Science Evaluation Form

High School Physical Science - Physics

2025 Curricular Materials Review

# Publisher information

* Publisher Name:
* Title:
* ISBN #:
* Author:
* Copyright:
* Most Recently Published Edition and Website:
* Materials provided for evaluation:
* Intended Teacher Audience(s):
* Intended Student Audience(s):
* Is this curriculum in a digital format, print format, or both?

# Instruction

## Publishing Company

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

## Review Team Member:

* Please use information and attachments to complete the curriculum evaluation form.
* Explain any discrepancies between your findings and the provided information.
* Findings, explanations, and comments should directly reflect the rubric.

# Scoring for High School physical science – physics – Alignment to Science Standards

To evaluate each grade or course’s materials for alignment to [**Idaho Content Standards**](https://www.sde.idaho.gov/topics/admin-rules/files/negotiated-rulemaking/Idaho-K-12-State-Standards-for-Science.pdf), analyze the materials against the relevant criteria in the tables below. Instructional materials must meet most criteria and metrics to align with content standards.

| 0 PointsNo Alignment | 1 PointPartial Alignment | 2 PointsHigh Alignment | NANot Applicable |
| --- | --- | --- | --- |
| Standard for Science is not evident. | There is some evidence of the Standard for Science. | Materials explicitly align to and support the Standard for Science through regular and authentic engagement opportunities for students. |  |

High School Physical Science: Physics

| Motion and Stability: Forces and Interactions | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| *Students who demonstrate understanding can:* |
| Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. (1.1) | 0 1 2 N/A |  |
| Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. (1.2) | 0 1 2 N/A |  |
| Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. (1.3) | 0 1 2 N/A |  |
| Use mathematical representations of Newton’s Law of Gravitation and Coulomb’s Law to describe and predict the gravitational and electrostatic forces between objects. (1.4) | 0 1 2 N/A |  |
| Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current. (1.5) | 0 1 2 N/A |  |
| Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. (1.6) | 0 1 2 N/A |  |

| Energy | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| *Students who demonstrate understanding can:* |
| Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. (2.1) | 0 1 2 N/A |  |
| Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects). (2.2) | 0 1 2 N/A |  |
| Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. (2.3) | 0 1 2 N/A |  |
| Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics). (2.4) | 0 1 2 N/A |  |
| Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction. (2.5) |  |  |

| Waves | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| *Students who demonstrate understanding can:* |
| Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. (3.1) | 0 1 2 N/A |  |
| Evaluate questions about the advantages of using digital transmission and storage of information. (3.2) | 0 1 2 N/A |  |
| Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other. (3.3) | 0 1 2 N/A |  |
| Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter. (3.4) | 0 1 2 N/A |  |
| Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy. (3.5) | 0 1 2 N/A |  |

Category 1: 3D Design (Lessons and Units)
Lessons and units are designed so students make sense of phenomena and/or design solutions to problems by engaging in student performances that integrate the three dimensions.

| Lessons and units include clear and compelling evidence of the following: | Meets Criteria | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions in addition to page numbers. |
| --- | --- | --- |
| **Explaining Phenomena/Designing Solutions:** Making sense of phenomena and/or designing solutions to a problem drive student learning.* Student questions and prior experiences related to the phenomenon or problem motivate sense-making and/or problem solving.
* The focus of the lesson is to support students in making sense of phenomena and/or designing solutions to problems.
* When engineering is a learning focus, it is integrated with developing disciplinary core ideas from physical, life, and/or earth and space sciences.
 | 0 1 2 N/A |  |
| **Three Dimensions:** Builds understanding of multiple grade-appropriate elements of the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) that are deliberately selected to aid student sense-making of phenomena and/or designing of solutions. | **Three Dimensions (overall)**0 1 2 N/A |  |
| 1. Provides opportunities to develop and use specific elements of the SEP(s).
 | 0 1 2 N/A |  |
| 1. Provides opportunities to develop and use specific elements of the DCI(s).
 | 0 1 2 N/A |  |
| 1. Provides opportunities to develop and use specific elements of the CCC(s).
 | 0 1 2 N/A |  |
| **Integrating the Three Dimensions:** Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs. | 0 1 2 N/A |  |
| **Unit Coherence:** Lessons fit together to target a set of standards.* Each lesson builds on prior lessons by addressing questions raised in those lessons, cultivating new questions that build on what students figured out, or cultivating new questions from related phenomena, problems, and prior student experiences.
* The lessons help students develop toward proficiency in a targeted set of performance expectations.
 | 0 1 2 N/A |  |
| **Multiple Science Domains:** *When appropriate*, links are made across the science domains of life science, physical science and Earth and space science.* Disciplinary core ideas from different disciplines are used together to explain phenomena.
* The usefulness of crosscutting concepts to make sense of phenomena or design solutions to problems *across science domains* is highlighted.
 | 0 1 2 N/A |  |
| **Math and ELA:** Provides grade-appropriate connection(s) to the Idaho Content Standards in Mathematics and/or English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects. | 0 1 2 N/A |  |

# CATEGORY 2: Instructional Supports (Lessons and Units)

Lessons and units support three-dimensional teaching and learning for ALL students by placing the lesson in a sequence of learning for all three dimensions and providing support for teachers to engage all students.

| Lessons and units include clear and compelling evidence of the following: | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| **Relevance and Authenticity:** Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world.* Students experience phenomena or design problems as directly as possible (firsthand or through media representations).
* Includes suggestion for how to connect instruction to the students’ home, neighborhood, community and/or culture as appropriate.
* Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem—to questions from their own experience.
 | 0 1 2 N/A |  |
| **Student Ideas:** Provides opportunities for students to express, clarify, justify, interpret, and represent their ideas and respond to peer and teacher feedback orally and/or in written form as appropriate.  | 0 1 2 N/A |  |
| **Building Progressions:** Identifies and builds on students’ prior learning in all three dimensions, including providing the following support to teachers: * Explicitly identifying prior student learning expected for all three dimensions.
* Clearly explaining how the prior learning will be built upon.
 | 0 1 2 N/A |  |
| **Scientific Accuracy:** Uses scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students’ three-dimensional learning.  | 0 1 2 N/A |  |
| **Teacher support for unit coherence:** Supports teachers in facilitating coherent student learning experiences over time by:* Providing strategies for linking student engagement across lessons (e.g. cultivating new student questions at the end of a lesson in a way that leads to future lessons, helping students connect related problems and phenomena across lessons, etc.).
* Providing strategies for ensuring student sense-making and/or problem-solving is linked to learning in all three dimensions.
 | 0 1 2 N/A |  |

# CATEGORY 3: Monitoring Student Progress (Lessons and Units)

Lessons and units support monitoring student progress in all three dimensions as students make sense of phenomena and/or design solutions to problems.

| Lessons and units include clear and compelling evidence of the following: | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| **Monitoring student performances:** Elicits direct, observable evidence of three-dimensional learning; students are using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions.  | 0 1 2 N/A |  |
| **Formative:** Embeds formative assessment processes throughout that evaluate student learning to inform instruction.  | 0 1 2 N/A |  |
| **Scoring guidance:**  Includes aligned rubrics and scoring guidelines that provide guidance for interpreting student performance along the three dimensions to support teachers in (a) planning instruction and (b) providing ongoing feedback to students.  | 0 1 2 N/A |  |
| **Unbiased tasks/items:** Assesses student proficiency using methods, vocabulary, representations, and examples that are accessible and unbiased for all students.  | 0 1 2 N/A |  |
| **Coherent assessment system**: Includes pre-, formative, summative, and self-assessment measures that assess three-dimensional learning.  | 0 1 2 N/A |  |

# Scoring for Best Practices

| 0 PointsNo Alignment | 1 PointPartial Alignment | 2 PointsHigh Alignment | NANot Applicable |
| --- | --- | --- | --- |
| There is no evidence of the teaching practice. | The teaching practice is embedded in some lessons. | Materials regularly embed supports for teachers to implement best practices.  |  |

Scoring for Alignment to Best Practices

| Best Practices | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| 1. Materials contain clear statements and explanations of science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs).
 | 0 1 2 N/A |  |
| 1. Materials provide questioning and discussion techniques that promote learning through thinking, discussion, and reflection.
 | 0 1 2 N/A |  |
| 1. Digital materials and assessments are easy to edit and revise and access to distribute and/or print.
 | 0 1 2 N/A |  |
| 1. Materials contain teacher-specific instructions and explanations for expanding content knowledge and lesson planning development.
 | 0 1 2 N/A |  |

# Scoring for Multi-Tiered Systems of Support

| 0 PointsNo Alignment | 1 PointPartial Alignment | 2 PointsHigh Alignment | NANot Applicable |
| --- | --- | --- | --- |
| There is no evidence of the feature. | The feature is included and partially aligned to Tier II instruction. | The feature is included and fully aligned to Tier II instruction. |  |

## Scoring for Alignment to Idaho Multi-Tiered Systems of Support

| Multi-tiered Instruction | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| 1. **Interventions:** Materials provide interventions aligned to core instruction. Interventions are more frequent and varied to support acquisition of identified skills.
 | 0 1 2 N/A |  |
| 1. **Differentiated Instruction:** Provides guidance for teachers to support differentiated instruction by including:
* Materials provide a variety of resources and strategies for small group instruction that can be used for differentiation in the general education classroom.
* Supportive ways to access instruction, including appropriate linguistic, visual, and kinesthetic engagement opportunities that are essential for effective science and engineering learning and particularly beneficial for multilingual learners and students with disabilities.
* Extra support (e.g. phenomena, representations, tasks) for students who are struggling to meet the targeted expectations.
* Extensions for students with high interest or who have already met the performance expectations to develop deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.
 | 0 1 2 N/A |  |
| 1. **Scaffolded differentiation over time:** Provides supports to help students engage in the practices as needed and gradually adjusts supports over time so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems.
 | 0 1 2 N/A |  |
| 1. **Opportunity to learn:** Provides multiple opportunities for students to demonstrate performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts and to receive feedback.
 | 0 1 2 N/A |  |

# Scoring for Additional Indicators of Quality Materials

| 0 PointsNo Alignment | 1 PointPartial Alignment | 2 PointsHigh Alignment | NANot Applicable |
| --- | --- | --- | --- |
| There is no evidence of scaffolding, differentiation elements, or engaging tools.  | There is some evidence of scaffolding, differentiation elements, or engaging tools. | Materials include scaffolding and differentiation elements as well as engaging tools. |  |

Scoring for Alignment to Additional Indicators of Quality Materials

| Indicators of Quality Materials | Meets Criteria | Justification or Comments |
| --- | --- | --- |
| 1. Materials provide examples of scaffolding and guided practice.
 | 0 1 2 N/A |  |
| 1. Materials include supports for differentiation, pacing, remediation and extension activities, and alternative teaching approaches.
 | 0 1 2 N/A |  |
| 1. Materials provide instructional strategies to accommodate the learning differences of all students.
 | 0 1 2 N/A |  |
| 1. Materials are relevant and interesting for grade level with authentic contexts and tools that allow students to make connections.
 | 0 1 2 N/A |  |
| 1. Materials integrate technology and interactive tools, visuals, videos, or dynamic software to engage students.
 | 0 1 2 N/A |  |
| 1. Materials are available in language(s) other than English.
 | Yes N/A |  |

For Questions Contact

Content & Curriculum – Curricular Materials

Idaho Department of Education

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