

IMRA Review Cycle 2024 Report



Publisher Name	Program Name
Texas Education Agency, Open Education Resources	Bluebonnet Learning Grade 4 Math, Edition 1
Subject	Grade Level
Mathematics	4

Texas Essential Knowledge and Skills (TEKS) Coverage: **100%**
English Language Proficiency Standards (ELPS) Coverage: **100%**
Quality Review Overall Score: **223 / 227**

IMRA Reviewers

Flags for Suitability Noncompliance **0**

Indicator	Count of Flags
1. Prohibition on Common Core	0
2. Alignment with Public Education’s Constitutional Goal	0
3. Parental Rights and Responsibilities	0
4. Prohibition on Forced Political Activity	0
5. Protecting Children’s Innocence	0
6. Promoting Sexual Risk Avoidance	0
7. Compliance with the Children’s Internet Protection Act (CIPA)	0

Flags for Suitability Compliance **2**

Indicator	Count of Flags
Alignment with Public Education’s Constitutional Goal, 2.1.1	2
Promoting Sexual Risk Avoidance, 6.2	0

Alleged Factual Errors **0**

Public Feedback

Flags for Suitability Noncompliance **0**

Rubric Indicator	Count of Flags
1. Prohibition on Common Core:	0
2. Alignment with Public Education’s Constitutional Goal	0
3. Parental Rights and Responsibilities	0
4. Prohibition on Forced Political Activity	0
5. Protecting Children’s Innocence	0
6. Promoting Sexual Risk Avoidance	0
7. Compliance with the Children’s Internet Protection Act (CIPA)	0

Alleged Factual Errors **0**

Public Comments **3**

Quality Review Summary

Rubric Section	Quality Rating
1. Intentional Instructional Design	50 / 53
2. Progress Monitoring	28 / 28
3. Supports for All Learners	31 / 32
4. Depth and Coherence of Key Concepts	23 / 23
5. Balance of Conceptual and Procedural Understanding	66 / 66
6. Productive Struggle	25 / 25

Strengths

- **1.1 Course-Level Design:** Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course, with suggested pacing guides for various instructional calendars, explanations for the rationale of unit order and concept connections, guidance for unit and lesson internalization, and resources to support administrators and instructional coaches in implementing the materials as designed.
- **1.2 Unit-Level Design:** Materials include comprehensive unit overviews that provide background content knowledge and academic vocabulary necessary for effective teaching, and contain supports for families in both Spanish and English with suggestions for supporting their student's progress.
- **2.1 Instructional Assessments:** Materials include a variety of instructional assessments at the unit and lesson levels, including diagnostic, formative,

and summative assessments with varied tasks and questions, along with definitions and purposes, teacher guidance for consistent administration, alignment to TEKS and objectives, and standards-aligned items at different levels of complexity.

- **2.2 Data Analysis and Progress Monitoring:** Materials include instructional assessments and scoring information that provide guidance for interpreting and responding to student performance, offer guidance on using tasks and activities to address student performance trends, and include tools for students to track their own progress and growth.
- **3.1 Differentiation and Scaffolds:** Materials include teacher guidance for differentiated instruction, activities, and scaffolded lessons for students who have not yet reached proficiency, pre-teaching or embedded supports for unfamiliar vocabulary and references in text, and guidance for differentiated instruction, enrichment, and extension activities for

students who have demonstrated proficiency in grade-level content and skills.

- 3.2 Instructional Methods: Materials include prompts and guidance to support teachers in modeling, explaining, and directly and explicitly communicating concepts to be learned. They provide teacher guidance and recommendations for effective lesson delivery using various instructional approaches, and support multiple types of practice with guidance on recommended structures, such as whole group, small group, and individual settings, to ensure effective implementation.
- 4.1 Depth of Key Concepts: Materials provide practice opportunities and instructional assessments that require students to demonstrate depth of understanding aligned to the TEKS, with questions and tasks that progressively increase in rigor and complexity, leading to grade-level proficiency in mathematics standards.
- 4.2 Coherence of Key Concepts: Materials demonstrate coherence across courses and grade bands through a logically sequenced scope and sequence, explicitly connecting patterns, big ideas, and relationships between mathematical concepts, linking content and language across grade levels, and connecting students' prior knowledge to new mathematical knowledge and skills.
- 4.3 Spaced and Interleaved Practice: Materials provide spaced retrieval and interleaved practice opportunities with

previously learned skills and concepts across lessons and units.

- 5.1 Development of Conceptual Understanding: Materials include questions and tasks that require students to interpret, analyze, and evaluate various models for mathematical concepts, create models to represent mathematical situations, and apply conceptual understanding to new problem situations and contexts.
- 5.2 Development of Fluency: Materials provide tasks designed to build student automaticity and fluency for grade-level tasks, offer opportunities to practice efficient and accurate mathematical procedures, evaluate procedures for efficiency and accuracy, and include embedded supports for teachers to guide students toward more efficient approaches.
- 5.3 Balance of Conceptual Understanding and Procedural Fluency: Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed, include questions and tasks that use concrete models, pictorial representations, and abstract representations, and provide supports for students in connecting and explaining these models to abstract concepts.
- 5.4 Development of Academic Mathematical Language: Materials provide opportunities for students to develop academic mathematical language using visuals, manipulatives, and language strategies, with embedded

teacher guidance on scaffolding vocabulary, syntax, and discourse, and supporting mathematical conversations to refine and use math language.

- 5.5 Process Standards Connections: Materials integrate process standards appropriately, providing descriptions of how they are incorporated and connected throughout the course, within each unit, and in each lesson.
- 6.1 Student Self-Efficacy: Materials provide opportunities for students to think mathematically, persevere through problem-solving, and make sense of mathematics, while supporting them in understanding multiple ways to solve problems and requiring them to engage with math through doing, writing, and discussion.
- 6.2 Facilitating Productive Struggle: Materials support teachers in guiding

students to share and reflect on their problem-solving approaches, offering prompts and guidance for providing explanatory feedback based on student responses and anticipated misconceptions.

Challenges

- 1.3 Lesson-Level Design: 1.3 Lesson-Level Design: Materials do not include comprehensive, structured, detailed lesson plans that include daily objectives required to meet language standards of the lesson.
- 3.3 Support for Emergent Bilingual Students: The materials do not include teacher guidance on providing linguistic accommodations for multiple levels of language proficiency as defined by the ELPS.

Summary

Bluebonnet Learning is a mathematics 3-5 program aligned to the Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS). The instructional materials offers a structured approach to grade 4 math instruction, incorporating a detailed scope and sequence that outlines the concepts and knowledge to be taught across various units. Each unit is supported by pacing guides that accommodate different instructional calendars, ensuring effective implementation regardless of the number of instructional days available. The program includes comprehensive unit overviews that provide essential background knowledge, academic vocabulary, and misconceptions necessary for teaching concepts effectively.

Campus and district instructional leaders should consider the following:

- The program materials include instructional materials with assessment tasks that provide progressions towards proficiency through rubrics and exemplar student responses to support scoring and responding to student performance. The lessons include margin notes throughout to offer support that ensures access for all learners. Unit Overviews include the foundational standards that support the recommendation to use the Succeed resource from the prior grade for intervention. The materials include instruction for various strategies to suit students' needs and

preferences. Separate small group lessons for intervention or extension are not a part of the materials.

- The program includes materials that allow students to work through the vertically aligned problem-solving model and to think critically about mathematics. The materials have a variety of ways to assess ELPS embedded into mathematics, including strategies for emerging bilingual learners. Routines within the program, such as lesson structure, support the teacher with engaging students in the demands of the mathematical tasks and include intentional daily opportunities for discourse, high-level thinking, and flexible thinking. Tasks throughout the materials consistently build in complexity using the concrete, representational, abstract approach to learning mathematics, going deep on the most critical topics to the grade level. Over time, the materials tell a coherent story of mathematics within and across grade levels.

Intentional Instructional Design

1.1	Course-Level Design	15/15
1.1a	Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course.	5/5
1.1b	Materials include suggested pacing (pacing guide/calendar) to support effective implementation for various instructional calendars (e.g., varying numbers of instructional days – 165, 180, 210).	2/2
1.1c	Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.	2/2
1.1d	Materials include guidance, protocols, and/or templates for unit and lesson internalization.	2/2
1.1e	Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.	4/4

The materials include a scope and sequence outlining the Texas Essential Knowledge and Skills (TEKS), English Language Proficiency Standards (ELPS), concepts, and knowledge taught in the course. Materials include suggested pacing (pacing guide/calendar) to support effective implementation for various instructional calendars (e.g., varying numbers of instructional days – 165, 180, 210). Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course. Materials include guidance, protocols, and/or templates for unit and lesson internalization. Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.

Evidence includes, but is not limited to:

Materials include a scope-and-sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course.

- The materials include a section titled "Grade 4 Year-at-a-Glance/Scope and Sequence" located in the *Course Guide*, which outlines each module's topics, the number of instructional days for each module, as well as concepts, knowledge, and skills covered in each module.
- The materials include a pacing guide located in the *Course Guide*, organized by process standards, TEKS, and ELPS, with focus standards highlighted in bold. Additionally, the pacing guide offers a rationale for the instructional order within grade 4 and how it connects to learning in grades K-2.
- In the "Grade 4 Standards by Lesson" section of the *Course Guide*, educators find a table titled "Grade 4 English Language Proficiency Standards by Lesson per Module," detailing the ELPS standards addressed in each module and lesson.

Materials include suggested pacing (pacing guide/calendar) to support effective implementation for various instructional calendars (e.g., varying numbers of instructional days–165, 180, and 210).

- The materials include a pacing guide located in the "Grade 4 Year-at-a-Glance/Scope and Sequence" summarizing the suggested number of instructional days for each module and a 165-day instructional calendar. The materials include an "Overview of Module Topics" and a "Lesson Objectives" chart located in the Module Overview section at the beginning of each teacher edition. The overview is organized by topic and includes TEKS, ELPS, lesson numbers, objectives, and the suggested number of days, covering a total of 165 instructional days.
- The materials include an "Additional Days School Year" (ADSY) module to support the effective implementation of extending the 165-day instructional calendar by up to 30 days, which supports schools with various instructional calendars.

Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.

- The *Course Guide's* "Sequence of Grade 4 Modules Aligned with TEKS" section provides a rationale for the order of units, explaining how the knowledge and skills in each module build upon learning and make connections across the units. For instance, the "Rationale for Module Sequence" states "Previous modules earlier in the year prepared students to explore the relationship between a fractional unit and its whole unit by carefully establishing examples of such relationships in different contexts."
- Each module begins with an overview that explains the rationale behind the order of topics and lessons. It highlights how each topic builds on prior knowledge and prepares students for subsequent concepts. For example, the overview in Module 1 states "Building upon their previous knowledge of bundling, students learn that 10 hundreds can be composed into 1 thousand, and therefore, 30 hundreds can be composed into 3 thousands because a digit's value is 10 times what it would be one place to its right (4.2A)."

Materials include guidance, protocols, and/or templates for unit and lesson internalization.

- The materials include a *K-5 Math Program and Implementation Guide*, which includes a section that explains the module structure and lesson structure of each module. The lesson structure overview provides a "Lesson Internalization Protocol" which includes a step-by-step process for understanding each lesson before teaching. In addition, materials include explanations of fluency practice, application problems, concept development, problem sets, student debriefs, and exit tickets.
- The *K-5 Math Program and Implementation Guide* features a "Teacher Module Internalization Protocol," providing step-by-step guidance for teachers to thoroughly understand each module before teaching. This protocol facilitates a four-step process to grasp the unit's objectives, sequence, and pacing of activities. It enables comprehensive preparation for teaching by meticulously exploring and organizing instructional resources.

Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.

- The materials include two coach guides aligned with the Teacher Module Internalization Protocol and Teacher Lesson Internalization Protocol templates. These guides support administrators and coaches in assisting teachers with module implementation and internalization, providing a structured approach with a stated purpose for each step, recommended timing, and optional ideas for further exploration.
- An "Observation Tool" template located in the *K-5 Math Program and Implementation Guide* provides administrators and coaches with support for the implementation of course materials with fidelity. This tool offers non-evaluative feedback to teachers on their implementation progress. In addition, the observation tool serves as a resource for documenting observations of teachers' instructional practices and material implementation, with sections outlining specific activities to observe before, during, and after classroom visits.
- The grade 4 *Course Guide* features a "Manipulatives and Supplies Lists" section, offering coaches and administrators a comprehensive list necessary to support fidelity in implementing course materials.
- The "Student Work Analysis Protocol" found in the *K-5 Math Program and Implementation Guide* utilizes a six-step process to analyze student work samples. It guides coaches and administrators in understanding student thinking and identifying learning strengths and gaps through reflective questions.

Intentional Instructional Design

1.2	Unit-Level Design	4/4
1.2a	Materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit.	2/2
1.2b	Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student.	2/2

The materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit. Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student.

Evidence includes, but is not limited to:

Materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit.

- The materials begin each module with a comprehensive overview that provides essential background knowledge for effective teaching of new concepts. These overviews are structured by topic, featuring tables with common student misconceptions and visuals illustrating skills and strategies in each module. For instance, the "Module 5 Overview" includes visuals demonstrating how to compare fractions with like numerators and denominators.
- The materials feature a terminology section at the beginning of each module's overview. This section includes bullet lists of new and recently introduced terms, accompanied by concise definitions and visuals. It also includes Spanish cognates where applicable. Teachers utilize separate lists for "New or Recently Introduced Terms" and "Familiar Terms and Symbols," offering guidance on effectively teaching the academic vocabulary integral to the module's concepts.
- The "Topic Overview" section of each module provides detailed information on focus TEKS and guidance for every topic alongside vertical alignment connections to grade 4 math concepts. For example, in grade 4, Module 1 of the *Teacher Edition*, "Place Value of Multi-Digit Whole Numbers," the coherence section aligns with grade 3, Module 2, and grade 5, Module 1 of the materials.

Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student.

- The grade 4 *Course Guide* includes a "Tips for Families" section for each module, available in both English and Spanish. These tips provide families with an overview of key concepts covered in the module, strategies for supporting learning at home, and vocabulary definitions. Each tip sheet includes a checklist to monitor student progress and a section titled "Additional

Ways to Help at Home," which offers families visual models demonstrating concepts and strategies. These strategies include using everyday items like crackers, crayons, or toys to reinforce mathematical understanding.

- The materials feature a *Family Guide* containing a letter that explains the program's purpose and resources available for families to support their students. This guide also includes sample problems demonstrating various problem-solving approaches. The family letter emphasizes the importance of teaching students multiple methods to solve math problems, stating "We limit our students if we give them only one set of tools to solve math problems. The three examples above show what is possible when students learn multiple approaches." The guide is provided in both English and Spanish.
- The materials feature "Homework Helpers" in the *Succeed* student workbooks, offering step-by-step explanations for each homework assignment. This resource assists students in understanding and solving problems effectively. The *K–5 Math Family Guide* outlines resources like Homework Helpers and family tip sheets to aid families in supporting their students during homework. These are available in both English and Spanish.

Intentional Instructional Design

1.3	Lesson-Level Design	31/34
1.3a	Materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson.	27/30
1.3b	Materials include a lesson overview outlining the suggested timing for each lesson component.	1/1
1.3c	Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson.	2/2
1.3d	Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).	1/1

The materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content standards of the lesson. Materials include comprehensive, structured, detailed lesson plans that include questions, tasks, materials, and instructional assessments required to meet the language standards of the lesson. Materials do not include comprehensive, structured, detailed lesson plans that include daily objectives required to meet language standards of the lesson. Materials include a lesson overview outlining the suggested timing for each lesson component. Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson. Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

Evidence includes, but is not limited to:

Materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson.

- The *Teacher Edition* for Modules 1–7 includes a section at the beginning of each lesson called "Suggested Lesson Structure." This section is organized into four parts: "Fluency Practice," "Application Problems," "Concept Development," and "Student Debrief." Each lesson begins with a specific learning objective and follows a recommended bullet-pointed structure detailing each component and its allocated time. Comprehensive teacher guidance is provided for each lesson component, including step-by-step instructions for activities, questions, and possible student responses. Each lesson contains a list of materials required for each task within a lesson, if applicable. Some lessons also include additional teacher guidance in the form of margin notes offering support for language and scaffolding activities aligned with the ELPS. Materials include ELPS by module and lesson in the *Course Guide* and ELPS by topic in the "Module Overview of Module Topics and Lesson Objectives" table.

- Instructional assessments are integrated throughout the course materials. Each module includes a "Mid-Module Assessment," "End-of-Module Assessment," and an "Exit Ticket" for each lesson. Detailed teacher guidance for informal instructional assessment opportunities is provided within individual lesson components.
- The materials include a list of teacher questions and potential student responses within daily lesson plans, along with key academic vocabulary for each lesson. For example, Module 5, Lesson 7, Student Debrief includes the following question: "For Problem 3(a-d), how did you determine the number of horizontal lines to draw in each area model?"

Materials include a lesson overview outlining the suggested timing for each lesson component.

- Individual lessons in the materials follow a consistent framework and include a Suggested Lesson Structure found at the beginning of each lesson, which provides teacher guidance for the timing of each component in the lesson cycle. The time allotted for each lesson component within the Suggested Lesson Structure varies slightly among the lessons. Every lesson cycle in the materials is designed to be 60 minutes in length. Each lesson displays a pie chart dividing each component of the lesson and the number of suggested minutes for that component. For example, in Module 6, Lesson 1, the Suggested Lesson Structure is Fluency Practice for 12 minutes, Concept Development for 38 minutes, and Student Debrief for 10 minutes, for a total time of 60 minutes.
- The materials provide guidance on how long to spend on each Fluency Practice activity included in each lesson of the *Module Teacher Edition*. There may be more than one fluency activity that needs to be done within a specific allotted time frame. For example, in Lesson 3 of Module 4, there are three fluency activities to complete within 12 minutes. Each activity has a four-minute suggested time allotment.

Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson.

- The *Grade 4 Course Guide* includes a comprehensive "Manipulatives and Supplies List" that details the type and quantity of student materials. Each module in the materials provides a list of "Suggested Tools and Representations" in its Module Overview, specifying student materials required for the module. This organized table format aids teachers in planning and preparation, detailing each item's identification, quantity, and description. Teachers can utilize these charts to ensure they have all the necessary materials well in advance. Each component section at the beginning of individual lessons includes a list of materials needed. Materials designated for teachers are indicated with (T), while those for students are marked with (S). For example, certain fluency activities may require students to have a personal whiteboard, noted as "(S) personal whiteboard" beneath the specific activity.
- The "Lesson Overview Materials List" in each Module Overview includes a comprehensive list of the teacher and student materials necessary to effectively deliver each lesson in the module. The list of materials is in a table by lesson and separated by teacher and student materials.

Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

- The *K-5 Math Program and Implementation Guide* contains a section titled "Homework Helpers," which includes an overview of homework guidance and instructions for solving problems similar to those found in lessons. Each homework practice set in "Succeed" is supported by its corresponding Homework Helper.
- The *K-5 Math Program and Implementation Guide* includes guidance on homework usage in the Lesson Structure section. It emphasizes that homework aims to reinforce understanding and confidence with previously learned material rather than introducing new concepts. Homework assignments are located in the student's Succeed workbook and align closely with lesson concept development. Each lesson offers optional homework practice and advice on selecting the most effective homework materials for extended practice. Alternatively, the *Implementation Guide* suggests utilizing the lesson's Fluency component for additional practice outside of school hours.
- Lessons included in the materials periodically provide teacher suggestions for student extension and enrichment opportunities within the individual lesson components, noted in the *Module Teacher Editions* in boxes entitled "Notes on Multiple Means of Engagement (MME)." For example, Module 2, Lesson 7, Concept Development includes an MME box that states, in part, "Invite students who have demonstrated proficiency and others to test their discoveries about multiplying fractions by partitioning shapes other than rectangles, such as circles and hexagons."

Progress Monitoring

2.1	Instructional Assessments	24/24
2.1a	Materials include a variety of instructional assessments at the unit and lesson level (including diagnostic, formative, and summative) that vary in types of tasks and questions.	12/12
2.1b	Materials include the definition and intended purpose for the types of instructional assessments included.	2/2
2.1c	Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments.	2/2
2.1d	Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.	6/6
2.1e	Instructional assessments include standards-aligned items at varying levels of complexity.	2/2

The materials include a variety of instructional assessments at the unit and lesson level (including diagnostic, formative and summative) that vary in types of tasks and questions. Materials include the definition and intended purpose for the types of instructional assessments included. The materials include teacher guidance to ensure consistent and accurate administration of instructional assessments. Materials include diagnostic, formative, and summative assessments that are aligned to the TEKS and objectives of the course, unit, or lesson. Instructional assessments include standards-aligned items at varying levels of complexity.

Evidence includes, but is not limited to:

Materials include a variety of instructional assessments at the unit and lesson level (including diagnostic, formative, and summative) that vary in types of tasks and questions.

- The grade 4 *Assessments Teacher Edition* provides a range of assessments, including formative, summative, and diagnostic types, featuring multiple-choice questions, short-constructed responses, and questions of varying complexity. Tasks are administered either on paper or online, including short answer, inline, fill-in-the-blank, multiple choice, and multi-select questions. The materials include a variety of instructional assessments that vary in types of tasks and questions. For example, in Module 1, Lesson 1, the "Exit Ticket" and "Problem Set" are two different types of tasks with different questions. These also vary compared to the "Module 1 End-of-Module Assessment."
- The grade 4 *Assessments Teacher Edition* incorporates summative assessments at the unit level through Mid-Module and End-of-Module Assessment Tasks, which feature multiple-choice and short-constructed response questions. Teacher guidance from the *OER K-5 Math Program and Implementation Guide* indicates these assessments serve both formative and summative purposes.

- The grade 4 *Assessments Teacher Edition* suggests that some questions within Mid-Module Assessment Tasks serve diagnostically by assessing TEKS that recur in End-of-Module Assessment Tasks. According to the *Assessment* book, Mid-Module Assessment Tasks and Rubrics can also be used in a "diagnostic manner as they assess TEKS that will be assessed again on the End-of-Module Assessment Task."
- Additionally, "Fluency Practice" and "Application Problems" are described as diagnostic tools intended to provide distributed practice and connect previous concepts to current lessons. As outlined in the *OER K-5 Math Program and Implementation Guide*, there are several lesson-level and module-level diagnostic assessments. Fluencies can be used to diagnose readiness in the lesson. The format of fluencies varies throughout the module. Fluency Practice has three goals, including "Anticipation (skills that ensure students are ready for the in-depth work of upcoming lessons)." Also, Application Problems can be "used to activate schema or prepare students for new learning." Lastly, the "Exit Tickets" are stated to have two purposes, which are "indispensable for planning purposes" of future lessons. Exit tickets also vary in format.
- The materials provide formative assessments through problem sets in each module, offering diverse tasks like group projects and various question types. For instance, in Module 4, Lesson 1, Problem Set, students use the task directions to draw a figure using geometrical terms. These questions feature multiple-choice and short-constructed response questions, promoting analysis, evaluation, and creative thinking. Additionally, "Student Debriefs" serve as formative assessments through class discussions.

Materials include the definition and intended purpose for the types of instructional assessments included.

- The materials outline the roles and intended purposes of diagnostic tools, formative assessments, and summative assessments. For example, the Approach to Assessments section in the *OER K-5 Math Program and Implementation Guide* clarifies that Mid-Module and End-of-Module Assessment Tasks are primarily summative assessments. These tasks provide comprehensive feedback on student understanding and instructional effectiveness, guiding adjustments in teaching. The *OER K-5 Math Program and Implementation Guide* and the Grade 4 Assessment Guide define the various types of assessments, such as mid-module and end-of-module assessments. Both thoroughly explain the purpose and rationale behind each assessment as well as when to administer them.
- "Problem Sets" and "Exit Tickets" are described as formative assessments. Exit Tickets are brief assessments designed to immediately gauge student comprehension and identify areas needing review or additional support.

Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments.

- The materials include an "Approach to Assessments" in the "K–5 Math Instructional Materials" section in the *Grade 4 Assessments Teacher Edition*, which provides teacher guidance on best

practices to ensure the consistent administration of both the Mid-Module and End-of-Module (instructional) Assessment Tasks included in each module (unit) of the materials. These tasks present new challenges to students and are not preceded by similar problems.

- The *OER K-5 Math Program and Implementation Guide*, included in the program materials, offers teacher guidance on best practices for administering formative and summative assessments to ensure accurate administration of both. For instance, the End-of-Module Assessment Task section specifies that "Similar to the Mid-Module Assessment tasks, the End-of-Module tasks should be completed independently by students within one class period. These tasks should also be new to the students and not preceded by analogous problems."
- The materials also include "Suggestions for Implementation" in the *Assessment Guide Teacher Edition*, which provides suggestions on the time allotted for the Mid-Module and End-of-Module Assessments. In the "Module Overview" found in each module *Teacher Edition*, there is a chart that provides information on when to administer the Mid-Module and End-of-Module assessments and how many days are allotted for each assessment. This guidance helps teachers ensure consistent administration of instructional assessments. Additionally, the "Suggested Methods of Instructional Delivery" section includes teacher guidance on how to administer "Sprints," which can serve as formative assessments.

Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.

- The materials include summative assessments aligned with the TEKS of the course and the objectives of the unit. In the Mid-Module Assessment Task and End-of-Module Assessment Task sections found in the *Assessment Guide Teacher Edition*, materials feature a chart detailing the standards addressed for each Mid-Module and End-of-Module assessment. Additionally, there is a rubric titled "Progression Towards Proficiency" that specifies which TEKS standards each question on the Mid-Module and End-of-Module Assessment Tasks addresses, identifying correct answers and criteria for earning partial points. Exit tickets mirror the questions in the Problem Sets and align with the objectives and TEKS associated with each lesson.
- Exit ticket formative assessments are included in each lesson of the course materials, aligned with both the stated lesson objective (noted in the "Lesson Overview") and the TEKS (found in the "Overview of Module Topics and Lesson Objectives" within each module of the materials). The materials also contain formative assessments aligned with the course's TEKS and the lesson objectives.
- There are several opportunities for diagnostic assessments that are aligned with the TEKS and objective of the course, unit, or lesson. The first is the Mid-Module Assessment Task and Rubric, as found in the *Assessment* book, which outlines that they can be used in a "diagnostic manner as they assess TEKS that will be assessed again on the End-of-Module Assessment Task." The associated TEKS for that Mid-Module Assessment can be found within the rubrics, as outlined, for example, on the "Module 1 Mid-Module Assessment". Another TEKS-aligned diagnostic assessment can be found within the "Fluency and Application

Problems," as outlined in the *OER K-5 Math Program and Implementation Guide*, which can be used for anticipatory purposes.

Instructional assessments include standards-aligned items at varying levels of complexity.

- The materials contain a Mid-Module Assessment Task that outlines the standards being assessed. This assessment comprises questions designed to prompt students to exhibit understanding across multiple levels of complexity using explanations, drawings, and representations. For instance, students are presented with a challenging task involving an open response and text entry: "What fraction of their money was spent on worms? Draw a model and write an equation to solve." Summative assessments include standards-aligned items in multiple-choice, short-answer, fill-in-the-blank, and multi-select formats. They include tasks at Depth of Knowledge levels 1, 2, and 3. Detailed information on different question types and answer keys can be found in the *K-5 Math Grade 4 Assessment Metadata* resource.
- Each lesson in the course materials includes a Problem Set with standards-aligned questions at different levels of complexity. Module 3, Lesson 17 includes a Problem Set that is a summative assessment of the TEKS from the taught lesson. Questions include having students relate, which promotes level four of analyzing; show, which promotes level one of remembering; and calculate, which promotes level three of Bloom's Taxonomy.

Progress Monitoring

2.2	Data Analysis and Progress Monitoring	4/4
2.2a	Instructional assessments and scoring information provide guidance for interpreting and responding to student performance.	2/2
2.2b	Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.	1/1
2.2c	Materials include tools for students to track their own progress and growth.	1/1

The materials include instructional assessments and scoring information that provide guidance for interpreting and responding to student performance. Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments. Materials include tools for students to track their own progress and growth.

Evidence includes, but is not limited to:

Instructional assessments and scoring information provide guidance for interpreting and responding to student performance.

- The *Grade 4 Assessments Teacher Edition* includes a section on "Evaluating Student Outcomes" that provides guidance for teacher son using "Progression Toward Proficiency" rubrics. These rubrics, tailored for each Mid-Module and End-of-Module assessment task, provide guidance for teachers to pinpoint students’ strengths, misconceptions, and areas needing instructional support. This section includes scoring details and guidance for teachers who use the "Assessment Tasks" as a formative or summative evaluation of student performance.
- The "Collaboratively Troubleshooting Student Misconceptions" section of *Grade 4: Modules 1-7 Teacher Edition* includes a table that could assist the teacher in addressing student misconceptions and responding to formative or summative assessment data. The table identifies possible misconceptions and provides strategies to help students better understand the learning objectives.

Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.

- The course materials include an "Additional Days School Year (ADSY) Module," which offers supplemental lessons, tasks, and activities. According to the *K-5 Component Navigation Guide*, these resources can be used for "responding to data after an assessment." The ADSY Module also provides teachers with guidance on using these lessons to address trends in student performance on assessments.

- The *Grade 4 Assessments Teacher Edition*, included in the course materials, features a "Suggestions for Implementation" section. This section suggests using tasks and activities to respond to student performance on assessments. One such suggestion states, "For example, if data shows students need support reaching proficiency, teachers can utilize TEKS associated with each item in the Progression to Proficiency rubric. They can also refer to the scope and sequence, standards by lesson, and development of fluency information in the *Course Guide* to find appropriate lessons or fluency activities for additional practice."
- Each module in the *Teacher Edition* includes a section titled Collaboratively Troubleshooting Student Misconceptions, featuring a chart that identifies potential student misconceptions. It lists various tasks and activities designed to address these misconceptions. For example, in grade 4 Module 1, a common misconception is students name a digit instead of the value of that digit in a number (e.g., "The value of 4 in 1,427 is 4"). The recommended task is to "Use place value cards to represent a number and the value of each digit that composes the number."
- In the *OER K-5 Math Program and Implementation Guide*, the "Responding to Trends in Student Performance" section provides guidance for teachers on identifying trends and using structured materials effectively. It states, "Teachers can identify trends and use the coherent structure of these instructional materials to respond to student performance. Topics are clearly labeled with focus standards to help teachers quickly locate materials, problems, and other resources for supporting students in small groups or individually." This guidance assists teachers in utilizing tasks and activities to address trends in student performance effectively.

Materials include tools for students to track their own progress and growth.

- The "Assessment Reflection" section of the *Course Guide* includes a chart titled the "Assessment Reflection Tool." This tool is designed to help students monitor their progress and growth. It includes guiding questions that students answer before, during, and after assessments. These questions prompt students to reflect on their experiences, understand confusing aspects, recognize their existing knowledge, and identify ways to better prepare for future assessments. According to the materials, "This assessment reflection tool, available in the *Course Guide* for each grade level, helps teachers facilitate discussions both before and after an assessment."
- The "Fluency Practice" section of the *OER K-5 Math Program and Implementation Guide* mentions that "Sprints can be used to promote self-monitoring and self-improvement."

Supports for All Learners

3.1	Differentiation and Scaffolds	8/8
3.1a	Materials include teacher guidance for differentiated instruction, activities, and/or paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills.	3/3
3.1b	Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). (T/S)	2/2
3.1c	Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skills.	3/3

The materials include teacher guidance for differentiated instruction and activities, for students who have not yet reached proficiency on grade-level content and skills. Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skills.

Evidence includes, but is not limited to:

Materials include teacher guidance for differentiated instruction, activities, and/or paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills.

- The course materials feature margin notes strategically placed to provide teachers with guidance on differentiated instruction or activities tailored for students who need more practice building proficiency on grade-level concepts. Within the *OER K-5 Math Program and Implementation Guide*, the "Differentiation and Scaffolds" section includes a chart illustrating examples of scaffolds across three categories: Multiple Means of Representation, Multiple Means of Action and Expression, and Multiple Means of Engagement.
- The *Additional Days School Year Manual* offers opportunities for students to gain additional practice in reinforcing content. The "Module Overview" within this manual provides suggestions on implementing lessons, each of which is aligned with at least one module.
- Within the *Grade 4 Modules 1-7 Teacher Edition*, the "Collaboratively Troubleshooting Student Misconceptions" section presents teachers with a table of differentiated instruction strategies and guiding questions. These resources are designed to assist students who are struggling to grasp specific concepts, aiming to support teachers in implementing differentiated instruction to enhance students' understanding of the TEKS.

Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). (T/S)

- Lesson plans within the course materials include pre-teaching or embedded supports for unfamiliar vocabulary and references provided in margin notes. These notes feature scaffolds that clarify vocabulary through charts and visuals, and they offer sentence frames to support both oral and written language. For instance, in Module 1, Lesson 4, the Notes on Multiple Means of Representation suggest creating a chart to assist students, including emergent bilingual- students, with understanding the term *unknown factor*. They recommend writing a division sentence such as $8 \div 4 = \underline{\quad}$ and labeling the total, unknown factor, and known factor.
- Each module (unit) overview in the course materials includes a "Terminology" section that provides definitions and visual supports for the vocabulary featured in the module. Teacher guidance on utilizing the Terminology section for pre-teaching or embedded support is detailed in the *OER K-5 Math Program and Implementation Guide*.
- There are several opportunities for pre-teaching vocabulary. In Module 1, Lesson 10, in the Multiple Means of Representation, there is an opportunity to define unfamiliar words used in the lesson. The margin notes state, "Support students, including some emergent bilingual students, by defining unfamiliar words and experiences, such as the *White House*." Module 1, Lesson 13 includes embedded supports in the margin notes to support students' understanding of unfamiliar vocabulary and references. The margin notes state, "To improve understanding, have students read the problems to their partners and paraphrase what the question asks them to find."

Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skills.

- Lesson plans in the *Grade 4 Modules 1–7 Teacher Edition* include teacher guidance for differentiated instruction, targeting students who demonstrate proficiency in grade-level concepts. This instruction involves incorporating complex questions or tasks during the "Concept Development" and "Problem Set" sections of each lesson. According to the *OER K-5 Math Program and Implementation Guide*, "Problem Sets are intentionally crafted from simple to complex with various access points based on a student's current level of proficiency." Additionally, the materials offer opportunities for students to engage with questions of varying depth during the "Student Debrief," such as justifying their answers using academic vocabulary.
- Margin notes in lesson plan materials suggest differentiated instruction through extension activities designed for proficient students. For example, in Module 5, Lesson 14, the Notes on Multiple Means of Engagement suggests, "Challenge students who have demonstrated proficiency to approximate estimates before solving to check the reasonableness of their answers."
- The Differentiation and Scaffolds section of the *OER K-5 Math Program and Implementation Guide* states teachers should consult margin notes for extension suggestions. For instance, in Module 5, Lesson 25, the Notes on Multiple Means of Engagement suggest that teachers

"consider adjusting the numbers to challenge proficient students or offer alternatives like developing a game to practice the skill."

- The materials have differentiated enrichment instruction for students who have demonstrated proficiency, as noted in Module 1, Lesson 14. In the "Application Problem," there is an extension for students, which is an opportunity for enrichment. The materials state, "If the cats ate 1,462 points of the cat food, how much food was left?" The materials provide another enrichment opportunity in Module 1, Lesson 10, when the Multiple Means of Engagement margin box states, "Challenge students who have demonstrated proficiency to think of at least two situations similar to problem 3, where choosing which unit to round to is important to the outcome of the problem."

Supports for All Learners

3.2	Instructional Methods	13/13
3.2a	Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).	6/6
3.2b	Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.	4/4
3.2c	Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.	3/3

The materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learning explicitly (directly). Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches. Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.

Evidence includes, but is not limited to:

Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).

- Each lesson within the course materials features a concept development component structured with detailed teacher prompts presented in a vignette format, marked with "T:". These prompts provide explicit guidance for modeling, explaining, and communicating the concepts addressed in the lesson. Additionally, exemplary student responses to each question are provided and marked with "S:".
- The "Concept Development" section in the *OER K-5 Math Program and Implementation Guide* offers guidance on effectively introducing new concepts, particularly when introducing new terminology. It recommends having students explore the meanings of new key terms through interactive discussions and turn-and-talk strategies. The Concept Development section organizes all teacher guidance in a linear vignette format, facilitating the clear integration of each element within the lesson cycle.
- Margin notes within each lesson provide additional guidance to support teachers in modeling, explaining, and communicating the concepts to be learned. These notes offer specific guidance on how to effectively model, explain, or communicate content. For example, in Module 7, Lesson 2 gives teachers guidance on using real-life objects to support students in making connections between the concept introduced and familiar experiences.
- Lessons in each module are grouped into topics, and each topic includes an overview that offers guidance to support teachers. The overview for Topic A provides explicit direction on how to model, explain, and communicate the concept directly and effectively.

Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.

- The course materials feature comprehensive teacher guidance for effective lesson delivery, incorporating a variety of instructional approaches. These include cooperative learning, read/draw/write activities, paired learning, discourse, and concept debriefs. For example, in the *Teacher Edition* of Module 1, Lesson 1, Concept Development, teachers are encouraged to utilize place value disks and charts to enhance students' visualization and comprehension of mathematical concepts.
- Lessons provide guidance on facilitating effective learning experiences through various instructional methods, such as daily lesson vignettes, question strategies, group work, and peer teaching. They emphasize hands-on learning with manipulatives, real-life objects, and graphic organizers to actively engage students.
- The materials offer teacher guidance on effective lesson facilitation, encouraging reflective practice, peer teaching and learning, and collaborative learning approaches. These instructional strategies are integrated throughout the lesson, including within the "Student Debrief" section, which provides guided instructions to facilitate reflection and discussion of lesson concepts.

Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.

- Each lesson in the course materials is designed to foster student proficiency of concepts through a variety of practice modalities, including modeled, guided, collaborative, and independent structures. Lessons are structured sequentially to include "Fluency Practice," Application Problems, Concept Development, and a Student Debrief. The materials incorporate independent practice opportunities at the end of each lesson, such as exit tickets, problem sets, and homework assignments. The "Lesson Structure" section of the *OER K-5 Math Program and Implementation Guide* offers guidance on effectively implementing each component and explains their respective purposes.
- The lesson materials provide comprehensive support for diverse practice approaches, utilizing whole group, small group, paired, and individual learning structures within each lesson cycle. The *OER K-5 Math Program and Implementation Guide* offers teacher suggestions for organizing small groups and paired learning teams to enhance lesson effectiveness. This section outlines the objectives of each lesson component, offering scaffolding, accommodations, and differentiation strategies to support the needs of all learners.

Supports for All Learners

3.3	Supports for Emergent Bilingual Students	10/11
3.3a	Materials include teacher guidance on providing linguistic accommodations for various levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.	1/2
3.3b	Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs.	1/1
3.3c	Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.	8/8
3.3d	If designed for dual language immersion (DLI) programs, materials include resources that outline opportunities to address metalinguistic transfer from English to the partner language.	Not scored

The materials include teacher guidance on providing linguistic accommodations for at least one level of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language. Materials do not include teacher guidance for linguistic accommodations at more than one level of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language. Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs. Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

Evidence includes, but is not limited to:

Materials include teacher guidance on providing linguistic accommodations for various levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

- The *Grade 4 Teacher Edition* offers linguistic accommodations through margin notes in lesson plan materials. These accommodations provide teacher guidance on supporting understanding and fostering academic language acquisition for emergent bilingual students. For instance, supports include utilizing anchor charts, sentence stems, graphic organizers, partner activities, strategic grouping, and visuals.
- The "Emergent Bilingual" section of the *OER K-5 Math Program and Implementation Guide* offers teachers guidance on employing linguistic accommodations for emergent bilingual students to enhance vocabulary, comprehension, and knowledge acquisition. It also advocates for establishing language routines to reinforce understanding of new key terms.

- The materials include guidance to support students who have different levels of English language proficiency. For example, in the *OER K-5 Math Program and Implementation Guide*, two sections include guidance on supporting students who have different levels of English language proficiency: the "Structuring Student Groupings" section and "Linguistic Accommodations for EB Students to Build Comprehension and Knowledge" section. The guidance is not specific to using linguistic accommodations to address proficiency levels and engage students in using increasingly more academic language.

Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs.

- The *OER K-5 Math Program and Implementation Guide* includes a section titled "Support for Emergent Bilingual Students," which offers guidance on the four-part lesson design, linguistic accommodations for building vocabulary, research-based language routines for introducing new key terms, and strategies to improve comprehension. For instance, teachers receive guidance on implementing a "Collect and Display Language Routine" within the lesson cycle to aid in academic language acquisition as outlined in the ELPS.
- Lesson plans incorporate margin notes that outline accommodations for supporting emergent bilingual students aligned with ELPS through "Multiple Means of Engagement, Representation, and Action." These scaffolds and supports propose modifications to activities to cater to the needs of emergent bilingual students. They include guidance on acquiring vocabulary, fostering language development related to specific topics, and assisting teachers in effectively utilizing sentence stems to aid students. Accommodations encompass strategies like turn-and-talk discussions, clarifying vocabulary using charts and visuals, and supplying templates, as well as graphic organizers.

Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

- The *Grade 4 Teacher Edition* supports oral discourse through various strategies. Lessons emphasize building academic vocabulary with visual aids and using gestures and background knowledge to clarify unfamiliar words. Additionally, the module includes strategies like recording student responses and providing extra practice time to enhance oral communication. The "Fluency Practice" component aims to build or activate background knowledge.
- Lesson plan materials promote cross-linguistic connections by allowing students to discuss mathematical reasoning in their preferred language. In the "Terminology" section of the "Module Overview," Spanish cognates are included when a term has a similar meaning and spelling in English, supporting emergent bilingual students who speak Spanish. To improve written discourse, lesson plans guide teachers in supporting students who need more practice by offering a word bank for constructing written responses. They suggest using

sentence frames or prompts to assist students during written activities and facilitating discussions. Furthermore, teachers are encouraged to pair emergent bilingual students with peers to support reading tasks aloud and help with written responses.

- Individual lesson components align with ELPS standards, aiming to enhance comprehension in the "Concept Development" and "Student Debrief" sections. Teacher vignettes encourage strategic questioning that prompts students to use academic vocabulary in their explanations and relate concepts to familiar experiences.

If designed for dual language immersion (DLI) programs, materials include resources that outline opportunities to address metalinguistic transfer from English to the partner language.

- The material is not designed for dual language immersion (DLI) programs.
- Materials include resources addressing metalinguistic transfer from English to the partner language. For example, the *OER K-5 Math Program and Implementation Guide* includes a section to support emergent bilingual students. This section identifies the student debrief portion of the lesson as a support for metacognitive and metalinguistic thinking. Materials state the effect of lowering students' affective filters through routine lesson delivery as metalinguistic thinking support.

Depth and Coherence of Key Concepts

4.1	Depth of Key Concepts	3/3
4.1a	Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.	1/1
4.1b	Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.	2/2

The materials include practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS. Materials include questions and tasks that progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.

Evidence includes, but is not limited to:

Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

- The grade 4 materials include practice opportunities in the lessons that require students to demonstrate depth of understanding aligned to the TEKS. Information within the *OER K-5 Math Program and Implementation Guide* describes instruction components that include concrete to abstract sequencing. Lesson components also support students to acquire higher and higher levels of understanding. Lesson-level practice includes opportunities for students to engage in procedural and application practice aligned to the TEKS. For example, Module 3, Lesson 5, "Exit Ticket," includes opportunities for students to show their multiplication thinking with place value disks and place value charts alongside the algorithm. The last two problems of the Exit Ticket include multiplication in the context of a real-world problem.
- The materials include mid-module and end-of-module assessments that demonstrate the depth of understanding aligned to the TEKS specific to each module's content. The *Grade 4 Assessments Teacher Edition* overview provides information about the assessment question types. Summative assessment questions come in formats that include constructed response, multiple choice, and multi-select, in which students demonstrate their comprehensive understanding and proficiency of the module concepts. The "Progression Toward Proficiency" rubric for mid-module and end-of-module assessments describes how the students show their understanding with increasing proficiency. The rubric defines the depth of understanding aligned to the TEKS. For example, Module 1, "Mid-Module Assessment Task," provides proficiency guidance for question 10 aligned to TEKS 4.4G. To receive full points for this question, the rubric indicates students should correctly round the given numbers to the nearest thousandth place and include the solution to subtracting the two rounded numbers.
- The final lesson of each module provides practice in which students engage in problem-solving in real-world contexts aligned to the TEKS. For example, in Module 6, Lesson 17,

students solve real-world problems about making a profit. Tasks include describing how to allocate a weekly allowance.

Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.

- In the "Concept Development" section of each lesson, tasks progressively increase in rigor and complexity. For example, in Module 4, Lesson 13, tasks increase in rigor across three levels of depth of knowledge: recalling attributes of triangles, comparing findings, and explaining results with a partner to encourage critical thinking and peer discussion, leading to grade-level proficiency in TEKS.
- The lesson structure includes tasks that progressively increase in rigor and complexity, leading to grade-level proficiency. For example, in Module 5, Lesson 18, the lesson begins with fluency practice to reinforce previous knowledge, proceeds to solving one- and two-step word problems using the "Read–Draw–Write" process, and concludes with a student debrief that promotes critical thinking through peer discussion of mathematical concepts and independent practice on an exit ticket.
- Lesson questions progress from simple to complex understanding, guiding students toward achieving grade-level proficiency in the standards. In Module 1, Lesson 11, questions start with basic addition with regrouping across one place value and then advance to regrouping across multiple place values using a standard algorithm. The final questions in the problem set integrate this skill into word problems encompassing addition with regrouping across multiple place values.

Depth and Coherence of Key Concepts

4.2	Coherence of Key Concepts	12/12
4.2a	Materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence.	2/2
4.2b	Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts.	3/3
4.2c	Materials demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level.	3/3
4.2d	Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to new mathematical knowledge and skills.	4/4

The materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence. Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts. Materials demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level. Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to new mathematical knowledge and skills.

Evidence includes, but is not limited to:

Materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence.

- The materials demonstrate coherence across the course by logically sequencing units and lessons, beginning with numbers and operations, progressing through algebraic reasoning, and concluding with geometry and measurements. The "Rationale for Module Sequence in Grade 3" within the *Course Guide* provides details about this progression of modules across the course.
- The materials demonstrate coherence across grade bands. The *Grade 3 Course Guide* includes a "Progression of Mathematical Concepts" chart, color-coded by mathematical strand, which outlines the vertical alignment and sequence of grade-level modules (units) from Kindergarten through grade 5. For example, in grade 2, students explore fractions as equal parts of shapes, while grade 3 focuses on understanding fractions as numbers or on a number line. Moving into grade 4, students delve into fraction equivalence, ordering, and comparison, and by grade 5, they progress to operations such as addition, subtraction, multiplication, and division of fractions.
- The course materials demonstrate coherence across the course through a logically sequenced scope and sequence aligned with the TEKS. Module 1 focuses on place value,

rounding, and addition/subtraction algorithms. This knowledge builds to subsequent modules, such as Module 2, which includes unit conversions and problem solving with metric measurement, and Module 3, which includes multi-digit multiplication and division. Each module builds upon the concepts introduced in the previous one, ensuring a cohesive and progressive development of mathematical understanding throughout the academic year.

Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts.

- The materials include an overview section for each topic within every module, demonstrating coherence by linking lessons and explaining connections among patterns, key concepts, and mathematical relationships taught throughout. The overviews include teacher guidance for each focus standard while emphasizing the overall coherence. The overviews also provide guidance on how big ideas connect within and across modules. For instance, Module 5, "Module Overview," states, "Module 5 builds conceptual understanding of rational numbers, specifically fractions, which will help students be successful in Module 6 as they begin working with decimals."
- The materials maintain coherence across units by explicitly linking the current concept to previous and upcoming ones. For example, in Module 4, Lesson 1, Lines and Angles, the "Fluency Practice" explains how the activity reviews year-long fluency standards for addition and subtraction in the grade level.
- The materials apply the "Concrete-Representational-Abstract" approach across modules, lessons, and grade levels. This consistent approach demonstrates coherence by connecting mathematical patterns throughout the instructional materials.

Materials demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level.

- The course Module Overview demonstrates coherency across units. The *OER K-5 Math Program and Implementation Guide* states "the module's placement in the overall development of learning in and across the grade levels" (per the *OER K-5 Math Program and Implementation Guide*.) For example, the Module 5 overview states, "In this 35-day module, students build on their grade 3 work of using concrete objects and pictorial models to solidify their understanding of fractions as numbers. Students now explore fraction equivalence and extend this understanding of mixed numbers. This leads to the comparison of fractions and mixed numbers and the representation of both in a variety of models."
- Each module includes a "Terminology" section with a "Familiar Terms and Symbols" subsection, linking vocabulary from previous units and grade levels to the current module's content. This section provides definitions and visual models to reinforce understanding of these terms in context.
- The "Progression of Mathematical Concepts" chart in the *Grade 4 Course Guide* provides a vertical alignment of mathematical concepts across grade levels, illustrating their connection

to future course content or upcoming grade levels. The *Grade 4 Course Guide* features a color-coded "Progression of Mathematical Concepts" chart that shows the alignment of grade 5 learning with the scope and sequence of grade 4 materials. This chart shows the continuity and progression in mathematical content across units and grade levels.

Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to new mathematical knowledge and skills.

- The materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current grade level to new grade-level content. Lessons include application problems that review concepts and procedures from earlier in the current grade level, preparing students for the new knowledge and skills in the current lesson. Fluency practice reviews concepts and procedures from previous grade levels, reinforcing foundational skills in preparation for current learning. The "Concept Development" component and margin notes in lesson materials include guidance for teachers on how to help students connect their prior learning with new concepts in the lesson.
- The "Topic Overviews" guide teachers on how concepts and procedures in lessons connect and build on each other. For example, in Module 4, Topic A, Lesson 2, students build rectangles using unit square tiles to make arrays. In Lesson 3, using experience with drawing rectangular arrays within an area model, students find the area of an incomplete array. Students connect these representations to solving area problems by first skip counting and then multiplying the length (column) by the width (row). Module 4, Lesson 1, Fluency Practice, reviews features of various figures that were learned in previous grades. This knowledge of figures helps to identify lines, angles, and line segments in the current grade-level lesson.
- The lesson materials demonstrate coherence at the lesson level by using familiar procedures to introduce new mathematical concepts. For example, materials across different grade levels engage with opportunities to create number bonds. In Module 4, the instructional materials in Lesson 1 connect students' prior knowledge of concepts, building on students' understanding of basic geometric figures from earlier grades.

Depth and Coherence of Key Concepts

4.3	Spaced and Interleaved Practice	8/8
4.3a	Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units.	4/4
4.3b	Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.	4/4

The materials provide space retrieval opportunities with previously learned skills and concepts across lessons and units. Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.

Evidence includes, but is not limited to:

Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units.

- The course materials include key lesson components that facilitate learning through spaced retrieval of previously acquired knowledge and skills. At the lesson level, "Fluency Practice" involves mental math exercises that revisit previous skills from current and prior modules. For example, before a lesson on solving measurement word problems using estimation, students engage in an estimation sprint and practice using subtraction algorithms with measurements.
- "Application Problems" provide spaced retrieval opportunities to solve word problems using various techniques such as strip diagrams, number bonds, and arrays. For example, Module 2, Lesson 1, includes an application problem for students to solve using a model and strategy of their choice. The application problem provides spaced retrieval opportunities for previously learned skills in a real-world context. The note below the problem states, "This Application Problem builds on Grade 4 Module 1 Lesson 19. Note that Solution A models the standard algorithm, whereas Solution B records a simplifying strategy using number bonds. A number bond demonstrates part-whole relationships and is a way to record completing a whole or taking part from a whole. This Application Problem leads to the Concept Development of this lesson because the problem involves the metric unit of a meter."
- Sometimes, the "Student Debrief" section integrates spaced retrieval practice. Students revisit previously learned skills and concepts through targeted questions and reflection points, making connections between previously learned skills across lessons. For example, in Module 2, Lesson 4, the Student Debrief section includes the question, "Did you find the number line helpful when comparing measures?" Module 1 includes number lines and connects to this learning in Module 2.
- Course materials offer systematic retrieval opportunities through assessments found in the *Assessments* book. Each module includes Mid- and End-of-Module assessments aligned with the TEKS, assessing students' proficiency in concepts in each module. Modules 1–7

incorporate spiral review activities that span across lessons and units. These tasks are designed to activate students' prior knowledge. Lessons include a student debrief section that integrates retrieval practice. In the student debrief section, students revisit previously learned skills and concepts through targeted questions and reflection points, reinforcing their understanding over time.

Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.

- The course materials integrate components that provide interleaved practice of previously learned skills and concepts. For example, in Module 2, Lesson 4, teacher guidance provides prompts for students in the student debrief, such as, "How did the previous lessons on conversions prepare you for today's lesson?" This approach allows students to revisit and apply different methods.
- The Fluency Practice supports skills in the upcoming lesson. These activities align with current lesson concepts, providing ongoing practice. For example, Module 7, Lesson 4, includes a fluency practice to review adding fractional units. The notes indicate this fluency anticipates the learning in "Concept Development" through a direct relationship to the measurement units within the lesson.
- The materials also incorporate interleaved practice through Application Problems, where students determine the most effective operations and strategies to solve problems. The application problem includes prior learning recall, critical thinking demands, and the application of skills in varied contexts.
- The materials systematically revisit and apply previously learned concepts throughout each unit. For example, in Module 7, students use their prior knowledge of metric conversions to complete input/output tables. Using this approach, foundational skills are reinforced and applied in increasingly complex scenarios.

Balance of Conceptual and Procedural Understanding

5.1	Development of Conceptual Understanding	18/18
5.1a	Questions and tasks require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations.	12/12
5.1b	Questions and tasks require students to create a variety of models to represent mathematical situations.	2/2
5.1c	Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.	4/4

The questions and tasks require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations. Questions and tasks require students to create a variety of models to represent mathematical situations. Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

Evidence includes, but is not limited to:

Questions and tasks require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations.

- Lesson tasks engage students with mathematical concepts through interpreting, analyzing, and evaluating a range of representations. For example, in Module 3, students use place value charts, number bonds, strip diagrams, area models, and algorithms to represent and solve multi-digit multiplication and division problems. Questions in the "Problem Set" provide opportunities for students to use the representation of their choice to solve mathematical problems and justify their solutions.
- The lesson structure provides opportunities for students to interact with diverse models and representations and prompts students to interpret, analyze, and evaluate different mathematical concepts. For example, in Module 1, students engage with place value disks, strip diagrams, and number lines to support their understanding of place value.
- The materials include questions within lessons to prompt students to interact with various models and representations, enabling them to interpret, analyze, and evaluate different concepts. For example, the "Concept Development" in Module 5, Lesson 2, includes scaffolding questions to develop their understanding of decomposing and composing fractions using various representations. In Module 5, Lesson 1, the teacher asks students various scaffolding questions involving comparing problems, analyzing situations, and evaluating adjustments.
- The materials include questions for students to construct diverse models to illustrate mathematical concepts. For instance, in Lesson 2, Concept Development, prompts for students include questions about extending their area model to represent and find different solutions. In Module 5, Lesson 1, Concept Development prompts students to create and

interpret a fraction strip model, make and analyze changes to the model when partitioned differently, and evaluate solutions by adding fractional parts within the model. Additionally, later in the lesson, the activity shifts to a representational aspect, requiring the students to interpret, analyze, and evaluate a model representation.

Questions and tasks require students to create a variety of models to represent mathematical situations.

- The course materials include tasks that prompt students to create diverse models to represent mathematical situations. For example, in Module 1, Lesson 1, Concept Development tasks students to model a number using place value disks. The problems provide experience with a variety of representations in the place value model.
- Each lesson component includes questions requiring students to create various models to represent mathematical situations. For example, in Module 6, Lesson 14, the "Fluency Practice" asks students to write in expanded decimal and fraction notation. The Concept Development, Problem Set, and "Exit Ticket" sections include scaffolding questions that require students to solve word problems using various models.
- Lesson components across the instructional materials require students to construct various models that illustrate mathematical scenarios. For example, in grade 4, students use a range of tools such as place value disks, counters, arrays, ten-frames, number bonds, fraction strips, strip diagrams, and area models to visualize and solve mathematical problems.
- "Application Problems" within the instructional materials require students to employ models as part of strategic problem-solving techniques using the material's "Read-Draw-Write" strategy. The problem-solving model includes selecting appropriate models, such as strip diagrams, number bonds, area models, or other visual aids.

Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

- Each module provides opportunities for students to apply their conceptual understanding to new and complex problem situations. Both teacher-guided facilitation questions in the Concept Development and guided practice questions in the Problem Set components support comprehension and apply learning from previous lessons. For instance, in Module 3, Lesson 1, students compare units used to measure perimeter, explain the difference between perimeter and area, and how they solved their answers.
- The Fluency Practice and Application Problem tasks activate students' prior knowledge and allow them to apply conceptual understanding in various contexts. The foundational skills in these components anticipate and prepare students for the learning in the Concept Development section, which introduces new tasks while integrating previously acquired mathematical concepts. For example, a note in Module 1, Lesson 19 Application Problem states, "For this two-step problem, students self-select an approach and independently solve. Practicing a two-step problem here scaffolds the difference between the structured practice

in Lesson 18 and the open-ended practice in Lesson 19. Prepare students for today's exploration by guiding them to evaluate their methods for solving and assessing the reasonableness of their answers."

- The "Student Debrief" in lessons includes guided questions that prompt students to apply conceptual understanding by comparing, explaining, and justifying their answers. Students discuss different problem-solving strategies, explaining their reasoning and justifying their preferred method. For example, Module 3, Lesson 3, includes the question, "Explain how you used the figure you drew for Problem 4 to find a solution."

Balance of Conceptual and Procedural Understanding

5.2	Development of Fluency	12/12
5.2a	Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks.	2/2
5.2b	Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit.	3/3
5.2c	Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit.	6/6
5.2d	Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.	1/1

The materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks. Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit. Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit. Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

Evidence includes, but is not limited to:

Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks.

- The "Fluency Practice" lesson component features "Sprints" in select lessons throughout each module (unit) of the course materials. Sprints are timed fluency exercises to help students identify patterns and solve increasingly complex problems. For instance, in Module 1, Lesson 1, students multiply and divide by 10, moving from simple multiplication and division in the first column to finding the unknown number in the second column. According to the *OER K-5 Math Program and Implementation Guide*, Sprints "are carefully selected and sequenced to help students recognize patterns and structures to solve subsequent, more complex problems." These exercises assist students in developing the automaticity needed to solve grade-level tasks. Sprint tasks encompass a range of skills such as recalling math facts, computational patterns with whole numbers and grade-appropriate rational numbers, rounding, estimation, and simplifying fractions.
- Lessons within the course materials encompass both Fluency Practice and "Application Problem" components. These components are designed to aid students in developing the fluency necessary for grade-level tasks. Fluency Practice tasks "offer spaced practice with previously learned material and prepare students for new learning by activating prior knowledge." For example, in Module 2, Lesson 1, the fluency note states, "This fluency activity prepares students to add and subtract meters and centimeters later in the lesson." Application Problem tasks "apply conceptual understanding to make sense of and persevere

through new problems," supporting fluency by encouraging the use of flexible thinking strategies in problem-solving contexts. This practice prepares students to complete grade-level tasks. For example, Module 1, Lesson 1, Application Problem note, states, "As the first lesson of the year, this Application Problem reviews area, perimeter, multiplication, and addition—all important concepts from Grade 3. This problem can be extended after the Concept Development by asking students to find an area 10 times as much as the grass sod or to find a perimeter 10 times as wide and 10 times as long."

- The Concept Development components support student fluency by providing teachers with guidance to facilitate exploration and discussion of various problem-solving approaches with newly introduced mathematical concepts. For example, Module 2, Lesson 3, Concept Development, Problem 1 task states, "Compare the sizes and note the relationship between 1 kiloliter and 1 liter and 1 liter and 1 milliliter. Teacher prompts guide students into noticing the relationship between the different measures and building fluency with equivalent measures, such as 1,500 ml is the same as 1L 500 ml. Problem 2 incorporates this fluency when students "Add mixed units of capacity using the algorithm or a simplifying strategy. "

Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit.

- The lesson components prompt students to apply efficient, flexible, and accurate mathematical procedures. For example, the Module 3, Lesson 4 vignette includes the teacher guidance statement, "Right. We can use our understanding of place value to know that when we multiply a number by 10, the product is 10 times larger. So, all of our digits shift one place value to the left. What do you think happens when we multiply a number by 100?" Students use place value to achieve the Lesson 4 objective, "Interpret and represent patterns when multiplying by 10 and 100 in models and numerically." Students use this knowledge and apply efficient, flexible, and accurate mathematical procedures within Lesson 6. The student objective for Lesson 6 is, "Multiply two-digit multiples of 10 by two-digit multiples of 10 with the area model."
- The course materials' lesson structure supports students' use of efficient, flexible, and accurate mathematical procedures when solving both new and previously learned concepts. For example, in Module 7, Lesson 8 prompts students to solve multi-step word problems using pictorial representations, adding like units, adding up, and/or rounding. Students have the opportunity to select and apply the strategy of their choice to solve increasingly complex problems as the lesson progresses.
- The "Problem Sets" in each lesson "often encompass fluency related to Concept Development as well as conceptual understanding and application word problems," offering students opportunities to practice newly acquired mathematical concepts using efficient, flexible, and accurate methods. For example, in Module 3, Lesson 6, the fluency note states, "This activity helps prepare students to multiply by multiples of 10 and 100," for the fluency activity, Take Out the 10 or 100.

Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit.

- Lesson components within the materials provide opportunities for students to apply flexible, accurate, and efficient mathematical procedures throughout their learning. For example, Application Problems prompt students to apply previously learned models and strategies to solve real-world scenarios. During Application Problems, teachers prompt students to choose the most suitable approach.
- "Student Debrief" sessions provide questions to prompt students to explore alternative solution methods and engage in peer conversations, reflecting and refining their problem-solving techniques. For example, Module 3, Lesson 7, Student Debrief, provides the prompt, "Talk to your partner about which method you prefer. Do you prefer writing the partial products or using a place value chart with disks? Is one of these methods simpler for you to understand? Does one of them help you solve the problem faster?"
- The materials include the application of accurate mathematical procedures through Problem Sets. These sets direct students to use a variety of strategies to solve problems. Concept Development supports students in integrating new learning goals into their existing knowledge. The lesson vignette includes guidance for modeling and guided practice to support students' depth of understanding of mathematical concepts. For example, Module 3, Lesson 10, Concept Development Vignette, prompts teachers to support efficiency and flexible thinking by identifying a connection of strategies, stating, "Notice that our answer is the same when we used the algorithm and the partial products strategy."

Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

- The Concept Development, a key component in every lesson of the course modules, includes a vignette that guides teachers to provide opportunities for students to evaluate procedures, processes, and solutions related to new math concepts for efficiency, flexibility, and accuracy. For example, in Module 7, Lesson 8, students solve multi-step word problems using a variety of strategies. The Concept Development provides teacher guidance for directing students to "assess the solutions presented by their peers on the board, comparing the solutions to their own work" while the teacher highlights the "alternative methods to reach the correct solution."
- The Student Debrief provides guidance for teachers to prompt students in evaluating the efficiency, flexibility, and accuracy of procedures, processes, and solutions for new math concepts. For example, in Module 7, Lesson 8, students solve multi-step word problems using a variety of strategies. Questions in the Student Debrief include, "For Problem 3, is 29 pounds 29 ounces a correct answer? Explain." and "What are the advantages to knowing several methods for working with units of measurement?" These reflective questions provide opportunities for students to explain their reasoning for choosing specific problem-solving methods.

Balance of Conceptual and Procedural Understanding

5.3	Balance of Conceptual Understanding and Procedural Fluency	16/16
5.3a	Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.	2/2
5.3b	Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations.	6/6
5.3c	Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.	8/8

The materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations. Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.

Evidence includes, but is not limited to:

Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.

- Materials explicitly state how the conceptual and procedural emphasis of the TEKS appear in each module within the "Module Overview." For example, the Module 1 Overview describes how students build a conceptual understanding of place value and apply this understanding to more procedural tasks such as adding and subtracting. The materials state, "The place value chart is fundamental to Topic A. Building upon their previous knowledge of bundling, students learn that 10 hundreds can be composed into 1 thousand, and therefore, 30 hundreds can be composed into 3 thousands because a digit's value is 10 times what it would be one place to its right (4.2A)." Students build on place value understanding using a vertical number line to build a conceptual understanding of rounding. The materials include the procedural emphasis of the TEKS, stating, "In Grade 4, students become fluent with the standard algorithms for addition and subtraction. "
- Module 1, Topic B Overview, describes how students work within the conceptual and procedural emphasis of the TEKS. The description states, "In Topic B, students use place value to compare and order whole numbers. Initially, using the place value chart, students compare the value of each digit to surmise which number has a greater value. Moving away from dependency on models and toward fluency with numbers, students compare numbers by observing across the entire number and noticing value differences."

Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations.

- Materials include tasks and questions that use pictorial representations. For example, in Module 4, Lesson 2, "Concept Development," students are tasked with drawing and labeling up to four rays to model four types of angles. Materials include prompts to ask students about the drawings, such as, "What do you notice?" and "How did you identify this angle?" Additionally, the activity prompts the teacher to ask questions about what they notice about the drawings.
- Lesson materials incorporate tasks and questions using concrete representations as manipulatives. For example, Module 4, Lesson 2, Concept Development, prompts students to fold a round piece of paper to make a right angle. Additionally, the paper model is used to find right angles. Questions within the vignette support student understanding of right angles. For example, a question in the vignette asks, "Use your right angle template to find all of the right angles on the angles template. How will you know if it's a right angle?"
- Modules and lessons follow a structured approach fostering conceptual understanding by linking concrete models and pictorial representations to abstract concepts such as algorithms and equations. Questions prompt students to explain relationships among models, pictorial representations, and abstract representations. For example, Module 3, Lesson 11, "Student Debrief," includes the question, "In Problem 1, how does the area model connect to the expressions written below the area model? How could the distributive property be used to solve problems without drawing the area model?"

Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.

- The modules (units) in the course include instructional sequencing of concepts and lessons using the "concrete-representational-abstract approach." Explicit teacher guidance and exemplars for supporting students in connecting, creating, defining, and explaining both concrete and representational models to abstract thinking are within the materials. For example, the beginning of the Concept Development of Module 1, Lesson 6 vignette states, "T: (Draw 1,248 using place value disks in a place value chart.) T: (Draw 1,672 using place value disks in a place value chart.) T: (Draw 1,278 using place value disks in a place value chart.) What is the greatest place value represented? S: Thousands. T: Discuss with your partner: How many thousands are represented in each number?" The materials support students' understanding of ordering numbers from greatest to least and least to greatest. At the end of the lesson, the Student Debrief includes the question, "How did you determine the order of the cities?" This question supports students in making connections and explaining their understanding of ordering numbers.
- The Concept Development component of lessons includes scaffolds to support students in connecting, creating, defining, and explaining concrete and representational models to abstract concepts. For example, in Module 1, students begin by using place value disks to compare whole numbers and move to using a place value chart to draw place value disks and a standard form to compare.

- The Student Debrief component of lessons allows students to explain the use of concrete and representational models to abstract concepts. For example, in Module 5, Lesson 13, questions include, "How are strip diagrams and number lines helpful in comparing fractions?"
- Additional support for students beyond Tier 1 lesson materials is included in the "Collaboratively Troubleshooting Student Misconceptions" section of each module (unit) overview and in margin notes provided within individual lessons in the modules. These resources suggest ways for teachers to provide additional support for students in connecting, creating, defining, and explaining both concrete and representational models to abstract thinking through scaffolded instruction and extension tasks.

Balance of Conceptual and Procedural Understanding

5.4	Development of Academic Mathematical Language	14/14
5.4a	Materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies.	3/3
5.4b	Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context.	2/2
5.4c	Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time as well as guide teachers to support student responses using exemplar responses to questions and tasks.	9/9

The materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies. Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context. Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time as well as guide teachers to support student responses using exemplar responses to questions and tasks.

Evidence includes, but is not limited to:

Materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies.

- The materials offer various opportunities for students to develop their academic mathematical language through the use of visuals. For example, in the Module 2, "Terminology" section, with new and familiar vocabulary terms, the materials provide a visual with the definition to show an example of the word. Lesson components use visuals by drawing models to represent mathematical concepts, such as drawing equal groups to illustrate multiplication. These activities effectively support students in developing a deeper understanding and proficiency in mathematical language through visual representations.
- The materials actively support students in developing their academic language through the use of manipulatives. Lesson margin notes include guidance to provide concrete manipulatives to demonstrate their understanding while solving problems or explaining their reasoning. For example, Module 6, Lesson 5, includes the margin note, "Students needing more proficiency practice and some emergent bilingual students may benefit from additional practice reading and writing decimals. If students are confusing the decimal notation (for

example, modeling 0.5 rather than 0.05), couple place value disks with the area model, and have students count and recount their disks."

- The materials offer various strategies for students to enhance their academic mathematical language. Throughout the course, lessons facilitate the development of academic mathematical language through strategies such as classroom discourse, peer conversations (like turn-and-talks), and collaborative learning tasks. These approaches are integrated into lesson components as appropriate. For example, Module 3, Lesson 6, includes teacher guidance for a collaborative task stating, "T: With a partner, use place value disks to show 21 units of 1 tenth in five-group formation. S: (Layout 21 disks, all tenths, in five-group formation, as shown.) T: Talk with your partner. Is there any way we can use fewer disks to show this same value?"

Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context.

- The materials introduce new or recently introduced terminology and also include a list of familiar terms and symbols. These lists, which can be found in every module overview, can be used with students in various ways, including utilizing the visual supports to establish word walls or to "encourage them to naturally use terminology as they respond in class to discussion questions or in Turn and Talks" as highlighted in the *OER K-5 Math Program and Implementation Guide* within the Terminology section.
- The *OER K-5 Math Program and Implementation Guide* outlines how margin notes support comprehension through various presentation methods and understanding of vocabulary and symbols. For example, the guide states, "Provide multiple means of representation by using a variety of methods to present information and support understanding of vocabulary and symbols to maximize comprehension." An example of how this vocabulary is included within a margin note is in Module 3, Lessons 8 and 16. Within the "Notes on Multiple Means of Representation," a scaffold is given to support students in developing vocabulary.
- When new terminology/vocabulary is introduced within a lesson, it is also then incorporated into several areas in the lesson. For example, it is then used in sample student responses, as noted in Module 3, Lesson 1, when within the vignette, the teacher introduces the word *formula*, and then the student uses it in the exemplar responses. Vocabulary is also reviewed in several student debriefs, as seen in Module 1.

Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time as well as guide teachers to support student responses using exemplar responses to questions and tasks.

- The materials feature embedded guidance to assist teachers in facilitating the application of appropriate mathematical language within the "Concept Development" sections. These

sections introduce new terminology to students, allowing them to explore its meaning in context, formalize its use, and participate in class discussions. The lesson vignettes provide teacher guidance supporting math conversations that enable students to hear, refine, use, and develop their mathematical language toolkit. For instance, margin notes within several lessons include sentence frames that students can utilize during discourse to encourage the use of academic vocabulary.

- The materials provide embedded guidance for teachers to support the application of appropriate mathematical language, encompassing vocabulary, syntax, and discourse during math conversations. For instance, in the "Student Debrief," students gather to reflect on their learning and analyze new concepts, guided by teacher instructions in the opening paragraph. During these discussions, students engage with peers through provided questions, discussing vocabulary terms, and articulating their thought processes in a comfortable language-rich environment. The Concept Development and Student Debrief components include discussion questions supporting mathematical discourse, enabling students to hear, use, and refine mathematical language among their peers. The "Problem Set" and "Exit Ticket" components include academic vocabulary in tasks for students. The materials include guidance for teachers to support students' responses through exemplar responses to questions and tasks. For instance, Module 4, Lesson 6, includes guidance for teachers in the vignette stating "T: (Show the place value chart with the number 378.73.) As with any place value chart, the value of each digit is determined by the place value unit. Say the value of the digit in the hundreds place. S: 3 hundreds. T: Say the value of the digit in the hundredths place. S: 3 hundredths. T: These values sound so much alike. Discuss with your partner how to tell them apart." Across lesson components such as the "Application Problem," Concept Development, and Student Debrief, teacher guidance includes exemplar responses to questions and tasks within the lesson cycle. This support extends to suggestions for observing student discourse with peers, where exemplar responses are highlighted as benchmarks. Additionally, various components like "Fluency Practice," Application Problems, Concept Development, and "Problem Sets" include exemplary student answers and expected work, facilitating clear expectations for students.

Balance of Conceptual and Procedural Understanding

5.5	Process Standards Connections	6/6
5.5a	Process standards are integrated appropriately into the materials.	1/1
5.5b	Materials include a description of how process standards are incorporated and connected throughout the course.	2/2
5.5c	Materials include a description for each unit of how process standards are incorporated and connected throughout the unit.	2/2
5.5d	Materials include an overview of the process standards incorporated into each lesson.	1/1

The process standards are integrated appropriately into the materials. Materials include a description of how process standards are incorporated and connected throughout the course. Materials include a description for each unit of how process standards are incorporated and connected throughout the unit. Materials include an overview of the process standards incorporated into each lesson.

Evidence includes, but is not limited to:

Process standards are integrated appropriately into the materials.

- "Module Overviews" provide a list of the Texas Essential Knowledge and Skills (TEKS) Mathematical Process Standards (MPS) integrated into the modules. The Overview summary explains the integration of process standards into instructional design without explicitly naming them within the narrative.
- The *Grade 4 Course Guide* includes a chart listing TEKS MPS by lesson per module, along with a "Fluency Close-Up" detailing standards by concept (e.g., "Number and Operations"). For instance, it specifies, "The student applies TEKS Mathematical Process Standards to represent and compare whole numbers and understand relationships related to place value."

Materials include a description of how process standards are incorporated and connected throughout the course.

- The TEKS MPS section of the *K-5 Math Program and Implementation Guide* provides teacher guidance on how the TEKS MPS are integrated into the lesson structure. According to the *K-5 Math Program and Implementation Guide*, "They are seamlessly woven into the lesson structure to require the level of thinking and behaviors that the standards embody."
- In the *Grade 4 Course Guide*, the integration of TEKS MPS throughout the module is described, particularly in the "Development of Fluency" section. A table outlines each TEKS MPS and specifies the lesson in which it is incorporated, ensuring continuity throughout the module.

Materials include a description for each unit of how process standards are incorporated and connected throughout the unit.

- The TEKS MPS are incorporated throughout the unit as shown in the "Scope and Sequence" section of the *Grade 4 Course Guide*. Each module has TEKS MPS incorporated. Lastly, there is a list of TEKS MPS in every module overview to show that TEKS MPS are incorporated into every module, as highlighted in Module 1. The *K-5 Math Program and Implementation Guide* describes the integration and connection of TEKS MPS throughout the course. The TEKS MPS are connected throughout the unit. There is a note in Module 1, Lesson 1, Problem Set paragraph that states that 4.1C is used in the RDW approach, which is used all throughout the module and across modules and courses.
- Each module includes a list of TEKS MPS and a description of how process standards are incorporated and connected throughout the module. The Module and "Topic Overviews" include and reference the content TEKS within the descriptions for each module and topic. Each module includes a list of TEKS MPS and a description of how process standards are incorporated and connected throughout the module. For example, Module 1 Overview includes information about how the students will engage with the process standards through a descriptive statement followed by a specific process standard in parenthesis. One of the statements shows the connection, stating, "They explain and justify their solutions to multi-step word problems using precise language (4.1G)."

Materials include an overview of the process standards incorporated into each lesson.

- The TEKS MPS section of the *K-5 Math Program and Implementation Guide* provides teachers with guidance on how to integrate TEKS MPS into the structure of each lesson throughout the course.
- The *Grade 4 Course Guide* features a table titled "Grade 4 TEKS Mathematical Process Standards by Lesson per Module," listing TEKS MPS addressed in each lesson of the course. For example, processing standard 4.2A is present in Module 1, Lessons 1–7 and 9–11. The *Grade 4 Course Guide* includes a Fluency Close-Up that categorizes TEKS MPS by concept. For example, under Number and Operations, it specifies, "The student applies TEKS mathematical TEKS Mathematical Process Standards to represent and compare whole numbers and understand relationships related to place value." The chart is organized by TEKS, module, and lesson.

Productive Struggle

6.1	Student Self-Efficacy	15/15
6.1a	Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.	3/3
6.1b	Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.	6/6
6.1c	Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.	6/6

The materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics. Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks. Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.

Evidence includes, but is not limited to:

Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.

- Materials provide opportunities for students to make sense of mathematics through the "Read-Draw-Write" (RDW) process. The OER K-5 Program and Implementation Guide states, "Students in Grades 1–5 use the Read-Draw-Write (RDW) process to make sense of problems, choose and apply mathematics, and solve." For example, in Module 1, Lesson 11, students use the RDW during the "Application Problem" by reading the problem, drawing and labeling a strip diagram model, writing an equation, and writing a word sentence for the solution of the problem. As a daily lesson component, the Application Problem provides an opportunity for students to persevere through problem-solving. The OER K-5 Math Program and Implementation Guide states, "Students apply conceptual understanding to make sense of and persevere through new problems."
- Materials provide opportunities for students to think mathematically. The OER K-5 Math Program and Implementation Guide states, "A Student Debrief ends each lesson, holding space for students to reflect on and process their learning." This component provides guided discussion questions that "develop student metacognition by helping them to make connections among parts of the lesson, concepts, strategies, and tools on their own." For example, Module 4, Lesson 3, Student Debrief, provides the question, "How might you use your understanding of perpendicular lines to solve a problem in real life? How might you use perpendicular lines when building something, for example?"

Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.

- The materials support students in understanding that there are multiple ways to solve problems and complete tasks. This support includes questions during "Concept Development," such as, "Explain how you solved this problem. Are there any other representations we could use to model this problem?" Module 1, Lesson 4, Concept Development, focuses on ways to represent a multi-digit number with the use of base-ten numerals, number names, and expanded notation. Place value charts are used to understand, explain, and justify the breakdown of each unit and visually show its value.
- The materials support students in explaining and justifying that there can be multiple ways to solve problems and complete tasks. For example, Module 5, Lesson 17, Student Debrief, suggests the following discussion questions for students, "For Problem 2, did you agree with Monica or Stuart? Explain why you chose that strategy. Do you see a different method?" Module 4, Lesson 4, Student Debrief, includes the question, "How do you know if two lines are parallel (Problem 2)?" Module 6, Lesson 13, Student Debrief, includes the question, "Compare your answer for Problem 2(a) with your partner's answer. Did you write the difference using the same unit?"

Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.

- The course materials are designed to require students to make sense of math through doing math with teachers and peers. For example, in Module 5, Lesson 2, students work with the teacher using linking cubes to show how one can be decomposed into sixths and how sixths can be composed to make one. Students then work in partner groups to come up with another way to decompose the given whole into sixths.
- The materials require students to make sense of math through writing about mathematical concepts with peers and teachers. For example, in Module 6, Lesson 17, students work with the teacher in Problem 1 to write about fixed and variable expenses. In Problem 2, students write a plan for how Ben might spend his allowance with a partner.
- Materials are designed to require students to make sense of mathematics through discussing math with peers and teachers. For example, Module 6, Lesson 17, Student Debrief includes prompts such as, "Did you save any money in Week 1 to use in Week 2? Explain your thinking." Module 1, Lesson 6, Student Debrief, includes the question, "How was Problem 3 more challenging than Problems 1 and 2? How did you use your place value knowledge to solve?" Module 1, Lesson 7, "Multiple Means of Representation" margin notes for the Concept Development supports students discussing math with peers and teachers to make sense of math, stating, "For those students who have trouble conceptualizing halfway, demonstrate halfway using students as models. Two students represent the thousands. A third student represents halfway. A fourth student represents the number being rounded. Discuss: Where do they belong? To whom are they nearer? To which number would they round?"

Productive Struggle

6.2	Facilitating Productive Struggle	10/10
6.2a	Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.	6/6
6.2b	Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.	4/4

The materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.

Evidence includes, but is not limited to:

Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.

- Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations. For example, Module 4, Lesson 4, "Application Problem," provides an opportunity for students to reflect on the given word problem of two siblings stating a fraction partition. The task prompts students to explain which sibling was correct about the partitioning. Module 7, Lesson 11, "Student Debrief," prompts students to review their problem-solving approaches. One of the prompts asks, "Explain to your partner how you solved Problem 2. If you used different strategies, discuss how you arrived at the same answer."
- Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including arguments and justifications. For example, in Module 3, Lesson 28, "Concept Development," the question in the vignette asks, "How many boxes does the farmer need for the apples for one store? How do you know?" The exemplar response in the vignette states, "The farmer needs 11 boxes because 10 boxes are full and 1 more box is needed for the 4 remaining."

Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.

- Materials include guidance and prompts to assist teachers in providing explanatory feedback based on student responses. The Module 3, Lesson 8 Concept Development vignette provides prompts from the teacher identified by a T and examples of student responses or actions identified by an S. After asking students questions, a teacher's response can provide feedback to the students. For example, a portion of the vignette states, "T: Record that in your place value chart as...? S: 2 thousands 4 hundreds. T: Where? S: A bit lower than the 1 hundred 5

tens. T: Just as we record the partial products numerically, we draw them. This does not show the connection to addition well, but it does show the partial products well. Can you see the three partial products?"

- The *OER K-5 Math Program and Implementation Guide* includes prompts for teachers to provide explanatory feedback based on student responses. The "Language and Communication" section states, "Therefore, one of the most significant things a teacher can do to create a culture of learning is to have routines to celebrate and reinforce the importance of mining mistakes for good mathematical thinking and reframing them into learning moments." Following an explanation of redefining mistakes as learning moments, a description of collaborative troubleshooting describes three steps: discuss surface thinking, validate what they got right, and create a bridge to a better understanding. A table provides general prompts for responding to student responses. For grade-level exemplar prompts, the *OER K-5 Math Program and Implementation Guide* suggests using the *Course Guide* specific to the course of instruction.
- Materials include guidance to assist teachers in providing explanatory feedback on anticipated misconceptions. For example, the "Collaboratively Troubleshooting Student Misconceptions" section in the "Module Overview" provides teacher guidance to support possible misconceptions. A chart associates the misconception with TEKS, their location, and the Topic. For example, in Module 3, Topic A, students may only add two side lengths when finding the perimeter. The "How to Bridge to a Better Understanding" table provides guidance to teachers, including the following: "Use highlighters or colored pencils to color code the parts of a rectangle and the corresponding terms in the perimeter and area formulas."
- The materials include prompts to assist teachers in providing explanatory feedback based on anticipated misconceptions. For example, the *Course Guide*, Collaboratively Troubleshooting Student Misconceptions example provides a teacher-student dialogue based on a misconception for Module 1, Topic F, that teachers can use and adapt for other misconceptions. In addition, the Student Debrief in Module 1, Lesson 1 shows questions (prompts) that teachers can use to lead the discussion and address misconceptions.