



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: **Biology**

Grade/Course: **Biology**

Publisher: **Accelerate Education**

Copyright: **2017**

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

**[Tier I](#), [Tier II](#), [Tier III](#) Elements of this review:**

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

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

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

**Tier 1 ratings** receive a “Yes” in Column 1 for Criteria 1 – 8.

**Tier 2 ratings** receive a “Yes” in Column 1 for all non-negotiable criteria, but at least one “No” in Column 1 for the remaining criteria.

**Tier 3 ratings** receive a “No” in Column 1 for at least one of the non-negotiable criteria.

| CRITERIA  | INDICATORS OF SUPERIOR QUALITY  | MEETS METRICS (YES/NO) | JUSTIFICATION/COMMENTS WITH EXAMPLES   |
|---|---|------------------------|--|
| <b>SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet Criteria 1 and 2 for the review to continue to Criteria 3 and 4. Submissions must meet all of the non-negotiable criteria in order for the review to continue to Section II.</b>   |   |                        |  |
| <p><b>Non-Negotiable</b><br/> <b>1. THREE-DIMENSIONAL LEARNING:</b><br/> Students have multiple opportunities throughout each unit to develop an understanding and demonstrate application of the three dimensions.</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> | <p><b>REQUIRED</b><br/> <b>1a)</b> Materials are designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials teach the science and engineering practices, crosscutting concepts and disciplinary core ideas separately when necessary but they are most often integrated to support deeper learning.</p> | <p><b>No</b></p>       | <p>Materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. Materials do not lead students to develop scientific content knowledge and skills by interacting with the three dimensions of the science standards for a majority of the time.</p> <p>For example, in “Semester A: Classification,” the “Eubacteria” lesson briefly mentions one Crosscutting Concept (CCC) on structure and function. However, no evidence could be found of students engaging with the CCC, either in isolation or in an integrated fashion, as called for by the standards. Students perform a vocabulary match of the structures within a bacteria and read content related to the disciplinary core ideas (DCI) on how bacteria can cause diseases (HS.LS1E.d) and on how antibiotics are used as a treatment against bacterial infections (HS.LS1E.c). There is no evidence of an opportunity for students to obtain, evaluate, and communicate information (SEP) about bacterial reproduction and adaptation and how these features impact the design of effective treatment.</p> <p>In “Semester A: The Principles of Inheritance” the “Chromosomes” lesson introduces students to one-dimensional lesson objectives that are focused on “the parts of a chromosome, chromosomal mutation, and the differentiation among types of chromosomal mutation (HS.LS3A.a, HS.LS3B.a, HS.LS3B.b).” The lesson is divided into segments that contain guiding questions for students. Students read the text then answer the conceptual check questions available at the end of each lesson segment. However, no evidence could be found of meaningful student engagement with the science and engineering practices (SEP) or with crosscutting concepts.</p> |

| CRITERIA  | INDICATORS OF SUPERIOR QUALITY   | MEETS METRICS (YES/NO)      | JUSTIFICATION/COMMENTS WITH EXAMPLES   |
|---|--|-----------------------------|--|
|   |  |                             | <p>In “Semester B: Biomes,” the “Finding Trophic Level Assignment” activity requires students to create a food web of several organisms in an ecosystem. They draw arrows representing the flow of energy between trophic levels. Although the food web activity shows that energy moves between one place and another, there is limited student engagement with crosscutting concepts. Students must also develop a model that is based on evidence to illustrate relationships between systems (SEP). However, there is no information shared with students on how energy is efficiently transferred from one trophic level to another and affects the relative number of organisms that can be supported at each trophic level (HS.LS2B.b).</p> |
| <p><b>Non-Negotiable</b><br/> <b>2. PHENOMENON-BASED INSTRUCTION:</b><br/> Explaining phenomenon and designing solutions drive student learning.</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p>  | <p><b>REQUIRED</b><br/> <b>2a)</b> Observing and explaining phenomena and designing solutions provide the purpose and opportunity for students to engage in learning a majority of the time.</p> | <p><b>No</b></p>            | <p>Observing and explaining phenomena do not set the purpose for student learning.</p>   |
| <p><b>Non-Negotiable (only reviewed if criteria 1 and 2 are met)</b></p> <p><b>3. ALIGNMENT &amp; ACCURACY:</b><br/> Materials adequately address the <a href="#">Louisiana Student Standards for Science</a>.</p> <p><input type="checkbox"/> Yes      <input type="checkbox"/> No</p> | <p><b>REQUIRED</b><br/> <b>3a)</b> The majority of the Louisiana Student Standards for Science are incorporated, to the full <b>depth of the standards</b>.</p>                                  | <p><b>Not Evaluated</b></p> | <p>This section was not evaluated because the non-negotiable criteria were not met.</p>  |
|   | <p><b>REQUIRED</b><br/> <b>3b)</b> Science content is <b>accurate</b>, reflecting the most current and widely accepted explanations.</p>   | <p><b>Not Evaluated</b></p> | <p>This section was not evaluated because the non-negotiable criteria were not met.</p>  |
|   | <p><b>3c)</b> In any one grade or course, instructional materials spend minimal time on content outside of the course, grade, or grade-band.</p>   | <p><b>Not Evaluated</b></p> | <p>This section was not evaluated because the non-negotiable criteria were not met.</p>  |

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

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

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|---|---|------------------------|--|
| <input type="checkbox"/> Yes <input type="checkbox"/> No  | guidelines are embedded in the curriculum.  |                        |  |
|   | <b>7c)</b> The total amount of content is <b>viable</b> for a school year.  | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
| <b>Additional Criterion</b><br><b>8. ASSESSMENT:</b><br>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. | <b>REQUIRED</b><br><b>8a)</b> Multiple types of formative and summative assessments (performance-based tasks, questions, research, investigations, and projects) are embedded into content materials and assess the learning targets. | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
|   | <b>REQUIRED</b><br><b>8b)</b> Assessment items and tasks are structured on integration of the <b>three-dimensions</b> .   | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
|   | <b>8c)</b> Scoring guidelines and rubrics <b>align</b> to performance expectations, and incorporate criteria that are specific, observable, and measurable.   | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
| <input type="checkbox"/> Yes <input type="checkbox"/> No  |   |                        |  |

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

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

| Section                                     | Criteria                        | Yes/No               | Final Justification/Comments  |
|---|---------------------------------|----------------------|---|
| <b>I: Non-Negotiables</b>                   | 1. Three-dimensional Learning   | <b>No</b>            | The instructional materials are designed in a way that, a majority of the time, students do not develop scientific content knowledge and skills by interacting with the three dimensions. |
|   | 2. Phenomenon-Based Instruction | <b>No</b>            | Observing and explaining phenomena do not set the purpose for student learning.   |
|   | 3. Alignment & Accuracy         | <b>Not Evaluated</b> | This section was not evaluated because the non-negotiable criteria were not met.  |
|   | 4. Disciplinary Literacy        | <b>Not Evaluated</b> | This section was not evaluated because the non-negotiable criteria were not met.  |
| <b>II: Additional Indicators of Quality</b> | 5. Learning Progressions        | <b>Not Evaluated</b> | This section was not evaluated because the non-negotiable criteria were not met.  |

| CRITERIA  | INDICATORS OF SUPERIOR QUALITY | MEETS METRICS (YES/NO) | JUSTIFICATION/COMMENTS WITH EXAMPLES   |
|---|--------------------------------|------------------------|--|
|   | 6. Scaffolding and Support     | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
|   | 7. Usability                   | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
|   | 8. Assessment                  | <b>Not Evaluated</b>   | This section was not evaluated because the non-negotiable criteria were not met. |
| FINAL DECISION FOR THIS MATERIAL: <b>Tier III, Not representing quality</b> |                                |                        |  |

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

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

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

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