using different plant and animal parts. Students participate in teacher-led discussions that encourage them to wonder about the characteristics of living things. No evidence of student opportunity to interact with and build understanding of the three dimensions could be found within these activities.
Non-Negotiable **2. PHENOMENON-BASED INSTRUCTION:** Explaining phenomenon and designing solutions drive student learning. ☐ Yes ☒ No	**REQUIRED** **2a)** Observing and explaining phenomena and designing solutions provide the purpose and opportunity for students to engage in learning a majority of the time.	**No**	Observing and explaining phenomena and designing solutions does not provide the purpose and opportunity for students to engage in learning. The materials include both an "Engage" and an "Explore" activity for each lesson topic. However, neither of these activities, nor other components of the materials, present students with a complex phenomenon, such as a case, a wonderment, or a problem to be investigated, explained, or solved as an opportunity to drive the learning that follows.
Non-Negotiable (only reviewed if criteria 1 and 2 are met) **3. ALIGNMENT & ACCURACY:** Materials adequately address the Louisiana Student Standards for Science. ☐ Yes ☐ No	**REQUIRED** **3a)** The majority of the Louisiana Student Standards for Science are incorporated, to the full **depth of the standards**.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **3b)** Science content is **accurate**, reflecting the most current and widely accepted explanations.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	3c) In any one grade or course, instructional materials spend minimal time on content outside of the course, grade, or grade-band.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Non-Negotiable (only reviewed if criteria 1 and 2 are met) **4. DISCIPLINARY LITERACY:** Materials have students engage with authentic sources and incorporate speaking, reading, and writing to develop scientific literacy. ☐ Yes ☐ No	**REQUIRED *Indicator for grades 4-12 only** **4a)** Students regularly engage with **authentic sources** that represent the language and style that is used and produced by scientists; e.g., journal excerpts, authentic data, photographs, sections of lab reports, and media releases of current science research. Frequency of engagement with authentic sources should increase in higher grade levels and courses.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **4b)** Students regularly engage in **speaking and writing** about scientific phenomena and engineering solutions using authentic science sources; e.g., authentic data, models, lab investigations, or journal excerpts. Materials address the necessity of using **scientific evidence** to support scientific ideas.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **4c)** There is **variability** in the tasks that students are required to execute. For example, students are asked to produce solutions to problems, models of phenomena, explanations of theory development, and conclusions from investigations.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	4d) Materials provide a coherent sequence of authentic science sources that build scientific **vocabulary** and knowledge over the course of study. Vocabulary is addressed as needed in the materials but not taught in isolation of deeper scientific learning.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
SECTION II: ADDITIONAL INDICATORS OF QUALITY			
Additional Criterion **5. LEARNING PROGRESSIONS:** The materials adequately address Appendix A: Learning Progressions.	**REQUIRED** **5a)** The overall organization of the materials and the development of disciplinary core ideas, science and engineering practices, and crosscutting concepts are	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
They are coherent and provide natural connections to other performance expectations including science and engineering practices, crosscutting concepts, and disciplinary core ideas; the content complements the the Louisiana Student Standards for Math. ☐ Yes ☐ No	coherent within and across units. The **progression of learning** is coordinated over time, clear and organized to prevent student misunderstanding and supports student mastery of the performance expectations.		
	5b) Students apply mathematical thinking when applicable. They are not introduced to math skills that are beyond the applicable grade's expectations in the Louisiana Student Standards for Mathematics. Preferably, **math connections** are made explicit through clear references to the math standards, specifically in teacher materials.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **6. SCAFFOLDING AND SUPPORT:** Materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support to explore key concepts using multiple, varied experiences to build scientific thinking. ☐ Yes ☐ No	**REQUIRED** **6a)** There are separate **teacher support** materials including: scientific background knowledge, support in three-dimensional learning, learning progressions, common student misconceptions and suggestions to address them, guidance targeting speaking and writing in the science classroom (i.e. conversation guides, sample scripts, rubrics, exemplar student responses).	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6b) Appropriate suggestions and materials are provided for **differentiated instruction** supporting varying student needs at the unit and lesson level (e.g., alternative teaching approaches, pacing, instructional delivery options, suggestions for addressing common student difficulties to meet standards, etc.).	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **7. USABILITY:** Materials are easily accessible, promote safety in the science classroom, and are viable for implementation given the length of a school year.	**REQUIRED** **7a)** Text sets (when applicable), laboratory, and other scientific materials are **readily accessible** through vendor packaging.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7b) Materials help students build an understanding of standard operating procedures in a science laboratory and include **safety** guidelines, procedures, and equipment. Science classroom and laboratory safety	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

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☐ Yes ☐ No	guidelines are embedded in the curriculum.		
	7c) The total amount of content is **viable** for a school year.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
Additional Criterion **8. ASSESSMENT:** Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed standards. ☐ Yes ☐ No	**REQUIRED** **8a) Multiple types** of formative and summative assessments (performance-based tasks, questions, research, investigations, and projects) are embedded into content materials and assess the learning targets.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	REQUIRED **8b)** Assessment items and tasks are structured on integration of the **three-dimensions**.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	8c) Scoring guidelines and rubrics **align** to performance expectations, and incorporate criteria that are specific, observable, and measurable.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 8.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria, but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Three-dimensional Learning	**No**	Materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of materials do not explicitly address or adequately integrate the disciplinary core ideas, science and engineering practices, and crosscutting concepts to support deeper learning.
	2. Phenomenon-Based Instruction	**No**	Observing and explaining phenomena and designing solutions does not provide the purpose and opportunity for students to engage in learning. The materials include "Engage" and "Explore" activities for each lesson topic; however, neither of these, nor other components of the materials, present students with a complex phenomenon, such as a

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			case, a wonderment, or a problem to be investigated, explained, or solved as an opportunity to drive the learning that follows.
	3. Alignment & Accuracy	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	4. Disciplinary Literacy	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
II: Additional Indicators of Quality	5. Learning Progressions	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	6. Scaffolding and Support	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	7. Usability	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
	8. Assessment	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**			

Instructional materials are one of the most important tools educators use in the classroom to enhance student learning. It is critical that they fully align to state standards—what students are expected to learn and be able to do at the end of each grade level or course—and are high quality if they are to provide meaningful instructional support.

The Louisiana Department of Education is committed to ensuring that every student has access to high-quality instructional materials. In Louisiana all districts are able to purchase instructional materials that are best for their local communities since those closest to students are best positioned to decide which instructional materials are appropriate for their district and classrooms. To support local school districts in making their own local, high-quality decisions, the Louisiana Department of Education leads online reviews of instructional materials.

Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their robust knowledge of teaching and learning to review instructional materials.

The 2018-2019 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Bossier, Caddo, Central, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, InspireNOLA, Jefferson, KDHSA (Jefferson Parish Charter), Lafayette, Lincoln, Livingston, Orleans, Ouachita, Rapides, Recovery School District, RSD - Choice Foundation, RSD – FirstLine, RSD – NOCP, St. Charles, St. James, St. Mary, St. Tammany, Tangipahoa, Vermilion, West Baton Rouge, Zachary. This review represents the work of current classroom teachers with experience in grades K-5.

Appendix I.

Publisher Response

Strong science instruction requires that students:

- Apply content knowledge to explain real world phenomena and to design solutions,
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Grade/Course: **2**

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SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet Criteria 1 and 2 for the review to continue to Criteria 3 and 4. Submissions must meet all of the non-negotiable criteria in order for the review to continue to Section II.				
Non-Negotiable **1. THREE-DIMENSIONAL LEARNING:** Students have multiple opportunities throughout each unit to develop an understanding and demonstrate application of the three dimensions. ☐ Yes ☒ No	**REQUIRED** **1a)** Materials are designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials teach the science and engineering practices, crosscutting concepts and disciplinary core ideas separately when necessary but they are most often integrated to support deeper learning.	**No**	Materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials do not explicitly reference or adequately address the three dimensions of the Louisiana Student Standards for Science separately or in an integrated manner. For example, in the Physical Science Unit, "Observing Matter," "Explain (Show What You Know)" and "Explore (Brainy Bots)" students identify whether observation tools (i.e., senses or measurement tools) are used to make qualitative or quantitative observations. This lesson set does not adequately address any Disciplinary Core Idea (DCI) from the Louisiana Student Standards for Science (LSSS), nor does it support student engagement in Science and Engineering Practices (SEP) as called for by the standards. Finally, it does not require students to build or apply understanding of any Crosscutting Concepts (CCC) such as "Cause and Effect." In the Physical Science Unit, "States of Matter," "Explore (Show What You Know)" and "Elaborate (Fact Lab)" students identify solids, liquids, and gases. In "States of Matter," "Elaborate (What Doesn't Belong)" students identify which object doesn't fit with the other objects pictured. There is no evidence of opportunity to support students in developing scientific content knowledge and skills through engagement with the three dimensions, either separately or in an integrated manner. In these activities, students do not identify patterns (CCC) in the properties of solids, liquids, or gases and do not use those patterns of properties to	When reviewing Science4Us, it's important to consider each Instructional Module (total of 28) as covering a standard, or often several standards. In additional there are both online and offline materials, as well as a rich literacy and math integration. For example, in the Instructional Module, Observing Matter (PS-E-A1, Core Idea: Physical Science, Main Idea and Expectations: Properties of Matter) you'll find 8 interwoven daily lessons, all aligned to the 5E Model. All daily sessions support the DCI, CCC and Engineering Skills. Engage (Day 1): Two children using Scale and Proportionality (CCC) to measure two different dogs and temperature. (Online) Explore (Day 2): Students choose between two objects a toy car or a bear. They first use a word bank to describe the object. Based on the words chosen, a character at a carnival must choose that item. They will use Scale and Proportionality (CCC) to describe the toy car or bear. In the associated Offline lesson, "Making a Pattern," students work collaboratively to organize their items and to complete the observations sheet by drawing pictures and answering questions. Students will reuse the same five to eight items to complete all of the patterns on the observation sheet. This activity uses Patterns (CCC). Explain (Day 3): In the Explain lesson we introduce students to the concept of Quantitative Observations which incorporate Scale and Proportionality (CCC), since we are comparing different sizes of objects and using tools to measure.

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			explain why a substance belongs (or doesn't belong) in a certain group. Furthermore, the materials do not provide student engagement with the SEPs or CCCs to explain how changes in temperature affect the states of matter as called for by the DCI LE.PS1A.c. In the Life Science Unit, "Living and Nonliving," "Explore" students build virtual living things using different plant and animal parts. Students participate in teacher-led discussions that encourage them to wonder about the characteristics of living things. No evidence of student opportunity to interact with and build understanding of the three dimensions could be found within these activities.	Elaborate (Day 4-7): In one of the Offline Elaborates "Stepping Into Matter" the students are working to solve a problem "How could we use the characteristics of matter to sort and group our shoes?" Students work in groups to observe their shoes, and then compare and choose which characteristic(s) they want to focus on for sorting the shoes. Each group will write down their characteristics that they want to focus on for sorting the shoes. Then, each group creates a pictograph after sorting the shoes based on their category. Students will learn that: Scientists learn through observations, they compare and contrast what they observe, they collect data and that is an important scientific processing skill, and scientists describe relationships among and between things that are alike and different. This aligns to the Engineering Skill--Plan and conduct an investigation to describe and classify different kinds of matter by their observable properties. In another Online Investigate, students are embarking on a scavenger hunt. They have a list of items to find which require them to compare and contrast materials based on size, weight and qualitative observations. This lesson incorporates Scale and Proportionality (CCC).
Non-Negotiable **2. PHENOMENON-BASED INSTRUCTION:** Explaining phenomenon and designing solutions drive student learning. ☐ Yes ☒ No	**REQUIRED** **2a)** Observing and explaining phenomena and designing solutions provide the purpose and opportunity for students to engage in learning a majority of the time.	**No**	Observing and explaining phenomena and designing solutions does not provide the purpose and opportunity for students to engage in learning. The materials include both an "Engage" and an "Explore" activity for each lesson topic. However, neither of these activities, nor other components of the materials, present students with a complex phenomenon, such as a case, a wonderment, or a problem to be investigated, explained, or solved as an opportunity to drive the learning that follows.	Science4Us aligns with the 5E Model of Instruction. The daily sessions are as following: Day 1: Engage - Activities that activate student prior knowledge of the content topic. Day 2: Explore - These activities promote natural curiosity and the formation of student ideas. Day 3: Explain - Presentation that explains the science content, including vocabulary defitions. Day 4: Elaborate - A variety of activities that support literacy skills that focus on vocabulary.

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				Day 5: Activities use artistic formats like poems, and songs to discuss science content. Day 6: Activities that reinforce science process skills, as students apply what they have learned. Day 7: Students participate in a science investigation to apply science process skills. Day 8: This session reviews and assesses student's knowledge of the content. For example, in the Instructional Module Motion (Core Idea: Physical Science, Position of Motion of Objects). Students begin learning with a knowledge activiation activity in Day 1: Engage activity, students are guided along by their host, Val. Students watch a three-minute animated story about two girls discovering the quickest path to their school by taking different routes. Students complete this activity on their own or in a group. As a follow-up teachers can use the offline lesson, an Anticipation Guide, to continue activating prior knowledge about motion. As students progess in the lesson to Day 2: Explore, students explore the factors that influence motion, including direction, friction, distance, and time. Students take a walk to their choice of four destinations using the arrow keys on their keyboard. They will be able to see how long it takes them to get there (time) as well as how many steps it takes (distance). In the offline lesson "Get in Motion" students will work with a small ball and some classroom items such as books to create bounderies. The students will first draw the ball and then use the books to move the ball in various directions and various patterns. Students can even design and draw out their own pattern. Students are asked to complete various sentence stems such as "I wonder what would happen if I..."; "This reminded me of..."; and "This was different what I expected because...".

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				In Daily session 3, Explain, students are introduced to the motion vocabulary, which includes: motion, circular, distance, friction, measure, position, surface, time, and zigzag. As a follow-up, students can work offfline to complete a main idea word match to synthesize information. Two days of literacy based lessons follow in Daily sessions 4 & 5. The main focus here is vocabulary acquisition through working with the above vocabulary terms in syllable format and in a song. In the Connection to the Arts activity "Making and Measuring Motion" students will use what they know about motion, a change in position, to explore movements common to people and animals. This activity illustrates that there are different types of movement (forward, backward, straight, sideways, zigzag). It is important for students to recognize that motion can be measured using distance (how far something travels) or time (how long objects are in motion). In fact, movement can be measured with standard measurements (yardsticks, stopwatches) and nonstandard measurements (books or steps, counting). The following questions can be used to emphasize the scientific connection to this art activity: How can you tell if something moves? What are some objects or animals that move? What are some different ways that they move? What did you like the best about this activity? In Daily Session 6, Take a Note, students match given measurements in time and distance to the correct path. Then students arrange the measured paths in order from least to greatest and describe the type of path. Students can then work offline in "Measuring Motion" to use sidewalk chalk to create various paths of different shapes and lengths. The students will measure the paths and rank the paths from shortest to longest. Various critical thinking questions are included in the Teacher Support Materials to guide the students into further processing how the shape of a path can affect the distance it takes to reach a destination.

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				And in Daily Session 7, Investigate, students will work with Steven the Skater to help him solve a problem. Students will need to predict which surface will result in the fastest motion down a ramp. Repeated trials, measurement, data collection, and data analysis skills are highlighted in this interactive investigation. In the associated offline lesson "Tick Tock Pendulum" students will create a pendulum using pencils, string, and a washer. Through building their pendulum, students will demonstrate and explain how friction affects motion.
Non-Negotiable (only reviewed if criteria 1 and 2 are met) **3. ALIGNMENT & ACCURACY:** Materials adequately address the Louisiana Student Standards for Science. ☒ Yes ☐ No	**REQUIRED** **3a)** The majority of the Louisiana Student Standards for Science are incorporated, to the full **depth of the standards**.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	REQUIRED **3b)** Science content is **accurate**, reflecting the most current and widely accepted explanations.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	3c) In any one grade or course, instructional materials spend minimal time on content outside of the course, grade, or grade-band.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Non-Negotiable (only reviewed if criteria 1 and 2 are met) **4. DISCIPLINARY LITERACY:** Materials have students engage with authentic sources and incorporate speaking, reading, and	**REQUIRED *Indicator for grades 4-12 only** **4a)** Students regularly engage with **authentic sources** that represent the language and style that is used and produced by scientists; e.g., journal excerpts, authentic data, photographs, sections of lab reports, and media releases of current science research. Frequency of engagement with authentic sources should increase in higher grade levels and courses.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
writing to develop scientific literacy. ☐ Yes ☐ No	**REQUIRED** **4b)** Students regularly engage in **speaking and writing** about scientific phenomena and engineering solutions using authentic science sources; e.g., authentic data, models, lab investigations, or journal excerpts. Materials address the necessity of using **scientific evidence** to support scientific ideas.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	REQUIRED **4c)** There is **variability** in the tasks that students are required to execute. For example, students are asked to produce solutions to problems, models of phenomena, explanations of theory development, and conclusions from investigations.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	4d) Materials provide a coherent sequence of authentic science sources that build scientific **vocabulary** and knowledge over the course of study. Vocabulary is addressed as needed in the materials but not taught in isolation of deeper scientific learning.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
SECTION II: ADDITIONAL INDICATORS OF QUALITY				
Additional Criterion **5. LEARNING PROGRESSIONS:** The materials adequately address Appendix A: Learning Progressions. They are coherent and provide natural connections to other performance expectations including science and engineering practices, crosscutting concepts, and disciplinary core ideas; the content complements the the Louisiana Student Standards for Math.	**REQUIRED** **5a)** The overall organization of the materials and the development of disciplinary core ideas, science and engineering practices, and crosscutting concepts are coherent within and across units. The **progression of learning** is coordinated over time, clear and organized to prevent student misunderstanding and supports student mastery of the performance expectations.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	5b) Students apply mathematical thinking when applicable. They are not introduced to math skills that are beyond the applicable grade's expectations in the Louisiana Student Standards for Mathematics. Preferably, **math connections** are made explicit through	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

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☐ Yes ☐ No	clear references to the math standards, specifically in teacher materials.			
Additional Criterion **6. SCAFFOLDING AND SUPPORT:** Materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support to explore key concepts using multiple, varied experiences to build scientific thinking. ☐ Yes ☐ No	**REQUIRED** **6a)** There are separate **teacher support** materials including: scientific background knowledge, support in three-dimensional learning, learning progressions, common student misconceptions and suggestions to address them, guidance targeting speaking and writing in the science classroom (i.e. conversation guides, sample scripts, rubrics, exemplar student responses).	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6b) Appropriate suggestions and materials are provided for **differentiated instruction** supporting varying student needs at the unit and lesson level (e.g., alternative teaching approaches, pacing, instructional delivery options, suggestions for addressing common student difficulties to meet standards, etc.).	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
Additional Criterion **7. USABILITY:** Materials are easily accessible, promote safety in the science classroom, and are viable for implementation given the length of a school year. ☐ Yes ☐ No	**REQUIRED** **7a)** Text sets (when applicable), laboratory, and other scientific materials are **readily accessible** through vendor packaging.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7b) Materials help students build an understanding of standard operating procedures in a science laboratory and include **safety** guidelines, procedures, and equipment. Science classroom and laboratory safety guidelines are embedded in the curriculum.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7c) The total amount of content is **viable** for a school year.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Additional Criterion **8. ASSESSMENT:** Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed standards. ☐ Yes ☐ No	**REQUIRED** **8a) Multiple types** of formative and summative assessments (performance-based tasks, questions, research, investigations, and projects) are embedded into content materials and assess the learning targets.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	REQUIRED **8b)** Assessment items and tasks are structured on integration of the **three-dimensions**.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	8c) Scoring guidelines and rubrics **align** to performance expectations, and incorporate criteria that are specific, observable, and measurable.	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 8. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria, but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.				
Compile the results for Sections I and II to make a final decision for the material under review.				
Section	**Criteria**	**Yes/No**	**Final Justification/Comments**	
I: Non-Negotiables	1. Three-dimensional Learning	**No**	Materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of materials do not explicitly address or adequately integrate the disciplinary core ideas, science and engineering practices, and crosscutting concepts to support deeper learning.	
	2. Phenomenon-Based Instruction	**No**	Observing and explaining phenomena and designing solutions does not provide the purpose and opportunity for students to engage in learning. The materials include "Engage" and "Explore" activities for each lesson topic; however, neither of these, nor other components of the materials, present students with a complex phenomenon, such as a case, a wonderment, or a problem to be investigated, explained, or solved as an opportunity to drive the learning that follows.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	3. Alignment & Accuracy	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	4. Disciplinary Literacy	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
II: Additional Indicators of Quality	5. Learning Progressions	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	6. Scaffolding and Support	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	7. Usability	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
	8. Assessment	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.	
FINAL DECISION FOR THIS MATERIAL: **Tier III, Not representing quality**				

Instructional materials are one of the most important tools educators use in the classroom to enhance student learning. It is critical that they fully align to state standards—what students are expected to learn and be able to do at the end of each grade level or course—and are high quality if they are to provide meaningful instructional support.

The Louisiana Department of Education is committed to ensuring that every student has access to high-quality instructional materials. In Louisiana all districts are able to purchase instructional materials that are best for their local communities since those closest to students are best positioned to decide which instructional materials are appropriate for their district and classrooms. To support local school districts in making their own local, high-quality decisions, the Louisiana Department of Education leads online reviews of instructional materials.

Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their robust knowledge of teaching and learning to review instructional materials.

The 2018-2019 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Bossier, Caddo, Central, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, InspireNOLA, Jefferson, KDHSA (Jefferson Parish Charter), Lafayette, Lincoln, Livingston, Orleans, Ouachita, Rapides, Recovery School District, RSD - Choice Foundation, RSD – FirstLine, RSD – NOCP, St. Charles, St. James, St. Mary, St. Tammany, Tangipahoa, Vermilion, West Baton Rouge, Zachary. This review represents the work of current classroom teachers with experience in grades K-5.

Appendix II.

Public Comments

There were no public comments submitted.