Science Evaluation Tool

2020 Curricular Materials Review- Component Programs

**Publisher information**

* Publisher Name:
* Title:
* Grade Level/Course:
* ISBN #:
* Author:
* Copyright:

**Instructions:**

Publishing Company:

* Complete the evaluation form below. Please provide written justification as to how the material meets the standard along with location references. If a justification requires additional space, please submit response on an additional document.

Review Team Member:

* Please use associated information and attachments to complete the evaluation form.
* Explain any discrepancies between your findings and those provided. Explanations and comments should directly reflect the rubric.
* Further explain any findings.

**Introduction**

This tool was specifically designed to evaluate materials created for the NGSS. The innovations that are part of these standards are fundamentally rooted in the Framework. This means that states and districts, like or in Idaho, that did not adopt the NGSS, but that adopted standards based on the three dimensions of the Framework should also be able to use it to evaluate instructional materials that are developed for these key innovations. For example, Idaho Science Content Standards use the title supporting content (SC) to refer to disciplinary core idea (DCI) found in NGSS.

The NGSS innovations in focus within this tool are:

1. **Making Sense of Phenomena and Designing Solutions to Problems.** Making sense of phenomena or designing solutions to problems drives student learning.
2. **Three-Dimensional Learning**. Student engagement in making sense of phenomena and designing solutions to problems requires student performances that integrate grade-appropriate elements of the Science and Engineering Practices (SEPs), Crosscutting Concepts (CCCs), and Supporting Content (SC) in instruction and assessment.

Sections of the tool:

1. Content Domains
2. Science and Engineering Practices
3. Cross Cutting Concepts
4. Indicators of Quality

# Prior to Evaluation

Assemble all previously identified materials necessary for the evaluation. In addition, each evaluator should have a reference copy of the:

* [Standards-Idaho Science Content Standards](http://www.sde.idaho.gov/academic/shared/science/ICS-Science-Legislative.pdf)
* [Glossary](file:///C%3A%5CUsers%5Ckbrady%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5CGlossary.pdf)
* Shifts represented in the 2018 science Idaho content standards relative to previous versions:
	+ Science and Engineering Practices and Crosscutting Concepts are integrated throughout the Performance Standards (K-12) and are the *driving force* for instructional practices, not content domain.
	+ Fewer Performance Standards and Supporting Content topics allow deeper understanding and exploration.
	+ Phenomenon and project/problem based learning and instructional models best correlate with the Performance Standards and state assessment.
	+ In preparation for middle school and high school courses, specific content concepts are taught at specific grade levels, K-5.

## Category 1: Making Sense of Phenomena and Designing Solutions to Problems

**Category 1**

This tool is to be used to collect evidence and make claims about how instructional materials provide opportunities for students to make sense of phenomena and design solutions to problems.

### Directions:

Record evidence of where the category has clearly been incorporated into the materials and instances where it does not appear to have been incorporated. Check evidence that applies and provide page numbers, a brief description of the evidence, and an explanation of how it either supports or contradicts the claim.

#### Claim 1:

From the student’s perspective, most learning experiences are focused on making sense of phenomena and designing solutions to problems.

**Evidence:**

[ ] Materials have meaningful and relevant phenomena or problems as the central component for learning experiences throughout the materials.

[ ] Students have opportunities to use appropriate SEPs and CCCs to make sense of phenomena and/or to design solutions.

**Explain Evidence** using page numbers, brief descriptions, and additional information:

#### Claim 2:

Guidance is provided to teachers to support students in making sense of phenomena and designing solutions to problems.

**Evidence:**

[ ] One phenomena/problem or a series of related phenomena/problem drive instruction and help maintain a focus for all the lessons in a sequence.

[ ] Guidance is provided to the teacher for how each of the lessons supports students in explaining the phenomena or solving the problem.

[ ] Teaching strategies are provided to use student sense-making and solution-designing as a mechanism for making their three-dimensional learning visible.

**Explain Evidence** using page numbers, brief descriptions, and additional information:

## Content Domains

### PS: Physical Science

| **Content Topic** | **Justification:** Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| Matter & Its Interactions |  |
| Motion & Stability: Forces & Interactions |  |
| Energy |  |
| Waves |  |

### LS: Life Science

| **Content Topic** | **Justification:** Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| Molecules to Organisms: Structure & Processes |  |
| Ecosystems: Interactions, Energy, & Dynamics |  |
| Heredity: Inheritance & Variation of Traits |  |
| Biological Adaptation: Unity & Diversity |  |

### ESS: Earth and Space Science

| **Content Topic** | **Justification:** Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| Earth’s Place in Universe |  |
| Earth’s Systems |  |
| Earth & Human Activity |  |

## Science and Engineering Practices

| **SEP** | **Justification:** Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| Asking Questions (science) & Defining Problems (engineering) |  |
| Develop & Use Model |  |
| Plan & Carry Out Investigations |  |
| Analyze & Interpret Data |  |
| Mathematical Thinking |  |
| Construct Explanation & Design Solutions |  |
| Engage In Argument |  |
| Obtain, Evaluate, & Communicate Information |  |

## Cross Cutting Concepts

| **CCC** | **Justification:** Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| Patterns |  |
| Cause & Effect |  |
| Scale, Proportion, & Quantity |  |
| Systems & System Models |  |
| Energy & Matter |  |
| Structure & Function |  |
| Stability & Change |  |

## Indicators of Quality Rubric: Supporting Criteria

### Access and Equity:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Materials are provided in a way that ensures all students have the opportunity to achieve success in the program of study, including by meeting Title IX, Americans with Disabilities Act and other accessibility requirements.
 |  |
| 1. Materials and assessments are free from bias, inclusive and non-discriminatory, and offered in a way that ensures all students have the opportunity to achieve success in the program of study.
 |  |
| 1. Contains guidance to support differentiated and culturally responsive (i.e., purposefully represents diverse cultures, linguistic backgrounds, learning styles and interests) instruction in the classroom so that every student’s need are addressed by including:
	1. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community as appropriate.
	2. Appropriate scaffolding, interventions, and supports, including integrated and appropriate reading, writing, listening, and speaking alternatives (e.g., translations, picture support, graphic organizers) that neither sacrifice content nor avoid language development for English language learners, special needs, or below grade level readers.
	3. Digital and print resources that provide various levels of readability.
	4. Modifications and extensions for all students, including those performing above their grade level, to deepen understanding of the content.
	5. Materials in multiple language formats.
 |  |

### Student Focus:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material supports the sequential and cumulative development of foundational skills and progresses in specificity to build students’ depth of knowledge and skills. Those skills are necessary for a student’s independent comprehension of grade-level complex texts and mastery of tasks called for by the standards.
 |  |
| 1. Content and standards within the program of study are non-duplicative and vertically aligned to prepare students to transition seamlessly to the next level of education.
 |  |
| 1. The material provides many and varied opportunities for students to work with each standard within the grade level.
 |  |
| 1. The material cross-refers and integrates other content areas.
 |  |
| 1. The material has a balance of text types and lengths that encourage close, in-depth reading and rereading, analysis, comparison, and synthesis of texts.
 |  |
| 1. The material includes sufficient supplementary activities or assignments that are appropriately integrated into the text.
 |  |
| 1. The material has activities and assignments that develop problem-solving skills and foster synthesis and inquiry at both an individual and group level.
 |  |
| 1. The material has activities and assignments that reflect varied learning styles of students.
 |  |
| 1. The material includes appropriate instructional strategies.
 |  |
| 1. Project-based learning and related instructional approaches, such as problem-based, inquiry-based and challenge-based learning, are fully integrated into the material.
 |  |

### Pedagogical Approach:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Provides guidance for teachers throughout for how learning experiences build on each other to support students in developing a deep understanding of the content.
 |  |
| 1. Provides scaffolded supports for teachers to facilitate learning of the content so that students are increasingly responsible for making sense of the content.
 |  |
| 1. The material provides opportunities for supporting English language learners to regularly and actively participate with grade-level text.
 |  |
| 1. The material gives clear and concise instruction to teachers and students. It is easy to navigate and understand.
 |  |
| 1. Includes appropriate academic and content-specific vocabulary in the context of the learning experience that is accessible, introduced, reinforced, reviewed, and augmented with visual representations when appropriate.
 |  |
| 1. Allows teachers to access, revise, and print form digital resources (e.g., readings, labs, assessments, rubrics).
 |  |
| 1. Uses varied modes (selected, constructed, project-based, extended response, and performance tasks) of instruction-embedded pre-, formative, summative, peer, and, self-assessment measures of learning.
 |  |
| 1. Includes editable and aligned rubrics, scoring guidelines, and exemplars that provide guidance for assessing student performance and to support teachers in planning instruction and providing ongoing feedback to students.
 |  |
| 1. Provides multiple opportunities for students to demonstrate and receive feedback on performance of practices connected with their understanding of concepts.
 |  |

### Presentation and Design:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material has an aesthetically appealing appearance (attractive, inviting).
 |  |
| 1. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.
 |  |
| 1. The material has a reasonable and appropriate balance between text and illustration. The material has grade-appropriate font size.
 |  |
| 1. The illustrations clearly cross-reference the text, are directly relevant to the content (not simply decorative), and promote thinking, discussion, and problem solving.
 |  |
| 1. Non-text content (performance clips, images, maps, globes, graphs, pictures, charts, databases, and models) are accurate and well integrated into the text.
 |  |

### Technology:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Technology and digital media support, extend, and enhance learning experiences.
 |  |
| 1. The material has “platform neutral” technology (i.e., cloud based) and availability for networking.
 |  |
| 1. The material has a user-friendly and interactive interface allowing the user to control (shift among activities).
 |  |

**For Questions Contact**

Content & Curriculum

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