2024 Instructional Material Summer Review Institute

Review Team Appraisal of Title

Third Grade 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	1-Year Digital License only—Grade 3 (one per student) Student Digital License (Modules 1–4)	Publisher	Twig Education Inc.
SE ISBN	9781789162653	TE ISBN	9798889500544
SW ISBN	9798889500025	Grade Level/Content	Third Grade 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
	96%

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.*

		Average Score
CLR Recognized	☑	95%

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 align with this focus area. Within various portions of the lessons, the material provides an 'English Learners' and 'Cultural Connections' resource to aid students in connecting with the material. This Cultural Connections resource includes equitable and inclusive texts and images. Under the Cultural Connections tab it suggests displaying images from other countries in case students have more familiarity with them. The material also includes an activity that utilizes students with experience raising animals as a resource. Classmates can ask them questions about their experience raising animals. The instructional material also includes a resource labeled 'Cross-Curricular Connections', which includes links to ELA, WIDA, Math and Arts. The Twig Science Reporter resource provides real-world and current STEM news.

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 align with this focus area. The materials include Spanish resources to support dual-immersion and bilingual programs. The leveled readers, anchor texts, and videos provide multiple perspectives on specific concepts. The instructional materials engage students in reflection about their own lives through the reading and activities. Under the Cultural Connections tab, it is suggested to share some stories of how people from around the world have addressed the problems in the module. Three suggestions are given- Wangari Muta Maathai, Christine Loh, and Tulsi Tanti. However, the lessons are not specific to New Mexico past and present cultures.

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
95%

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

The materials align with the science standards overall as demonstrated in the complex texts, varied activities, investigations, and research and writing projects. The videos, supplementary texts, images, and digital components add information for the students to make connections with phenomena around them. The instructional materials provide learning experiences through hands-on activities, digital investigations, research opportunities, close readings, writing assignments, and engineering design challenges to support rigorous content acquisition.

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 materials align with the standards for this science topic. The materials include close readings of topics regarding physics, force, motion, and gravity. The instructional materials include activities in which students must represent forces such as pushing and pulling by drawing arrows on an image. The activity provides opportunities for planning and conducting an investigation. The materials task students with creating models and conducting multiple tests with controlled variables to gather data about patterns in motion and record their observations. Students are provided the opportunity to design a model swing with different rope lengths. Through this activity, they investigate motion and discuss the observations with a partner and record their predictions of an item's motion on a cause and effect chart.

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 standards for this topic. The materials provide opportunities for students to compare and contrast animal life cycles. Students demonstrate their knowledge by predicting the next stage in the life cycle of a particular animal. For example, students are provided the opportunity to complete the life cycle of a butterfly after the larvae stage and complete a life cycles comparison chart. The instructional materials provide videos on life cycles, then require students to create a life cycle model. For each life cycle stage, students are tasked to create a sketch, add a label, and write notes.

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 align with the performance expectations and related components. The activities provide students opportunities to study various animals that live in groups and create arguments that living in groups helps all members survive. For example, the materials provide the opportunity for students to complete a claim-evidence-reasoning (CER) chart to write their arguments about bird flocks. The instructional material is set up in units with each unit broken up into driving questions. Through the materials, students learn about the bengal tiger, ants, and animals that herd and flock together. The materials provide opportunities for students to construct explanations, make observations, and fill in a CER chart. Students are then tasked to use this chart to construct an argument using evidence and data to support it.

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 align with the standards for this science topic. The materials foster students' analytical skills through the use of tables and charts, which provide an opportunity for them to demonstrate their understanding by writing their interpretation and explanation. The materials provide the opportunity for students to read a data set about the zebra family and identify the traits zebras inherit from their father and mother. They also explain why some acacia plants have longer thorns than others. The materials allow students to make predictions regarding the possible offspring traits based on parents' traits that are given.

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 instructional materials align with the performance expectations and related components for this science topic. The materials include a digital interactive activity for students to explore how rising temperatures may have affected plants and animals towards the end of the Ice Age. The materials include lessons that require students to study evidence about extinct animals. They use that evidence to figure out what the animal ate, its behavior, and the environment it lived in. The lessons also provides videos, which students watch and use to take notes about the features of certain plants and animals. They use their observation notes to draw conclusions. The material provides lessons on how invasive species and non-native plants and animals change the environment and allows students to think of solutions to this problem. The materials also cover characteristics that help species survive. The material, however, does not touch upon how certain traits help species to find a mate and reproduce.

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 align with the earth and space systems performance expectations. Tables and graphs are used to show patterns and relationships in weather, which can be used to make future predictions during a typical season. The material provides opportunity for students to practice by using bar graphs to rank weather conditions for four areas. They use evidence and reasoning to write about the best time to visit each location. Another task requires students to obtain and combine information from articles and videos to help explain the weather conditions in the tropical zone. This research is also used to chart weather patterns of rainfall and temperature variations over a year to make predictions for future weather in various parts of the world.

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 instructional materials partially align with the performance expectations for this science topic. The material covers the risks and safety tips for weather-related hazards such as lightning and wildfires. As part of this unit, students are given the opportunity to write what they can do to make it harder for a fire to spread. The material challenges students to research a weather hazard and write some dangers of that hazard. Although the instructional materials cover how technologies, such as warning HQ calls, decrease known risks, it does not include how it increases benefits or meets societal demands.

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 topic. The material provides instruction on engineering design. Students demonstrate their learning by carrying out an activity in which they define a problem, its criteria and its constraints. The material tasks students with designing a magnetic game and an amusement park ride. Students must then create a model based on their design. The materials provide opportunities for students to improve their designs by reflecting on their model. They are asked to draw and write about the changes they make to the design to improve it. The materials also challenge students to generate and research ideas for possible solutions to a design problem. The lessons require that students reflect on how their prototypes meet and failed to meet different criteria and then create a revised design.

CCSS for ELA and Math Grade 3 NGSS
Materials align to the identified ELA and math standards in the third grade NGSS.
Statements of appraisal and supporting evidence:

The instructional materials align with the NGSS-identified CCSS ELA and math standards for third grade. The ELA standards are addressed throughout the materials. The materials include close readings, in which students answer text-dependent questions. When discussing the text, students are asked to use evidence to support their ideas. The materials provide students with an opportunity to find the cause and effect connected to a scientific idea, such as when researching information about animal traits that are influenced by the environment. However, the lessons do not include time or sequence. Math standards are also addressed within the lessons. The instructional material provides opportunities for students to solve math problems connected to articles they read, such as learning to read and create bar graphs and dot plots to show temperature data. However, picture graphs are not addressed. The materials also incorporate number and operations standards by having students solve addition, subtraction, multiplication, and division problems connected to the science content.

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 align with the phenomena/problem-based and three-dimensional approach. The materials use real world scenarios to provide engaging and meaningful connections for students. Each module contains a phenomena tracker showing the SEP, DCI, and CCC for each driving question addressed in the module. Examples are provided for possible discussion questions and answers. The materials provide recommendations to review class discourse and behavior norms. They also include sentence starters to help students ask and respond to questions. The link labeled 'Assessments' within each module's driving question lists the standards and alignment to other subjects.

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 align with three-dimensional assessment focus area. They provide multiple assessment opportunities including whole class, small group, partner discussions, and self-assessment through reflection. They also provide criteria rubrics for projects. The materials contain a full, customizable digital assessment tool with report options and links to specific NGSS performance expectations. The materials provide teachers with options to collect, interpret, and act on student progress. The instructional materials provide opportunities for students to receive and provide feedback from peers and their teacher as well as to self-reflect.

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

The instructional materials include opportunities for teachers to effectively plan and utilize materials by providing lists of digital resources and questions about anchor phenomena. Each teacher module gives a full course overview. Units are divided into driving questions and each driving question is made up of lessons divided into engage, explore, explain, elaborate, and evaluate. All lessons are set up in the same fashion with a spark, investigate, report, connect, and reflect section. The teacher guide provides highlights for differentiated instruction to include English learners, cultural connections, special needs, along with challenge and extension activities. Lessons are identified specifically for WIDA English Language Development. The materials include suggested pacing for each lesson as well as a fast track course for an accelerated pace. The materials are provided in hard copy and digital format. Each lesson includes a 'Resources' and a 'Preparation' section that list all of the necessary supplies and teacher guidance for all activities.

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

The materials are designed to provide active student participation and engagement. Lessons begin with a pre-exploration to gauge prior knowledge and spark curiosity and inquiry. The materials provide hands-on activities, opportunities for collaboration with peers, and ongoing projects that continue over an extended amount of time. Students are provided with a variety of graphic organizers to track their data. The material provides regular teacher check-ins and presents questions to ask individual students, small groups, or whole groups. Lessons are set up in a predictable manner (spark, investigate, report, connect, reflect), which facilitates an easy, predictable flow for students as well as teachers. Each driving question includes an anchor phenomenon section which connects the lesson to prior knowledge.

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

The materials are designed to meet the needs of all learners. They provide multi-modal assessments and the digital components offer text to speech. There are tabs to provide more information and ideas for cultural connections, cross curricular connections (ELA, WIDA, Math, and Arts), special needs such as fine-motor skills, physical disabilities, processing and executive functioning, and visual-spatial processing. They also provide challenge suggestions for advanced and gifted students. The materials provide teachers with engaging questions and allow students many opportunities for discussion including partners, small groups, and whole groups. Videos and digital activities are provided in English and Spanish. There are also other opportunities to design and build models. Each lesson also includes ways to access the content and to reflect on their learning.

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
98%

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 are coherent and consistent with the New Mexico content standards to prepare all students to be college-and career-ready. They offer a clear order of lessons that starts with what students already know and introduces more complex ideas to build knowledge through investigations. The activities provided are grade level appropriate. The lesson structures are consistent as they follow the order of spark, investigate, report, connect, and reflect. Each grade level module provides an 'In this module...' summary section that includes a module trailer to get students excited about what's coming up and provides them with a framework for their learning. Each driving question also includes an 'Anchor Phenomenon' section, which connects the lesson to prior knowledge and connects standards across lessons. Each module contains a scope and sequence providing an overview of lessons and standards within the unit. It also includes performance expectation progressions showing what students have learned in previous grades, what students are expected to learn in the current grade, and how the standards will progress in later grades.

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

The materials provide teachers with a clear guide and tools for planning lessons. Each module includes ready-made 'Performance Expectations Progressions' to help teachers link prior knowledge to current and future instruction. Under the 'Overview' tab, each lesson states the standards, 3D learning objectives, and language objectives it covers. Additionally, the materials provide lists of academic and content-specific vocabulary words, along with opportunities for how and when to use them within the lesson. The materials include pictures and videos that teachers and students can use to support the teaching-learning process. They also offer a variety of ways to engage students through collaboration. The instructional materials incorporate features to support meaning-making. For example, each lesson incorporates features such as graphic organizers, digital resources, and visuals to support meaning-making. Each lesson also includes a tab labeled 'Teacher Background Knowledge', which provides teachers with necessary information to make meaning of the content and 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 materials contain detailed pacing guides for both full-course and fast track courses. They contain suggested time allotments for each portion of the lesson to help the teacher budget the time. The teacher edition provides ready-made questions that the teacher can use to support student learning, paired with possible responses students may give. In addition, the teacher edition contains notes and tabs leading to connected content in the student edition. Each lesson includes a 'Digital Resources' tab that lists the digital components, including videos, read alouds, Google slides or Powerpoint presentations, digital graphic organizers, digital handouts, and other resources.

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 assessment resources and tools such as performance assessments, multiple-choice tests, open-response questions, and oral and written tests. Ready-made formative and summative assessments are provided in every module to allow teachers to edit the questions and assign them online. Performance assessments are paired with criteria to help teachers quantify student progress as they design and create projects. The 'Assessment Explorer' section on the teacher edition contains scoring guides to identify the levels of students as emerging, developing, proficient or advanced. In addition, the materials provide alternative assessments to cater to English learners, advanced students, students with special needs, and culturally and linguistically diverse students. There are tabs available in the teacher edition that contain suggestions for accommodations for these student groups. Extension activities and challenges are also provided for students above grade level.

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 materials support struggling students with ready-made rephrased questions and opportunities to work with a partner, while advanced learners are provided with challenge activities such as responding to additional prompts and modifying models. Different pathways are offered for the teachers to choose from (full course or fast track course) based on student needs. The materials also provide differentiation for English learners and those with special needs by providing them with leveled books according to their reading levels and providing sentence starters. In addition, the materials include resources to engage families through the family outreach letters. These letters give examples of how families can continue student learning at home.
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 align with this focus area. Within various portions of the lessons, the material provides an 'English Learners' and 'Cultural Connections' resource to aid students in connecting with the material. This Cultural Connections resource includes equitable and inclusive texts and images. Under the Cultural Connections tab it suggests displaying images from other countries in case students have more familiarity with them. The material also includes an activity that utilizes students with experience raising animals as a resource. Classmates can ask them questions about their experience raising animals. The instructional material also includes a resource labeled 'Cross-Curricular Connections', which includes links to ELA, WIDA, Math and Arts. The Twig Science Reporter resource provides real-world and current STEM news.
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 align with this focus area. The materials include Spanish resources to support dual-immersion and bilingual programs. The leveled readers, anchor texts, and videos provide multiple perspectives on specific concepts. The instructional materials engage students in reflection about their own lives through the reading and activities. Under the Cultural Connections tab, it is suggested to share some stories of how people from around the world have addressed the problems in the module. Three suggestions are given- Wangari Muta Maathai, Christine Loh, and Tulsi Tanti. However, the lessons are not specific to New Mexico past and present cultures.

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 #: 31

Background and experience:

I am currently an elementary principal. I hold a Level III K-8 teaching license with endorsements in bilingual education, TESOL and reading. I also hold a Level 3-B Administrator License. I've earned a BA in elementary education and an MA in curriculum and instruction with an emphasis in reading. I have 14 years of experience in education as a teacher, administrator, and instructional coach at the district, REC and NMPED level. I have also been a instructional material reviewer for NMPED for four years.

Professional summary of material:

The Twig Science third grade instructional materials are highly recommended for New Mexico teachers and districts. They are a very comprehensive set of materials that provide teachers with the necessary tools to provide equitable access to rigorous content for all students. The materials provide interactive, engaging, hands-on activities, projects, and complex texts. Three-dimensional learning is incorporated throughout the modules through investigations, research opportunities, reading, writing, and engineering challenges. They offer a variety of assessments and progress monitoring tools to guide teachers in addressing all students' needs. These instructional materials use phenomena and real-life problems to aid students in making real life connections and reflections on their own lives and how they can take part in STEM. Accommodations and modifications for EL, gifted, advanced, and special needs students are provided throughout all lessons. The material is provided in hard copy as well as online.

Reviewer #: 32

Background and experience:

I hold an MA in teaching mathematics and a bachelor's degree in elementary education with a major in general education. I also have a diploma in special education and am currently writing my dissertation for a PhD in educational leadership and management. I have a Level III license in elementary, middle school, and special education, with endorsements in mathematics, TESOL, and language arts. I have taught at the elementary level for 12 years.

Professional summary of material:

The Twig Science instructional materials for third grade provide a wide range of student-centered activities. They are user-friendly and cover all the standards prescribed by the New Mexico Public Education Department. Additionally, they integrate other subject areas into every science lesson. The activities are fun and engaging, helping students get excited to learn. Each lesson is supported by resources in the teacher's edition to enhance students' learning experiences. They provide resources to help teachers plan an effective lesson. The materials offer a variety of assessment tools to measure students' progress and provide accommodations for ELs, students with special needs, and advanced students. Thus, I highly recommend the use of these materials to districts, schools, and teachers.

Reviewer #: 33

Background and experience:

I am currently a 5th grade teacher. I hold a Level III K-8 teaching license with a TESOL endorsement. I have a BS in animal science and a MA in elementary education. I have 20 years experience in the classroom teaching all content areas. I have taught kindergarten, first grade, second grade, fourth grade, and fifth grade.

Professional summary of material:

The instructional materials are a comprehensive set of materials that meet the NGSS and New Mexico content standards. Lessons provide opportunities for students to explore science topics in an engaging and meaningful way. The materials provide multimodal means of learning to meet the needs of all learning styles. The materials are presented in both print and digital formats, allowing for greater accessibility to meet the needs of both teachers and students. The CLR components within the materials include relevant and significant suggestions for making lessons and activities more culturally relevant.