2024 Instructional Material Summer Review Institute

Review Team Appraisal of Title

Grades 6-8 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	STEMscopes New Mexico 3D Grade Physical Science Core Online Bundle (Online, Student Notebook Set per year for 1 Yr)	Publisher	Accelerate Learning Inc.
SE ISBN	9798891928640	TE ISBN	
SW ISBN	9781643048550	Grade Level/Content	Grades 6-8 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
89%

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
66%

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

The materials contain little representation of diverse cultural and linguistic perspectives. There is a lack of diversity, with no references to personal stories or experiences as they relate to New Mexico cultures past and present. The one world view reference found in the materials to third world countries does not reflect the current practice of identifying them as developing countries. The teacher and student editions are offered in both English and in Spanish. There are no references or resources that directly connect to the cultural and linguistic perspectives found in the diverse populations of New Mexico.

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 do not highlight diversity in culture and language through multiple perspectives. There is no inclusion or opportunity to connect personal or cultural experiences to content. There are also no resources that encourage cultural and linguistic perspectives that exist in diverse populations such as those found in New Mexico.

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
93%

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

The materials align with the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, and CONNs). There are opportunities to explore content through reading, writing, and by participating in activities that engage learners at different levels.

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 materials align with the physical science performance standards (PEs) and related components (DCIs, SEPs, CCCs and CONNs) for this focus area. The materials provide students with opportunities to develop models to describe the atomic composition of simple molecules and to analyze and interpret data on the properties of substances before and after interactions. There are opportunities to gather and make sense of information describing synthetic materials, develop models that show conservation of matter, and predict various particle changes when thermal energy is part of the equation.

MOTION AND STABILITY: FORCES AND 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:

These materials align with the physical science performance expectations and the related DCI, SEP, CCC, and CONN components for this area. The materials provide opportunities for students to read, discuss, reflect, write, and collaborate as they investigate and then design solutions to problems involving two colliding objects, how a change in an object's motion depends on its mass and the sum of the forces on it, how data helps determine the strength of electromagnetic forces, how gravitational forces are attractive and depend on the interacting masses, and how objects can exert forces on each other even though the objects are not in contact.

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 materials align with the physical science performance expectations (PEs) and related components (DCIs, SEPs, CCCs, and CONNs). There are learning opportunities related to potential and kinetic energy, energy release and transfer, and thermal energy. Simulators connect learning with a hands on visuals that are engaging and informative.

WAVES AND THEIR APPLICATIONS 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 align with physical science performance expectations (PEs) and the related components (DCIs, SEPs, CCCs, and CONNs) for this area. The materials offer students opportunities to read about, explore, and investigate how mathematical representations can model waves and the energy-related amplitudes, how a model can describe the reflection, absorption, and transmission of waves, and how research supports the claim that digitized signals are more reliable than analog signals to encode and transmit information.

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 align with the engineering design performance expectations (PEs) and the related components (DCIs, SEPs, CCCs, and CONNs). The materials offer opportunities to design, test, revise, self-reflect, and obtain feedback for designing solutions based on criteria and constraints.

CCSS for ELA/Literacy and Math Grades 6-8 NGSS
Materials align to the ELA and math standards identified in grades 6-8 Physical Science NGSS.
Statements of appraisal and supporting evidence:

The materials align with the CCSS for ELA and math. The CCSS ELA supports include comparing and contrasting activities, reasoning based on research findings, and following a multi-step procedure. CCSS math supports include modeling with mathematics, writing, reading, and evaluating expressions, and summarizing numerical data sets.

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
98%

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 provide a three-dimensional approach centered around high-quality phenomena and/or problems. The materials offer 21st century skills, such as critical thinking, collaboration, communication, and applying knowledge to other situations, to make sense of the phenomena and solve problems.

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 materials provide multiple-choice, open-ended, and claim-evidence-reasoning structured open-ended assessments for teachers to measure student progress with physical science DCIs, CCCs, and SEPs. Full-year and unit-by-unit teacher lesson planning guides outline a coherent progression for when and how long students spend on each concept and standard. Each lesson is organized in terms of the five Es (engage, explore, explain, elaborate and evaluate) and IA (intervention and accelerate), and shows each lesson's connection to the 3D approach (DCIs, SEPs, CCCs).

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

The materials provide opportunities to plan effectively through both digital and print materials. The materials are organized through tabs with the scope as well as topic title, the five Es, and intervention and acceleration items. The materials offer a timeline for each scope with an outline of each lesson’s timeframe in days and hours, background information, standards alignment, answer keys, rubrics and materials lists. The online materials do not offer a search function to allow searching a specific keyword, topic or options.

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

The materials include opportunities for regular and active participation in the science content. There are engaging videos, simulators, and student-centered engineering investigations. Activities can be differentiated for a variety of learning styles. There is opportunity for students to access prior knowledge and stay organized by using a graphic organizer in each unit.

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

The materials are designed for all learners. There are supports for intervention as well as acceleration. The teacher's edition and student edition are both available in English and Spanish. All materials are available in a digital format as well as in hard copies. The materials do not include a sense of diversity (cultures, regions, and personal experiences) relevant to the diverse populations found in New Mexico.

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
70%

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 align with the NGSS standards and prepare students for college- and career-readiness, enlightening them on the science and engineering practices, cross cutting practices, and physical science core ideas that make up the 3D approach.

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

The lessons are engaging and well-designed, with clear and logical progressions. The materials start with a hook, investigating phenomena, accessing prior knowledge, and a graphic organizer that serves to structure students' learning and gives them the opportunity to predict what they will learn. The materials provide the opportunity for students to explore and elaborate, as well as deepen their understanding by practicing and/or extending their new ideas. The assessments at the end of lessons include multiple-choice, open-ended, and structured open-ended claim-evidence-reasoning scenario assessments and provide teachers with accurate measurements of their students' progress.

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:

Instructional materials provide resources to support planning and learning in both online and print format. The materials offer a progression of learning throughout the entire unit. Documents are available to assist with question prompts, artifacts to look for throughout the scope, and sample answers to help plot understanding.

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 materials offer a variety of assessment resources and tools, both formative and summative, in online and print format. Sample answers, rubrics, and a yearlong inventory of skills are available that allow plotting of understanding. The information and data gathered on these forms and assessments can be used to track progress on CCCs and SEPs. If additional help is needed to gain proficiency, the materials offer intervention activities.

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

Lessons start with individual activities such as completing a graphic organizer, diagram or model and continue with many small group activities to support learning and critical thinking. The material provide 3D and teacher supports such as language learning strategies; interventions for adaptive, physical, cognitive, and SEL development; and science career spotlights. Interventions provide students with additional opportunities to review concepts and vocabulary, and acceleration extensions give students a chance to deepen and further apply their understanding of concepts.

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

The materials contain little representation of diverse cultural and linguistic perspectives. There is a lack of diversity, with no references to personal stories or experiences as they relate to New Mexico cultures past and present. The one world view reference found in the materials to third world countries does not reflect the current practice of identifying them as developing countries. The teacher and student editions are offered in both English and in Spanish. There are no references or resources that directly connect to the cultural and linguistic perspectives found in the diverse populations of New Mexico.

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 do not highlight diversity in culture and language through multiple perspectives. There is no inclusion or opportunity to connect personal or cultural experiences to content. There are also no resources that encourage cultural and linguistic perspectives that exist in diverse populations such as those found in New Mexico.

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 #: 43

Background and experience:

BA in Education and an MA in Education (Curriculum and Instruction) from Eastern New Mexico University. Level III Administration license, a Level III-A K-8 Elementary license, a Level III-A Pre K-12 Special Education license with endorsements in science and health, and a Level I 7-12 Athletic Coach license. 17 years of educational experience. 3 years as a STEM director and teacher of STEAM-H at a charter high school, where I lead my team to a 2021 Governor's STEM Challenge Statewide Championship. 12 years at a charter middle school teaching middle school science; I also taught the 8th grade Next-Step class and the STEAM-H elective. 2018 NMPED Teacher of the Year Finalist and the 2019 New Mexico Teach Plus Policy Fellow of the Year. Served as a New Mexico Teach Plus Policy Senior Fellow for 2021, 2022 and 2023 and helped with the Phoenix Project (Teach Plus). Board member and North Central Regional Representative for the New Mexico Science Teachers Association (NMSTA). I have helped develop End of Course Exams (EoCs) for the NMPED and have participated in past in the Summer Instructional Review Institute.

Professional summary of material:

The materials contain a variety of highly engaging activities that support students at all learning levels. The lessons and units are aligned to the 3-Dimensional Next Generation Science Standards (NGSS) which contain SEPs, CCCs, and DCIs. The materials are also aligned to the Common Core State Standards (CCSS) in ELA and math. There are guided supports for language acquisition. The activities, media, and simulators are engaging and conducive to the learning process and promote the concept of mastery. The materials offer both an English and Spanish version for both teachers and students and are available online or in digital format. The materials do not make connections to cultural and linguistic perspectives and lack the inclusion of experiences and stories from diverse individuals such as those represented in New Mexico.

Reviewer #: 44

Background and experience:

M.S. in Science Teaching, New Mexico Institute of Mining and Technology; B.A. Political Science and History (Pre-Law), Olivet Nazarene University. Teach 7th grade Life Science; Level III Teacher - 23 years. Previously taught H.S. Geology/Chemistry, General Science, 8th grade Physical Science, 6th grade Earth Science. 2009 Teacher on Loan at the Air Force Research Laboratory STEM Outreach. 2022 University of New Mexico Rose Scholar and Research Experience for Teachers Participant. Participated in NMPED Instructional Materials Science Review 2018.

Professional summary of material:

The materials offer a lot of inquiry and hands-on activities, a variety of assessments, scaffolding lessons, and problem-based learning [PBL] projects. The materials are aligned with NGSS and the Common Core math and ELA standards. The materials offer opportunities for accessing prior knowledge, self-reflection, time for feedback, discussion, use of technology, assessing credible sources, and presentation of learning. The materials are offered in Spanish and provide cross-curricular and language acquisition embedded in lessons. The materials lack diversity in cultural and linguistic perspectives. The materials are online as well as in print format.

Reviewer #: 45

Background and experience:

Level 3 bilingual high school mathematics and computer science teacher for 14 years (Algebra 1, Honors Algebra 1, Geometry, Bilingual Geometry, Bilingual Precalculus, Honors/AP Precalculus, Computers with Math Applications, Consumer Math, Fractal Math and Chaos Science), including AP and regular computer science and statistics teacher for 3 years. M.A. in mathematics from the University of South Florida; B.A. with math and physics majors from Goshen College,;and computer science B.A. equivalent with English and French language studies from Eastern Kentucky University.

Professional summary of material:

I recommend these Physical Science middle school instructional materials for New Mexico schools and districts with some reservations. All lessons are organized with the 5 Es: Engage, Explore, Explain, Elaborate, Evaluate. The print version mirrors the online version without the convenient links to interactive activities and simulations. The materials help culturally and linguistically diverse students that use the Spanish versions of the content or need scaffolding to learn academic and content-specific vocabulary. The online version has the ability to enlarge text, have it read back at various speeds, and highlight text and take notes, all of which can be printed. The Reading Science A, B, C materials advertise different reading levels but have exactly the same text. To see all teacher- and student-facing materials online, one must click on a "View All Sections" item available in each of the five E tabs. The online materials do not have a search function and do not reference any of the page numbers in the corresponding printed materials.

These materials are engaging for middle school students, straightforward for teachers to implement, are doable for students approaching grade level, and provide opportunities for advanced students to deepen their understanding. The materials are clearly aligned to the NGSS and the 3D approach, showing disciplinary core ideas, science and engineering practices, and crosscutting concepts. I would definitely consider this material for teaching physical science to middle school students.