

Science



Instructional Materials and Curriculum Evaluation Tool

Explanation and Use Guidance

When adopting curricular materials it is important to consider the alignment and coherence of the materials to the identified standards. While many vendors will claim full alignment with the state standards, local teams will want to utilize their control and decision making criteria prior to making a purchase.

It is important to note that a curriculum and a curricular resource differ in their structure and function. For the purpose of this tool they are defined below.

- **Instructional Materials (or resources)** support curriculum
- **A Curriculum** is an organized plan of instruction that includes a sequence of instructional units that lend coherence to learning and engage students in mastering the standards. "Curriculum refers to the knowledge and practices in subject matter areas that teachers teach and that students are supposed to learn. A curriculum generally consists of a scope, or breadth of content, in a given subject area and of a sequence of concepts and activities for learning." A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13165>. (2012)

This tool is intended to support districts in their evaluation of a curriculum. While it may be helpful in determining aligned instructional materials and resources it is acknowledged that they likely will not meet the full intent of the standards and will require additional supplementation. Therefore districts are encouraged to utilize their local control when making decisions about which materials are best fit for their students.

STRONG SCIENCE INSTRUCTION REQUIRES THAT STUDENTS;

- Apply content knowledge to explain real world phenomena and to design solutions,
- Investigate, evaluate and reason scientifically using the Science and Engineering Practices. and
- Connect concepts across disciplines of science and everyday life.

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Title: **[Title]**Grade/Course: **[Grade/Course]**Publisher: **[Publisher]**Copyright: **[Copyright]****Criterion of review:**

1. Three-dimensional Learning, Coherence and Scope (Non-Negotiable)
2. Teacher Supports
3. Usability
4. Balanced Assessments

The Scores and tallies are meant to provide evidence to reference during discourse. The first section consists of non-negotiables. Districts should utilize local discretion when adding value to the other section to reflect the needs of their local context.

Section 1

Non-Negotiable Criterion of Standards Alignment ([Video](#))

1. The materials promote **students making sense of the Kansas Science Standards** by utilizing a **phenomenon or problem based approach**. They incorporate observable events and/or problems that are experienced in the natural world.
Select: **YES** **NO**
Comments:
2. The materials clearly identify areas for students to **utilize the three dimensions** of the science standards (disciplinary core ideas, cross cutting concepts and science and engineering practices).
Select: **YES** **NO**
Comments:
3. The science concepts represented in the material represent the most **current** understanding of **accurate** understandings and widely accepted scientific explanations.
Select: **YES** **NO**
Comments:

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Non-Negotiable Criterion of Three Dimensional Learning (Video)

1. Students have **multiple opportunities** throughout each unit to develop an understanding and demonstrate application of the three dimensions and how they relate to a phenomenon.

Select: **YES** **NO**

Comments:

2. Materials consistently **integrate the three dimensions** in student learning opportunities and are **explicit** on which performance expectations / standards are addressed in each lesson, chapter and/or unit.

Select: **YES** **NO**

Comments:

3. Materials and **assessments** are designed to elicit direct, observable evidence **for** and **of** three-dimensional learning that build on student understandings and prior knowledge / experiences.

Select: **YES** **NO**

Comments:

Non-Negotiable Criterion of Literacy Supports (Video)

1. The materials provide opportunities for students to engage with **authentic sources of information, at the appropriate grade level**, that support the language and style of literacy used by scientists. This may include academic articles, journals, photographs, data sets, lab reports, or videos.

Select: **YES** **NO**

Comments:

2. The materials require students to regularly engage in **speaking, listening, and writing** about their scientific ideas in order to make sense of scientific phenomena.

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Select: **YES** **NO**

Comments:

Non-Negotiable Criterion Coherence and Scope (Video)

1. The progression of learning is appropriate and scaffolded over time **for the identified grade level.**

Select: **YES** **NO**

Comments:

2. The organization of materials reflects the appropriate learning progressions (vertical alignment) of Disciplinary Core Ideas called out in [Appendix E of the Next Generation Science Standards Appendices.](#)

Select: **YES** **NO**

Comments:

3. The organization of materials reflects the appropriate learning progressions (vertical alignment) of Cross Cutting Concepts called out in [Appendix G of the Next Generation Science Standards Appendices.](#)

Select: **YES** **NO**

Comments:

4. The organization of materials reflects the appropriate learning progressions (vertical alignment) of Cross Cutting Concepts called out in [Appendix F of the Next Generation Science Standards Appendices.](#)

Select: **YES** **NO**

Comments:

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Section 1 Criteria Total Scores

YES _____

Scores:

12 Meets Criteria

8-11 Partially Meets Criteria

0-8 Does Not Meet Criteria

Comments:

If the above criteria is met or partially met, then review using the below indicators

Balanced Assessments

1. Multiple types of **formative** and **summative** assessments (examples may include but are not limited to; iterative models, student discussions, data-analysis, self-reflection, projects, peer feedback, portfolios, justified multiple choice) are embedded into materials.

Select: **YES** **NO**

Comments:

2. Assessment tasks provided align with the three dimensions of science (Disciplinary Core Ideas, Science and Engineering Practices, and Cross Cutting Concepts) and are **tied to one or multiple performance expectations.**

Select: **YES** **NO**

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3. Claimed performance expectations are clearly assessed **at the level of the performance expectation**.
Select: **YES** **NO**
Comments:

 4. Assessment tasks provide teacher guidance on three dimensional **look-fors and progressions**. (Due to the unique nature of three-dimensional assessments this may include guidance such as how to evaluate students' development in using a particular Science and Engineering Practice. For example, what should be expected in a student's initial model versus a final model of a phenomenon.)
Select: **YES** **NO**
Comments:

 5. Tools are provided for scoring assessment items. **Scoring guidelines and rubrics** align to performance expectations and incorporate aligned criteria that are specific, observable and/or measurable.
Select: **YES** **NO**
Comments:

 6. Assessment guidance includes **suggestions on accommodations and modifications** that allow students to demonstrate their full knowledge and skills without changing the intent of the content of the assessment.
Select: **YES** **NO**
Comments:
-

Usability

1. The materials are **easily adaptable** or can be **easily modified** to meet the unique needs of my students.
Select: **YES** **NO**
Comments:

2. The materials can be **easily translated** to meet the unique needs of my students.

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Select: **YES** **NO**

Comments:

3. The reading level of the materials is at the appropriate level for my students.

Select: **YES** **NO**

Comments:

4. The Professional Development offered by the resource is comprehensive in both how to use the resource **AND** the pedagogy needed to teach the resource in a way that reflects high quality instruction.

Select: **YES** **NO**

Comments:

5. The resource provides clear and **timely access to technical support** for both educators and students.

Select: **YES** **NO**

Comments:

6. Laboratory materials that supplement kits or that must be purchased yearly are reasonable in preparation time and/or cost.

Select: **YES** **NO**

Comments:

7. The online platform and/or tools are easy to navigate when transitioning between activities and/or preps.

Select: **YES** **NO**

Comments:

Teacher Supports

1. The teacher support materials include: scientific background knowledge, support in three-dimensional instruction, strategies for discourse, ways to elicit student thinking.

Select: **YES** **NO**

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2. Materials provide support for **diverse learners** including **Emerging Multilingual Learners** and students with disabilities. Materials include a balance of images and information about people representing various demographic and physical characteristics.

Select: **YES** **NO**

Comments:

3. Materials provide clear **safety guidelines**.

Select: **YES** **NO**

Comments:

4. Materials include a **comprehensive list of all supplies** needed to support instructional activities.

Select: **YES** **NO**

Comments:

5. Materials include ways to integrate **cross-curricular** lessons with other disciplines.

Select: **YES** **NO**

Comments:

6. Materials can **feasibly be taught in one school year**.

Select: **YES** **NO**

Comments:

Section 2 Criteria Total Scores

YES _____

Scores:

18-19 Meets Criteria

17-12 Partially Meets Criteria

0-11 Does Not Meet Criteria

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Comments:

Final Evaluation

Notes from Discussion:

If any criteria within section 1 was not met, what are the additional explicit supports available to ensure this criteria is met?

If this resource is adopted what supplemental support will be needed?

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Special thanks to The Louisiana Department of Education and EdReports for their influence in our template

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