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	Amplify Physical Science Digital Student License (6 year license)	Publisher	Amplify Education, Inc.
SE ISBN	9781644821428	TE ISBN	9798885705622
SW ISBN	9781642763089	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
88%

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
73%

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

Interdisciplinary and real-life connections are included with the materials. The instructional materials follow an organized scope and sequence and consistently build from background knowledge. The materials provide some images and information from different demographic groups. Students are asked to begin lessons with building on prior knowledge. Culturally and linguistically responsive pedagogy is indirectly taught within the materials.

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 instructional materials represent perspectives in the lessons on Westfield's drinking water and skin cancer in Australia as compared to Brazil. Tools and resources are limited, with the exception of a multi-language glossary, in order to relate the content area appropriately to a broad range of culture and language. A self-reflection activity is consistently the final part of every lesson. Past and present cultures in New Mexico are not included within materials.

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
87%

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

The Amplify Physical Science materials are dedicated to covering NGSS and CCSS ELA and CCSS math standards. The pedagogy is guided by the Universal Design for Learning (UDL) and the 3-dimensional system of learning. Activities are multimodal and include hands-on investigations and modeling, which is supported by technology such as embedded simulators, videos and assistive technology. There are opportunities for differentiation for on-level, below level, advanced and English learners.

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 align with matter and its interactions performance expectations and related content through a variety of activities. One of the most prominent features of the instructional material are the Chemical Reactions Simulator, Thermal Energy Simulator, and the Phase Change Simulator. Students have opportunities to investigate phenomena through hands-on activities, modeling, and acting as an intern to develop an emergency supply pod that can be dropped into a location without damaging the cargo.

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:

The instructional materials teach students to apply scientific ideas and principles while designing such models as a supply drop pod. The materials encourage student engagement with the Magnetic Fields simulation in order to learn about inputs, processes, and outputs. Cause and effect is directly taught as students work with a simulation in regards to a school's heating system. Students are also provided opportunities to learn how to prepare for a science seminar by bringing with them written arguments supported by evidence and reasoning. Newton's third law is explicitly taught through the instructional materials.

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 instructional materials align with the energy performance expectations and the related components by engaging students in a variety of student-centered lessons. Students use the Thermal Energy simulator and the Harvesting Human Energy simulator to learn about and practice the phenomena. Students are given opportunities to read about the concept of energy and energy transfer through several articles. The instructional materials provide videos to further reinforce understanding.

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 instructional materials directly teach wavelength, frequency, and amplitude with the Investigating Different Types of Light lessons. Students are asked to use mathematical representations to describe and support claims in regard to Australia's rate of skin cancer in comparison to other countries, including Brazil. Students compare light waves with glass and aluminum foil, directly learning about light being reflected, absorbed, or transmitted, and also analyzing the path light makes. The materials instruct that structures can be designed to serve particular functions, as students work through the design cycle with the Baby Warmer model. Students complete a project summary in regard to the Baby Warmer design, taking into account the use of different materials for different functions. As homework, students are assigned to read about fiber-optics and sound waves not being able to travel through space because there is no matter. These topics are assigned through homework reading only, and are not taught through direct instruction.

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 instructional materials align with the engineering design performance expectations and the related components. For example, in the Phase Change Engineering Internship unit, students act as interns as they ask questions, define a problem, and create a solution to a real-world issue, "thousands of premature and low-birthweight babies struggle to thrive due to lack of access to medical equipment". Students create a mobile baby incubator through a 10 day lesson progression that includes criteria and constraints, a digital tool to design the baby warmer, peer feedback, iterative testing, and data analysis.

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:

Precise, multi-step procedures for carrying out experiments are directly taught. For example, in the lesson Investigating Hot and Cold Things. students are prompted to cite specific evidence from models in order to support reasoning, though students do not cite specific textual evidence in order to support this. The instructional materials make use of slides, videos, simulations, handouts, and notebooks in order to integrate quantitative and technical information within each lesson. Quoting and paraphrasing while avoiding plagiarism and following a standard citation format are not explicitly taught through the materials. Active reading guidelines support each text assigned. Mass, Force, and Velocity are examined. The materials teach solving real-life mathematical problems using positive numbers. Students learn to reflect and assess for reasonableness. Discussion of negative numbers and their meaning within models is not addressed. Students are not directly instructed to write ratios or use rate language in the context of ratios.

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
100%

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 instructional materials are centered around high quality phenomena and use a three-dimensional approach so students can make sense of the phenomena. Included in every lesson there is a 3-D statement that provides a clear explanation as to how the students will address the SEPs, CCCs and DCIs. Unit Maps in the teacher resource panel provide a storyline outlining how the students will make sense of the lessons.

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 tools, guidance, and support for teachers to collect, interpret, and act on data about student progress toward the learning goals. Teacher materials include an assessment system section found in the teacher reference panel that offers a breakdown of the assessments found in each lesson and what the assessment is scoring. Each on-the-fly assessment includes a two-part description of what evidence of understanding would look like and how the teacher should respond. Rubrics are provided to gauge the level of student performance on assessments and offer strategies on how to provide feedback and assist students at all levels.

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

Safety precautions are directly taught before each appropriate model. The material lists are easily accessible for teachers,within the Lesson Brief and the Teacher Preparation sections. Slides, videos, and simulators are meaningfully embedded within the materials. Potential challenges for each lesson are provided for struggling learners and lesson extensions are offered for excelling learners. Frequent formative assessments are prompted and deliberately instructed. Rubrics for written assessments are also provided.

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

The instructional materials are designed for student centered instruction. There are several hands-on and digital simulations that provide students the opportunity to interact with the phenomenon. Lessons are designed to reflect on what the students already know and what they will be learning. The flow of lessons are coherent and meaningful and are in a consistent format.

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

The instructional materials offer vocabulary support at the start of each lesson and active reading guidelines are given for each reading. Assigned texts have audio versions available and anchor charts, videos, and slides are consistently referred to. The materials include a Going Further section, with suggestions for excelling learners. Materials consistently include strategies to engage a variety of learning styles. Nearly all lessons close with a self-reflection activity.

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
87%

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 instructional materials clearly list the scope and sequence and all standards being covered within each lesson. Consistent formative assessments are explicitly explained and prompted, with rubrics and support strategies provided. The materials include appropriately placed summative assessments. Force & Motion and Phase Change Engineering Notebooks are include rigorous activities for students to problem solve. Frequently, lessons build from the prior lesson and finish with a written or verbal self-reflection activity.

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

The instructional materials provide well designed lessons. The scope and sequence of units, chapters, and lessons are detailed in the Unit Map and Progress Build under the Planning for the Unit Section. Lessons contain language objectives, but they are not clearly stated. The instructional materials provide a 3-D statement with clearly aligned knowledge and skills that the students interact with based on the DCIs, CCCs and the SEPs. The layout of the instructional materials is consistent and it supports student engagement.

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 materials include simulations, videos, and audio versions of texts that are fluidly integrated within each unit. Planning for the unit and teacher references include such supports as Getting Ready to Teach and Standards & Goals, each providing extensive examples of how to problem solve a variety of student needs. The instructional materials contain extensive online and print teacher-facing and student-facing material; these editions are easy to use and well organized.

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 instructional materials offer teachers a variety of assessment resources and tools to collect data about student progress. The Assessment System provides a breakdown of the assessments for each lesson. There are multiple summative and formative assessments throughout the instructional material, and answer keys and scoring guidelines are provided for each assessment. One assessment type not found in the instructional materials is how language standards are addressed.

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 instructional materials give all students opportunities and support to explore key concepts. Each lesson contains a differentiation section and provides differentiation strategies for all learners for that lesson based on what is required of the student and the needs of the student. The instructional materials also include opportunities for all students to engage with the materials through a variety of investigations that include hands-on and digital modeling in which students must support or refute a claim while using critical thinking and problem solving skills. The materials can be adapted by the teacher in delivery or in assessment.

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

Interdisciplinary and real-life connections are included with the materials. The instructional materials follow an organized scope and sequence and consistently build from background knowledge. The materials provide some images and information from different demographic groups. Students are asked to begin lessons with building on prior knowledge. Culturally and linguistically responsive pedagogy is indirectly taught within the materials.

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 instructional materials represent perspectives in the lessons on Westfield's drinking water and skin cancer in Australia as compared to Brazil. Tools and resources are limited, with the exception of a multi-language glossary, in order to relate the content area appropriately to a broad range of culture and language. A self-reflection activity is consistently the final part of every lesson. Past and present cultures in New Mexico are not included within materials.

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 #: 61

Background and experience:

Level III teacher with thirteen years of experience teaching special education grades K-12, with a current focus in the middle and high school years. ELA endorsement. BA from the University of California, Berkeley. Master's degree from the Institute of American Indian Arts in Creative Nonfiction. Fourth year working with the Summer Review Institute.

Professional summary of material:

The instructional materials are well-organized, in depth, and consistently reach the appropriate standards for each lesson. Simulations, videos, and online resources are plentiful. Phase Change Engineering Internship and Force & Motion Engineering Internship are highly engaging workbooks that are provided. The materials have limited opportunities for small group work and hands-on lessons. Some essential concepts are left to readings assigned as homework. For typically performing students, the materials are appropriately engaging and challenging.

Reviewer #: 62

Background and experience:

I have been a science teacher for Albuquerque Public Schools for twelve years. I graduated from the University of New Mexico in 2011 with a bachelor's degree in geography and earth and planetary science, and obtained my teaching credentials from Central New Mexico Community College shortly after that. I currently hold a K-12 teaching license in the state of New Mexico with endorsements in science and health.

Professional summary of material:

I found the Amplify Education physical science instructional materials to be relevant to the 21st century learner. The flow of lessons is easy to follow, and there is plenty of support offered in the materials for the novice to the experienced educator. Amplify learning materials provide students a variety of methods to interact with the standards as they gain knowledge and skills. The digital simulations and the Futura Workspace are amazing tools for students as they navigate the material. In addition, using the digital tools allow students to perform iterative tests without the need for costly equipment. Amplify would benefit any science class for all learners.

Reviewer #: 63

Background and experience:

Tier III teacher with 20+ years of teaching in K-12 general and special education. Endorsements include science, TESOL and reading. Master's of Education in Language, Linguistics & Socio-cultural Studies from the University of New Mexico.

Professional summary of material:

This Physical Science material is a balanced combination of writing, reading, investigation, simulations and modeling. It follows a scope and sequence that flows from one lesson to the next, with built-in informative assessments in each chapter and end-unit assessments. This material set also includes two engineering internships centered on "Force & Motion" and "Phase Change." There are indicated differentiation resources and strategies included in each chapter.