2023 Instructional Material Summer Review Institute

Review Team Appraisal of Title

Grades K-12 Computer 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	3D Modeling 1a/1b one year student license	**Publisher**	eDynamic Holdings LP
SE ISBN	9781959433101	**TE ISBN**	
SW ISBN		**Grade Level/Content**	9-10 Computer Science

Core Instructional Material Designation *(Core instructional material (CIM) is the comprehensive print and/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
	52%

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 85% or above on the CLR portion of the review are recognized as culturally and linguistically relevant.*

CLR Recognized ☐	Average Score
	50%

FOCUS AREA 3 CULTURAL AND LINGUISTIC PERSPECTIVES AND RESPONSIVENESS:
Instructional materials represent a variety of cultural and linguistic perspectives and highlight diversity in culture and language through multiple perspectives.
Statements of appraisal and supporting evidence:

The materials invite students to share their perspectives in class forums, reflecting the diversity of the classroom. Examples include asking students to reflect on discussing the advantages that someone who has a strong background in math courses like geometry or trigonometry might have when learning 3D modeling and asking how the rule of thirds would affect traditional and contemporary artists. However, multiple perspectives are not presented in the materials themselves. No New Mexico-specific content is found.

Computer Science Standards Review - *Materials are reviewed for alignment with the state adopted content standards, benchmarks and performance standards.*

Average Score
58%

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

The materials invite students to read about computer science concepts, but there is no evidence of the materials offering opportunities to evaluate perspectives, justify a decision, or design a solution to a problem. The materials for the instruction on 3D modeling tasks are concise and clear.

COMPUTING SYSTEMS
Materials align to the computing systems standards for computer science.
Statements of appraisal and supporting evidence:

The materials provide students with opportunities to read about computing systems, get a broad overview of hardware and software, and become familiar with troubleshooting strategies. However, there is no evidence of students explaining how operating systems and hardware interact, or of students developing practices and strategies for troubleshooting themselves.

NETWORKS AND THE INTERNET
Materials align to the networks and internet standards for computer science.
Statements of appraisal and supporting evidence:

The materials provide some general practices for digital citizenship such as "be kind" and "don't steal", but no evidence is found of opportunities for students to consider the nuances of ethical dilemmas with particular scenarios. Students read about some maintenance practices for devices, but there is no evidence of students evaluating the reliability of networks. There is no evidence of material addressing cybersecurity.

DATA AND ANALYSIS
Materials align to the data and analysis standards for computer science.
Statements of appraisal and supporting evidence:

The materials invite students to represent some mathematical concepts such as a plane or 3D shape in Blender. Students learn about options for data storage such as local vs. cloud, but there is not evidence of students evaluating the convenience or security tradeoffs involved.

ALGORITHMS AND PROGRAMMING
Materials align to the algorithms and programming standards for computer science.
*Statements of appraisal and supporting evidence***:**

The materials ask students to use Blender to create various 3D models of increasing complexity. There is no evidence of the inclusion of topics such as improving programs based on user feedback or using lists or conditionals as computational structures. Students work alone on their 3D modeling work. Many topics are read about, such as collaboration or intellectual property licenses, but there is no evidence of students directly collaborating or evaluating the licenses.

IMPACTS OF COMPUTING
Materials align to the impacts of computing standards for computer science.
Statements of appraisal and supporting evidence:

The materials give students readings about digital citizenship and intellectual property, but there is no evidence of the material providing students with opportunities to consider the subtleties of ethical dilemmas, privacy concerns, digital security practices, or the impacts of unconscious or automated bias.

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

Average Score
59%

FOCUS AREA 1 COMPUTATIONAL CONCEPTS
Instructional materials provide strategies to develop students' skills that are crucial to understanding computational concepts, including sequencing, looping, parallelism, events, conditionals, operators, and data.
Statements of appraisal and supporting evidence:

The materials provide students ample opportunities to create, edit, and refine shapes and forms in 3D spaces, starting with primitives and then remixing and adding textures and movements to them, including predefined animations and shapes. Computational concepts such as conditionals, events, or parallelism are not found in the materials.

FOCUS AREA 2 COMPUTATIONAL PRACTICES
Instructional materials provide strategies to develop students' skills that are crucial to understanding computational practices, including experimenting and iterating; testing and debugging; and reusing and remixing.
Statements of appraisal and supporting evidence:

Students are encouraged to create shapes and then edit and experiment with them, eventually growing them into more complex objects and scenes. Building complex shapes using simpler shapes to create and make them move also aligns with traditional computational practices such as stepwise refinement and decomposition.

FOCUS AREA 3 COMPUTATIONAL PERSPECTIVES
Instructional materials provide strategies to develop students' skills that are crucial to understanding computational perspectives, including expressing, connecting, and questioning.
Statements of appraisal and supporting evidence:

Students write about the future of 3D modeling, but no evidence is found of the materials offering opportunities for the students to explore emerging technologies, predict the future of innovations, or draw on the history of computers and technology. Students do model 3D objects, such as the drinking pitcher as a whole class, but there is no evidence they have the opportunity to individually select and create their own unique artifacts.

FOCUS AREA 4 ACCESSIBILITY AND EQUITY
Statements of appraisal and supporting evidence:

The materials provide students tools such as a text-to-speech reader, flashcards, and a limited glossary. However, there is no evidence found in the materials of supplementary practice or materials for students struggling to comprehend a topic, and no evidence is found of extensions for gifted students.

FOCUS AREA 5 TEACHER SUPPORT
*Statements of appraisal and supporting evidence***:**

Instructions for installing Blender 2.9, the version used in the curriculum, are included for Windows. (Blender 3.5 is the current version as of this review). The hardware requirements are listed in the student section, not the teacher guides. Other necessary materials are listed on the student "Getting Started" page.

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, pacing, assessment, individual learners, and cultural and linguistic relevance and responsiveness.*

CLR Recognition Average Score	Average Score
50%	54%

FOCUS AREA 1 RESOURCES AND SUPPORTS FOR TEACHERS AND STUDENTS
Instructional materials provide teacher resources to support planning and supports for all students.
Statements of appraisal and supporting evidence:

The materials provide multiple teacher guides supporting different paradigms such as inquiry-based or project-based learning. No evidence is found of the materials listing standards. The glossary and dictionary tools are incomplete; for example, they do not provide definitions for concepts discussed in lessons such as "Bézier curve" or "interpolation axes."

FOCUS AREA 2 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 rubrics for activities, quizzes for students to check their understanding, and 50-question multiple-choice midterm and final exams available through the platform. However, these assessments don't align to standards. Assessment alternatives for EL, culturally and linguistically diverse, advanced, or special needs students are not found.

FOCUS AREA 3 CULTURAL AND LINGUISTIC PERSPECTIVES AND RESPONSIVENESS
Instructional materials represent a variety of cultural and linguistic perspectives and highlight diversity in culture and language through multiple perspectives.
Statements of appraisal and supporting evidence:

The materials invite students to share their perspectives in class forums, reflecting the diversity of the classroom. Examples include asking students to reflect on discussing the advantages that someone who has a strong background in math courses like geometry or trigonometry might have when learning 3D modeling and asking how the rule of thirds would affect traditional and contemporary artists. However, multiple perspectives are not presented in the materials themselves. No New Mexico-specific content is found.

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 #: 80

Background and experience:

I have a master's in mathematics from the University of South Florida, a math and physics B.A. from Goshen College, and a computer science B.A. equivalent along with some English Language studies from Eastern Kentucky University. I have taught high school math for 13 years and during 3 of those years, I also taught regular and AP computer science. I also have 10 years experience as a university website administrator, during which I also taught JavaScript and undergraduate math classes part time.

Professional summary of material:

I love how these materials challenge students through the steps of creating and designing 3D models in various contexts while reflecting on their possible purposes. However, this material doesn't align particularly well with traditional computer science topics such as algorithms, networks, cybersecurity, and parallelism. Also, while the platform for this curriculum does allow for teachers to add standards alignment to its lessons, this curriculum doesn't come with the standards listed.

Reviewer #: 81

Background and experience:

I have a bachelor's in computer science from the University of New Mexico. I've been a teacher for 15 years, teaching computer science at the high school and college level since 2015. Prior to teaching, I worked as a system administrator, web developer, and computer programmer.

Professional summary of material:

This material provides students with instructions to learn 3D modeling. However, other concepts like algorithms, digital citizenship, networking, and ethical computing have much less support. There is no evidence of any standards in the materials, which would require extra work on the teacher's part to ensure alignment.