2024 Instructional Material Summer Review Institute

Review Team Appraisal of Title

Grades 9-12 Physical Science

This appraisal form is provided for use by educators responsible for the selection of instructional materials for implementation with districts and charter schools across New Mexico to meet the need of their student populations.

NMPED Adoption Information

Text Title	Inspire Science New Mexico Physical Science Comprehensive Student Bundle with Actively Learn Science, 6-year subscription	Publisher	McGraw Hill LLC
SE ISBN	9781266209109	TE ISBN	9780076958191
SW ISBN		Grade Level/Content	Grades 9-12 Physical Science

Core Instructional Material Designation *(Core Instructional Material is the comprehensive print or digital educational material, including basal material, which constitutes the necessary instructional components of a full academic course of study in those subjects for which the department has adopted content standards and benchmarks.)*

Recommended (90% and above)	☐	**Recommended with Reservations** (80-89%)	☐	**Not Recommended and Not Adopted** (below 80%)	☑

Total Score - *The final score for the materials is averaged between the team of reviewers.*

Average Score
76%

Cultural and Linguistic Relevance Recognition - *Materials are reviewed for relevant criteria pertaining to the support for teachers and students in the material regarding cultural relevance and the inclusion of a culturally responsive lens. Those materials receiving a score of 90% or above on the CLR portion of the review are recognized as culturally and linguistically relevant.*

CLR Recognized ☐

Average Score
41%

FOCUS AREA 6: CULTURAL AND LINGUISTIC PERSPECTIVES
Instructional materials represent a variety of cultural and linguistic perspectives.
Statements of appraisal and supporting evidence:

The instructional materials include resources that discuss research and strategies when teaching diverse learners, unhoused students, and ELs, but some groups are not addressed and activities are not given. Images support a wide variety of ethnicities, cultures and backgrounds, but stories and information are barely represented. Diverse linguistic and cultural backgrounds are minimally addressed in the resources.

FOCUS AREA 7: INCLUSION OF CULTURALLY AND LINGUISTICALLY RESPONSIVE LENS
Instructional materials highlight diversity in culture and language through multiple perspectives.
Statements of appraisal and supporting evidence:

The materials contain consistent opportunities for materials to support linguistic diversity and has programming resources for the teacher to assist in working with diverse learners. There is no evidence found in the materials to support multicultural learners or to speak to learners in New Mexico specifically.

Science Standards Review - *Materials are reviewed for alignment with the state adopted content standards, benchmarks and performance standards. The science standards include the performance expectations (PEs), disciplinary core ideas (DCIs), science and engineering practices (SEPs), crosscutting concepts (CCCs), and connections (CONNs) of the Next Generation Science Standards (NGSS). They also include the six NM StemReady! science standards.*

Average Score
74%

OVERALL ALIGNMENT
Materials align with the science standards overall.
Statements of appraisal and supporting evidence:

The materials contain strong evidence of NGSS integration in both teacher and student versions (as well as online). Investigations and activities provide opportunities for exploration of scientific ideas and processes. While the teacher edition addresses all the DCIs, SEPs, CCCs and CONNs, as well as language, math and history connections, the student edition is insufficient in some of these components such as language objectives and CCCs. There are no instances in the materials where the New Mexico-specific standards are addressed or New Mexico's diverse and unique populations are represented.

MATTER AND ITS INTERACTIONS
Materials align to the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, CONNs, and NM Standards) for this focus area.
Statements of appraisal and supporting evidence:

The instructional materials provide opportunities for students to develop an understanding of the patterns of the Periodic Table and how it works but does not have students predict behavior based on the patterns. Students are asked to practice modeling, performing investigations and applying scientific principles to explain chemical reactions, understanding the conservations of mass principle, changes, and movement of energy within systems. Materials use mathematical expressions to show conservation of mass in chemical reactions. No evidence is found to support the standards in the understanding of the sum of bonds or predicting outcomes based on chemical properties.

MOTION AND STABILITY
Materials align to the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, CONNs, and NM Standards) for this focus area.
Statements of appraisal and supporting evidence:

The materials provide direction to the student to assist in the analysis of data to support claims of Newton's Second Law of motion with relevance to the object, mass, and acceleration. The materials offer mathematical representations and scientific and engineering ideas where total momentum of a system is conserved without using net force and for creating a device minimalizing force during a collision. The materials provide interactions of Newton's Law of Gravitation and Coulomb's Law in relation to electrostatic forces but lacks magnetic interactions, and input and output collaborative efforts, as defined in the NGSS.

ENERGY
Materials align to the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, CONNs, and NM Standards) for this focus area.
Statements of appraisal and supporting evidence:

The material provides examples of computational modeling and energy calculations. The materials provide microscopic interactions that affect energy at the macroscopic level. Some resources lack examples requiring teaching of electric fields. The material provides several exercises for students to design, build and refine research related to energy transformations. Activities lack precision calculations but allow students to develop models to represent particle interactions. Examples illustrate the discussion of energy systems and the inflow and outflow of energy in these defined systems.

WAVES AND THEIR APPLICATION IN TECHNOLOGIES FOR INFORMATION TRANSFER
Materials align to the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, CONNs, and NM Standards) for this focus area.
Statements of appraisal and supporting evidence:

The materials provide opportunities to use mathematical models to show the relationships between the frequency, wavelength, and speed of waves. The materials exhibit the relevance of technology that uses waves in a real life meaningful way to transmit and receive information but no evidence of how waves are stored. The materials provide information about EM radiation and the usefulness of the wave versus particle model but no relation to how matter is involved is stated. The materials provide opportunities to understand the values of various technological advances that use waves and the wave interactions between matter and energy. The text includes no information that relates to New Mexico as a distinct land and culture and some references, such as to hurricanes, are outside of the scope of the experiences of most New Mexican students.

ENGINEERING DESIGN
Materials align to the engineering design performance expectations (PEs) and related components (DCIs, SEPs, CCCs, CONNs, and NM Standards) for this focus area.
Statements of appraisal and supporting evidence:

The materials provide opportunities to demonstrate understanding of global challenges and demonstrate a manageable design for real-world complex problem solving. This is based on cost, safety, reliability and aesthetics as it relates to social, cultural and environmental impacts. The materials lack the trade-off of design solutions accounting for a range of constraints.

CCSS for ELA and Math in Grades 9-12 NGSS
Materials align to the ELA and math standards identified in grades 9-12 Physical Science NGSS.
Statements of appraisal and supporting evidence:

Quantitative information is provided to explain in a narrative form but no examples of taking technical information into a visual form is mentioned. The sources of information are not always from diverse sources. The text states using multiple authoritative sources but does not mention issues of plagiarism or over reliance on one source. The materials provide several opportunities to quantitatively explain relationships between variables (e.g. mass, gravitational force). Modeling opportunities exhibit concepts but no mention of descriptive modeling could be found. The materials provide opportunities to create equations with one or more variables and graph these using computer software.

Science Content Review- *Materials are reviewed against relevant criteria pertaining to the support for teachers and students in the specific content area reviewed.*

Average Score
91%

FOCUS AREA 1: PHENOMENA-/PROBLEM-BASED AND THREE-DIMENSIONAL APPROACH
Instructional materials are centered around high quality phenomena and/or problems and require a three dimensional approach to make sense of the phenomena or to solve the problems.

The materials are phenomenon-centered with a multi-dimensional approach to make sense of them. The materials have cross-cutting concepts (including mathematical models), disciplinary core ideas and science and engineering practices to gain a full understanding of the content standards. No language standards are listed in the student edition.

FOCUS AREA 2: THREE-DIMENSIONAL ASSESSMENT
Assessments provide tools, guidance and support for teachers to collect, interpret and act on data about student progress toward the learning goals of the 3 dimensional standards.

The instructional materials provide assessment types and opportunities for students to check for understanding. Design opportunities are also provided for students to better grasp the phenomenon and problem solve. Online and text sources provide means for students to obtain feedback from their teacher and self-reflect on their comprehension of a lesson or module.

FOCUS AREA 3: TEACHER SUPPORTS
Materials include opportunities for teachers to effectively plan and utilize materials.

The materials provide ample support documents for teachers to prepare and modify them (eg. pacing documents, differentiation options, and technology options). The planning document in the Online Resources is general and parts are specific to biology instead of physical science.

FOCUS AREA 4: STUDENT CENTERED INSTRUCTION
Materials are designed for each student's regular and active participation in science content.

The materials provide opportunities for student engagement, participation, and learning that is relevant to phenomena. The lessons provided within the materials are meaningful, direct, and apparent to all students.

FOCUS AREA 5: EQUITY
Materials are designed for all learners.

The instructional material provides EL support throughout the TE textbook. The materials provide extension activities for students to engage with the content. The material provides instances in which students are included from a variety of learning modalities and ways to reflect on their learning.

All Content Review - *Materials are reviewed against relevant criteria pertaining to the support for teachers and students in the material regarding the progression of the standards, lesson structure, pacing, assessment, individual learners and cultural relevance.*

Average Score
76%

FOCUS AREA 1 COHERENCE:
Instructional materials are coherent and consistent with the New Mexico Content Standards that all students should study in order to be college- and career-ready.
Statements of appraisal and supporting evidence:

The materials integrate the 3-dimensional NM STEM Ready! standards with specificity to grade-band and are centered around high-quality phenomena allowing for meaningful student progress. The lessons and modules bridge connections with concise instruction to prepare students for college- and career-readiness.

FOCUS AREA 2 WELL-DESIGNED LESSONS:
Instructional materials take into account effective lesson structure and pacing.
Statements of appraisal and supporting evidence:

The materials provide structured lesson content and pacing guides for each module. The content is organized with clear learning expectations and is laid out in a purposeful way to facilitate learning. The resources are available to support vocabulary (both general and content specific), but clear language objectives are not evidenced. The text layout is designed with student engagement in mind and helps students make sense of the content. Materials provide opportunities for various formative and summative assessments.

FOCUS AREA 3 RESOURCES FOR PLANNING:
Instructional materials provide teacher resources to support planning, learning, and understanding of the New Mexico Content Standards.
Statements of appraisal and supporting evidence:

The instructional materials provide a module planner that helps outline what and how information should be taught along with instructional supports and strategies teachers can use in their instruction. The instructional resources include a clear teacher edition that has useful suggestions on how to present topics to students. The material also includes digital materials for both teachers and students.

FOCUS AREA 4 ASSESSMENT:
Instructional materials offer teachers a variety of assessment resources and tools to collect ongoing data about student progress related to the standards.
Statements of appraisal and supporting evidence:

The resources provide a variety of assessments and grading rubrics throughout the text. CCCs, SEPs, and DCIs are correlated to technology, other resources and tools. The materials lack sufficient support for culturally and linguistically diverse students and special needs students.

FOCUS AREA 5 EXTENSIVE SUPPORT:
Instructional materials give all students extensive opportunities and support to explore key concepts.
Statements of appraisal and supporting evidence:

The materials provide customized appropriate and differentiated strategies, as well as cross-curricular connections. The materials lack support for active participation from special populations and provide no evidence for familial engagement.

FOCUS AREA 6 CULTURAL AND LINGUISTIC PERSPECTIVES:
Instructional materials represent a variety of cultural and linguistic perspectives.
Statements of appraisal and supporting evidence:

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FOCUS AREA 7 INCLUSION OF CULTURALLY AND LINGUISTICALLY RESPONSIVE LENS:
Instructional materials highlight diversity in culture and language through multiple perspectives.
Statements of appraisal and supporting evidence:

The materials contain consistent opportunities for materials to support linguistic diversity and has programming resources for the teacher to assist in working with diverse learners. There is no evidence found in the materials to support multicultural learners or to speak to learners in New Mexico specifically.

Reviewers' Professional Summary - *These materials are reviewed by Level II and Level III educators from across New Mexico. The reviewers have brought their knowledge, experience and expertise into the review of these materials. They offer here their individual summary of the material as a whole.*

Reviewer #: 67

Background and experience:

I am an ASCP certified medical technologist, have an MS in Secondary Education and have been teaching in NM and TX for 18 years. I have taught all scientific subjects from MS to HS in rural schools in eastern NM. I am a Level III teacher and was on the adoption team for incorporating the NGSS for NM in 2015.

Professional summary of material:

The materials I have reviewed for McGraw Hill Inspire Science are well laid out and provide alternative resources for both the teacher and student. The lessons are deep and engaging but lack New Mexico specific examples. The material, as a whole, includes multiple examples from diverse locations but lacks sensitivity to Cultural and Linguistic Learners and other special needs groups.

Reviewer #: 68

Background and experience:

I have been teaching for 20 years (17 in New Mexico) and am currently a Level III teacher in New Mexico. I hold a B.A. in biology and German studies and an M.Ed. in curriculum and instruction. I have taught all subjects in the sciences since teaching in New Mexico but currently teach AP Computer Science Principles, AP Chemistry and Chemistry. I am endorsed in science, MCLL and TESOL and enjoy working with local and state organizations to help encourage computer science education in the New Mexico. This is my second year reviewing HQIM for the State.

Professional summary of material:

McGraw Hill Inspire Physical Science provides a look into the science principles outlined in the NGSS. The material gives teachers a chance to engage students in the phenomenon through projects and experimentation along with data collection and analysis opportunities. Activities lack discussion about topics such as precision. The online resources offer an extended glimpse into the materials, but at times lack the exercises and breadth to meet diverse groups of students. Overall, these materials give students ways to engage with the Performance Expectations, but at other times fail to provide supports for special populations and include the NM-specific standards.

Reviewer #: 69

Background and experience:

I am in my 13th year of teaching in New Mexico. I have a bachelor's degree in wildlife biology and history as well as a master's in special education and am a Level III teacher. I have taught mostly middle school and high school. Content areas include: physical science, biological sciences, biomedical sciences, history, gifted education and forensic sciences. I have taught the past 2 years at the 7-8 levels in gifted education teaching all curriculum based on College and Career Standards and National Gifted Standards as well as introductory biomedical sciences at the middle school level.

Professional summary of material:

The resources in review have a large scope of material. The materials provide many useful extension resources that are both hands-on and project-based. The information provided meets some of the content standards fairly well but the areas that it does not meet are cultural and linguistic standards. The material does not contain as many examples and specific standards-based wording in the student edition. The material is strong in some areas, like basic science content, but the area that it is lacking in is the area of differentiation of material for special populations and its relatability to New Mexico students.