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: **Twig Science Louisiana** Grade/Course: **K**

Publisher: **Imagine Learning LLC/Twig Education, Inc.** Copyright: **2020**

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 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
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 teach the science and engineering practices (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) in an integrated manner to support deeper learning.	**Yes**	The instructional 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 materials integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning. In Module 1: My Big Nature Adventure, Driving Question 2, Lesson 7, students watch a video and discuss how sunlight or lack of sunlight affects plants. Students engage in Analyzing and Interpreting Data (SEP) by examining images of caves in their Twig Notebooks and circle the locations of plants. Students identify and explain the Pattern (CCC) that plants need sunlight in order to grow (DCI, K-LS1.C). In Module 3: Be Prepared, Driving Question 3, Lesson 4, students listen to and discuss an informational text to learn about patterns in weather and make connections between the text and their daily weather data gathering observations (DCI, K-ESS2.D). Students participate in a class discussion to identify and differentiate between different types of weather identified in the text (SEP, Obtaining, Evaluating, and Communicating

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Information) and review the data they collected with their Weather Data Sheets (SEP, Analyzing and Interpreting Data) to identify Patterns (CCC) to make connections among different weather types from in the informational text (DCI, K-ESS2.D). In Module 4: I Can, Driving Question 1, students explore their local area, focusing on evidence of the ways animals change their environments (DCI, K-ESS2-2). Students continue to explore by reading about earthworms (SEP, Obtaining, Evaluating, and Communicating Information) and observing an earthworm habitat to identify the changes worms make to their environment (CCC, Cause and Effect). The class engages with text and video to learn how beavers affect the environment (CCC, Cause and Effect). Students also draw a picture that shows how an animal of their choice changes the environment to meet its needs.
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 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.	**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. The materials provide phenomena in the form of common experiences at the start of units, encouraging students to generate questions; however, the materials do not include opportunities for students to revisit the phenomena frequently throughout the units. Therefore, the phenomena does not drive learning, as the materials do not provide engagement in

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			coherent sequences of learning throughout the units. For example, Module 3: Marble Run Engineer, Driving Question 1, Lesson 1 introduces the anchor phenomenon, which involves exploring the different ways to move a marble into a cup. Students generate questions about the anchor phenomenon which focus on how to make an object move, what happens when moving an object, how different strengths move an object, and how to make objects move in different directions. Students revisit the anchor phenomenon in only 6 of the 23 lessons in Module 3, which does not provide ample opportunities for students to engage in coherent sense making around the phenomenon. Module 4: I Can introduces students to the phenomenon of hermit crabs using plastic objects as shells by having students view a video of hermit crabs walking along a beach. Students generate questions to help explain and describe where hermit crabs live, why hermit crabs look for objects, why they need shells, and how humans have impacted the hermit crabs' environment. Although the anchor phenomenon is observable and serves to spark student inquiries, only 5 out of 30 lessons in the module revisit the anchor phenomenon and offer opportunities for coherent student sense making.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
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 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.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	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 Criteria of Superior Quality			
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. ☐ Yes ☐ No	**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 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, 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	**Not Evaluated**	This section was not evaluated because the non-negotiable criteria were not met.

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	teaching approaches, pacing, instructional delivery options, suggestions for addressing common student difficulties to meet standards, etc.).		
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.
	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.
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** 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. ***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.			

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Section	**Criteria**	**Yes/No**	**Final Justification/Comments**
I: Non-negotiable Criteria of Superior Quality[2]	1. Three-dimensional Learning	**Yes**	The instructional 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 materials 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 the purpose and opportunity for students to engage in learning a majority of the time.
	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 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**			

[2] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier 1 or Tier 2 rating.
[3] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier 1 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-12.

Appendix I.

Publisher Response

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: **Twig Science Louisiana**

Grade/Course: **K**

Publisher: **Twig Education, Inc.**

Copyright: **2020**

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.
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- 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.
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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	PUBLISHER RESPONSE
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 teach the science and engineering practices (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) in an integrated manner to support deeper learning.	**Yes**	The instructional 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 materials integrate the Science and Engineering Practices (SEP), Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCI) to support deeper learning. In Module 1: My Big Nature Adventure, Driving Question 2, Lesson 7, students watch a video and discuss how sunlight or lack of sunlight affects plants. Students engage in Analyzing and Interpreting Data (SEP) by examining images of caves in their Twig Notebooks and circle the locations of plants. Students identify and explain the Pattern (CCC) that plants need sunlight in order to grow (DCI, K-LS1.C). In Module 3: Be Prepared, Driving Question 3, Lesson 4, students listen to and discuss an informational text to learn about patterns in weather and make connections between the text and their daily weather data gathering observations (DCI, K-ESS2.D). Students participate in a class discussion to identify and differentiate between different types of weather identified in the text (SEP, Obtaining, Evaluating, and Communicating	

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			Information) and review the data they collected with their Weather Data Sheets (SEP, Analyzing and Interpreting Data) to identify Patterns (CCC) to make connections among different weather types from in the informational text (DCI, K-ESS2.D). In Module 4: I Can, Driving Question 1, students explore their local area, focusing on evidence of the ways animals change their environments (DCI, K-ESS2-2). Students continue to explore by reading about earthworms (SEP, Obtaining, Evaluating, and Communicating Information) and observing an earthworm habitat to identify the changes worms make to their environment (CCC, Cause and Effect). The class engages with text and video to learn how beavers affect the environment (CCC, Cause and Effect). Students also draw a picture that shows how an animal of their choice changes the environment to meet its needs.	
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 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.	**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. The materials provide phenomena in the form of common experiences at the start of units, encouraging students to generate questions; however, the materials do not include opportunities for students to revisit the phenomena frequently throughout the units. Therefore, the phenomena does not drive learning, as the materials do not provide engagement in	Twig Education acknowledges and appreciates the initial review of Twig Science Elementary Grade K by the Louisiana Department of Education and will thoughtfully consider the feedback provided in future product development plans. Twig Education is committed to providing high-quality instructional materials that support students in explaining phenomena and designing solutions. Twig Science Elementary Grades K-5 has been reviewed

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			coherent sequences of learning throughout the units. For example, Module 3: Marble Run Engineer, Driving Question 1, Lesson 1 introduces the anchor phenomenon, which involves exploring the different ways to move a marble into a cup. Students generate questions about the anchor phenomenon which focus on how to make an object move, what happens when moving an object, how different strengths move an object, and how to make objects move in different directions. Students revisit the anchor phenomenon in only 6 of the 23 lessons in Module 3, which does not provide ample opportunities for students to engage in coherent sense making around the phenomenon. Module 4: I Can introduces students to the phenomenon of hermit crabs using plastic objects as shells by having students view a video of hermit crabs walking along a beach. Students generate questions to help explain and describe where hermit crabs live, why hermit crabs look for objects, why they need shells, and how humans have impacted the hermit crabs' environment. Although the anchor phenomenon is observable and serves to spark student inquiries, only 5 out of 30 lessons in the module revisit the anchor phenomenon and offer opportunities for coherent student sense making.	and adopted by the following state departments of education: California, Oklahoma, Oregon, Nevada, South Carolina, and West Virginia. In the most recent adoption by the Oregon Department of Education (October 2023), Twig Science Elementary Grades K-5 received the highest possible scores for all aspects of *Criterion 1.2 Science Phenomena & Engineering Design-Based Engagement*. The criterion requires that instructional materials center science phenomena and engineering design problems that drive student learning and engage students as directly as possible in authentic and relevant experiences. In Twig Science Elementary, each of the 25 modules is centered around an Anchor Phenomenon that aligns to specific Performance Expectations. Students make sense of the Anchor Phenomenon by exploring smaller Investigative Phenomena and by taking on Engineering Design Challenges. Through these inquiry-based investigations and by taking on the role of STEM specialists, students are encouraged to see science as an interrelated world of phenomena rather than a series of facts. They use the Science and Engineering Practices and apply the Crosscutting Concepts to absorb new knowledge and make sense of phenomena throughout

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				each Module, Driving Question, and Lesson. The Anchor Phenomenon for each module is designed to ignite student curiosity and act as a tangible experience providing a gateway into the larger science concepts explored in each module. When students first engage with the Anchor Phenomenon at the start of the module, they work as a class to generate and record the questions they want to investigate to make sense of the Anchor Phenomenon. They return to their questions at regular touchpoints in the module as they use their learning to construct their own explanations of the phenomenon. Anchor Phenomenon touchpoints are found throughout each module. Students follow the same sequence of steps in every module: 1. Engage with the Anchor Phenomenon and Generate Questions About the Anchor Phenomenon 2. Investigate the Anchor Phenomenon 3. Evaluate the Anchor Phenomenon 4. Explain the Anchor Phenomenon 5. Resolve the Anchor Phenomenon When students Engage with the Anchor Phenomenon, they are asked to think about the Anchor Phenomenon independently or in pairs in preparation

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				for a whole-class discussion about their observations. Then, the class works together to describe and define the Anchor Phenomenon in their own words. Next, students Generate Questions About the Anchor Phenomenon. After students think of questions independently, students share their question(s) with a partner. Then, students undertake a full-class discussion of the questions they have generated. These questions are used to drive the remaining sensemaking touchpoints throughout the module. During the Investigate the Anchor Phenomenon step, students engage in a variety of multi-modal three-dimensional STEM experiences, including hands-on activities, digital interactives, and text investigations. During the Evaluate the Anchor Phenomenon step, students work independently or in small groups and then ultimately as a class to synthesize their learning and answer questions they developed in the Generate Questions About the Anchor Phenomenon step. During the Explain the Anchor Phenomenon step, students demonstrate their understanding through written, drawn, or oral output.

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				Finally, students Resolve the Anchor Phenomenon by discussing the relationship between the specific, observable phenomenon and the broader scientific concepts.
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 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.	

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	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 Criteria of Superior Quality				
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 Louisiana Student Standards for Math. ☐ Yes ☐ No	**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 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	**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	**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
support to explore key concepts using multiple, varied experiences to build scientific thinking. ☐ Yes ☐ No	address them, guidance targeting speaking and writing in the science classroom (e.g. conversation guides, sample scripts, rubrics, exemplar student responses).			
	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. ☐ 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.	
	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.	
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** 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.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	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. ***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	**Yes**	The instructional 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 materials 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 the purpose and opportunity for students to engage in learning a majority of the time.	
	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 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.	

[2] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier 1 or Tier 2 rating.
[3] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier 1 rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	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**				

Appendix II.

Public Comments

There were no public comments submitted.