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: **Activate Learning Certified OpenSciEd**

Grade/Course: **Biology and Chemistry**

Publisher: **Activate Learning**

Copyright: **2024/2023**

Overall Rating: **Tier 1, Exemplifies 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)	
3. Alignment & Accuracy (Non-negotiable)	
4. Disciplinary Literacy (Non-negotiable)	
5. Learning Progressions	
6. Scaffolding and Support	
7. Usability	
8. Assessment	

Each set of submitted materials was evaluated for alignment with the standards beginning with a review of the indicators for the non-negotiable criteria. If those criteria were met, a review of the other criteria ensued.

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.

Click below for complete grade-level reviews:

Biology (Tier 1)   Chemistry (Tier 1)

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Strong science instruction requires that students:

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Title: **Activate Learning Certified OpenSciEd Biology**

Grade/Course: **Biology**

Publisher: **Activate Learning**

Copyright: **2024**

Overall Rating: **Tier 1, Exemplifies 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)	
3. Alignment and Accuracy (Non-Negotiable)	
4. Disciplinary Literacy (Non-Negotiable)	
5. Learning Progressions	
6. Scaffolding and Support	
7. Usability	
8. Assessment	

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.	**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. The materials provide multiple opportunities for students to engage with three-dimensional learning in an integrated manner. Students actively apply SEPs, analyze CCCs, and deepen their understanding of DCIs through hands-on investigations, data analysis, and model development. For example, in Unit 1, Ecosystems Interactions and Dynamics, Lesson 3, students analyze information from the migration model and wildebeest data cards (SEP, Developing and Using Models), looking for Patterns (CCC) that can be used as evidence to support an explanation for wildebeest migration. Students use the patterns they identify from the wildebeest data cards to determine which of the factors, such as disease, bone marrow analysis, blood analysis, and/or cause of death, support or limit the size of the wildebeest population (DCI, HS.LS2A.a). During the next lesson, students create data displays with their group based on

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the patterns previously identified. Students then communicate their data displays with the other groups (SEP, Evaluating and Communicating Information; CCC, Patterns). In Unit 2, Ecosystem: Matter and Energy, Lesson 4, students work together to create a model (SEP, Developing and Using Models) of how matter and energy move during photosynthesis (CCC, Systems and System Models; DCI, HS.LS1C.a). Then, students analyze world maps showing solar radiance and gross primary production to determine the relationship between the two (CCC, Cause and Effect). Lastly, students read an article and communicate their ideas (SEP, Obtaining, Evaluating, and Communicating Information) about how changes in the climate of the Earth contributed to the growth of plants that became arctic peat. In Unit 4, Natural Selection and Evolution of Populations, Lesson 1, students engage in Developing and Using Models (SEP) by creating an initial consensus model illustrating how urbanization affects nonhuman populations to begin to make sense of the anchor phenomenon. They explore Cause and Effect (CCC) by examining the relationship between increasing urbanization and adaptations in hawksbeard, juncos, and rats. As students analyze the dependency of species survival on environmental changes, they learn about relationships in ecosystems (DCI, HS.LS2.A.b). Lesson 2 builds on this understanding as students engage in Planning and Carrying Out Investigations (SEP) by

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			conducting experiments on seed dispersal in hawksbeard and comparing their findings with published studies. Students analyze Patterns (CCC) in how urban environments shape genetic traits. Students demonstrate how natural selection favors specific seed dispersal strategies by making connections between their observations from the investigation and the adaptations found in the seeds of urban plant populations (DCI, HS.LS4.C.a and HS.LS4.C.b).
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.	**Yes**	Observing and explaining phenomena and designing solutions provide the 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 spark students to generate questions and define problems to motivate learning about the core ideas of the unit, and this provides purpose for students to engage in the investigations and lessons that follow as they work towards figuring out the phenomenon. At the start of each unit, students observe and analyze the phenomenon and work towards making sense of the phenomenon by recording initial thoughts in a Notice and Wonder table, brainstorming investigative questions recorded on a Driving Question Board, and collaborating to develop an initial model which is updated and refined as they continue their study. Students track their learning in a science notebook where they record Notice and Wonder tables, personal glossaries, and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			models, revising these throughout the unit. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 1 introduces students to the anchor phenomenon, the 30 by 30 conservation initiative to preserve land and water in the United States. The unit question is “How do ecosystems work and how can understanding them help us protect them?” Students begin by brainstorming a list of criteria people use to motivate conservation. Then they look at four different conservation areas related to the anchor phenomenon and develop initial models of what happened in these places over time. Students share their initial models through a gallery walk, looking for similarities and differences between the models of the conservation areas. Then, they create a Driving Question Board about how the ecosystems in the conservation profiles work and how they are protected, and generate ideas for investigating their questions. In Lesson 2, students encounter a related phenomenon, the Serengeti conservation area. Students participate in a scavenger hunt to gather information about the Serengeti and reach a consensus about why the Serengeti was protected and how it was protected through class discussions. In Lessons 3-5, students investigate the migration of wildebeests, determining the limiting factors in the ecosystem that affect the carrying capacity of their population. In Lesson 5, students complete a transfer task about a population of wild dogs, using what they have

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			learned about how ecosystems work. In Lesson 6, after the transfer task, students revisit their Driving Question Board, identifying which questions they have been able to answer using the Serengeti as a model conservation area. In Unit 2, Ecosystems: Matter and Energy, Lesson 1 introduces students to the anchor phenomenon, zombie fires in the Arctic. The zombie fire system provides students the purpose and opportunity to answer the unit question, "What causes fires in ecosystems to burn and how should we manage them?" In Lesson 1, students answer the question, "How can fires burn under ice and release so much energy and matter?" They build a Driving Question Board and consider ideas for investigation. In Lesson 2, students observe fuel samples, such as peat, wood, and dried leaves, and read about peat. Afterwards, students develop an investigation plan, determining what tools they can use to collect evidence about the differences between peat and the other fuel sources as they burn, and developing a data table to record evidence during the investigation. Students then conduct an investigation in which they burn the different fuel sources using Bromothymol blue (BTB) to determine how much carbon dioxide is released. In Lesson 3, students conduct another investigation to determine the effect of temperature on yeasts' decomposition of sugar in order to determine the role of decomposers in the zombie fire system. Using their collected data, students construct an

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			explanation about why there is so much matter and energy in the zombie fire system based on what they figured out in their investigations. In Lesson 4, students read about the changes in Earth's tilt and the amount of direct sunlight the Arctic received thousands of years ago compared to nowadays. Students wonder about how the change in direct sunlight may have affected photosynthesis in the Arctic. In Lesson 5, students conduct an investigation on the effect of direct versus indirect sunlight on photosynthesis. In Lesson 6, students construct an explanation for why there is so much matter and energy in the zombie fire system. At the end of Lesson 6, students return to the Driving Question Board to determine what questions they have answered and what they still need to figure out. In Unit 5, Common Ancestry and Speciation, Lesson 1 introduces students to the anchor phenomenon as students view photographs and videos showing an area of the Arctic where polar, black, and brown bears were seen sharing territory for the first time. They create a Notice and Wonder chart where they record observations they made and questions they have. Then, they investigate the phenomena by analyzing maps of the typical ranges of these species, climate data, and articles about the lifestyles of the bear species. They use their findings to develop initial models predicting what will happen to each species under two conditions - seasonally available ice and permanently available ice - and create a

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			Driving Question Board. In Lesson 3, students investigate similarities and differences between the three species using anatomical and DNA evidence to determine the evolutionary history of the species. By the end of Lessons 4 and 5, students write arguments for what caused polar and brown bears to split into separate species and revise their initial model from Lesson 1. In Lesson 6, students continue to consider what will happen to polar bears in the future and read about evidence suggesting that polar and brown bears can mate, and through analysis of data gathered during a simulation, determine the likelihood that a hybrid of these species would be successful in the arctic environment of the future. Over the course of the unit, students analyze extinction data from past mass extinction events, apply their findings to current conditions, and write arguments for or against taking action to protect polar bears from possible extinction.
	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 provide evidence to support claims.	**Yes**	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. The lessons incorporate investigative learning, data analysis, and model-based reasoning to explain scientific phenomena, ensuring students actively engage in scientific and engineering practices. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 7, students engage in an agent-based

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			modeling game to investigate predator-prey interactions in the Serengeti ecosystem. The investigation provides hands-on experience with Using Mathematics and Computational Thinking (SEP) while exploring Patterns (CCC) in survival strategies. The use of algorithms to simulate predator-prey dynamics enhances their understanding of real-world ecosystem interactions, supporting both data interpretation and model refinement. In Unit 2, Ecosystems: Matter and Energy, Lesson 2, students plan an investigation (SEP, Planning and Carrying out Investigations) to compare the amount of energy and matter released when peat burns compared to other fuel sources such as dead leaves and wood. Students determine what evidence to gather and the tools that would be necessary to gather the evidence. Students conduct the experiment and gather evidence in their data table. Students then participate in a building understanding discussion about the evidence they collected during the burning investigation (SEP, Analyzing and Interpreting Data). Students figure out that peat has large amounts of stored energy and releases carbon when it burns. In Unit 4, Natural Selection and Evolution of Populations, Lesson 2, students conduct an investigation (SEP, Planning and Carrying out Investigations) to determine why seeds in urban environments tend to have a different structure than those in rural areas. They continue their investigations in Lessons 3 and 4, focusing on differences in populations

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			of two other species, rats and juncos, which inhabit urban and rural areas. In Lesson 5, students use the results of these investigations to update their initial model of how urbanization influences the evolution of various species and compare their model to those of Lamarck and Darwin (SEP, Developing and Using Models). In Lesson 7, students encounter the case of the Florida panther and apply their model to try to explain changes in the panther population. They use this case study to evaluate their models and ask questions that help them refine the model in later lessons (SEP, Asking Questions and Defining Problems). In Lessons 8 and 9, students engage in Using Mathematics and Computational Thinking (SEP) to explain the effect of fragmentation affects allelic frequencies in nonhuman species and propose changes to urban design to reduce this selective pressure.
	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.	**Yes**	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. Each unit provides students opportunities to use their experiences and prior knowledge to help them learn and connect to the new content. At the end of each unit, students engage in a lesson in which they apply what they have learned to their own communities. In Unit 1, Ecosystem Interactions and Dynamics, Lesson 9, students

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			begin to think about how humans interact with ecosystems after learning about conservation efforts in the Serengeti in previous lessons. Students participate in a Stop and Jot technique, answering the following questions: “How do you interact with an ecosystem when you visit a park or other protected space?” and “How do you interact with the land or water where you live?” Students relate their personal interactions with ecosystems to human interaction with the Serengeti ecosystem. They also relate this experience to the other conservation areas they studied at the beginning of the unit. Prompting the students to think about ways in which they interact with ecosystems supports students in understanding motivations for conservation efforts. In Unit 2, Ecosystems: Matter and Energy, Lesson 1, students are introduced to the anchor phenomenon, arctic zombie fires. As they begin to explore these events, they draw connections to their own experience with fires and connect with their community by doing a home-learning assignment. They ask community members how they have been directly or indirectly affected by fires and whether a fire in another community could impact their community. This activity prepares the students to think about the impacts of fires on people and the environment. In Unit 3, Inheritance and Variation of Traits, Lesson 11, students discuss prior knowledge about cancer treatments and explore various treatments through case studies, articles, and

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			an interactive game. In Lesson 12, students analyze data from the Center for Disease Control (CDC) about the relationship between new cancer diagnoses and zip codes and apply the concept of health equity. They consider how their geographic location influences their risk of developing cancer and develop interview protocols to understand the needs of a cancer patient in their community or family so that they can act as a healthcare navigator for that patient.
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**.	**Yes**	The majority, (16 out of 20), of the Louisiana Student Standards for Science (LSSS) are incorporated to the full depth of the standards. The materials partially address LSSS HS-LS1-8, HS-LS1-6, HS-LS1-7, and HS-LS3-1. All SEPs and CCCs within these standards are addressed across the five units; however, there are 9 out of 38 DCIs (24%) within the Biology LSSS that are not fully addressed within the materials. All DCIs for HS-LS1-8 (HS.LS1E.a, HS.LS1E.b, HS.LS1E.c, HS.LS1E.d, and HS.LS1E.e) are not addressed within the materials. These DCIs address the topics of viruses, vaccines, and disease-causing microorganisms. LSSS HS-LS1-6 is not fully addressed because the materials do not fully address a part of DCI HS.LS1C.b about how the carbons from sugar are used in the formation of macromolecules such as amino acids and DNA. However, the other DCI (HS.LS1C.a), the SEP (Constructing Explanations and Designing Solutions), and the CCC (Energy and Matter)

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			are fully addressed for this standard. LSSS HS-LS1-7 is only partially addressed because one of the two DCIs is not fully addressed. While students conduct an experiment to determine how temperature affects the rate of respiration, the materials do not address the energy released by respiration, which is used to maintain body temperature (DCI, HS.LS1C.d). LSSS HS-LS3-1 is also only partially addressed because two of three DCIs related to this standard are not fully addressed. Students use a model to build understanding of the relationship between DNA, genes, and proteins, but the idea that DNA also includes segments that do not code for genes and whose functions are regulatory or unknown is not addressed fully (DCI, HS.LS3A.a). This DCI is briefly mentioned as a look-for in the discussion around the consensus model on page 8 in the Lesson 7 teacher guidance; however, a teacher would need to provide additional instruction to fully cover this DCI. Students also learn about Mendelian Inheritance by analyzing pedigree charts, but they are not given the opportunity to learn about more complex patterns of genetics, like incomplete or codominance (DCI, HS.LS3A.b).
	Required 3b) The total amount of content is **viable** for a school year.	Yes	The total amount of content is viable for a school year. The materials include five units each spanning over four to six weeks. Each unit includes lesson condensing suggestions if needed. This does not include any supplemental lessons teachers will need to

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			add to address the missing DCIs. Units are structured to allow for deep exploration of concepts without excessive repetition or gaps. Unit 1 includes five to six weeks of instruction. Unit 2 includes six weeks of instruction. Unit 3 includes five weeks of instruction. Unit 4 includes five weeks of instruction. Unit 5 includes four weeks of instruction.
	Required **3c)** Science content is **accurate**, reflecting the most current and widely accepted explanations.	Yes	All reviewed content is accurate, up-to-date, and aligned with the most current and widely accepted explanations. No evidence of incorrect or out-of-date science explanations could be found. For example, the Teacher Handbook states that the materials are explicitly aligned to the Next Generation Science Standards, ensuring that students engage with the most current and research-based scientific concepts. In Unit 2, Ecosystems: Matter and Energy, students investigate zombie fires and explain why so much peat is stored under the arctic ice. In Lesson 4, students model the flow of energy and matter during photosynthesis. The molecular structures on the card are accurate representations of glucose, water, oxygen, and carbon dioxide. Students use accurate maps and information to draw a conclusion that the arctic plants grew better in the past due to more sunlight. In Lesson 10, students read case studies to research and evaluate the effects of various fire management plans on ecosystem stability. In Unit 3, Inheritance and Variation of Traits, Lesson 11, students read about the

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			relatively new CRISPR-based Therapy for cancer. The reading cites evidence from three peer-reviewed journal articles. In Unit 5, Common Ancestry and Speciation, students investigate environmental changes to the Arctic's environmental conditions and how these changes are affecting bear species. In Lesson 1, students engage with the phenomenon by exploring accurate maps and data published by the Canadian government, as well as articles that cite recently published sources from journals and universities. In Lesson 3, students examine photographs to compare skulls, claws, and jaws from different species of bears. These photographs are of authentic specimens. In Lessons 4 and 7, students analyze real-world data from published studies on genetic variation and species interactions, ensuring that their explanations are based on current scientific consensus on polar bear speciation and extinction events.
	3d) In any one grade or course, instructional materials spend **minimal time on content outside** of the course, grade, or grade-band.	**Yes**	Materials spend minimal time on content outside of the course. The majority of materials are directly aligned to the Biology LSSS. The materials maintain a course-appropriate scope by aligning with the LSSS for Biology, clearly defining boundaries, ensuring scaffolded learning progressions, and avoiding excessive repetition of prior-grade content. Lessons appropriately scaffold biological organization (HS-LS1-2) and population dynamics (HS-LS2-1) without unnecessary focus on middle school

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			content. For each lesson, the Teacher's guide explicitly states where content will and will not go, ensuring that minimal time is spent on content outside of the course. While the LSSS does not have specific ETS standards, these concepts are integrated within the DCIs of the LSSS. NGSS HS-ETS1-3 (Unit 3) is mostly incorporated as a DCI of LSSS HS-LS2-7. ETS1-2 (Unit 2) is not included as a DCI in the LSSS Life Science Standards; however, it is incorporated as an extension and does not detract from the focus on core biology content. Some references to elementary-level ecosystem concepts exist, but do not interfere with high school-level mastery. Unit 1 includes a related environmental science standard, ESS3-3 and one life science standard, LS2-8, that are not part of the LSSS for Biology.. Additionally in Unit 1, LS2-2 is not in the LSSS, but this standard is combined with LSSS HS-LS2-1 and is therefore not outside of the standards for Biology. . In Unit 2, two standards addressed in the materials, ESS2-6 and ESS3-6, are not in the LSSS for Biology. NGSS LS2-3 and LS2-5, are partially embedded within the clarification statement and DCIs of LSSS HS-LS1-7 and HS-LS2-4, respectively.- In Unit 4, LS2-8 is not found in the Biology LSSS. NGSS LS4-6, while not included in the LSSS, is integrated within the DCIs for LSSS HS-LS2-7 and does not spend time on content outside of the course. All of the standards included in Unit 3 and Unit 5 are part of the Biology LSSS.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Non-Negotiable **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.	**Yes**	Students regularly engage with authentic sources that represent the language and style used and produced by scientists. The materials incorporate a variety of authentic sources, including primary source documents, photographs, and authentic data sets. All student-facing resources are cited from credible, recent sources. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 3, students watch an interview with Dr. Simon Mduma, an ecologist, to understand scientific methodologies and field research on migration. Then, students analyze authentic field research data cards from wildebeest population studies. In Lesson 9, students investigate competing road proposals for the Serengeti, using real stakeholder reports and conservation data. Students explore predator-prey relationships during wildebeest migration using agent-based models, which are based on computer simulations of a complex system. In Unit 2, Ecosystems: Matter and Energy, Lesson 7, students read adapted scientific literature on carbon sinks burning worldwide, including case studies from Cambodia, Brazil, and Australia. They use global fire maps, historical data, and ecosystem models to develop scientific explanations of carbon cycling. In Unit 3, Inheritance and Variation of Traits, Lesson 1, students interact with data from the U.S. Department of Health and Human Services showing the most common cancers in the U.S. in 2018 as an introduction to the anchor phenomenon. In Lesson 5, students

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			watch a video showing human skin cells dividing from the Allen Institute of Cell Science. In Lesson 11, students read an article about CRISPR-based therapy with citations from peer-reviewed journals, including *Annual Review of Cancer Biology*, *Genes*, and *ACS Synthetic Biology*. In Unit 4, Natural Selection and Evolution of Populations, Lesson 1, students read a case study about hawksbeard seed dispersal in urban and non-urban environments. The reading includes a citation from the National Academy of Sciences. In Lesson 4, they read about the common garden experiment with juncos, which includes methods and data from a study published in the journal *Behavioral Ecology*.
	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.	**Yes**	Students regularly engage in speaking and writing about scientific phenomena and engineering solutions using authentic sources. Materials address the necessity of using scientific evidence to support ideas. Students engage in writing and speaking about scientific phenomena and engineering solutions through constructing scientific explanations based on authentic data, models, and investigations, using peer-reviewed science sources and case studies to support claims and reasoning, and engaging in peer discussion and written argumentation to refine and defend their ideas with evidence. Oftentimes, students discuss and write in response to articles, data sets, and other authentic sources of scientific information. For

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 1, students develop initial models based on four authentic conservation profiles. The next day, students revise their initial models based on teacher feedback. After their revisions, the students participate in a Stay and Stray Gallery Walk in which some students stay to communicate the components and interactions of their model to their peers, while others in the group go to observe and discuss the other models. As students participate in the gallery walk, they write down similarities and differences between the conservation profiles. In Unit 2, Ecosystems: Matter and Energy, Lesson 6, students develop a class consensus model synthesizing data on peat, permafrost, and carbon cycling. They construct individual scientific explanations for the phenomenon of zombie fires using collected evidence. In Lesson 7, students begin by discussing what they have learned about the flow of matter and energy in the zombie fires and what questions remain about this phenomenon. Then they complete a Notice and Wonder T-chart, recording their thoughts as they watch an animation showing global high fire activity in the year 2020. Students review different one-page readings showing the locations of carbon sinks. After reading case studies about carbon sinks in different countries, students develop a written model and provide written peer feedback to other students. At the end of the lesson, students update their Personal Glossaries to include the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			definition of fire suppression. In Unit 4, Natural Selection and Evolution of Populations, Lesson 10, students participate in a discussion about how the fragmentation of ecosystems reduces the genetic diversity of wildlife species. After reading about the needs of different wildlife species that inhabit the areas around Buckeye, Arizona, students divide into groups. Each group reads and shares with the class one development proposal for the city and summarizes the proposals and possible effects on the wildlife populations. The teacher then facilitates a whole class discussion during which students reach consensus about the benefits and drawbacks of each proposal and share any compromise design ideas they have developed.
	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.	**Yes**	There is variability in the tasks that students are required to execute. Within each unit, students produce and revise models of the anchoring phenomenon. Across the materials, students regularly engage in a variety of tasks, such as discussing, reading, identifying patterns, generating explanations through models, and interpreting data. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 9, students apply scientific reasoning to a real world problem by evaluating road proposals and making recommendations regarding a proposed road through the Serengeti. In Lesson 3, students analyze wildebeest field research data to identify patterns and draw conclusions about why

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			wildebeest migrate. In Lesson 5, students develop and use a kinesthetic and mathematical model to explain how food availability affects the carrying capacity of wildebeest populations. In Unit 2, Ecosystems: Matter and Energy, Lesson 3, students carry out an investigation using yeast as a model organism to understand how temperature and oxygen affect decomposition and cellular respiration. They then construct an explanation based on their evidence. In Lesson 10, students investigate fire management strategies, including prescribed burning, cultural burning, and restoring grazer populations. They develop a mathematical representation to explain how these techniques alter the flow of energy and matter in ecosystems. Students also propose a plan to reduce wildfire risk in their communities. In Unit 3, Inheritance and Variation of Traits, Lesson 3, students use a game-based model to learn about how human cells turn into cancer cells and form tumors. After students play the game, they record what part of mitosis each part of the game represents and discuss their ideas with peers. Then, students watch a video of skin cells dividing and refine their answer to how non-cancer cells become cancer cells. After students play another round of the previous game, they consider what questions remain and how they might approach answering them. Students review evidence from a graph, participate in a card sort activity, and, finally, reach a class consensus about the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			differences between cancerous and non-cancerous cells. In Unit 5, Common Ancestry and Speciation, Lesson 5, students begin the lesson by sharing with a partner information gained about how polar and brown bears became different species. This is followed by a class discussion reviewing the class consensus model and answering the question, "What will happen to arctic bears as their environment changes?" Students discuss in terms of what it explains and what can be added to the model. Students then revise the class consensus model individually before comparing ideas during a class discussion and reaching a new consensus on what the model should include.
	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.	**Yes**	The 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, but only after students have first had the opportunity to build conceptual understanding of the term. Students co-construct definitions of the words they encounter and then add them to their Personal Glossaries. The materials introduce vocabulary within the context of deeper conceptual understanding rather than isolated memorization. Vocabulary terms are introduced within relevant investigations, and unit-based learning progressions ensure that terms are revisited in multiple contexts to reinforce understanding. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 3, students update their

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			personal glossaries with terms such as empirical evidence and mortality factors as they analyze population data and migration patterns in the Serengeti. Rather than simply defining words, students encounter them in real-world applications and co-construct definitions. In Unit 2, Ecosystems: Matter and Energy, Lesson 1, students read and annotate an article about arctic fires. As they read, students update their Personal Glossaries to record definitions of words they encounter in the reading. After the class discusses the reading, students share words they added to their glossaries and reach a consensus on the definitions of the terms. In Lesson 5, students investigate how photosynthesis affects carbon storage and develop vocabulary related to chemical energy and directional hypotheses. This connects to future lessons where they model the carbon cycle and discuss the role of feedback loops. In Lesson 6, students develop a Gotta-Have-It Checklist, which helps them identify and track key concepts, interactions, and vocabulary terms needed for their models. This approach integrates terminology into the students' scientific reasoning rather than committing it to memory. In Unit 5, Common Ancestry and Speciation, Lesson 1, students develop a partial understanding of the word speciation by reading about different bear species that live in Wapusk Park, Canada. In Lesson 4, students explain what it means for bears to split into two species - polar and brown bears. As they read about changes to

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			the environment that caused bear populations to adapt, students co-construct a more formal definition of speciation.
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.	**Yes**	The overall organization of the materials and the development of the disciplinary core ideas, science and engineering practices, and crosscutting concepts are coherent within and across units and are organized to support learning through a natural progression. Students engage with and build understanding of the three dimensions of the standards at increasing levels of complexity and sophistication and engage in a coherent progression of learning that is clear, organized, and coordinated over time. The clear progression of learning, which incorporates the three dimensions of the science standards throughout, supports student mastery of the Performance Expectations and prevents misunderstanding. For example, the first six lessons of Unit 1, Ecosystem Interactions and Dynamics, focus on DCI LS2A.a. In order to support student mastery of this DCI, students are first introduced to the idea of conservation through the 30 by 30 initiative in Lesson 1. In this lesson, students begin to develop ecosystem models based on real-world conservation profiles and develop a model of a conservation profile. In Lesson 2, students explore how ecosystems can remain stable or shift based on human decisions. In Lesson 4, students see how rainfall can cause an

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			ecosystem to remain stable or change (CCC, Stability and Change). In Lesson 3, students figure out that most wildebeest deaths are due to starvation, not predators, establishing food as the main driver of migration. Through Lessons 2 and 3, students obtain and evaluate information through an information scavenger hunt about the Serengeti and analyze empirical data on wildebeest migration. The understanding that food is the primary reason for migration transitions into Lesson 4, in which students analyze rainfall and food availability as limiting factors for populations, figuring out that these factors shape population dynamics. Using CODAP, students use cause-and-effect reasoning to connect rainfall to grass growth, which affects wildebeest migration. In Lesson 5, students simulate how carrying capacity is determined by limiting factors using a kinesthetic model. In these two lessons, students construct mathematical representations of rainfall and wildebeest location using CODAP to build models of carrying capacity. The kinesthetic model in Lesson 5 provides students with concrete evidence of how food is the limiting factor that determines the carrying capacity of the wildebeest population. These activities prepare them for the transfer task in Lesson 6, in which they apply what they have figured out about how limiting factors affect the carrying capacity of an ecosystem to a population of African wild dogs. Throughout Lessons 1-6, students apply the SEPs and CCCs to further

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			support students' mastery of the performance expectation. In Unit 3, Inheritance and Variation of Traits, Lesson 3, students play a Cell Game to model the cell cycle and learn how cancerous cells can form when cell division is not properly regulated. In Lesson 8, students learn about two individuals who survived multiple cancers and use pedigree charts to trace their family histories of cancer and conclude that a heritable genetic mutation can result in an increased likelihood of developing cancer and that these mutations can be inherited. In Lesson 9, students read about how UV radiation can cause non-heritable mutations in cells that can also lead to the development of cancer. They synthesize this information in Lesson 10 by creating a model showing how people develop cancer through inheritance and mutations. In Unit 4, Natural Selection and Evolution of Populations, Lesson 2, students discuss a case study about hawksbeard to begin to consider the importance of seed dispersal strategies. They engage in an investigation of how fragmentation in urban environments affects the success of leathery and feathered seeds differently and consider the effects of selection pressures on the types of seeds that plants in different environments produce. In Lesson 3, students read about mice in Tokyo where a mutation causes them to be resistant to poison, and through a simulation, they determine that exposure to poison in the environment causes changes in the percentage

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			of mice that have this mutation. In the next lesson, students investigate how urban environments provide selective pressure for juncos to behave boldly, which is negatively correlated with a particular gene. In Lesson 5, students use what they learned in the previous lessons to build a model of inheritance and evolution through natural selection. In Lesson 9, students investigate how habitat connectivity affects genetic diversity and ecosystem resilience. The application of mathematical and statistical reasoning to evaluate the effectiveness of wildlife corridors bridges scientific content with engineering solutions, reinforcing meaningful connections across lessons and preparing students to apply knowledge to novel problems. In Unit 5, Common Ancestry and Speciation, Lesson 3, students use anatomical and DNA evidence to understand evolutionary relationships among bear species. The shift from anatomical comparisons to genetic evidence illustrates an authentic scientific progression, supporting deeper understanding and preventing misconceptions.
	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,	**Yes**	Students apply mathematical thinking when applicable. Across the majority of the materials, students are not introduced to math skills that go beyond the Louisiana Student Standards for Mathematics (LSSM) for High School. Students occasionally apply mathematics skills and understanding to engage in Using Mathematics and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	specifically in teacher materials.		Computational Thinking (SEP) appropriately in the context of their learning. For example, in Unit 1, Ecosystem Interactions and Dynamics, Lesson 1, students begin to explore how ecosystems are protected and develop initial models of changes over time, which implicitly lays the groundwork for graphing, data interpretation, and systems modeling, all key mathematical and computational thinking skills, aligned to the SEP, Using Mathematics and Computational Thinking. In Unit 2, Ecosystems: Matter and Energy, Lesson 10, after reading about various fire management techniques, students use a mathematical model to trace the amount of carbon available at each trophic level and determine how each management technique reduces the amount of fuel available to burn in an ecosystem. In Unit 3, Inheritance and Variation of Traits, Lesson 8, students use basic probability and ratio reasoning to analyze pedigree charts in order to predict genetic inheritance patterns. On the worksheet, students respond to the following prompt: “If a parent has Li-Fraumeni syndrome (LFS), what are the chances it will be passed down to their children?” The students use Mendelian logic to determine that there is a 50% probability that the offspring will inherit LFS if the parent is heterozygous. In Lesson 9, students interpret real-world data sets showing the correlation between UV exposure and melanoma incidence across regions and racial groups. Students interpret line graphs and scatter plots to determine the relationship

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			between average UV index and melanoma rates for different populations. They explore the slope of trend lines showing the strength of correlation and compare trends across demographics, applying descriptive statistics and critical data comparison. In Unit 4, Natural Selection and Evolution of Populations, Lesson 8, students model the changes in allele frequency over time in a population of panthers and how fragmentation of their environment leads to lower genetic diversity. During this investigation, they calculate frequencies and notice that the frequencies change over time, resulting in some alleles being missing from the population.
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.**	**Yes**	There are separate teacher support materials provided. Within each lesson, support materials include the following: standards alignment, materials list, a summary of the navigation between lessons, suggestions for navigating within the lesson, sample scripts and conversation guides, and student look-fors with color-coded highlights to call attention to the three dimensions. The Teacher Portal includes unit-level resources, including a Teacher Edition, Student Edition, and a Spanish Student Edition, in addition to a linked document outlining where and how each of the three dimensions is addressed within the unit and an overview of materials. The Teacher Edition for each unit begins with an overview of the guiding question for the unit that summarizes the work students will do to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			answer the overarching question of the unit and the standards they are working toward. The overview outlines the Unit Storyline by describing the lesson-level phenomenon or design problem and what students figure out. It also includes an example of how the concepts are represented. There is a lab safety section, a description of how the unit fits into the scope and sequence of the course, and an explanation of the anchoring phenomenon, including why it was chosen. Then it describes the three dimensions that are addressed in the unit, specifically citing the performance objectives, SEPS, DCIs, and CCCs, crossing out any parts that are not addressed in the unit. It also gives teachers suggestions for how to shorten and extend the unit, resources for building their own content knowledge, and the vocabulary introduced in each lesson. The lessons are designed with a phenomenon-based instructional approach, and teacher materials explicitly support this approach with guidance on how to help students construct explanations based on evidence. Teachers are equipped with discussion prompts, sample scripts, and student look-fors to guide formative checks of understanding. Additionally, the materials include electronic exit tickets and transfer tasks supported by teacher guidance and rubrics or exemplars, ensuring clarity around expectations and support for student reasoning and communication. The beginning of each lesson provides several important teacher supports.

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			First, the lesson objective is written clearly and color-coded under the section What Students Will Do. The SEPS utilized in the lesson are in blue, the CCC are in green, and the DCIs are in orange. The standards that students will work towards in the lesson are written next to the objective. Under the objective, what the students will figure out in the lesson is explicitly stated. In the box above the objective, guidance includes information on how the current lesson ties to what was previously learned and what will be learned in future lessons. In the Where We Are Going and Where We Are Not Going section of the lesson plan, teacher guidance is provided that either narrows or expands the scope of the lesson. The teacher is also provided with a materials list needed to successfully complete the lesson. Finally, throughout the lesson, key scientific vocabulary is gradually introduced with explanations to ensure that teachers can facilitate accurate instruction. The learning progression is outlined clearly in each lesson in the Where We Are Going and Where We Are Not Going section. The brief explanation of what was learned in the previous lesson, what is learned in the current lesson, and what will be learned in the next lesson provides instructional coherence for the teacher.
	Required **6b)** Teacher resources include **educative resources** that are designed to **promote teacher learning** and support the wide range of teachers	Yes	Teacher support materials include guidance to ensure that students experience phenomena, design solutions, and apply scientific knowledge and skills in such a way that is

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	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.		developmentally appropriate. The materials include educational teacher resources intentionally designed to promote teacher learning and support teachers across varying experience levels. It provides explicit guidance on how to support student engagement in science and engineering practices, construct evidence-based explanations, and connect learning across units and ensures that all students experience meaningful learning anchored in real-world phenomena. Each lesson includes explicit guidance for the teacher to ensure that students experience the phenomena using three-dimensional learning. Each unit and each lesson provides suggestions for supporting students' three-dimensional learning and suggested prompts to help teachers guide their students through the storyline. For example, in Unit 3, Inheritance and Variation of Traits, Lesson 1, the supports guide teachers through introducing cancer as a complex but personally relevant phenomenon. In Lesson 5, guidance supports teachers in facilitating student understanding of DNA replication, mutation, and protein repair mechanisms, helping teachers link these biological concepts to cancer formation. The Progress Trackers and Gotta-Have-It Checklists provided in the materials support a wide range of teachers and students in tracking conceptual development and serve as formative assessment supports. In Lesson 7, teachers use the Progress Tracker and Gotta-Have-It Checklist to guide the

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			development of a consensus model for the genetic basis of cancer. These tools allow teachers to differentiate instruction and focus student attention on essential mechanisms and interactions. In Unit 5, Common Ancestry and Speciation, Lesson 3, students discuss the similarities and differences between three bear species— the brown bear, black bear, and polar bear. The Learning Plan for this lesson provides suggestions for the teacher on how to initiate this discussion, orients them to the purpose of the discussion, gives a rationale for having students work in small groups before engaging in a whole-class discussion, and includes a list of six things to listen for the students to say. Then the students rotate through stations where they read about the three bear species and compare their skulls, teeth, and claws. The Lesson Planning resource offers a suggestion of how to introduce this investigation as well as how to organize the stations and group students.
	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,	**Yes**	Materials provide support for diverse learners, including English Learners and students with disabilities. The materials provide appropriate suggestions for supporting varying student needs at the unit and lesson levels using an accelerated learning approach. Materials include teacher guidance to help support special populations and provide opportunities for these students to meet the expectations of the standards and enable regular progress monitoring. Each lesson includes a Teacher

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	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.		Edition that provides multiple supports for teachers to effectively engage all students. The Teacher Edition provides explicit suggestions of ways in which to support diverse learners, including English Learners and students with disabilities. The lessons are designed with flexibility in pacing and materials and include progress monitoring tools, such as Exit Tickets and numerous formative assessments. Overall, the materials promote engagement for all students while enabling students to meet rigorous science standards. For example, in Unit 1, Ecosystem Interaction and Dynamics, Lesson 10, students evaluate real-world conservation plans with a focus on multiple stakeholder perspectives. This complex task is scaffolded with teacher prompts and structured comparison frameworks that help students organize information and make claims with evidence. Supports such as sentence starters, discussion stems, and criteria checklists are available to assist all learners, particularly those with language needs or who require support in constructing explanations. Lessons avoid presenting content-specific definitions too early. Instead, terms like carbon sink, zombie fire, photosynthesis, and feedback loop are co-constructed with students after shared experiences. In Unit 2, Ecosystem: Matter and Energy, Lesson 1, the teacher guidance states that “words should be defined and recorded after your class has developed a shared understanding of their meaning.” In Lesson 3,

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			students engage in a laboratory investigation to determine why matter does not decompose in permafrost. As they prepare for this activity, students identify variables and controls. The Teacher Edition notes that multilingual students may need extra support in understanding the idea of control conditions since the way we use the term in science and in everyday life is different. Later in the lesson, students use molecule cards to trace the flow of energy and matter during cellular respiration. The teacher materials suggest that teachers can extend this activity for students who need enrichment by asking students to determine the number of each molecule (glucose, oxygen, water, and carbon dioxide) that would be required for this process to adhere to the law of conservation of mass. In Lesson 6, students work together to create a Gotta-Have-It Checklist before creating a model to explain what causes zombie fires. The teacher materials suggest a way to support students who are learning English, as well as others who struggle with language during the consensus discussion, by paraphrasing back what students say in slightly different ways. This offers students redundancy of content and the opportunity to hear scientific language in multiple contexts.
7. USABILITY: Materials are easily accessible, promote safety	**Required** **7a)** Text sets (when applicable), laboratory, and other scientific materials are **readily accessible** through vendor packaging or certified partners.	**Yes**	Text sets (when applicable), laboratory, and other scientific materials are readily accessible through vendor packaging. All text sets, laboratory instructions, and other print

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in the science classroom, and are viable for implementation given the length of a school year. ☒ Yes ☐ No			materials are linked in the Teacher Portal and online on the Lesson Launch Page. All print materials including student-facing and teacher-facing documents are free to download and print. Print materials and lab kits can be purchased through the vendor website. Many lessons can be implemented without purchasing anything or with minimal, locally sourced, reusable items that can be easily found at local or online retailers. For example, in Unit 4, Natural Selection and Evolution of Populations, Lesson 6, the lesson centers on a transfer task related to bacterial resistance to antibiotics. The activity relies on the interpretation of real-world phenomena, application of prior learning, and potentially the use of data visuals or informational text sets that are either provided in the materials or are easily accessible. There is no indication of hard-to-source lab materials or equipment needed for this task. In Unit 5, Common Ancestry and Speciation, Lesson 6, students use a model involving chips of two colors on a map. This is a low-tech, high-impact modeling activity that uses basic manipulatives and is fully supported by teacher guidance and illustrations. The modeling materials are either included in the materials' instructional toolkit or easily obtainable at low cost from common classroom supply vendors.
	Required **7b)** Materials help students build an understanding of standard operating	**Yes**	Materials help students build an understanding of standard operating procedures in a science laboratory and include

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	procedures in a science laboratory and include **safety** guidelines, procedures, and equipment. Science classroom and laboratory safety guidelines are embedded in the curriculum.		safety guidelines, procedures, and equipment. The materials provide embedded support to help students understand standard procedures in scientific investigations, including how to handle materials responsibly, make ethical decisions involving living organisms, and conduct data analysis or model-based investigations safely and appropriately. Many investigations involve simulations that mimic steps taken in authentic research facilities. When students engage in laboratory investigations, the materials include safety information at the Unit and Lesson levels. For example, in Unit 2, Ecosystem: Matter and Energy, Lesson 2, Burning Fuel investigation, the materials provide explicit safety guidelines, including the following: "Wear safety goggles (indirectly vented chemical splash goggles), a non-latex apron, and nitrile gloves during setup, hands-on investigation, and take-down." "Never taste any substance or chemical in the lab." "Wash hands with soap and water immediately after completing the activity." and "Ensure that the classroom has engineering controls (eyewash station and shower) available." In Lesson 5, Earth's Tilt investigation, the materials provide the following explicit safety instructions: "Wear indirectly vented chemical splash goggles, a non-latex apron, and nitrile gloves during the setup, hands-on, and takedown." "Use caution when working with glassware, clamp lights, and electrical receptacles." and "Ensure materials are handled away from ignition

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			sources." The materials include guidance to reinforce safety lab procedures, as the guidance explains demonstrations of safe heating of solutions and proper handling of reagents, as well as the proper use of chemical indicators (iodine) and reinforcement of safe disposal practices. In Unit 3, Inheritance and Variation of Traits, Lesson 9, students experiment with yeast to learn about the relationship between environmental factors and cancer. Students use wild-type and UV-sensitive yeast and compare how each population responds under various conditions. The Teacher's Edition for this unit includes generalized safety information at the beginning as well as at the beginning of Lesson 9. The included slide deck includes two Safety Considerations slides to share and discuss with students before beginning the experiment. In Unit 5, Common Ancestry and Speciation, Lesson 8, students conduct research on species conservation strategies and write evidence-based arguments about whether humans should intervene to protect polar bears. Although this lesson is not lab-based, it involves the evaluation of real-world conservation strategies and encourages critical thinking about scientific methods and implications. Teacher materials include discussion protocols and norms for handling diverse opinions and guidance on how to structure research tasks safely and ethically, supporting academic integrity and proper sourcing.

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. ☒ 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.	**Yes**	Multiple types of formative and summative assessments are embedded into content materials and assess the learning targets. The materials embed multiple types of formative and summative assessments across lessons, offering opportunities for teachers to monitor student understanding and progress toward mastery of performance expectations. The Assessment System includes and outlines the following for each unit: a pre-assessment, formative and summative assessment opportunities, and a student self-assessment. Integrated into the learning sequence, the assessments include iterative modeling, student-centered discussions, data analysis, peer feedback, and transfer tasks. Most lessons provide an opportunity for formative assessment including discussions, models, card sorts, simulations, laboratory investigations, and skills practice. Transfer tasks are also included as summative assessments. For example, in Unit 1, Ecosystem Interactions and Dynamics, students engage with iterative models throughout the unit. In Lesson 2, students develop a consensus model to explain the creation of Serengeti National Park and its conservation purpose. In Lesson 4, students revise their models based on new data about rainfall and food availability for wildebeest. In Lesson 8, students use computational models to test predictions and refine models of biodiversity and ecosystem resilience. Lastly, in Lesson 9, students revise the class

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			consensus model again to incorporate human interactions in the ecosystem. Unit 1 also incorporates student-centered discussions. Building understanding discussions are featured in Lessons 4, 5, 7, and 8, where students discuss ideas around rainfall patterns, population regulation, predator-prey dynamics, and ecosystem resilience. In Lesson 10, students present and discuss conservation plans, analyzing trade-offs and stakeholder impacts across ecosystems. Unit 3, Inheritance and Variation of Traits, includes a pre-assessment in Lesson 1. Lessons 2-9 all provide opportunities for formative assessment through Progress Tracker Updates as well as other activities. In Lesson 3, students participate in a card sort activity and then apply that model to authentic photos of cells undergoing mitosis. Teachers can formatively assess student mastery by evaluating how well students sequence the photos to show the cell cycle and describe what each photo shows. In Lesson 5, students create a Gotta Have It Checklist outlining the important details that should be included in their explanations of mutations and how they can cause cancer. Lesson 10 includes a Transfer Task in which students analyze data and pedigree charts to understand how lactase and celiac disease are inherited that can be used as a summative assessment. In Unit 4, Natural Selection and Evolution of Population, Lesson 6, the Antibiotic Resistance Transfer Task serves as a summative assessment where

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			students apply their understanding of natural selection in a new context. Teachers use a scoring rubric to evaluate student responses. The assessment requires students to construct explanations (SEP) based on evidence, demonstrating their knowledge of DCI, LS4.C.a and cause and effect relationships (CCC).
	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.	**Yes**	Assessment items and tasks are structured on the integration of the three dimensions and include opportunities to engage students in applying understanding to new contexts. Throughout the materials, students engage in the actions of the SEPs and apply CCCs as they build and demonstrate mastery of the DCIs. The materials provide evidence that assessment items and tasks are structured around the integration of the three dimensions and offer opportunities for students to apply understanding in new contexts. These assessments are embedded throughout the units and designed to progressively build conceptual understanding through modeling, simulations, investigations, and transfer tasks. For example, in Unit 3, Inheritance and Variation of Traits, Lesson 3, students play the Cell Game, modeling how cell division is regulated by p53, and what happens when that regulation fails. The game incorporates the SEP, Developing and Using Models, the DCI, LS1B.a, and the CCC, Cause and Effect. Students interpret data and revise models to understand how cancer cells emerge due to disrupted regulation mechanisms. In Lesson 6,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students physically model how DNA codes for proteins, focusing on how mutations in p53 affect function. This activity incorporates the SEPs, Using Models and Obtaining and Analyzing Information, the DCIs, LS1.A.b and LS3.A.a, and the CCC, Structure and Function. Students use an electronic exit ticket to apply their learning to a new context involving gene mutation and protein impact. In Lesson 10, students complete a Transfer Task requiring them to apply everything they have learned about mutations, inheritance, and environmental factors to explain cancer in a new scenario. The Transfer Task incorporates the SEP, Using Models and Constructing Explanations, the DCIs, LS3.B.a and LS3.B.b, and the CCC, System Models and Cause and Effect. This task is designed to assess understanding in a new context, which helps the teacher determine whether students can apply ideas beyond the initial phenomenon. In Unit 5, Common Ancestry and Speciation, Lesson 6, students use models to make predictions about sea ice and how this selective pressure will affect the survival of polar bears (DCI, HS.LS4C.c; SEP, Developing and Using Models; CCC, Cause and Effect). In Lesson 9, students engage in a Transfer Task that requires them to analyze data and make claims about the future of bumblebee populations worldwide (SEP, Analyzing and Interpreting Data; CCC, Scale, Proportion, and Quantity). They read about the role bumblebees play in the ecosystem and use

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			data about their historic range to explain how a disease could spread between populations and how pesticides affect mortality rates to evaluate claims about the future health of bumblebee populations worldwide (DCI, HS.LS4C.d). In Lesson 7, students investigate historical mass extinctions and apply that understanding to explain modern extinction threats. Assessments require students to construct and revise arguments using patterns of evidence, analyze climate, biological, and geological data from past mass extinctions, and relate them to present-day extinction events, and integrate CCCs such as Patterns to support claims.
	8c) Scoring guidelines and rubrics **align to performance expectations**, and incorporate criteria that are specific, observable, and measurable.	**Yes**	Scoring guidelines and rubrics align with performance expectations and incorporate criteria that are specific, observable, and measurable. The materials include scoring guidelines, rubrics, and look-for and listen-for opportunities that align to performance expectations and incorporate specific, observable, and measurable criteria. These tools guide both teachers and students in evaluating mastery of the three dimensions of the LSSS. The materials provide in-the-moment guidance for teachers on what to look for and listen for during instruction which helps teachers identify key evidence of student progress toward mastery of the objectives. These embedded prompts appear across lessons as part of formative assessment opportunities. For example, in Unit

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			1, Ecosystems Interactions and Dynamics, Lesson 3, as students analyze the wildebeest data cards, teachers are prompted to look and listen for specific scientific patterns students uncover, such as bone marrow health, anthrax timing, and fat content. The teacher edition gives the following guidance for teachers in the What to look for/listen for in the moment section in the assessment opportunity box: "Live wildebeest have a higher percentage of fat in their bone marrow than dead wildebeest," "June and July were the only months where anthrax was found in the population," and "There was no difference of anthrax infection percentages between living and dead wildebeest." The assessment opportunity box also has a What to do section, which provides questioning guidance such as "Ask, What empirical evidence did you find to help explain why the wildebeest migrate?" In Lesson 6, students complete a Transfer Task applying their knowledge of limiting factors and carrying capacity to a new scenario involving African wild dogs. A peer-assessment rubric is provided with clear criteria including: accuracy of scientific explanation (SEP, Constructing Explanations), use of data to support claims (SEP, Analyzing and Interpreting Data and Engaging in Argument from Evidence), and clarity and coherence of reasoning. The teacher guide states that "partners use a rubric to evaluate answers on one question from the Transfer Task and suggest ways to improve the quality

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			of their responses." The materials also include a Transfer Task key for the teacher that outlines correct responses and explains how those responses demonstrate understanding of the related DCIs, SEPs, and CCCs. At the end of Unit 2, Ecosystem: Matter and Energy, Lesson 4, students complete an Exit Ticket. The provided key includes the Performance Expectation (PE) that is assessed and aligns each question with the SEP, CCC, and/or DCI that it evaluates. For the multiple choice questions, it indicates the correct response with a rationale and suggestions for how to support students who struggle with the skills or concepts required to correctly answer the question. For open-ended responses, the key includes what teachers should look for in student responses and offers suggestions for scaffolds. In Lesson 6, students write an explanation of how zombie fires burn under the ice. The associated rubric describes what teachers should look for to identify each level of response (Foundational Pieces, Linked Understanding, and Organized Understanding) along with exemplar responses, suggested feedback, and suggested instructional support for each level of response. In Lesson 12, students complete a Transfer Task that asks them to develop models to explain the flow of matter and energy in the Gulf of Mexico's dead zone. The associated key provides the aligned PE and outlines the SEP, CCC, and DCI that are assessed and indicates which questions align with each dimension. Like the rubric for the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			explanation in Lesson 6, it provides rationales for multiple choice questions, look-fors for each level of response with exemplar student responses for constructed responses, and suggestions for feedback and support for each level of response. In Unit 4, Natural Selection and Evolution of Populations, Lesson 10, the Buckeye Plan Evaluation Tool serves as both a formative and summative assessment with an answer key that incorporates performance expectations and specific criteria. The assessment evaluates students on how well they apply scientific ideas to urban planning, considering constraints, biodiversity, and habitat connectivity. The rubric includes criteria, such as recognizing the presence of wildlife corridors, evaluating corridor sufficiency, and articulating trade-offs, with each one measurable and observable in student responses. The tool provides a clear structure for teachers to assess the application of Engaging in Argument from Evidence (SEP), DCI's ETS1.B.1 and LS4.D.a, and Systems and System Models (CCC) in the context of a complex, real-world scenario.
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**

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
I: Non-Negotiable Criteria of Superior Quality[2]	1. Three-dimensional Learning	**Yes**	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.
	2. Phenomenon-Based Instruction	**Yes**	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. 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. 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.
	3. Alignment and Accuracy	**Yes**	The majority of the Louisiana Student Standards for Science (16 out of 20) are incorporated, to the full depth of the standards. The total amount of content is viable for a school year. Science content is accurate, reflecting the most current and widely accepted explanations. In any one grade or course, instructional materials spend

[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
			minimal time on content outside of the course, grade, or grade band.
	4. Disciplinary Literacy	**Yes**	Students regularly engage with authentic sources that represent the language and style that is used and produced by scientists. Students regularly engage in speaking and writing about scientific phenomena and engineering solutions using authentic science sources. There is variability in the tasks that students are required to execute. 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 from deeper scientific learning.
II: Additional Criteria of Superior Quality[3]	5. Learning Progressions	**Yes**	The lessons within and across each unit are organized to support learning through a natural progression. Students apply mathematical thinking when applicable.
	6. Scaffolding and Support	**Yes**	There are separate teacher support materials provided. Teacher support materials include guidance to ensure that students experience phenomena, design solutions, and apply scientific knowledge and skills in such a way that is developmentally appropriate. Appropriate suggestions and materials are provided for differentiated instruction supporting varying student needs at the unit and lesson level.

[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
	7. Usability	**Yes**	Text sets (when applicable), laboratory, and other scientific materials are readily accessible through vendor packaging or certified partners. Materials help students build an understanding of standard operating procedures in a science laboratory and include safety guidelines, procedures, and equipment.
	8. Assessment	**Yes**	Multiple types of formative and summative assessments are embedded into content materials and assess the learning targets. Assessment items and tasks are structured on integration of the three dimensions and include opportunities to engage students in applying understanding to new contexts. Scoring guidelines and rubrics align to performance expectations and incorporate criteria that are specific, observable, and measurable.
FINAL DECISION FOR THIS MATERIAL: **Tier 1, Exemplifies quality**			

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: **Activate Learning certified OpenSciEd Chemistry**

Grade/Course: **Chemistry**

Publisher: **SASC, LLC dba Activate Learning**

Copyright: **2023**

Overall Rating: **Tier 1, Exemplifies 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)	
3. Alignment and Accuracy (Non-Negotiable)	
4. Disciplinary Literacy (Non-Negotiable)	
5. Learning Progressions	
6. Scaffolding and Support	
7. Usability	
8. Assessment	

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.

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[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 support students in developing 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.	**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 the materials integrate the Science and Engineering Practices (SEP), Cross Cutting Concepts (CCC) and the Disciplinary Core Ideas (DCI) to support deeper learning. The materials provide multiple opportunities for students to engage with three-dimensional learning in an integrated manner. Students actively apply SEPs, analyze CCCs, and deepen their understanding of DCIs through hands-on investigations, data analysis, and model development. For example, in Unit 3, Molecular Processes in Earth's Systems, Lesson 10, students determine why water is needed in so many reactions. During the lesson, students critically read a scientific article explaining how copper can be cleaned from water by forming a precipitate. Students then model (SEP, Developing and Using Models) reactions explaining how intermolecular forces between water and certain ions allow for the observed cleaning reaction to occur (DCI, HS.PS2B.c). Students then model a variety of reactions with water to determine similarities and differences in reactions (CCC, Patterns). In Unit

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			4, Chemical Reactions in Our World, Lesson 6, students determine how acidic water can become less acidic again. During the lesson, students engage in Planning and Carrying Out Investigations (SEP) using the Explore Water and Carbon Dioxide Interactions Simulation to determine how acidic water can become less acidic. Students use the results to argue (SEP, Engaging in Argument from Evidence) that a reversible reaction was taking place that reaches an equilibrium state (DCI, HS.PS1B.b; CCC, Stability and Change). Later in the lesson, students analyze acid-base reactions to determine acid-base bonding Patterns (CCC). In Lesson 8, students continue to explore acid-base neutralization reactions by modeling chemical equations and investigating (SEP, Planning and Carrying Out Investigations) to determine how ratios in balanced chemical equations are particle-number ratios. Students apply a mathematical model (SEP, Using Mathematics and Computational Thinking) using molar masses and particle-number ratios to predict the amount of a base needed to neutralize an acid (DCI, HS.PS1B.c; CCC, Energy and Matter).
Non-Negotiable **2. PHENOMENON-BASED INSTRUCTION:** Explaining phenomenon and designing solutions	**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	**Yes**	Observing and explaining phenomena and designing solutions provide the 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 spark students to generate questions and define problems to motivate learning

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
drive student learning. ☒ Yes ☐ No	define problems, as well as purpose to incrementally build understanding through the lessons that follow.		about the core idea of the unit. Students authentically interact with the SEPs as they test theories or models, generate data, and use reasoning and scientific ideas to provide evidence to support claims. The organization of unit phenomena provides students with a purposeful reason to engage in sense-making, asking questions, and refining scientific understanding through coherent sequences of investigations and activities. For example, in Unit 1, Thermodynamics in Earth's Systems, students explore coastal communities affected by rising sea levels that force some people to move and work to answer the unit question, "How can we slow the flow of energy on Earth to protect vulnerable coastal communities?" Students begin Lesson 1 with a notice and wonder T-Chart to collect observations and generate questions. The lesson introduces instruments that are used by the scientific community to measure sea level and includes data analysis in the form of a graph depicting sea level from 1900 to the current time. Students also make predictions for community impact regarding rising sea levels. Lesson 4 includes a simulation to model sea level rise as a result of ice melting in Greenland and Antarctica. Within this lesson, students calculate sea level rise, build a model, and plan an investigation to test their ideas regarding the phenomenon. In Lesson 6, Day 1, students use previous information from Lesson 1, such as the anchor chart for their variables and their consensus energy transfer model

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			from Lesson 5, to conduct an investigation. Students investigate why scientists want to use microbeads to prevent ice from melting. Students analyze and interpret data collected in order to determine if the scientist's idea would prevent ice from melting. As the unit progresses to Lesson 9, the phenomenon of rising sea levels remains consistent. Students explore the effect of temperature and salinity on glacial melting, which would cause sea level rise. Density is investigated, and a four-panel chart is used to model the particle motion of fresh and salt water, both cold and warm. Students then calculate the density of the different types and temperatures of water. In Unit 5, Energy from Chemical and Nuclear Reactions, students investigate the phenomenon “How can chemistry help us evaluate fuels and transportation options to benefit the Earth and our communities?” At the end of each lesson, students add evidence acquired during lesson explorations to their progress trackers as well as ask questions to deepen their understanding of the phenomenon. In Lesson 1, Day 1, students engage in a whole-class discussion to identify global problems and related solutions previously studied. Students analyze a graph of past carbon dioxide emissions data and brainstorm technologies that use fuel for different types of transportation. In Lesson 3, students explore differences between diesel and gasoline engines. Students add concepts, such as energy input is needed to ignite

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			carbon-based fuel, to their progress trackers. In Lesson 6, students examine changes in matter, total kinetic energy, and total energy stored in fields over time as bonds of different strengths break and form. The teacher guides students to answer the question, "How does what we figured out help us explain the energy we get from combusting fuels?" In Lesson 8, students use a model to explain why carbon-based fuels provide energy and think about the impacts of carbon dioxide emissions, which connect back to the phenomenon.
	Required **2b)** Materials 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 provide evidence to support claims.	**Yes**	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. When appropriate, the materials provide students with the opportunity to engage directly with experiments designed to discover and explain the phenomena. The materials provide frequent opportunities for students to authentically engage with the SEPs by designing and conducting investigations around student-generated questions and analyzing data needed to support a claim or develop an explanation related to a phenomenon. For example, in Unit 4, Chemical Reactions in our World, Lesson 8, students use their model (SEP, Developing and Using Models) of acid-base neutralization and argue (SEP, Engaging in Argument from Evidence) that the ratios in balanced chemical equations are mass ratios. Students then test this model

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			to figure out that these ratios are particle-number rather than mass ratios. Students apply a mathematical model (SEP, Using Mathematical and Computation Thinking) using these ratios and molar masses to predict the amount of base needed to neutralize an acid and then carry out a second neutralization investigation to test this idea. In Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 10, students compare fuel cell designs, including a double A battery, a car battery, and an electric vehicle, to a hydrogen cell battery (SEP, Systems and System Models). Students observe videos of a hydrogen cell battery that assist the students in their comparisons. Before this lesson, students created a Criteria and Constraints poster regarding greenhouse gases that they updated in this lesson from the chemical equations for global hydrogen production, which they were given. Students consider the feasibility of alternative sources to fossil fuel, such as hydrogen and electric, in regard to refueling/recharging availability in their communities. Students also identify other non-carbon-based fuel sources being investigated.
	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.	**Yes**	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. These connections are embedded into the structure of the investigations and discussions, offering

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students opportunities to reflect on real-world scenarios, evaluate safety in everyday environments, and consider the impacts of science and technology. Students engage in personal sense-making that builds on what they already know about, supporting deeper engagement with science practices. For example, in Unit 5, Teacher Edition, Lesson 1, Day 2, guidance prompts teachers to incorporate student experiences in order to make connections to the unit phenomena. For example, teachers ask students what other examples they have encountered where the levels of water have changed over time and what they believe caused this change. Students use their collective experience to share their own expertise that they can all use in their models and identify situations, such as melting ice on roofs or interconnected bodies of water around the world. Unit 3, Molecular Processes in Earth's Systems, provides many opportunities for students to make connections to real-life and/or prior knowledge. For example, in Lesson 3, students draw on prior knowledge regarding water in the solar system, and Lesson 11 asks again about water, albeit regarding processes in which water is necessary. In Lesson 8, students consider utilizing substitute ingredients in recipes and contemplate the similarities of the original and substitute ingredients, leading up to the question of whether another substance, with similar properties, could be used as a substitute for

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			water. Later on in Lesson 12, students activate their prior knowledge regarding the process of photosynthesis as a chemical reaction.
Non-Negotiable **3. ALIGNMENT AND ACCURACY:** Materials adequately address the Louisiana Student Standards for Science. ☒ Yes ☐ No	**Required** **3a)** The materials incorporate the majority of the Louisiana Student Standards for Science to the **full depth of the standards**.	**Yes**	The materials incorporate the majority (9 out of 13) of the Louisiana Student Standards for Science to the full depth of the standards. Standards not fully addressed in the materials include the following: LSSS HS-PS1-8, HS-PS2-6, HS-PS1-2, and HS-PS3-3. While LSSS HS-PS3-3 is not addressed in the materials, correlation guidance notes that the standard is addressed in the Physics materials. For LSSS HS-PS1-8, DCI HS.PS1.C.a is partially addressed. The lesson introduces isotopes to demonstrate that the neutron and proton count does not change in nuclear processes, as well as explains the difference between a nuclear process and a chemical reaction. A submarine nuclear reactor is utilized to demonstrate the release of energy from uranium, yet energy absorption is not addressed. While fission is explained, the materials do not address other topics, including fusion and radioactive decay. For LSSS HS-PS2-6, DCI HS.PS4B.c is partially addressed. Students investigate the transmission of diffracted light and analyze the relative light intensity versus color. Photoelectric materials are not explored. For LSSS HS-PS1-2, DCI HS.PS1B.c is partially addressed. Chemical Reactions such as decomposition, neutralization, combustion and synthesis reactions are thoroughly explored

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			throughout the curriculum, but single and double displacement reactions are not introduced. Correlation guidance notes that unaddressed topics are covered in the Physics materials.
	Required **3b)** The total amount of content is **viable** for a school year.	**Yes**	The total amount of content is viable for a school year. The materials include a comprehensive sequence of 72 lessons within five units that collectively provide sufficient instructional time to meet or exceed the minutes required for high school courses. Lessons typically run two to three days each, with entire units spanning several weeks, totaling 154 days of instruction. Each unit includes instructional suggestions for lengthening or shortening lessons as needed to accommodate differences in required coverage of the LSSS for Chemistry or days available for instruction. Materials provide optional ways to extend lessons without a breakdown in the storyline, such as extension readings, videos, activities offered as alternates, home learning, and extended learning. For example, in Unit 5, Teacher's Edition, Lesson 1 suggests extending the discussion or allowing students to lead the Scientists Circle. Additionally, in Lesson 1, teachers encourage students to gather data from people who have lived in their school community for at least 40 years to learn what transportation used to be like. Students then include their area's history of transportation from a historical, economic, or human

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			geographic viewpoint, which can deepen the relevance of the unit. In Unit 2, Structure and Properties of Matter, Teacher's Edition, the materials provide extension examples, such as more carefully examining lighting in the students' community. Students use the models they develop in this unit to explain why patterns in their community differ from other places, and how climate change may result in these patterns.
	Required **3c)** Science content is **accurate**, reflecting the most current and widely accepted explanations.	**Yes**	The science content is accurate, up-to-date, and aligned with the most current and widely accepted explanations. No evidence of incorrect or out-of-date science explanations could be found. The materials consistently align with accepted DCIs of the LSSS for Chemistry. Lessons integrate accurate models, simulations, and lab investigations that represent current explanations in chemistry, energy systems, and nuclear processes. The materials use up-to-date contexts such as climate modeling, ocean acidification, and renewable versus nuclear energy to connect disciplinary content with modern scientific applications. For example, Unit 1, Thermodynamics in Earth's Systems, addresses the global phenomena of rising sea levels and glacial melt. The phenomenon includes energy transfer, the effect of atmospheric carbon dioxide, and the possible solutions of increasing surface reflectivity through the use of microbeads or the construction of a berm to mitigate water

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			temperature. For example, in Unit 4, Chemical Reactions in Our World, Lesson 1, students analyze current NOAA temperature and ocean acidity maps. In Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 1, students analyze fuel cards with current CO_2 emissions and transportation usage.
	Required **3d)** In any one grade or course, instructional materials spend **minimal time on content outside** of the course, grade, or grade-band.	Yes	Instructional materials spend minimal time on content outside of the course, grade, or grade-band. Time spent on the materials outside the grade serves to maintain coherence in relation to the phenomenon or to build upon previous knowledge. Materials, such as investigations, simulations, articles, activities, and presentation materials, spend very little time on content outside of the course band. The Teacher Edition for each unit provides a section, Where We Are Going and NOT Going, which helps teachers understand specific learning objectives and boundaries for the particular lessons. This section helps teachers facilitate a focused and coherent learning experience aligned with the intended standards. For example, in Unit 2, Lesson 12, teacher guidance notes that although students focus their explanations in this lesson on electron movement, they are not developing the more advanced concepts of electron configurations, orbitals, energy levels, or band gaps. Those concepts are outside the scope of the standards and are not necessary for understanding electrical conductivity. In Unit 3, Molecular Processes in Earth's Systems,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Lesson 6 provides students with element card sets from which they are to identify patterns, beginning with the number of protons in an atom. Lesson 7 continues this idea as students observe patterns based on the number of bonds able to be formed and the arrangement of subatomic particles. Lesson 8 introduces Lewis dot and ball-and-stick models, reflecting patterns in valence electrons, as students indicate patterns in electronegativity on a periodic table. In Unit 1, Thermodynamics in Earth Systems, Lessons 9 and 13, students apply mathematical modeling and system analysis to glacial melting and climate modeling, which remain fully grounded in the expectations of energy transfer and conservation. The use of prior knowledge about density and convection serves only as a review, keeping instruction within grade-band content. However, several units take an integrated science approach to develop an understanding of the anchor phenomena. For example, in Unit 3, Molecular Processes in Earth's System, a large portion of the unit is focused on LSSS for Environmental Science, including the following: LSSS HS-ESS 1-2, HS-ESS2-1, and HS-ESS2-5. In Unit 4, Chemical Reactions in Our World, only a short portion of the unit fully addresses LSSS HS-PS1-5, HS-PS1-6, and HS-PS1-7. The majority of the unit focuses on the following standards: LSSS HS-ESS2-6, HS-ESS3-4, HS-ETS1-1, and HS-ETS1-2, which are outside the scope of the LSSS for chemistry.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Non-Negotiable **4. DISCIPLINARY LITERACY:** Materials have students engage with authentic sources and incorporate speaking, reading, and writing to develop scientific literacy. ☒ Yes ☐ No	**Required** **4a)** Students regularly engage with **authentic, grade-appropriate 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.	**Yes**	Students regularly engage with authentic, grade-appropriate sources that represent the language and style used and produced by scientists. The instructional materials incorporate a variety of authentic, grade-appropriate sources, including primary source documents, photographs, and authentic data sets. Additionally, the Unit Launcher for each unit includes an excerpt from an actual peer-reviewed scientific journal article for students to analyze and discuss within the context of their studies. In Unit 3, Molecular Processes in Earth's Systems, Lesson 1, students watch an authentic video from the NASA Artemis team discussing how the discoveries from space benefit the way we live on Earth today and those from the Moon will create a better future for generations to come. In Unit 4, Chemical Reactions in our World, Lesson 4, Day 1, students complete a pH concentration investigation. On Day 2, students analyze and interpret the data, as they share and discuss results as a class. Unit 2, Structures and Properties of Matter, opens with a video of real-time and slow-motion lightning strikes. As the lesson progresses, the students read about various historical theories regarding lightning from mythology and Native American beliefs. The students then compare the readings and look for similarities. Students then read about two scientists who were believed to have experimented with lightning and have accreditations for working in the field of electricity, mentioning Benjamin Franklin as

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the inventor of the lightning rod, a device that appears later in the unit. Lesson 1 readings culminate with lightning strike data in the form of a U.S. map indicating frequency of lightning strikes and a data table that the students will utilize. Later in the unit, students use a simulation that shows them particles with positive and negative charges and how those particles react to one another.
	Required **4b)** Students regularly engage in **grade-appropriate 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.	**Yes**	Students regularly engage in grade-appropriate speaking and writing about scientific phenomena and engineering solutions using authentic sources. Materials address the necessity of using scientific evidence to support ideas. Students regularly engage in productive science talk to generate driving questions, build understanding, and come to a consensus. Students also present and revise designs, gather evidence from multiple sources, and explain findings. In all units, students regularly engage in Driving Question Boards in which they provide questions about real-world phenomena that help guide their learning experience. Students also present and revise designs, gather evidence from multiple sources, and explain findings. Students turn and talk with peers regularly, and such activities are clearly marked in the materials. Students also engage in Building Understanding Discussions and Science Circles, where students learn how to respectfully argue from evidence information that they have learned. For example, in Unit 5,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Energy from Chemical and Nuclear Reactions, Lesson 1, Day 1, the materials introduce students to the unit phenomena by having them analyze a graph of electric power and transportation emissions. Students discuss what they noticed and wonder with a partner for two minutes, and then share their information with the rest of the class. In Lesson 8, students model how carbon-based fuels provide energy. Students examine how much carbon dioxide is released when different fuels and vehicles are used. Students then update their Progress Tracker by writing what they have learned. Students then revisit the Driving Question Board and complete a mid-unit assessment on cold packs or hot packs. In Unit 4, Chemical Reaction in Our World, students investigate the phenomenon of oyster larvae die-off. Students develop consensus models and investigation plans, and collaboratively create models and design project solutions. Students then discuss the criteria and constraints of the proposed projects they developed, review other groups' work, and use what they learned to revise their own projects.
	Required **4c)** Materials provide **variability in the tasks** that students execute. For example, students produce solutions to problems, models of phenomena, explanations of theory development, and conclusions from investigations.	**Yes**	Materials provide variability in the tasks that students execute. Within each unit, students produce and revise models of the anchoring phenomenon. Across the materials, students regularly engage in a variety of tasks, such as constructing written explanations, planning and conducting investigations, making

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			observations and collecting data with simulations, reading texts, and designing using criteria and constraints. In Unit 4, Chemical Reactions in Our World, Lesson 1, students explore cases, analyze data, and read about how carbon dioxide in the atmosphere is entering the ocean and making it more acidic, which hurts oysters and the ecosystem that relies on them. Students develop an initial model and build a Driving Question Board. Students brainstorm ideas for investigations based on the Driving Question Board. In Unit 5, Energy for Chemical and Nuclear Reactions, while examining the possible alternative fuels, students utilize both a physical and digital model (simulation) to examine bond breaking and reforming, as well as construct and evaluate criteria and constraints while creating a design project. Students search for evidence in videos, as well as conduct investigations, evaluate molecular models, and participate in a Scientist Circle, a discussion of ideas. In each unit, students interact with various models, digital and real-life, in order to produce solutions for real-world, relevant issues. In Unit 3, Molecular Processes in Earth's Systems, Lesson 9, students describe bond characteristics in salt, wood, and metal and consider salt substitutes in people's diets. On Day 1, students analyze a periodic table and related electronegativities to identify substitute atoms and determine bond character and polarity of different molecules. Students engage with manipulatives to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			visualize and predict the relative shift of electrons in different bonds. On Day 2, students observe models and construct an explanation for how sila-ibuprofen could be a substitute medicine for ibuprofen.
	Required **4d)** Materials provide a coherent sequence of learning experiences that contextually **build scientific vocabulary** and knowledge over the course of study. Students build conceptual knowledge of science vocabulary **in preparation for formal introduction** to terminology.	**Yes**	Materials provide a coherent sequence of authentic science sources that contextually build scientific vocabulary and knowledge over the course of study. Vocabulary is addressed as needed, but only after students have first had the opportunity to build conceptual understanding of the term. Students build vocabulary through experiences with science ideas and discussions about science. Students create a personal glossary in the back of their notebook with words they earn or encounter, or words that are reinforced. Students co-create the definitions as they are conceptually developed in the lessons. The materials include a Guidance for Developing your Personal Glossaries in each teacher's section to support students in this process. Vocabulary lists are not given at the beginning of a lesson. Some terms appear throughout the materials and are reinforced in each unit or lesson. For example, in Unit 2, Structure and Properties of Matter Unit Overview Materials, the materials provide the teacher instructions and a document with the vocabulary and lessons in which these vocabulary words are developed. Guidance notes that the list is not intended as a vocabulary list for students to study before a lesson, and doing so would undermine the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			authentic and lasting connection students can make with these words when they are allowed to experience them first as ideas they are trying to figure out. In Unit 2, Structures and Properties of Matter, Lesson 13, students investigate ionic conductivity using lab setups before formally naming terms such as ionic compound and electrolyte, demonstrating that vocabulary is introduced only after conceptual exploration. Similarly, in Unit 4, Chemical Reactions in Our World, Lesson 8, students apply a mathematical model using molar masses and particle-number ratios to predict the amount of base needed to neutralize an acid and carry out a second neutralization investigation to test their model. Materials introduce vocabulary, such as mole, molar mass, molarity, and stoichiometry, as students learn to apply the mathematical models.
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	**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 develop student understanding and support mastery of the Louisiana Student Standards for Science.	**Yes**	The overall organization of the materials and the development of the disciplinary core ideas, science and engineering practices, and crosscutting concepts are coherent within and across units and are organized to support learning through a natural progression. Students engage with and build understanding of the three dimensions of the standards at increasing levels of complexity and sophistication, and engage in a coherent progression of learning that is coordinated over time, clear, and organized. Teacher guidance includes a Unit Overview and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
disciplinary core ideas; the content complements the Louisiana Student Standards for Math. ☒ Yes ☐ No			Storyline that outlines how asking questions and investigations drive student learning as they develop science concepts and figure out the answer to their questions throughout the unit. The Unit Overview also includes what the students will figure out, how they will represent what they learned, and how they will engage with all three dimensions in each lesson. The materials also include a section of background knowledge that provides additional guidance for adjusting the sequence of the units if taught out of order. These resources support student mastery of the Performance Expectations and maintain coherence. For example, in Unit 3, Molecular Processes in Earth's systems, the CCCs progress from observing patterns to provide evidence and explanations to interacting and creating models, followed by the conservation of matter and energy. The progress in the CCCs of this unit continues with investigating and designing based on the properties and function of materials to solve problems, culminating with explanations of change and stability. Though interspersed throughout the unit, all are addressed and built upon one another. In Unit 1, Thermodynamics in Earth's Systems, Lesson 1, the phenomenon is presented to students in the form of a video in which they explore three different communities, create a notice and wonder chart, and identify local causes for the changes in sea level and the reasons people have to move. Throughout the lessons of the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			unit, students create models, apply scientific ideas, and use mathematical thinking to derive and compare densities for water at different temperatures and salinities. Students then collaboratively design and plan an investigation using a computer model to produce simulated data as evidence to figure out what is happening at a particle level when two pieces of matter come in contact that are at different temperatures. Students finish the unit by putting all of the pieces they have learned together and applying this knowledge to the phenomenon of indoor heating in a changing climate.
	5b) Students **apply grade-appropriate mathematical** thinking in meaningful ways, when applicable. The materials do not introduce 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.	**Yes**	Students apply grade-appropriate mathematical thinking when applicable. Across the majority of the materials, lessons and activities do not introduce students to math skills that go beyond the Louisiana Student Standards for Mathematics (LSSM) for high school students. Students regularly apply mathematics skills and understanding to engage in Using Mathematics and Computational Thinking (SEP) appropriately in the context of their learning. For example, in Unit 4, Chemical Reactions in Our World, Lesson 8, students model acid-base neutralization and argue that the ratios in balanced chemical equations are mass ratios. Students test this model and figure out that these ratios are particle-number ratios rather than mass ratios. Students apply a mathematical model using these ratios and

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			molar masses to predict the amount of base needed to neutralize an acid and carry out a second neutralization investigation. In Lesson 9, students use mathematical thinking to determine how many grams of a base would need to be added to return ocean pH levels to one that is safe for baby oysters (LSSM A1: N-Q.A.1). Additionally, in Unit 1, Lesson 12, students calculate energy transfer to provide evidence in solutions designed to address glacial ice melt (LSSM A1: N-Q.A.1). In Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 7, students create a mathematical representation of the energy transferred into fields to break and form bonds to determine that in some reactions more energy is transferred into than out of the system (LSSM A1: N-Q.A.1).
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)** Materials include the following separate **teacher support** materials: 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**.	**Yes**	Materials include the following separate teacher support material: scientific background knowledge, support in three-dimensional learning, learning progressions, strategies for addressing diverse emerging conceptions, and guidance targeting speaking and writing in the science classroom. 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. Support materials include a 3-D Strategies sections that detail explicit techniques for highlighting SEPs, DCIs, and CCCs further, sample prompts and

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			conversation guides for class discussions, as well as the Unit Storyline and how the students will engage with the unit phenomenon. The Unit Overview tab includes the standards and performance expectations information for the unit. The Teacher Background Knowledge provides guidance for the SEP, CCC, and DCI applications within the unit. The materials include a three-dimensional progression section that further explains the development of the three dimensions. The Assessment System Overview tab provides the type and timing of assessments (formative and summative) throughout the unit to determine student understanding of the standards. The Investigation Materials tab lists the materials required for each lesson within the unit. The Investigation Materials tab also identifies which materials are included with the materials kits and which must be obtained by the teacher. The Unit Resources tab shows unit resources for both teacher and student, which can be printed out and/or assigned online. Each lesson includes detailed learning plans as well as a section that clarifies where the lesson is going and where it is not going, and guides how in-depth students should engage with the content. Additional resources include slides, which can be edited to guide the lesson step-by-step, the Learning Plan, which details how much time each section of the lesson should take to complete, the Lesson Overview, which details how many days the lessons should take, and Learning Objectives, which

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			describe what the students should be expected to master. The Unit Overview section of the teacher dashboard provides teachers with all the necessary information needed to facilitate and implement the materials.
	Required **6b)** Teacher resources include **educational 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.	**Yes**	Teacher resources include educational 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 developmentally appropriate and aligned to the LSSS and associated learning progressions. Teacher resources include support for building student knowledge, as well as promoting teacher learning. Each lesson provides slides to guide student learning. Along with those slides are detailed teacher notes to implement the lesson. The digital setup allows the teacher to see both the student version and the slides with teacher notes simultaneously. Additionally, an attached document informs the teacher of the direction and goals of the lesson. The storyline overview breaks down the lesson into four components, providing information on each, which allows the teacher to see a quick snapshot of what the students will be doing, how they will figure out the problem they are investigating, and how they will model the phenomenon. The platform includes a teacher

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			Tools and Resources section, as well as support for grading and maintaining a Driving Question Board for those who may not be familiar with the concept. For example, in Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 1, Day 1, the materials provide teachers with suggested prompts and sample student responses. Guidance also includes possible time frames for each part of the lesson, with additional guidance in supporting students in engaging in analyzing and interpreting data. At the end of the lesson for Day 1, students identify components of the vehicle's system, such as fuel or battery engine and exhaust/air. In Unit 2, Structures and Property of Matter, Lesson 3, Day 1, the materials provide teachers ways to support students in three-dimensional learning. Guidance includes information to support students in explicitly using the water dropper as a model by continually emphasizing the ways in which the water dropper system allows indirect study of lightning. When students notice attraction or repulsion, teachers then ask students if they think something similar happens or could happen in lightning.
	Required **6c)** Materials provide **support for diverse learners**, including English Learners and students with disabilities. Appropriate suggestions and materials are provided for **supporting varying student needs** at the unit and lesson level using an accelerating learning	**Yes**	Materials provide support for diverse learners, including English Learners and students with disabilities. Teacher guidance includes appropriate suggestions and materials for supporting varying student needs at the unit and lesson level using an accelerated learning approach. Materials include teacher guidance

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	approach[2]. 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 opportunities for these students to meet the expectations of the standards and enable regular progress monitoring.		to help support diverse learners and provide the opportunities for these students to meet the expectations of the standards and enable regular progress monitoring. Each unit provides a pacing guide and supplemental materials to support bilingual students, struggling students, and advanced students. Support is also provided for students who miss in-person classes. Lesson materials include diverse learner support with specific tips, techniques, and points to consider to support the teacher in recognizing and valuing student resources and participation. Each Unit Overview includes a planning guide in which teachers can utilize and plan opportunities for students who need additional experiences and time developing core ideas of the unit. Each unit contains Teacher Guides, which include support and guidance in sidebar callout boxes. Each unit and lesson provides specific teacher guidance to provide support for things such as Alternate Activities, Additional Guidance sections, Assessment Opportunities, and Supporting Students in various NGSS Dimensions. These sections provide teachers with information on how to help students access the most information possible. Additionally, some of the handouts are provided in Spanish for those students who may benefit from items in this translation.

[2] **Accelerating Learning** is the prioritization of equitable access to high-quality, grade level instruction for ALL students as the center of the design and implementation of educational supports and services. Accelerating learning is both a mindset and an approach to teaching and learning, not a service, place or time. This approach leverages acceleration, a cyclical instructional process that connects unfinished learning in the context of new grade-level learning utilizing high-quality materials to provide timely, individualized supports throughout a variety of flexible instructional settings and groupings.

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			Family-facing documents are also provided in Spanish. The Teacher Edition provides materials designed to promote access to high-quality science learning experiences for all students by focusing on relevance, collaborative sensemaking, and involving all students in the learning process. Various lessons throughout the materials provide optional and alternate readings/lessons. These can be found in Unit 1, Lesson 8, Unit 2, Lessons 7 and 9, Unit 3, Lesson 2, Unit 4, Lessons 9 and 12, and Unit 5, Lesson 10. Additionally, there is a printable student edition in Spanish, support for absent students and substitutes, as well as remote learning resources. In Unit 2, Structures and Properties of Matter, Lesson 7, teacher guidance provides scaffolds to help students reason through algebraic representations of Coulomb's Law. Multiple entry points are built into the investigation, including opportunities to compare qualitative claims from class data with the formal mathematical model. The lesson combines graphical representations, hands-on apparatus, and mathematical modeling so that students with varying language proficiency and mathematical readiness can engage in the task. This layered approach provides both support for learners who need more concrete representations and enrichment for students ready to extend into larger-scale systems. Unit 3, Molecular Processes in Earth's Systems, Lesson 7, provides similar supports through the use of

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			computer simulations and model comparisons that allow students to visualize abstract atomic structures. The lesson explicitly provides multiple models, such as electron shell and atomic structure diagrams, so students can choose and critique which model is most useful. This approach supports English Learners and students with disabilities by reducing text load and grounding reasoning in visual, interactive models.
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)** All **materials for effective implementation** and student engagement are **readily accessible** through vendor packaging or certified partners.	**Yes**	All materials for effective implementation and student engagement are readily accessible through vendor packaging or certified partners. Teacher resources include lists of materials included and those needed for each lesson. All materials not provided in the unit kits are fairly common and easy to acquire. Materials, both digital presentation and items needed for hands-on activities, are readily available. The teacher portal sections of the platform include student and teacher editions and provide access to all copies of handouts and printables needed for each lesson. The program also consistently integrates core instructional resources, lab materials, authentic texts, and teacher support materials that are practical for classroom use. In the Unit Resources tab, Unit Planning, Unit Materials Teacher Kit includes a list of materials needed for the unit. The Unit Material Student Group Kit includes a list of group materials. For example, in Unit 2, Structure and Properties of Matter, Teacher Portal, Unit Resources, Kit

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			Companion, Activity Guide, Lesson 2, Day 1, guidance includes teacher tips, videos on how to prepare for the investigations, teacher and student kit boxes, and a list of locally sourced materials which are easy to obtain. In Unit 5, Lesson 1, Day 1, Lesson Launch, Student Edition, Handouts section, materials include links to the English and Spanish printable student handouts for the lesson, teacher keys, and Teacher Reference: Supporting Student Questions. All presentation materials are easily accessible digitally, and student editions can be printed. There is a digital Additional Resources section to supplement and/or assist with the primary materials. Student and teacher kits for the investigations, with pictures of included items, can be purchased. The help button brings the user to the store to purchase items. When clicking on the kits in the digital teacher portal, there is an activity guide included that shows which materials are needed on a specific day for each lesson.
	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.	**Yes**	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 materials. The materials provide ways for students to be exposed to the safety rules. The safety procedures can be found in the teacher's edition, student editions and within the

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			presentation slides. Safety is part of every investigation. For example, in Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 4, Day 1, Student Edition, Navigate, Section 14, Safety Precautions provides students with a list of safety precautions, such as “pick up any marbles on the floor to prevent slip/trip hazards.” In the teaching slides, Lesson 4, Day 1, Slide J, both teachers and students are provided with the same safety precaution list as found in the Student Edition handout. Unit 2, Lesson 13, as in all lessons with hands-on activities, includes safety instructions and instructions for carrying out the investigation. In Unit 4, Chemical Reactions in Our World, Unit Overview, the Teacher Background information provides lab safety requirements. In Lesson 8, specific safety precautions are called out within the lesson using an icon and a call-out box on a presentation slide.
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.	**Required** **8a)** Materials include **multiple types of curriculum-embedded formative and summative assessments** (iterative student models, student-centered discussions, data analysis, self-reflection and peer feedback investigations, and projects) that allow teachers to **evaluate student progress** toward mastery of the Louisiana Student Standards for Science.	Yes	Materials include multiple types of curriculum-embedded formative and summative assessments that allow teachers to evaluate student progress toward mastery of the LSSS. Each Unit Overview provides an Assessment System Overview which outlines the varied opportunities for different types of assessments throughout the lessons, including pre-assessment, formative assessment, summative assessment, student self-assessment, and lesson-by-lesson assessment opportunities with the three dimensions highlighted. Lessons include embedded

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☒ Yes ☐ No			formative assessments and directly call out the assessment opportunities in the lesson plans. Examples of these opportunities include student handouts, home learning assignments, exit tickets, progress trackers, and student discussions. The materials also include task assessments in the form of design challenges and presentations. Most lessons include a Progress tracker for student self-assessment, which can be used to formatively assess individual student progress or for students to assess their own understanding throughout the unit. Teachers are also provided assessment keys found in the Teaching the Lesson Resources. There are also on-demand professional development videos which teachers can utilize for approaches to grading. For example, in Unit 3, Molecular Processes in Earth's Systems, Lesson 11, students demonstrate understanding by developing and revising models of fertilizer reactions, critically reading to extract central scientific ideas, and comparing different chemical structures. These tasks function as both formative and summative assessments. Teachers can monitor progress during reading discussions and model development, while final models provide summative evidence of students' grasp of chemical reactions and conservation of matter. In Unit 4, Chemical Reactions in Our World, Lesson 1, Day 2, students' initial model developed is an opportunity to pre-assess students' use of particle thinking and understanding of what it means for a

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			substance to be acidified. In Lesson 4, students complete an exit ticket, which serves as a formative assessment to check understanding of concentration, pH, and molarity. In Lesson 7, students carry out an investigation comparing how the addition of a salt to an acidic solution affects the pH of a weak acid differently than a strong acid during a mid-unit transfer task, serving as a summative assessment. In Lesson 14, students self-assess their own engineering design solution for how to prevent oyster larvae from dying off. Lastly, in Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 3, Teacher Resources, the Test Bank Summary provides optional assessment opportunities in addition to those included with the instructional materials. Test banks contain editable, multi-dimensional questions for each lesson in three formats, including multiple choice, evidence-supported response, and scenario-based free response.
	Required **8b)** Assessment items and tasks **integrate the three dimensions** and include opportunities to engage students in applying understanding to new contexts.	**Yes**	Assessment items and tasks are structured on the integration of the three dimensions and include opportunities to engage students in applying understanding to new contexts. Materials include Lesson-Level Performance Expectations (LLPEs) within several lessons of the units. They are three-dimensionally structured to include the SEP, DCI, and CCC. The Transfer Tasks and Unit Assessments within each unit integrate SEPs and CCCs in assessments as students use data, construct

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			explanations, and develop models. While some lessons allow students to practice skills, others allow them to draw upon learned concepts for application in a different situation. The answer keys to the end-of-unit assessments also indicate which questions are aligned with specific DCIs, SEPs, and CCCs. For example, in Unit 2, Structures and Properties of Matter, Lesson 11, students research (SEP, Obtaining, Evaluating, and Communicating Information) how electrons move through air during a lightning strike, evaluate sources, and use models (SEP, Developing and Using Models) to explain (SEP, Constructing Explanations and Designing Solutions) ionization and charge transfer (DCI, HS.PS1A.c, HS.PS2B.c; CCCs, Cause and Effect, Energy and Matter). In Unit 3, Molecular Processes in Earth's Systems, Lesson 4, students complete an exit ticket where they analyze molecular models (SEP, Developing and Using Models) and describe Patterns (CCC) to determine which molecule will most likely cause erosion or frost heaving (DCI, HS.PS1A.c). In Lesson 15, Summative End-of-Unit Transfer Task, students develop models (SEP, Developing and Using Models) to explain the formation of soap scum due to the presence or absence of specific ions in water (LSSS HS.PS1-1, HS-PS1-2). Lastly, in Unit 5, Energy from Chemical and Nuclear Reactions, Lesson 5, students develop models (SEP, Developing and Using Models) predicting energy changes during bond formation and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			breaking. Students present claims (SEP, Constructing Explanations and Designing Solutions) using their models for how a particular fuel releases energy when it combusts (DCI, HS.PS1B.a; CCC, Energy and Matter). In Lesson 8, Hot Pack Assessment and Cold Pack Assessment, students develop a model (SEP, Developing and Using Models) based on evidence to illustrate energy transfer (CCC, Energy and Matter) into or out of a chemical reaction system, depending on energy transfer into and out of fields as particular bonds break and form (DCI, HS.PS1A.d, HS.PS1B.a).
	8c) Scoring guidelines and rubrics align with the three dimensions of the Louisiana Student Standards for Science. Scoring criteria should be at the appropriate depth for the grade band and incorporate look-fors that are specific, observable, and measurable.	**Yes**	Scoring guidelines and rubrics align with performance expectations and incorporate criteria that are specific, observable, and measurable. The Teacher Resources section includes the rubrics provided for lessons with assessment opportunities. Depending on the assessment, rubrics may provide student answer examples or state performance expectations addressed. Graded and non-graded assessments are included as well. The materials also include rubrics for teacher and peer feedback. Each unit includes a lesson-by-lesson assessment alignment, which indicates which of the DCIs, SEPs, and CCCs are aligned to each assessment, whether summative, formative, or peer assessment. This document also explains what to look for and at which point in the lesson. Assessments, which have the students create models based on

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			information developed, provide an exemplar for the teacher to utilize in gauging student understanding. For example, in Unit 1, Thermodynamics in Earth's Systems, Teacher Portal, Teaching the Lesson Resources, the Assessment Keys tab provides all of the answer keys for the entire unit. Lesson 12, Answer Key 1, Berm Model Key provides a rubric for teachers to grade students' models. The key also includes the 3D elements color-coded for help with grading. In Unit 3, Molecular Processes in Earth's Systems, Teacher Portal, Assessment System Overview, Overall Unit Assessment, Lesson 1, Day 1, the Exit Ticket provides teachers with the opportunity to pre-assess students' understanding of the problem that defines the driving questions for the unit by having students identify some of the criteria and constraints of supporting living and working off Earth for a longer period of time. In Unit 2, Structures and Properties of Matter, Lesson 9, assessment tasks require students to revise models of the lightning system and apply Coulomb's law through mathematical reasoning. Rubrics are structured around specific, measurable outcomes such as the inclusion of key components in models, accuracy of mathematical representations, and alignment of student explanations with physical principles. These observable criteria assess both conceptual understanding and application. The use of Gotta-Have-It Checklists provides additional transparency,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			allowing both students and teachers to track mastery of the standards in explicit, criterion-based ways.
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[3]	1. Three-Dimensional Learning	**Yes**	Materials support students in developing scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards.
	2. Phenomenon-Based Instruction	**Yes**	Observing and explaining phenomena and designing solutions provide the purpose and opportunity for students to engage in learning a majority of the time. 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. 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.

[3] 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	**Yes**	The materials incorporate the majority (9 out of 13) of the Louisiana Student Standards for Science to the full depth of the standards. The total amount of content is viable for a school year. The science content is accurate, up-to-date, and aligned with the most current and widely accepted explanations. No evidence of incorrect or out-of-date science explanations could be found. Instructional materials spend minimal time on content outside of the course, grade, or grade-band.
	4. Disciplinary Literacy	**Yes**	Students regularly engage with authentic, grade-appropriate sources that represent the language and style used and produced by scientists. Students regularly engage in grade-appropriate speaking and writing about scientific phenomena and engineering solutions using authentic sources. Materials address the necessity of using scientific evidence to support ideas. Materials provide variability in the tasks that students execute. Materials provide a coherent sequence of authentic science sources that contextually build scientific vocabulary and knowledge over the course of study.
II: Additional Criteria of Superior Quality[4]	5. Learning Progressions	**Yes**	The overall organization of the materials and the development of the disciplinary core ideas, science and engineering practices, and crosscutting concepts are coherent within and across units and are organized to support learning through a natural progression.

[4] 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
			Students engage with and build understanding of the three dimensions of the standards at increasing levels of complexity and sophistication, and engage in a coherent progression of learning that is coordinated over time, clear, and organized. Students apply grade-appropriate mathematical thinking when applicable.
	6. Scaffolding and Support	**Yes**	Materials include the following separate teacher support material: 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. 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. Teacher resources include educational 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 developmentally appropriate and aligned to the Louisiana Student Standards for Science and associated learning progressions. Materials provide support for diverse learners, including English Learners and students with disabilities. Teacher Guidance includes

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			appropriate suggestions and materials for supporting varying student needs at the unit and lesson level using an accelerated learning approach. Materials do not include teacher guidance to help support special populations and provide opportunities for these students to meet the expectations of the standards and enable regular progress monitoring.
	7. Usability	**Yes**	All materials for effective implementation and student engagement are readily accessible through vendor packaging or certified partners. 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 materials.
	8. Assessment	**Yes**	Materials include multiple types of curriculum-embedded formative and summative assessments that allow teachers to evaluate student progress toward mastery of the Louisiana Student Standards for Science. Assessment items and tasks integrate the three dimensions and include opportunities to engage students in applying understanding to new contexts. Scoring guidelines and rubrics align with the three dimensions of the Louisiana Student Standards for Science and incorporate specific, observable, and measurable criteria and look-fors at the appropriate depth for the grade band.
FINAL DECISION FOR THIS MATERIAL: **Tier 1, Exemplifies quality**			

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 2025-2026 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Acadia, Ascension, Avoyelles, Bienville, Bossier, Caddo, Calcasieu, CSAL, East Feliciana, East Baton Rouge, Hynes Charter School Corporation, Iberia, Iberville, Jefferson, Lafayette, Lincoln, Livingston, LSU Laboratory School, Natchitoches, Ouachita, Plaquemines, Richland, St. Charles, St. Landry, St. Mary, St. Tammany, Tangipahoa, Terrebonne, University View Academy, West Baton Rouge, and Zachary Community Schools. This review represents the work of current Louisiana educators with experience in grades K-12.

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.