



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: **Science +**

Grade/Course: **Grade 5**

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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 instructional materials for alignment with the standards and determine tiered rating, begin with **Section I: Non-negotiable Criteria**.

- Review the **required**¹ Indicators of Superior Quality for each **Non-negotiable** criterion.
- If there is a “Yes” for all **required** Indicators of Superior Quality, materials receive a “Yes” for that **Non-negotiable** criterion.
- If there is a “No” for any of the **required** Indicators of Superior Quality, materials receive a “No” for that **Non-negotiable** criterion.
- Materials must meet **Non-negotiable** Criteria 1 and 2 for the review to continue to **Non-negotiable** Criteria 3 and 4. Materials must meet all of the **Non-negotiable** Criteria 1-4 in order for the review to continue to Section II.
- If materials receive a “No” for any **Non-negotiable** criterion, a rating of Tier 3 is assigned, and the review does not continue.

If all Non-negotiable Criteria are met, then continue to **Section II: Additional Criteria of Superior Quality**.

- Review the **required** Indicators of Superior Quality for each criterion.
- If there is a “Yes” for all **required** Indicators of Superior Quality, then the materials receive a “Yes” for the additional criteria.
- If there is a “No” for any **required** Indicator of Superior Quality, then the materials receive a “No” for the additional criteria.

Tier 1 ratings receive a “Yes” for all Non-negotiable Criteria and a “Yes” for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a “Yes” for all Non-negotiable Criteria, but at least one “No” for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a “No” for at least one of the Non-negotiable Criteria.

¹ **Required Indicators of Superior Quality** are labeled “Required” and shaded yellow. Remaining indicators that are shaded white are included to provide additional information to aid in material selection and do not affect tiered rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
<p>Section I: Non-negotiable Criteria of Superior Quality Materials must meet Non-negotiable Criteria 1 and 2 for the review to continue to Non-negotiable Criteria 3 and 4. Materials must meet all of the Non-negotiable Criteria 1-4 in order for the review to continue to Section II.</p>			
<p>Non-negotiable 1. THREE-DIMENSIONAL LEARNING: Students have multiple opportunities throughout each unit to develop an understanding and demonstrate application of the three dimensions.</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>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 (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) in an integrated manner to support deeper learning.</p>	<p>No</p>	<p>The instructional materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. Although the materials attempt to integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning and do so for some modules, this is not consistently applied throughout the materials. Students often are exposed to content related to the core ideas without opportunity to build understanding through engagement with Science and Engineering Practices and through the lens of Crosscutting Concepts. This is demonstrated by the development of LSSS 5-PS1-1 across modules where students should build the science idea that matter is made of particles too small to be seen. In Module 1, students observe the conservation of matter through an ice cube melting inside a plastic bag. This is followed by a discussion that relies on knowledge about chemical and physical changes and the term “particle” for which students have not built an understanding. Later in Module 2, students watch a video</p>

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			<p>and read an article that describes what air is made of in specific terms then engage in an investigation to see what happens as air is pumped into a soda bottle filled with marshmallows. The foundational concept of the DCI has been both assumed and directly expressed prior to the incorporation of SEPs and discoveries intended to develop that understanding. In Module 4 Stargazing: Stars and the Solar System, Discovery 2, students use a model to observe shadows and then use another model to show the rotation of the earth on its axis. The materials focus on student understanding of the direction that the Earth rotates instead of providing the opportunity for students to model day and night and observe patterns. Students are then instructed to “conduct research” to explain why we have day and night; however, one of the links. “Starchild Question of the Month,” provides the question, “Why is there day and night?” along with the answer, and the other is a Youtube link that is no longer available. In this activity, students miss the opportunity to analyze data to discover the patterns and develop their own explanation of day and night.</p>

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
<p>Non-negotiable 2. PHENOMENON-BASED INSTRUCTION: Explaining phenomenon and designing solutions drive student learning.</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Required 2a) Observing and explaining phenomena and designing solutions provide the purpose and opportunity for students to engage in a coherent sequence of learning a majority of the time. Phenomena provide students with authentic opportunities to ask questions and define problems, as well as purpose to incrementally build understanding through the lessons that follow.</p>	<p>No</p>	<p>Observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to engage in learning a majority of the time. Phenomena in the form of common experiences sparks students to generate questions at the beginning of some units, but does not lead students to define problems that motivate learning about the performance expectations of the unit. The phenomena for the units do not provide purpose for students to engage in investigations and lessons that follow. Instead, students work toward figuring out problems that are not interconnected in relation to the phenomenon. The discovery activities in the modules do not allow for sense-making opportunities that lead students to figure out any answers to the questions they may have related to each anchoring phenomenon. For example, in Module 2, Mars: Matter and Energy in Ecosystems, the anchoring phenomenon is “the idea of a Mars settlement and sustaining life on Mars in a closed ecosystem.” In Module 2, Discovery 1, students engage in research about Mars and Earth to discover that it takes a long time to get to Mars from Earth. From there, students engage in research about a forest ecosystem and hummingbirds, citing that hummingbirds take long trips and need energy. This discovery does not lead to sense-making of the Mars phenomenon and would not</p>

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			<p>connect to the questions students would have on the Driving Questions Board. Discovery 4 shows an image of the sun with a focus on students identifying why the sun is important to life on Earth. Students investigate and identify the two types of energy provided by the sun and discriminate between living and nonliving things. Students also develop a model to explain how energy from the sun allows plants to make food that animals then consume to explain the importance of sunlight for living things to acquire energy for survival. At the end of Discovery 4, students explain how the Sun gives energy to living organisms, but there is no opportunity for students to make connections back to the anchor phenomenon of sustaining life on Mars in a closed ecosystem. Module 3, Water: Earth's Major Systems, focuses on the anchor phenomenon of a picture of a boy drinking water from a muddy water source. In Module 3, Discovery 1, students watch a video of water on the International Space Station to engage in determining the properties of water. Students then engage in an investigation by dropping water on a penny to reinforce the polarity of the water molecules. In Module 3, Discovery 3, students watch videos and read articles to learn about the four spheres of Earth and create a foldable in which they categorize pictures. Each Discovery does not lead to</p>

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			sense-making surrounding the muddy water that the boy is drinking in the Anchoring Phenomenon picture introduced at the beginning of the module. These activities do not lead them to solve the problems or questions they may initially have on the Driving Questions Board.
<p>Non-negotiable (only reviewed if Criteria 1 and 2 are met)</p> <p>3. ALIGNMENT & ACCURACY: Materials adequately address the Louisiana Student Standards for Science.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Required 3a) The majority of the Louisiana Student Standards for Science are incorporated, to the full depth of the standards.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
	<p>Required 3b) Science content is accurate, reflecting the most current and widely accepted explanations.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
	<p>3c) In any one grade or course, instructional materials spend minimal time on content outside of the course, grade, or grade-band.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
<p>Non-negotiable (only reviewed if Criteria 1 and 2 are met)</p> <p>4. DISCIPLINARY LITERACY: Materials have students engage with authentic sources and incorporate speaking, reading, and</p>	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
<p>writing to develop scientific literacy.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
Section II: Additional Criteria of Superior Quality			
<p>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.</p>	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>
	<p>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.</p>	<p>Not Evaluated</p>	<p>This section was not evaluated because the non-negotiable criteria were not met.</p>

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
<input type="checkbox"/> Yes <input type="checkbox"/> No	Preferably, math connections are made explicit through clear references to the math standards, specifically in teacher materials.		
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. <input type="checkbox"/> Yes <input type="checkbox"/> 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 (e.g. 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.
7. USABILITY: Materials are easily accessible, promote safety in the science classroom, and are viable for implementation given the length of a school year. <input type="checkbox"/> Yes <input type="checkbox"/> 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.
	Required 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
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. <input type="checkbox"/> Yes <input type="checkbox"/> 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 and include opportunities to engage students in applying understanding to new contexts.	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 <i>Tier 1 ratings</i> receive a “Yes” for all Non-negotiable Criteria and a “Yes” for each of the Additional Criteria of Superior Quality. <i>Tier 2 ratings</i> receive a “Yes” for all Non-negotiable Criteria, but at least one “No” for the Additional Criteria of Superior Quality. <i>Tier 3 ratings</i> receive a “No” 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-negotiable Criteria of Superior Quality²	1. Three-dimensional Learning	No	The instructional materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. Although the materials attempt to integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning and do so for some modules, this is not consistently applied throughout the materials.

² Must score a “Yes” for all Non-negotiable Criteria to receive a Tier I or Tier II rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	2. Phenomenon-Based Instruction	No	Observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to engage in learning a majority of the time. Phenomena in the form of common experiences sparks students to generate questions at the beginning of some units, but does not lead students to define problems that motivate learning about the core ideas of the unit. The phenomena for the units do not provide purpose for students to engage in investigations and lessons that follow.
	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 Criteria of Superior Quality³	5. Learning Progressions	Not Evaluated
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			

³ Must score a “Yes” for all Additional Criteria of Superior Quality to receive a Tier I rating.

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 [2021-2022 Teacher Leader Advisors](#) are selected from across the state and represent the following parishes and school systems: Acadia, Ascension, Baton Rouge Diocese, Beauregard, Bossier, Calcasieu, Central Community, City of Monroe, Desoto, East Baton Rouge, East Feliciana, Evangeline, Franklin, Iberia, Jefferson, Lafayette, Lafourche, Lincoln, Livingston, Louisiana Tech University, Louisiana Virtual Charter Academy, Orleans, Ouachita, Rapides, Regina Coeli Child Development Center, Richland, Special School District, St. Charles, St. John, St. Landry, St. Martin, St. Mary, St. Tammany, Tangipahoa, Terrebonne, University View Academy, Vermillion, West Baton Rouge, and West Feliciana. This review represents the work of current classroom teachers with experience in grades K-8.

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.