LOUISIANA DEPARTMENT OF EDUCATION

Academic Content

Instructional Materials Evaluation Tool

(IMET) for Alignment in Science Grades K-12 Full Curriculum

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: **Stile Science**

Grade/Course: **6**

Publisher: **Stile Education**

Copyright: **2022**

Overall Rating: **Tier 3, Not representing quality**

Tier 1, Tier 2, Tier 3 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 light orange. 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
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.			
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 **engage students** in integrating the science and engineering practices (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) 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 materials do not integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning. Many of the lessons present content through text and videos before students engage in the SEPs rather than developing knowledge through the integration of the SEPs. Additionally, the CCCs are not embedded and integrated into the content the majority of the time, and instead, are referenced in the teacher notes. Many of the lessons provide terms and definitions and explain concepts before investigations rather than providing students the opportunity to build scientific knowledge through the integration of SEPs and CCCs. For example, in the Our Place in Space unit, Lesson 1.1, The Solar System, students read text and observe graphics about the sun, objects, and planets that make up the Solar System. The lesson provides many concepts, terms, and definitions, such as stars, galaxies, a solar system, terrestrial planets, gas planets, and

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			asteroids. Lesson 1.2, The Role of Gravity, follows a similar structure as students read and observe graphics about gravity as the force that holds planets in orbit around the sun. The lesson provides many concepts, terms, and definitions such as gravity, orbit, moon, and satellite. The materials provide the content without integrating SEPs and CCCs. Then, in Lesson 1.3, Lab activity: Modeling the Solar System, students make a scaled model of the solar system and explain why most models are not accurate. To complete the activity, student groups complete both a size model and distance model for the solar system, examine their models analytically, and then complete a thinking routine that helps anchor the learning process and restraints of developing scaled models. However, this practice is addressed in isolation, and other SEPs, DCIs, and CCCs are not integrated to develop deeper learning of why or how the components of the solar system work together. In the Food Chains and Food Webs unit, Lesson 3.1, The Impact of Invasive Species, begins by defining and explaining habitats and ecosystems. Students then watch a video that explains what invasive species are and the impact they have on ecosystems. After answering questions regarding this information, the students watch a video about the introduction of various species to new ecosystems and their impact, such as the introduction of brown

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			tree snakes to Guam which impacted the local bird population. While the content addresses DCI MS.LS2.A.a, the materials provide the content before students have the opportunity to develop scientific knowledge about the interdependent relationships in ecosystems through the integration of the three dimensions. In the Energy Unit, Lesson 1.1, Forms of Energy, students learn about the various forms of energy by reading texts, observing pictures, and watching a video about potential energy. The materials provide definitions and examples of the various forms of energy without the integration of the three dimensions. Additionally, a teacher note is provided about a common misconception that "energy is stored inside of objects" when "in fact, energy is stored in a system because of the way objects are related to each other." The CCC of systems is not integrated into student learning to organize their thinking, and, instead, is added in as a teacher note.
Non-Negotiable **2. PHENOMENON-BASED INSTRUCTION:** Explaining phenomenon and designing solutions drive student learning.	**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	**No**	Observing and explaining phenomena and designing solutions do not provide purpose and opportunity for students to engage in learning a majority of the time. Phenomena in the form of common experiences at the beginning of each unit do not provide students with authentic opportunities to ask questions and define problems to motivate learning about the core ideas of the unit and

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☐ Yes ☒ No	lessons that follow.		do not provide the purpose for students to engage in the investigations and incrementally build understanding through the lessons that follow to figure out the phenomenon. The materials present phenomena in the form of a storyline or question with an introduction to the unit that includes information and videos, accompanied by a Career Profile. The phenomenon that students try to figure out or design a solution for is not always explicit in the materials. While lessons connect some ideas, connections to the phenomena throughout the lessons are minimal and often occur only at the end of the unit. Student questioning regarding unit introductions does not drive student learning and provide the purpose for the lessons that follow. For example, the Light unit begins with an explanation of a new way to turn smartphones into a microscope. Students then discuss previous knowledge regarding light concepts. The lesson ends with Curious Questions in which students ask questions about light, color, and lenses and what they would like to find out. The teacher is provided with one example question, “What if light moved as slowly as sound?” What the students are trying to figure out or what problem students are trying to solve is not explicit. Additional guidance on student questioning and how the questions can be used to engage students in the lessons that follow are not

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			provided. As students progress through the lessons, they learn about light ways, the interaction of light with objects, the electromagnetic spectrum, reflection, refraction, and lenses. However, connections to using smartphones as microscopes are not intentionally connected nor revisited during the lessons. While students engage in reflections at the end of each lesson, guidance does not support students in connecting these ideas to the new technology introduced at the start of the unit. Using smartphones as a microscope is referenced in the last lesson of the unit; however, guidance on how to use this new technology to drive student learning throughout the unit is not evident. In the Food Chains and Food Webs unit, the introduction begins with the question, "Why do cats have slit-shaped pupils?" The lesson then goes on to explain that a slit-shaped pupil helps predators hunt their food and then introduces another type of pupil shape and its purpose, horizontal bars, a shape that allows plant-eating animals to scan for predators. This scenario introduces the core idea of the unit, which is that all living things need food but does not give the students opportunities to contribute their own solutions to problems or ask their own questions. The rest of the unit centers on how organisms rely on each other for sources of food through the use of food chains and webs. In this unit, students

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			engage in a variety of activities and investigations, which are planned out for them that allow them to observe various aspects of food chains and webs. The lessons connect back to the idea that all living things need food but do not include an opportunity for students to engage in sense-making within the overall phenomenon. In the Energy Unit, the introduction includes the question, "How can we learn from nature to improve energy technology?" and then discusses biomimicry. Students then learn about climate change and the energy crisis and discover how humpback whales' biomimicry can improve wind turbines. Lessons that follow include investigative phenomena such as an asteroid impact and how weight and mass affect marbles in flour impacts. Students do not return or connect back to the original phenomena in the lessons that follow the Introduction. The unit culminates with a design challenge where students use biomimicry to make a more efficient water wheel turbine, but does not connect back to the phenomenon of the energy crisis and how this design could help.
	Required **2b)** Materials are designed to provide sufficient opportunities for students to **design and engage in investigations at a level appropriate to their grade band** to explain phenomena. This includes testing theories or models, generating data, and using reasoning and scientific ideas to	**No**	As evidenced in Indicator 2a, 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; therefore, students do not have sufficient opportunities for students to design and

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	provide evidence to support claims.		engage in investigations at a level appropriate to their grade band to explain phenomena.
	2c) Materials provide frequent opportunities for students to **make meaningful connections** to their own knowledge and experiences as well as those of their community during sense-making about the phenomena.	**No**	As evidenced in Indicator 2a, observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to make meaningful connections to their own knowledge and experiences as well as those of their community during sense-making about the phenomena.
Non-Negotiable **3. ALIGNMENT AND 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) 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.
	Required **3c)** 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.
	3d) 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 **4. DISCIPLINARY LITERACY:** Materials have students	**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,	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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engage with authentic sources and incorporate speaking, reading, and writing to develop scientific literacy. ☐ Yes ☐ No	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.		
	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.
	Required **4d)** Materials provide a coherent sequence of learning experiences 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 CRITERIA OF SUPERIOR QUALITY			
5. LEARNING PROGRESSIONS:	**Required** **5a)** The overall organization of the materials and the development of disciplinary core ideas,	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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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 Louisiana Student Standards for Math. ☐ Yes ☐ No	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.		
	5b) Students **apply grade-appropriate mathematical** thinking in meaningful ways, when applicable. They are not introduced to math skills that are beyond or far below the applicable grade level 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.
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, strategies for addressing diverse emerging conceptions, guidance targeting speaking and writing in the science classroom (i.e., conversation guides, rubrics, exemplar student responses). Support also includes teacher guidance in the materials' **approach to phenomenon-based instruction** and provides explicit guidance on how the materials **address, build, and integrate the three dimensions**.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required	**Not**	This section was not evaluated because the

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	6b) Teacher resources include **educative resources** that are designed to **promote teacher learning** and support the wide range of teachers who use the materials. Unit and lesson planning resources include explicit guidance designed to ensure that students experience phenomena, design solutions, and apply scientific knowledge and skills in ways that are aligned to the Louisiana Student Standards for Science and associated learning progressions.	**Evaluated**	Non-Negotiable Criteria were not met.
	Required **6c)** Support for **diverse learners**, including English Learners and students with disabilities, are provided. Appropriate suggestions and materials are provided for **supporting varying student needs** at the unit and lesson level using an accelerating learning approach. The language in which questions and problems are posed is not an obstacle to understanding the content, and if it is, additional supports are included (e.g., alternative teacher approaches, pacing and instructional delivery options, strategies or suggestions for supporting access to text and/or content, suggestions for modifications, suggestions for vocabulary acquisition, extension activities, etc.). Materials include **teacher guidance to help support special populations** and provide the opportunities for these students to meet the expectations of the standards and enable regular progress monitoring.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
7. USABILITY:	**Required** **7a)** Text sets (when applicable), laboratory, and	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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Materials are easily accessible, promote safety in the science classroom, and are viable for implementation given the length of a school year. ☐ Yes ☐ No	other scientific materials are **readily accessible** through vendor packaging or certified partners.		
	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.
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** (iterative student models, student-centered discussions, data analysis, self-reflection and peer feedback investigations, and projects) are embedded into unit materials and allow teachers to evaluate student progress toward demonstrating standards.	**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
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.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Tier 3 ratings 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 Quality[2]	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 integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning.
	2. Phenomenon-Based Instruction	**No**	Observing and explaining phenomena and designing solutions do not provide purpose and opportunity for students to engage in learning a majority of the time. Students do not have sufficient opportunities for students to design and engage in investigations at a level appropriate to their grade band to explain phenomena. Observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to make meaningful connections to their own knowledge and experiences as well as those of their community during sense-making about the phenomena.

[2] Must score a "Yes" for all Non-Negotiable Criteria to receive a Tier 1 or Tier 2 rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	3. Alignment and 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 Quality[3]	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 3, Not representing quality**			

[3] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier 1 rating.

Reviewer Information

Instructional Materials Review

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 2022-2023 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: A.E. Phillips, Ascension, Belle Chasse Academy, Bienville, Caddo, Calcasieu, Catholic Diocese of Baton Rouge -REACH Department, East Baton Rouge, Hynes Charter School Corporation, Iberia, Iberville, Jefferson, KIPP New Orleans, Lafayette, Lafourche, Lincoln, Louisiana Virtual Charter Academy, LSU Laboratory School, Orleans, Monroe City Schools, Morehouse, Orleans, Ouachita, Plaquemines, Rapides, Richland, St. Landry, St. Martin, St. Mary, St. Tammany, Tangipahoa, University View Academy, Vermillion, Webster, West Feliciana, and Zachary Community Schools. This review represents the work of current classroom teachers with experience in grades 6-12.

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.