

2024 Instructional Material Summer Review Institute

Review Team Appraisal of Title
Grades 9-12 Biology

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	BSCS Biology: Understanding for Life	Publisher	Kendall Hunt Publishing
SE ISBN	9781792493409	TE ISBN	9781792493447
SW ISBN		Grade Level/Content	Grades 9-12 Biology

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

67%

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

42%

FOCUS AREA 6: CULTURAL AND LINGUISTIC PERSPECTIVES

Instructional materials represent a variety of cultural and linguistic perspectives.

Statements of appraisal and supporting evidence:

The material does not have cross-cultural activities to provide equity among the learners. Though group norms are evident during group activities and classroom discussion, awareness and understanding of each learner is not evident, In addition, context, illustrations and activities do not make connections to diverse cultural and linguistic backgrounds.

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 provided do not align with the focus area of inclusion of a culturally and linguistically responsive lens. The material does not include tools or resources that demonstrate various perspectives, and does not address different ethnic descriptions, interpretations or perspective of events.

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

68%

OVERALL ALIGNMENT

Materials align with the science standards overall.

Statements of appraisal and supporting evidence:

The instructional materials do not completely align with the science standards. There are standards that are covered while other standards are not addressed in the material. Certain standards, such as 'From Molecules to Organisms', 'Matter and Energy in Organisms and Ecosystems', and 'Interdependence in Ecosystems' are covered. The 'Earth's Systems' and 'Earth and Human Activity' standards are not addressed in the instructional materials.

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 align with the life science performance expectations for the topic 'From Molecules to Organisms: Structure and Processes'. The disciplinary core ideas, science and engineering practices, cross cutting concepts, and connections are all addressed. The part of the instructional material that pertains to this topic requires students to develop and use models, re-evaluate models, and discuss with partners and the class by using their prior knowledge of what they know about themselves.

MATTER AND ENERGY IN ORGANISMS AND ECOSYSTEMS

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 align with the performance expectations for the topic 'Matter and Energy in Organisms and Ecosystems'. In addition, the related components such as disciplinary core ideas, science and engineering practices, and crosscutting concepts all align with the expectations in Unit 3, "How can we use scientific and social understandings of nutrition and natural resources to improve a food system?" This unit covers matter and energy by defining problems, developing and revising models, and applying knowledge to systems and system models.

INTERDEPENDENCE IN ECOSYSTEMS

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 instructional material in this topic partially meet the standards. Designing, evaluating, refining solutions, and revising based on evidence is partially addressed in the content materials. Representations to support explanations and engaging in argument from evidence meet the standards for 'Interdependence in Ecosystems.' Unit 4, "Why are some species, like coyotes, expanding while most others are contracting?", addresses the performance standard and related components by having students develop models, show mathematical and computational thinking, communicate after obtaining and evaluating information, and applying that to systems, stability and change.

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 instructional materials addressing the role of DNA in inheritance and variation of traits align with the standards for this topic. Claims based on evidence of inheritable genetics also align. Modeling cellular division and cell differentiation partially aligns with the topic standards. Applying statistics and probability to explain variation of traits partially align with the standards.

NATURAL SELECTION AND EVOLUTION

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:

In this topic, the material includes natural selection and evolution and it aligns with the performance expectations. The instructional materials address construction of explanations based on evidence, as well as using statistics and probability to support explanations in the processes of evolution and natural selection. The demonstration and application of concepts supporting evolution and natural selection claims addresses the topic standards. In unit 4, the materials aligns with the performance expectations as well as with the related components through developing and using models, engaging in arguments from evidence, looking at patterns, and crosscutting concepts.

EARTH'S SYSTEMS

Materials align to the earth and space 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 do not align with the earth's systems performance expectations as the standards are not addressed in this publication.

EARTH AND HUMAN ACTIVITY

Materials align to the earth and space 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 standards for human activities changing the landscape of the land and the biodiversity (Chapter 10, Lesson 4, pp. 466-473). The materials do not align with the standards that address how changes in climate/ecosystem can influence human activity. In addition, the materials do not emphasize conservation, recycling or use of resources, and lack support to illustrate relationships between sustainability of natural resources, human and biodiversity. Though model trackers and word walls are evident to support the lesson, the material does not provide the opportunity for evidence-based discussions and writing to support analysis or claims to address analytical thinking. Therefore, the earth and human activity do not align with the overall content standards for this topic.

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 material presents natural selection and adaptation using a model tracker in Chapter 11, Lesson 11, pp. 492-495. The model tracker does not show how the model will be used as a solution for reducing impacts of human activities on environment and biodiversity. This particular focus partially aligns with the performance expectation on using models to illustrate relationships between systems. While the disciplinary core idea is evident, some of the connections and scientific and engineering practices do not fully align with the expectations.

CCSS for ELA and Math in Grades 9-12 NGSS

Materials align to the ELA and math standards identified in grades 9-12 Biology NGSS.

Statements of appraisal and supporting evidence:

The materials partially align with the standards for CCSS ELA and math standards. The instructional materials partially align with the standards for using systems to simulate systems and interactions. The materials include modeling activities (Chapter 1, Lessons 3, 5, and 9), among others. However, there is a lack of explanatory texts, research projects, and interactive student-based presentations to support claims and provide clear information about the standards. The materials contain reference readings, the ability to integrate sources of information, classroom discussions, and the ability to write claims based on student investigations (reading, writing, and speaking). The CCSS math standards HSF-IF.C.7, HSF-BF.A.1, HSS-ID.A.1, HSS-IC.A.1, and HSS-IC.B.6 are not addressed in this publication and, therefore, the materials only partially align with the standards.

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 instructional material addresses a three-dimensional approach to phenomena or problems. The material, both teacher edition and student edition, integrates the standards appropriate to the grade level, and aligns with the SEPs, Conn, CCCs. The lessons are meaningful, and require students to develop models, and re-evaluate, discuss, and revise classroom consensus models with feedback. The phenomena are meaningful, relevant, and something with which the students can connect.

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 summative and formative assessments across all dimensions. The materials provide students opportunities to revise a class consensus model with feedback from peers and the teacher. Students are asked to reflect on what they still can't explain about the phenomena.

FOCUS AREA 3: TEACHER SUPPORTS

Materials include opportunities for teachers to effectively plan and utilize materials.

The instructional materials provide teacher support all throughout the lessons. Lessons include comprehensive lists of supplies, guidance and support, and assessments, which shortens the preparation. Furthermore, case studies, video, and model trackers are also available.

FOCUS AREA 4: STUDENT CENTERED INSTRUCTION

Materials are designed for each student's regular and active participation in science content.

The materials align with the focus area in that they are student-centered and that students are active participants in the content. The instructional materials also allow the students to be engaged when researching on their own; when having discussions in the classroom; when developing a model and revising it; and when formulating arguments.

FOCUS AREA 5: EQUITY

Materials are designed for all learners.

The instructional materials and assessments allow all students to build and reflect on scientific knowledge and self-reflection. The materials also provide extensions and opportunities for all students to engage in learning and engineering in greater depth.

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

51%

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 material partially align with the focus area of coherence, due to standards that are not addressed in this publication. The material addresses mastery of the standards that are included in the materials, engage students at an appropriate grade level, and make meaningful connections between standards and units through lessons and activities. The materials are consistent with the New Mexico content standards, except for the standards that are not addressed in this publication.

FOCUS AREA 2 WELL-DESIGNED LESSONS:

Instructional materials take into account effective lesson structure and pacing.

Statements of appraisal and supporting evidence:

The instructional material partially align with the focus area of well-designed lessons. The material provides a visual design that maintains consistent layout that supports student engagement. The material also contains clear, measurable, standards-aligned content objectives except for those standards not addressed in the material. There is no evidence of content-specific vocabulary or aid for students to make sense of the text.

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 partially align with the the focus area for planning by providing estimated instructional time, examples to guide academic development, and annotations on how to present, develop, and extend student learning. The unit and chapter instructional times are not given, but each individual lesson has a teaching time reference and a list of materials needed per lesson. The materials do not address cross-referencing of standards or use of digital learning.

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 summative and formative assessments with a scoring guide in the unit assessment. However, all content standards are not assessed, and the lesson assessments are not aligned with the standards. The materials do not provide suggestions for differentiation, remediation of assessments or alternative assessments for different types of learners. Lastly, the materials do not include opportunities to assess student understanding and knowledge of the standards using technology.

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 provide support to student learning using a video presentation as a springboard and investigations with use of slides, graphics and creating models. In addition, experiments are provided to simulate the phenomenon with the use of graphs. However, the materials do not provide the quantitative and qualitative analysis of data to support analytical thinking and exploring possibilities.

FOCUS AREA 6 CULTURAL AND LINGUISTIC PERSPECTIVES:

Instructional materials represent a variety of cultural and linguistic perspectives.

Statements of appraisal and supporting evidence:

The material does not have cross-cultural activities to provide equity among the learners. Though group norms are evident during group activities and classroom discussion, awareness and understanding of each learner is not evident, In addition, context, illustrations and activities do not make connections to diverse cultural and linguistic backgrounds.

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 provided do not align with the focus area of inclusion of a culturally and linguistically responsive lens. The material does not include tools or resources that demonstrate various perspectives, and does not address different ethnic descriptions, interpretations or perspective of events.

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 #: 64

Background and experience:

This educator has a PhD in biology with a concentration in cellular and organismal biology and has been an educator 14 years. The teacher currently holds a Level III license with eight years of secondary education and six years of teaching in post-secondary education. The teacher holds an endorsement in science and a vocational license. They currently teach Anatomy and Physiology, Advanced Biology, and dual credit Biology courses at the high school and community college level.

Professional summary of material:

BSCS Biology: Understanding for Life is extensive biology material that is appropriate for high school students. The book is organized and broken down into units, then the units are further broken down into lessons. The lessons are organized to carry out investigations, make observations, analyze results, reflect, and predict the next steps. There are standards not addressed in this publication such as earth systems and earth and human activity, therefore making this publication incomplete for teaching the standards for New Mexico. In addition, the material does not integrate multiple modalities for learning such as computers for special needs students or differentiation for English learners.

Reviewer #: 65

Background and experience:

This educator has spent 18 years in the teaching profession--9 years in elementary education, 6 years as a chemistry teacher at a regional university and 3 years as a general science teacher. The educator holds a Level III License and has a master's and PhD both in general science.

Professional summary of material:

BSCS Biology: Understanding for Life covers standards from molecules to organisms' structure and processes, ecosystems--interactions, energy and dynamics, heredity--inheritance and variation traits, and biological evolution--unity and diversity. However, it fails to address some of the SEPs, particularly in the use of mathematical and/or computational representation. In addition, models created are not optimized to make investigations and to make explanation of phenomena. Analytical thinking within every lesson during discussions is not evident with the question prompt.

Reviewer #: 66

Background and experience:

This educator has a master's degree in science teaching from New Mexico Tech. The teacher has 24 years teaching experience in special education, math and science at the high school level.

Professional summary of material:

BSCS Biology material covers a majority of life science standards. However, earth's systems, climate change, and natural selection standards are not addressed. A variety of formative and summative assessments are provided throughout the materials. Lessons cover developing and explaining scientific models, explaining system relationships and solutions to real world problems. The materials do not provide suggestions for modification of activities for different types of learners. Student use of technology to create and analyze scientific data is not addressed throughout the lessons.