2024 Instructional Material Summer Review Institute

Review Team Appraisal of Title

Grades 9-12 Life 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	New Mexico Science Dimensions Biology Digital Student Resource Package 6-Year	Publisher	Houghton Mifflin Harcourt Publishing Company
SE ISBN	9780358932093	TE ISBN	9780358932154
SW ISBN		Grade Level/Content	Grades 9-12 Life 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
90%

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
76%

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 support a variety of cultural and linguistic perspectives. The materials offer opportunities to make connections to students' individual cultures and backgrounds. Images and activities refer to a variety of demographics. There is no evidence in the materials of stereotyping or generalizations.

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 provide tools, resources and reflection opportunities for enhanced learning. The materials are inconsistent with CLR perspectives and do not address ethnic diversity, events, or experiences.

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
89%

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

The materials incorporate science standards with benchmarks listed throughout and both formative and summative assessments. The materials provide a comprehensive discussion of the role of DNA and how DNA is conserved and used in a multicellular organism. Biological cycles are well supported in diagrams and interactions. The materials also provide thorough investigations into the role of evolution and natural selection from the vantage point of the individual organism to the effects on a population. The materials provide activities for students to engage in the engineering design process including limiting criteria and various types of product models. The materials integrate both the ELA and math standards into the science content.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES
Materials align to the life 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 a means for students to demonstrate their understanding of the structure and function of DNA and model the tiered structure of a multicellular organism. The materials also allow students to plan and conduct investigations into the biological mechanisms that provide homeostasis. The materials discuss the role of mitosis in terms of cellular division and discuss the role of photosynthesis as a means for organisms to store chemical energy. Finally, molecules are discussed as storage units of energy in living organisms.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS
Materials align to the life 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 include both mathematical and textual evidence and explanations for relationships and biodiversity in environments. They include how relationships interact and interconnect at various levels. They show the energy levels and cycling of matter and energy within various levels and into and out of the various systems. The materials explain the chemical processes of photosynthesis and respiration as well as how those processes move energy in various systems. The materials provide opportunities for various skills such as modeling, analyzing, using mathematical and language arts skills, scientific processes, and hands-on activities to show the content and standards. The only area that the materials are found lacking is in some terminology mentioned in the standards that are not defined in the text.

HEREDITY: INHERITANCE AND VARIATION OF TRAITS
Materials align to the life 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 provided by the publisher align to the topic. All PEs, and the components thereof, cover Heredity: Inheritance and Variations of Traits. Mitosis and Meiosis are covered from both the human perspective and plant/animal diversity. Mutations and genetic diversity are ever expanding with population growth and is represented in the materials.

BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY
Materials align to the life 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 emphasize the multiple forms of evidence that support biological evolution and discuss the main factors that contribute to this phenomenon. Advantageous traits are emphasized as useful to survival and the materials give examples of statistics to support this claim. The materials also encourage students to construct explanations of how natural selection influences populations and can lead to increases, decreases or extinction of certain species. Finally, the materials provide opportunities for students to investigate the ways in which human activities affect biodiversity on the planet.

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 illustrate the steps of the engineering design model and allow students opportunities to practice all of the steps to solve real-world problems. Activities throughout the materials have students investigate and research, analyze, test, and evaluate various limiting factors as well as revise their plans. The materials provide various criteria for students to consider in their designs, such as cost/benefit, societal considerations, etc. The materials use both opportunities for physical and computer-based models for students to show mastery.
CCSS for ELA and Math in Grades 9-12 NGSS **Materials align to the ELA and math standards identified in grades 9-12 Life Science NGSS.** *Statements of appraisal and supporting evidence:*
The materials configured continuous use of ELA and Math integration throughout. Drawing from prior knowledge, the materials present mathematical examples using a variety of methods, such as graphs, equations, ratios, and probability. The ELA standards embedded in each lesson support the student in writing using technical context; encourage citations when applicable; and use multimedia presentations to enhance understanding of evidence.

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
99%

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.

Materials seamlessly integrate the NM Stem Ready standards, centering content around phenomena and aligning content to SEPs, CCCs, DCIs, ELA and math content standards. Materials provide meaningful use of the three dimensions and utilize appropriate discourse and instruction for the age group. Problems and investigations are presented for students to solve and provide more meaningful learning opportunities.

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 physical as well as online resources for teachers and students to assess learning. Rubrics, checks for understanding, hands on activities to model concepts, and end of unit assessments are available in the materials. Real-world problems allow students to interact with data, use skills gained and show mastery of concepts.

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

The materials provide comprehensive lists of supplies necessary for activities. Guidance documents for teacher support are accessible in multiple formats. Rubrics are available in the textbook and online resources for effective planning and progress monitoring of activities.

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

Materials engage students' curiosity and participation through building on prior knowledge and connecting their learning to relevant problems or topics in their world. The flow of lessons is coherent, concise, direct and meaningful to the teacher and student.

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

The materials provide opportunities for differentiation for students of various levels in each unit. Online and physical resources add dimensions for various levels and have options for students with diverse needs. The materials are designed for students to self-reflect on ideas and learning acquisition.

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
90%

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 address clear evidence of the content and provide meaningful connections for college- and career-readiness. The level of engagement within the materials aligns well with the level of maturity of the student and supports mastery of the standards in multiple formats, creating a consistent coherence of learning.

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 are purposefully organized in a meaningful progression to provide a scope and sequence of the lessons. The lessons and materials use clear and measurable standards and objectives as well as ELA standards in the activities. The materials also provide support to students with vocabulary and EL strategies.

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 teacher resources both online and in the physical text that align with the standards. Each unit has digital materials that assist teachers in both the teaching and the assessment of student learning. The teacher resources have standards and content listed in a consistent way throughout both the physical text and digitally.

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 provide a variety of planning and support resources to maintain a level of interactive engagement during learning. The strategic planning guides provide adequate pacing for focused student academic development. The digital resources incorporate further development of kinesthetic opportunities for student success.

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 can be adapted to meet the needs of different student populations. The materials provide differentiated activities to meet below and above proficiency learners. Materials provide linguistic support of EL groups but few examples of culturally and linguistically diverse populations. Community and family are engaged in some activities and materials contain support for all students to engage.

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 support a variety of cultural and linguistic perspectives. The materials offer opportunities to make connections to students' individual cultures and backgrounds. Images and activities refer to a variety of demographics. There is no evidence in the materials of stereotyping or generalizations.

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 provide tools, resources and reflection opportunities for enhanced learning. The materials are inconsistent with CLR perspectives and do not address ethnic diversity, events, or experiences.

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. I 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 and the TX panhandle. 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 HMH Science Dimensions: Biology 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. The materials correlate well with the NGSS.
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:
The materials presented in the HMH Science Dimensions Biology title provide a comprehensive and coherent approach to teaching biology for a diverse group of students and learners. The materials allow for quick adaptation for particular subgroups of students, while ensuring that lessons are fully aligned and NGSS integrated. Teachers should be able to easily adapt their materials for EL students, or advanced learners, and give all their students chances to engage with the content through real-world activities and investigations. The materials also encourage teachers to engage students through prior learning and give students the opportunity to discuss misconceptions and their points of view. Culturally and linguistically diverse groups are not mentioned in the materials.
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 materials for HMH are focused on the NGSS standards and well laid out and organized. The material offers a range of types of activities and methods of presenting results so that students practice a wide variety of skills. The online resources and physical resources are abundant and engaging. Various levels and types of learners are supported throughout the materials. The science content is well integrated with math and ELA practices to support student learning in a holistic method. Real-world and hands-on activities are in evidence to help cement student learning. The materials do not have much in the way of cultural differentiations.