Publisher Name	Program Name
Kiddom	*Texas Math Powered by Kiddom*
Subject	**Grade Level**
Mathematics	3

Texas Essential Knowledge and Skills (TEKS) Coverage: **100%**

English Language Proficiency Standards (ELPS) Coverage: **100%**

Quality Review Overall Score: **220 / 227**

Quality Review Summary

Rubric Section	Quality Rating
1. Intentional Instructional Design	**52 / 53**
2. Progress Monitoring	**25 / 28**
3. Supports for All Learners	**31 / 32**
4. Depth and Coherence of Key Concepts	**23 / 23**
5. Balance of Conceptual and Procedural Understanding	**64 / 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.
- 1.3 Lesson-Level Design: Materials include comprehensive, structured lesson plans with daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards. They also provide a lesson overview outlining the suggested timing for each component, a list of necessary teacher and student materials, and guidance on the effective use of lesson materials for extended practice, such as homework, extension, and enrichment.
- 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.
- 5.4 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, nor do they provide descriptions of how they are incorporated and connected throughout the course, within each unit, or 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

- 1.2 Unit-Level Design: Materials do not include the academic vocabulary necessary to effectively teach the concepts in the unit.
- 2.1 Instructional Assessments: The materials do not align diagnostic, formative, and summative assessments to the TEKS.
- 3.3 Support for Emergent Bilingual Students: Materials do not provide linguistic accommodations for more than one level of language proficiency.
- 5.3 Balance of Conceptual Understanding and Procedural Fluency: Materials do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.

Summary

Texas Math powered by Kiddom is a Mathematics 3–5 program emphasizing real-world problem-solving. The curriculum is student-centered and discovery-based to engage student learning, and it incorporates student communication to increase student outcomes. It strongly emphasizes working in collaborative groups, providing teachers with a consistent daily lesson structure. The lessons are problem-based, use real-world situations, and are detailed, including various questions, tasks, and assessments. Materials include teacher guidance for Lesson Narratives, Lesson Synthesis, Number Talks, Centers, and Responding to Student Thinking. Additionally, the program consists of coherence across units by connecting content and language learned in previous courses/grade levels.

Campus and district instructional leaders should consider the following:

- While the product features comprehensive and detailed lessons with guidance for differentiation and various instructional approaches.

- The program includes multiple opportunities for students to collaborate and learn from each other through hands-on experiences relevant to everyday life. Materials connect previous and future learning through shared language and vocabulary.

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 TEKS, ELPS, concepts, and knowledge taught in the course. Materials include a pacing calendar with options to accommodate various calendars, an explanation of the rationalized order of the course, and guidance for concept and lesson understanding. Materials include guidance, protocols, and templates for unit and lesson internalization. Materials support administrators and instructional coaches in implementing materials.

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 provide TEKS, ELPS, and subject materials applicable to grade 3 math. For example, the *Course Guide Overview* and *Teacher Resource Guide* both include a year-long TEKS-aligned scope and sequence for instruction. The scope and sequence consists of eight units for grade 3. Each unit contains student learning goals, vertical alignment to grade 2, concepts and how they build across the unit, and knowledge. The guide outlines grade 3 concepts broken into units and the lesson progression within each unit.
- Materials incorporate learning targets containing concepts and knowledge taught. Each unit includes the learning goals with an explanation of the correlation of standards addressed in each unit and the concepts and knowledge addressed in the explanations. A clear progression of knowledge and concepts is outlined for each unit covering the grade 3 TEKS.

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 provide a flexible pacing calendar with opportunities to adjust as needed. The "Texas Scope and Sequence" materials include a year-long breakdown of estimated time frames for teachers with suggested pacing for each unit. For example, Unit 1 suggests 21 instructional days and three days for extension, review, and assessment. The pacing guide is for a 34-week cycle.
- The guide for pacing includes a range of instructional calendar days. The scope and sequence suggests a range of days from 155 to over 180. The Texas Scope and Sequence page states, "To reduce the number of instructional days, omit the 27 lessons noted as optional. This will reduce the number of instructional days to 155 days."

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

- Materials explain the reasoning of unit order and the concept flow throughout the course. For example, the "Coherent Progression" section found in the *Course Guide* explains how concepts learned connect throughout the course. It states, "Grade-level, unit, lesson, and activity narratives describe decisions about the organization of mathematical ideas, connections to prior and upcoming grade-level work, and the purpose of each lesson and activity. The basic architecture of the materials supports all learners through a coherent progression of mathematics based on the standards and research-based learning trajectories. Activities and lessons are parts of a mathematical story that spans units and grade levels." The materials also state, "Every unit, lesson, and activity has the same overarching design structure: The learning begins with an invitation to the mathematics, is followed by a deep study of concepts and procedures, and concludes with an opportunity to consolidate understanding of mathematical ideas."
- The materials include a thorough explanation of the learning goal for each unit. In the course overview, the scope and sequence consists of a unit-lesson progression guide. In grade 3, the materials found in the scope and sequence digital resources provide a detailed explanation of the learning goals for each unit with information on how these learning goals build upon concepts learned in previous grade levels. For example, Unit 3, Section D states, "This prepares them to use rounding to see if solutions to problems are reasonable in the next section."
- The materials explain the rationale of concept development throughout the course. In the grade 3 scope and sequence, a detailed explanation of the rationale of the unit order is given for each unit. The rationale states the unit learning goals and explains student learning, beginning with grade 2. A sequential order provides the unit with organization and connection throughout the course. For example, Unit 2, Section A of the scope and sequence states, "They begin by considering how to show or explain a shape as being larger or smaller than another." It continues by stating, "Students will then be able to see how they can quantify the size of the shape by covering them with units of the same size." Finally, it states, "Students

then learn that the area of a shape is the number of squares that cover it with no gaps or overlaps."

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

- The materials strategically guide the course. For example, in the "Design Principles" located in the *Teacher Resource Guide* of the digital resources, the materials guide how the various lesson components connect lessons to the overall learning objective. The Design Principles explain the overarching design principle used throughout the resource. The Design Principles provide the purpose of each unit-lesson component.
- The materials include guidance for unit internalization. The *Course Guide* for grade 3 includes guidance and common instructional routines used in the units and lessons found in the sections Design Principles, "A Typical IM Lesson", and "How To Use These Materials".
- The materials provide narratives to guide units and lessons. The grade 3 digital materials have unit narratives at the start of Unit 2 through Unit 8 that provide specific learning goals and specify connections to previous learning. The unit narratives identify foundational skills that build. The "Teacher Edition Narrative" found in each unit provides guidance to develop a deeper understanding of the following unit. For example, in Unit 7, Lesson 10, Activity 1, the Narrative states, "The purpose of this activity is for students to differentiate methods for finding perimeter from those for finding area. While addition and multiplication involve various ways, students understand the problem and situation and consider whether the operations performed will provide the desired information. As in earlier problems, students can find perimeter in various ways. The emphasis should be on understanding the problem, and the information given should inform the solution method."
- The materials provide templates to support the internalization of learning. After each unit narrative, the materials include a "Section-Level Planning Guide" that provides a template for planning lesson components and includes assessment suggestions.
- Activities within each lesson provide details of the arrangement of the lessons. The "Lesson Synthesis" provides guidance for lesson internalization. In Unit 7, Lesson 10, Lesson Synthesis, the materials provide teachers with statements and questions for students to internalize learning. The materials state, "Today we saw some problems that asked us to think about area and perimeter together. How are perimeter and area alike?" The materials provide examples of students' responses to support the teacher.
- Materials provide protocols for lesson understanding. The "Instructional Routines" section includes a list and description of warm-up routines that "provide structure for both the teacher and the students," designed to assist with lesson internalization. For example, the material states, "Throughout the curriculum, routines are introduced purposefully to build a collective understanding of their structure. They are selected for activities based on their alignment with the unit, lesson, or activity learning goals. While each routine serves a different specific purpose, they all have the general purpose of supporting students in accessing mathematics, and all require students to think and communicate mathematically. The Instructional Routines section of this *Course Guide* gives more details on the specific routines used in the curriculum."

- The materials follow a systematic flow, providing multiple supports and structures for teachers and students. In the *Teacher Resource Guide*, "A Typical Kiddom Lesson" section states that a typical lesson has four phases: a warm-up, one or more instructional activities, the lesson synthesis, and a cool-down.

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

- The materials include resources to support administrators and instructional coaches, such as video training. The materials state, "As part of Kiddom's NEW Admin Insights Reporting Package, we now offer Usage Reports! These reports allow district and school leaders to gain insight into Kiddom activation and usage across schools. This video link provides materials that include resources and guidance to support administrators and instructional coaches in implementing the materials as designed."
- The materials provide usage reports for administrator and instructional coach implementation. The top section includes a scoreboard that displays the distribution of scores for each grade level and subject. The scoreboard can be used to quickly access student areas of need. The bottom section displays all relevant information about all unit levels and interim assessments. The table tracks student submission and grading progress to know when it is time to review the performance of students across the school or district.

Intentional Instructional Design

1.2	Unit-Level Design	3/4
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.	**1/2**
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 provide comprehensive unit overviews that provide the background content knowledge. Materials do not contain the academic vocabulary necessary to effectively teach unit concepts. Materials contain supports for families within units with suggestions on supporting the progress of their students in English and Spanish.

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 include unit overviews that provide content knowledge to teachers. For example, the grade 3 Unit Narrative opens each unit and explains new concepts students will encounter, student background from the previous grade, and an overview of the learning progression within the unit. The Unit Narrative includes models and sample problems students will interact with throughout the unit. The beginning of the Unit Narrative in Unit 2 provides a comprehensive overview stating "In this unit, students encounter the concept of area, relate the area of a rectangle to multiplication, and solve problems involving area. In grade 2, students explored attributes of shapes, such as the number of sides, number of vertices, and lengths of sides. They measured and compared lengths (including side lengths of shapes). In this unit, students make sense of another attribute of shapes: measuring how much space a shape covers. They begin informally by comparing two shapes and deciding which one covers more space. Later, they compare more precisely by tiling shapes with pattern blocks and square tiles. Students learn that the area of a flat figure is the number of square units that cover it without gaps or overlaps." The Unit Narrative continues and provides extensive background knowledge to teach the unit.
- Each lesson within the unit begins with the purpose and narrative of the lesson, which supports teachers' understanding of foundational skills and learning goals. In Unit 2, Lesson 1, the materials provide a lesson purpose stating "The purpose of this lesson is for students to recognize that different shapes cover different amounts of space." The lesson narrative states "In grade 2, students estimated, measured, and compared lengths using standard units. They learned how the length of the unit affects measurements. This lesson introduces the concept of area as students compare the sizes of different shapes. Students consider what it means for two-dimensional shapes to be larger or cover more space. They measure and describe relative area with increasing precision as they participate in the activities in this lesson."

- The materials provide access to a set of academic terms within the resource. At the beginning of the course and throughout the units, the materials contain Glossary Terms. This includes a slide deck providing "a complete grade-level list including word, definition, and picture for all vocabulary words introduced in the IM Math curriculum." However, academic vocabulary is not clearly provided in the unit overviews. Academic vocabulary directly connected with each lesson or activity is not evident. Academic vocabulary is only offered for the entire resource. The glossary terms provided are insufficient to teach each unit's concepts effectively.

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

- The materials contain resources to support families with information to assist their students in learning in English and in Spanish. "Family Support Materials" in each unit, except Unit 1, provide an overview of student learning objectives and suggestions for ways caregivers can support the unit learning at home. Additionally, caregivers can access their student's progress.
- The materials include Family Support Materials with unit concepts, visual models, and questions to ask students as they work. Teachers can provide this information to families for each unit. At the end of the unit, there is a "Try it at Home!" section, which includes a problem that students and caregivers should be able to solve by the end of the unit. This allows for a family connection and understanding of student knowledge. For example, at the end of Unit 6, the section states "Near the end of the unit, ask your student to find the following measurements of objects around your home: length measured to the nearest quarter inch, weight measured in kilograms or grams, liquid volume in liters."
- The materials include a Teacher Resource Pack for each unit. This resource provides family support materials for each unit.

Intentional Instructional Design

1.3	Lesson-Level Design	34/34
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.	**30/30**
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**

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. 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.

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.

- Materials include lesson plans that contain daily objectives called "Goals." The lesson plans are comprehensive and detailed, with stated goals for the teacher and the student. For example, in Unit 3, Lesson 1, the materials state, "Match (orally) base-ten diagrams, expressions, number names, and three-digit numbers that represent the same value. Represent ways to decompose the same three-digit number, using expressions." The materials provide "Student Facing Learning Goals" stating, "Let's represent numbers in different ways."
- Throughout each lesson, materials provide lesson plans that include questions. In Unit 3, Lesson 5, the materials provide teachers with questions to ask within the "Activity Synthesis". For example, "How do you think the table works? Ask questions to invite students to explain some of the patterns they noticed in the table. For each question, give students a minute of quiet thinking time. Record their responses with equations, if possible. If students do not notice the following patterns, consider asking: What numbers would go in the cells with a question mark? Why do the numbers in the table go up by 2 from left to right and from top to bottom? Why are the sums odd numbers?"
- "Teacher Reflection" questions are provided for each lesson, and questions are included in the Activity Synthesis for each activity. In Unit 3, Lesson 5, materials provide Teacher Reflection

questions asking, "Think about times when students were able to make connections to and build on the ideas of their peers during discussions today. What norms or routines allowed students to engage with other students' ideas?"

- The lesson plans contain student tasks built into the activities that are comprehensive, structured, and detailed. Each activity provides the purpose, materials, and "Student Task Statements". In Unit 1, Lesson 1, the resource expects the activity to elicit students' prior understandings of essential parts of a picture graph. Students are encouraged to consider what categories could be in the graph. Students contextualize and make sense of the data based on the title, the given values, and their own experiences. This is an opportunity for students to connect their lived experience to mathematics, which supports the development of their math identities. The Student Task Statement states, "What could the categories be for this picture graph? Be prepared to explain your reasoning." Tasks are embedded.
- Materials include structured lesson plans that contain the materials needed for each lesson. In the *Course Guide*, each unit includes an overview that outlines the materials to gather and copy per lesson. In Unit 1, Lesson 10, the materials state, "Required Materials: Card Sort Equal Groups Cards (1 copy for every 2 students): Activity 2."
- The materials provide comprehensive, detailed, and structured lesson plans that include instructional assessments. In the *Course Guide*, each lesson describes the "Checkpoint". Each Checkpoint includes observations of students' understanding of their work related to the section-level learning goal and ideas for the "Next-Section Support". The supports address unfinished learning in upcoming lessons and include centers.
- At the end of each unit is the "End-of-Unit Assessment" to gauge students' understanding of the key concepts of the unit while also preparing students for new-generation standardized exams. Problem types include multiple choice, multiple response, short answer, restricted constructed response, and extended response. Problems vary in difficulty and depth of knowledge.

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

- The materials provide lesson component timelines. The digital materials for each unit include a "Lesson Timeline". For example, in Unit 1, Lesson 1, the resource states the warm-up is 10 minutes, Activity 1 is 20 minutes, Activity 2 is 15 minutes, the "Synthesis Estimate" is 10 minutes, and the cool-down is 5 minutes. The times may vary from lesson to lesson, but the total time remains within the 60-minute timeframe.
- The materials suggest the timing of lesson components. The indicated time estimates in the materials are referred to as instructional time. The "About the Materials" section states "Each lesson plan is designed to fit within a class period at least 60 minutes long." There is extended lesson time if the optional activities or student practice are utilized.

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

- Materials include an overview listing of materials needed to deliver the lesson. Within the *Course Guide*, the beginning of each unit includes a "Materials Needed" chart organized by

every lesson. Each lesson delineates the materials the teacher needs to gather and the materials the teacher needs to copy. For example, Unit 1, Lesson 10 materials state that "One copy for every two students" is needed for a card sort, and, Unit 1, Lesson 16 states connecting cubes is a needed material.
- The materials include a section for "Required Materials" in the lesson overview. This section is divided into two sections: "Materials to Gather" and "Materials to Copy". These align with the Materials Needed chart in the unit overview.

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

- The materials do not contain practice that is solely designed to support learning outside of the school day. The "How to Use These Materials" section of the digital materials informs teachers of "Exploration Problems" that are intended to extend learning and may be used as homework. For example, Exploration Problems in the materials provide extended practice opportunities but may not be suitable to support independent learning outside the school day. This is made evident in the How to Use These Materials guidance, which states "One type is a hands-on activity directly related to the material of the unit that students can do either in class if they have free time, or at home. The second type of exploration is more open-ended and challenging. These problems go deeper into grade-level mathematics. They are not routine or procedural, and they are not just "the same thing again but with harder numbers."
- The materials do not provide explicit resources for homework. The materials inform teachers of the Exploration Problems that may be used as homework. Per the How to Use These Materials guidance in the online materials, these problems are not intended to be completed by all students during a given lesson. The materials guidance states, "Exploration questions are intended to be used on an opt-in basis by students if they finish a main class activity early or want to do more mathematics on their own. It is not expected that an entire class engages in Exploration Problems, and it is not expected that any student works on all of them. Exploration Problems may also be a good starter for a "Problem of the Week" or similar structure." The student print materials include various Exploration Problems in the practice problem section at the end of a unit. These Exploration Problems do not specify which lesson they align with or provide student directives to support independent practice outside of the school day.
- The materials provide resources for extended practice. Centers are included within each unit. Although guidance on the effective use of the center materials is not included within the lesson, it is included in the "Centers" section of the digital materials. The Centers section provides one page of directions for each center.
- Materials provide "Optional Lessons". Optional Lessons for additional practice are included in some units, but not in all units. The materials do not explicitly provide homework, extension, or enrichment.

Progress Monitoring

2.1	Instructional Assessments	21/24
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.	**3/6**
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. Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments. Materials include diagnostic, formative, and summative assessments that are aligned with the objectives of the course, unit, or lesson. Materials do not include diagnostic, formative, and summative assessments that are aligned to the Texas Essential Knowledge and Skills (TEKS). Instructional assessments found in the materials 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.

- Materials include a variety of instructional assessments at the unit and lesson levels that vary in types of tasks and questions. The "Assessment Guide", found in the *Teacher Resource Guide*, describes a variety of assessments in both print and digital versions. Materials provide pre-assessment, warm-ups, cool-downs, summative, and end-of-course assessments.
- Materials include diagnostic assessments that vary in types of tasks and questions. The "Assessment Guidance" provides unit-level diagnostic questions completed at the start to assess prerequisite skills and concepts for the unit. For example, in Unit 1, Section A of the *Teacher Resource Guide*, the diagnostic task is creating a scaled picture and bar graph. Materials provide students with fifteen questions to answer about given graphs. Each serve as a lesson diagnostic task and questions if the teacher uses them individually before each lesson. The diagnostic section of the Assessment Guidance included in the *Teacher Resource Guide* also specifies that lesson activities feature an "Advancing Student Thinking" section containing questions and tasks designed to give teachers diagnostic data at the lesson level.

Questions from earlier grade-level material later include problems addressing important work of the grade.

- Materials include formative assessments that vary in types of tasks and questions. The Assessment Guidance specifies that each lesson concludes with a "Cool-Down" section to assess student understanding of the lesson's learning goals. The *Teacher Resource Guide* Assessment section states, "Each lesson in grades 2–5 includes a Cool-Down (analogous to an exit slip or exit ticket) to assess whether students understood the work of that day's lesson." The Cool-Downs, including digital and PDF options, include one to three questions or tasks, categorizing the Cool-Down as lesson formative questions and tasks. For example, Unit 1, Lesson 3 Cool-Down asks students to answer questions about a given bar graph and then to write a possible question if given the bar graph.
- The lesson-level materials include practice problems. The materials provide the teacher with additional formative assessment data. Materials also provide formative assessment opportunities at the unit level in their "Section Checkpoints." Each unit is broken into sections containing a set of lessons. Section Checkpoints contain three to four problems designed to assess student learning goals within a given unit section. The *Teacher Resource Guide* Assessment section states, "Each section contains two or more explorations, designed to engage students in thinking creatively about the mathematics of the unit at school or home." For example, Unit 1, Activity 4, Lesson 1 asks students to survey their classmates and collect data to display in a table. This could be considered a unit formative task, as students are asked to demonstrate data organization. One or more practice problems in each lesson are provided. The *Teacher Resource Guide* Assessment section states, "These can be used for in-class practice, homework, or as a means to assess certain learning on a particular concept."
- Materials include summative assessments that vary in types of questions. The Assessment Guidance specifies that each unit provides a summative "End-of-Unit Assessment" designed to assess student learning of key concepts throughout the unit. The materials also contain an "End-of-Course Assessment" to assess students' mastery of grade-level standards after the final unit. The *Teacher Resource Guide* Assessment section states, "Problem types include multiple choice, multiple response, short answer, restricted constructed response, and extended response. The summative assessments are consistently formatted as tests that do not vary in types of tasks, such as projects or performance-based assessments.

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

- The materials include the definition and intended purpose for the instructional assessment types. The *Teacher Resource Guide* in the "Digital Review" materials includes descriptions of how the curriculum correlates with each type of assessment. The intended purpose of each type of assessment is provided within the *Teacher Resource Guide* Assessment.
- Materials include "Cool-Downs," which are formative assessments comparable to exit tickets. The materials assess whether students understood the work of that day's lesson. The Cool-Down is given to students at the end of the lesson. This activity serves as a brief check-in to

determine whether students understand the main concepts of the lesson. The materials guide uses this as a formative assessment to plan further instruction.

- Materials include End-of-Unit Assessments, which are referred to as summative assessments. Each unit includes a written End-of-Unit Assessment that students complete individually to assess their progress toward the unit learning goals and the grade-level standards for the course. Items are aligned to the relevant grade-level standards. These assessments gauge students' understanding of the key concepts of the unit while also preparing students for new-generation standardized exams. Problem types include multiple choice, multiple response, short answer, restricted constructed response, and extended response.
- Materials include Section Checkpoints, which are referred to as diagnostic tests. These are designed to be completed at the start of each unit to assess prerequisite skills and concepts for the unit. The pre-unit problems identify unfinished learning that must be carefully addressed during the unit.
- Each grade includes an End-of-Course Assessment to use after the final unit to assess students' mastery of the grade-level standards. The assessment also may be used before the final unit. The resource indicates that teachers can use the results of this assessment to choose sections from the final unit on which to focus, especially if there is limited time to complete the course.
- Materials include "Advancing Student Thinking" questions that assess what students understand about mathematics in an activity. The questions work together to provide a just-in-time intervention to help students attend to the mathematics of the activity. The first question is the "assessing" question, designed to assess whether students are on track with the mathematical focus of the activity. If students' responses show that they may not be on track, then subsequent questions direct students' attention to the concept or skill most important for the activity.

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

- The materials include teacher guidance for assessment purposes. The Assessment Guide provides a breakdown of each assessment type. Strategies with intended purposes are also provided as guidance.
- Materials provide guidance on assessment mastery. Materials do provide teachers with sample responses that demonstrate what evidence is needed to show skill mastery. The *Teacher Resource Guide* Assessments section states, "All summative assessment problems include a complete solution and standard alignment."
- The Assessment Guide found in Course Materials provides guidance for teachers on how and why to use the variety of opportunities in each course to ensure accurate administration of instructional assessments.
- The materials provide teacher guidance for tools students can use to complete assessments. For example, the End-of-Unit Assessments instruct teachers on specific questions: "Students can select from the following tools: Draw, Write, Upload Photo, Record Audio or Video."

Materials guide the number of instructional days allotted to assessment. The scope and sequence contains guidance on the suggested number of instructional days to Extend, Review, Assess, and Reteach. According to the *Teacher Resource Guide*, the commentary suggests formative evaluation following each unit task.

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

- Materials include diagnostics, formative, and summative assessments that are aligned with all objectives of the course, unit, or lesson. The pre-unit questions that the Assessment Guidance of the *Teacher Resource Guide* specifies as the intended diagnostic assessment resource aligns with the TEKS. The publisher has provided a *TEKS Alignment Document* that stated it would be included in their Texas Version.
- The materials provide diagnostic alignment to standards. The pre-unit questions do not align with the curriculum for grade 3. For example, the Unit 2 "Lesson Level Planning Guide" states one of the "Section Learning Goals" is to "Describe area as the number of unit squares that cover a plane figure without gaps and overlaps." The "Pre-Unit" diagnostic assessment question 1 from Unit 2, Lesson 4, Section A, asks students to "Partition the rectangle into four equal rows and five equal columns," which aligns with the lesson objective and the TEKS.
- The materials provide formative alignment to objectives and TEKS for each lesson. For example, one of the Unit 3 Section Learning Goals states, "Fluently add within 1,000 using algorithms based on place value and properties of operations." Within Unit 3, Lesson 6 Activity 2, students are asked to find the value of given sums using a strategy of their choice. This formative assessment question requires students to demonstrate the given learning objective and standard. The materials' various formative assessment resources, such as warm-ups, activities, practice problems, exploration problems, and Cool-Downs.
- The materials provide summative alignment to lesson objectives and standards. The *Teacher Resource Guide* Assessment section states, "All summative assessment problems include a complete solution and standard alignment." Although assessments align with unit objectives mentioned at the beginning of each lesson and at the bottom of the Section Checkpoint. The TEKS connected with each unit are listed on the Texas Scope and Sequence. For example, the Unit 2 Lesson Level Planning Guide states one of the Section Learning Goals is to "Describe area as the number of unit squares that cover a plane figure without gaps and overlaps." Question 1 in Section A Checkpoint directly aligns with this objective, as it instructs students to "Use square tiles to find the area of this figure. The blue square represents a one-inch tile."

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

- Materials include assessments at varying levels of complexity. Assessments vary in complexity based on the variety of questions included in assessments, such as materials that include multiple choice, drag and drop, short answer, multiple select, and drawing. The "Practice Problems" in Unit 5, Section D provided in the grade 3 digital materials reflect a variety of question types with varying levels of complexity. The first problems included in this practice require students to identify if fractions are equivalent in a multiple-choice format.

Next, students are tasked with comparing fractions by entering the appropriate comparison symbol. These questions are followed by word problems requiring students to apply comparing fractions to real-world scenarios in multiple-choice format. The final problem included in the practice is an open-response question requiring students to apply comparing fractions knowledge to generate a fraction that fits a given criterion.

- Materials include varying levels of complexity across each assessment type. Across each unit and the various lessons, students are exposed to multiple items that vary in the level of complexity to build to mastery of the standard. The Assessment section of the *Teacher Resource Guide* states, "Problem types include multiple choice, multiple response, short answer, restricted constructed response, and extended response. Problems vary in difficulty and depth of knowledge." The End-of-Course Assessment and "Resources" consist of three types of items: items that assess the major work of the grade, some fluency items that target the key fluencies for each grade ("varying in levels of difficulty"), and one or more in-depth problem, according to the Assessment section of the *Teacher Resource Guide*.

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 instructional assessments and scoring information provide guidance for interpreting and responding to student performance. Materials provide guidance for using 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.

- Materials provide guidance in the "Next-Unit Support" to help teachers identify misunderstandings and make observations for the end-of-unit assessments. Materials include an answer key with detailed explanations that may be used to guide student responses. For example, the "End-of-Unit Assessment" guides teachers, stating, "If students are not yet able to explain why they chose their scale, encourage students to play Sort and Display, Stage 3, during Center Choice Time. As students create their graphs, ask them to describe how they determine the scale. As needed, invite students to consider what the graph would look like if they chose a scale of 2, 5, or 10."
- Materials provide commentary to guide teachers. The *Teacher Resource Guide* Assessment section states, "Each instructional task is accompanied by commentary about expected student responses and opportunities to advance student thinking so that teachers can adjust their instruction depending on what students are doing in response to the task. Often suggested questions are provided to help teachers better understand students' thinking." For example, Unit 1, End-of-Unit Assessment, Question 5, provides narrative teacher guidance to the question, "Students who do not answer this question correctly may need further review of multiplication. Students who select A or B are likely performing the wrong operation with the numbers 3 and 10. Response C probably indicates incomplete work." As stated in the Assessment section of the *Teacher Resource Guide*, "Multiple choice and multiple response problems often include a reason for each potential error a student might make." The feedback and teacher reflection guidance are provided for each End-of-Unit Assessment.
- Materials provide guidance for evaluating responses. Digital assessments offer "Note For Evaluating Responses" for guidance for interpreting and responding to student performance. For example, "Students identify rectangles of a given area. The pictures show all the individual

square units, so counting is a possible strategy, as is using multiplication. Students who select answer B may be counted by adding up the 4 side lengths of 5 while students who select C may be counting incorrectly." The assessment materials at the lesson level, such as warm-ups, lesson activities, and cool-downs, provide answer keys and notes for evaluating responses to aid in the accurate administration of assessments.

- The materials provide data reports for evaluating performance. The materials state that online teacher accounts include "actionable reports" for teachers to analyze student performance to differentiate instruction. Reports help guide instruction by providing the teacher with ways to monitor student progress over time, track mastery level growth, and analyze class and student performance on individual standards.

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

- In the "Assessment Guidance Section" provided in the course overview, materials provide guidance for how to respond to trends that demonstrate a lack of prerequisite skills after completing the diagnostic pre-unit assessments. The example provided states, "What if a large number of students can’t complete the same pre-unit assessment problem? Address prerequisite skills while continuing to work through each unit's on-grade tasks and concepts instead of abandoning the current work in favor of material that addresses only prerequisite skills. Look for opportunities within the upcoming unit to address the target skill or concept in context or with a center."
- The End-of-Unit Assessment Guidance includes example observations of students’ "unfinished learning" and strategies for how to support students continued learning of concepts not yet mastered in the Next-Unit Support. The guidance is organized around evidence for understanding and mastery of the grade-level content standards and advises that rather than provide item-by-item analysis. The observations encourage analyzing multiple items to look for evidence of what students understand about the standards. For example, Unit 1, End-of-Unit Assessment Guidance chart, guides teachers to notice student trends in writing equations that do not match the images. The guidance states, "Before an upcoming lesson, invite students to work with a partner to explain the equations they wrote for drawings and diagrams, including any diagrams they created when finding unknown values on this assessment." Other examples of these supports include suggestions for questions to ask during activities, representations to use, centers to encourage, and ways to incorporate the End-of-Unit Assessment as an additional learning opportunity.
- The materials included checkpoint items designed to guide teachers in interpreting student performance. Observations of student’s understanding may be seen in their work as it relates to the section-level learning goal. The materials provide ideas for the "Next-Section Support" intended to offer ways to address unfinished learning in upcoming lessons. For example, the Grade 3, Unit 1, Section A Checkpoint guidance includes a section titled "Responding to Student Thinking" that highlights common misconceptions and errors teachers may encounter in students’ work about representing data, such as not representing numbers with reasonable accuracy on the graph's scale or not matching numbers to the appropriate categories. This

portion of the materials also includes suggestions for the teacher to implement in response to these errors.
- As stated in the Assessment section of the *Teacher Resource Guide*, "Multiple-choice and multiple-response problems often include a reason for each potential error a student might make." Next to each question at the End-of-Unit Assessment, the material lists the standard assessed, the solution to the problem, and a narrative for teacher reflection. The narrative includes teacher guidance on skills assessed and possible reasons students selected each incorrect answer choice. Below the End-of-Unit Assessment Guidance chart, materials provide activities to respond to trends in performance assessments.

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

- Materials provide online tools for students to track their own progress and growth. The materials provide a comprehensive data dashboard for students, enabling them to monitor and track their academic performance in detail. Students can access a personalized dashboard that tracks their progress in each class based on specific standards and assignments. The tool offers individualized reports showing students' strengths and areas needing improvement. Hovering over a standard provides more information, and clicking the standard reveals the number of assignments. The tool allows students to navigate to relevant assignments, view any associated attachments, check their grades, and read teacher comments or feedback. The tool enhances transparency and empowers students to take an active role in their learning by providing accessible, detailed, and actionable information about their academic performance.
- The online support article describes how students will receive notifications regarding assignments, grade notifications, and teacher comments. In the article "Student Help: How Do I Check My Grades and Feedback?" the materials state that students will receive an e-mail notification and an in-app notification when the teacher assigns a grade to a completed assignment. The materials state that students can review graded assignments and teacher feedback in their online accounts. Feedback may include general comments on the overall assignment performance or connections to specific questions. Materials provide question-specific feedback to enable students to navigate to those questions to better understand teacher feedback.

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, activities, and paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills. Materials include pre-teaching and embedded supports for unfamiliar vocabulary and references in text. 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 materials offer teacher guidance for differentiating instruction to support students who have not yet reached proficiency on grade-level content and skills in the *Teacher Resource Guide*. For example, the Section Checkpoint includes a part titled "Responding to Student Thinking." The guidance describes specific misconceptions or errors the teacher may observe in students' work and prescribes the next steps to take to support students' progress with the objective. In Unit 1, Section A Checkpoint, Responding to Student Thinking, the materials state, "Students represent the quantities accurately, but they do not match the numbers to the appropriate categories. Invite selected students to continue to play Sort and Display, Stage 3, during Center Time in the next section. As students play, ask them to explain how they chose their scale. Before they graph a number that will not line up on a tick mark on their scale, ask students to explain how high they expect to draw the bar. For example, if the student uses a scale of 5 and is graphing 37, consider asking, "If this tick mark represents 35, where would 37 be? How do you know?"
- The materials offer teachers additional guidance for differentiating instruction in the Supporting Diverse Learners, "Representation" section of the *Teacher Resource Guide*. It states, "Teachers can reduce barriers and leverage students' individual strengths by inviting students to engage with the same content in different ways." Support for teachers provides suggestions that offer alternatives for ways information is presented or displayed, such as acting it out, thinking aloud, using gestures, using a picture, showing a video, and

demonstrating with objects or manipulatives. The Lesson Synthesis also guides teachers to support students who have not reached proficiency with content or skills through questioning.

- The materials provide center activities that can be utilized to support students who have not yet reached proficiency in grade-level content and skills. The *Teacher Resource Guide* provides teacher guidance to differentiate between two categories of center types, Supporting and Addressing, and their intended purpose. The Addressing Center has students focus on the work of a lesson or a section of a unit. The Supporting center reviews prior unit or prior grade-level understandings and fluencies. In the A Typical IM Lesson section of the *Teacher Resource Guide*, optional activities are presented to provide an opportunity for additional practice on a concept or skill that we know many students (but not necessarily all students) need. These activities give additional practice to students who have not yet reached proficiency on grade-level content.
- Materials include paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills. In Supporting Diverse Learners, the Universal Design for Learning and Access for Students with Disabilities section of the *Teacher Resource Guide* includes suggestions that support students' motivation to engage with content, develop effort and persistence, and internalize self-regulation. In the Next Day Support, found within the Responding to Student Thinking in the *Teacher Resource Guide*, the materials include scaffolded supports that tell the teacher how to follow up with students on previous learning during the Launch activities.

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

- The materials include embedded supports for unfamiliar vocabulary in the text as part of the narrative of the lessons. For example, in Unit 5, Lesson 1, Activity 2, the materials state, "The purpose of this activity is for students to partition rectangles into thirds, sixths, fourths, and eighths before learning the name of sixths and eighths. Students do so by folding rectangular strips of paper into equal-sized parts. While folding, students may notice that thirds can be further partitioned to make sixths and that fourths can be further partitioned to make eighths, which will be explored more in a future lesson. The focus of the synthesis should be on naming sixths and eighths, as these are new terms for students. Students will use the partitioned rectangles during the lesson synthesis."
- The materials provide students with opportunities to interact with academic vocabulary and symbols through hands-on experiences, manipulatives, or visuals throughout the lessons. There are structured opportunities for students to talk through activity questions with partners and groups using academic language and vocabulary with the support of sentence stems. For example, in Unit 1, Lesson 1, Activity 2, the Launch directs teachers to discuss academic vocabulary words such as "bar graph" and "scale" by showing images and explaining the definitions. Students then participate in discussion prompts with partners utilizing this vocabulary.
- The materials provide pre-teaching and embedded supports for academic language in the Support for English Language Learners. Unit 4, Lesson 4, Activity 2 states, "Circulate and

collect the language students use as they consider the two situations. Listen for and clarify any questions about the context. On a visible display, record words and phrases such as *put in groups*, *split*, *divide*, *number of groups*, etc. During the synthesis, add 'divisor' to the display and highlight connections to any related language."

- Access for Students with Disabilities includes embedded supports for unfamiliar references and academic language. For example, in Unit 3, Lesson 3, Activity 1, the *Teacher Resource Guide* contains guidance stating, "Leverage choice around a perceived challenge. Invite students to select three of the four expressions to complete. Encourage the completion of the last two expressions, as they will be the focus of the Activity Synthesis."
- The Key Structures in This Course section in the *Teacher Resource Guide* states, "Additional teaching moves can be used to support the development of math learning communities throughout the school year." The chart specifies students' use of general and discipline-specific academic language. The materials suggest three teacher moves for this student action. One of these examples states, "Before beginning small group work, give students sentence frames and probing questions that feature important terms." This would serve as an embedded support for unfamiliar vocabulary and references in text.

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

- Materials do not include teacher guidance for differentiated instruction for students who have demonstrated proficiency in grade-level content and skills. The materials offer differentiated instruction for students who have yet to demonstrate proficiency in grade-level content through Cool-Down tasks, Next-Day Supports, and Prior Unit Supports. These provide the next steps for teachers to support students struggling with a concept. Cool-Down tasks at the end of lessons allow teachers to assess understanding and adjust instruction. The *Teacher Resource Guide* includes sections on responding to student thinking and next-day supports, offering specific strategies for further instruction. The Response to Student Thinking guides teachers to make adjustments based on specific student responses to the Cool-Down. Next-day supports, such as providing students access to specific manipulatives or having students discuss their reasoning with a partner, are recommended for cool-down responses that should be addressed while continuing to the next lesson. Although this teacher guidance could allow teachers to differentiate instruction for students who are proficient by providing extended support, the material only includes suggestions for ways to assist students who are not yet proficient.
- Materials include teacher guidance for extension activities for students who have demonstrated proficiency in grade-level content and skills. Centers included with each unit are designed to give students time to practice skills and concepts developed throughout the year. They can be used if a lesson is completed with the remaining class time. The section How to Use These Materials in the *Teacher Resource Guide* states, "Centers are intended to give students time to practice skills and concepts that are developed across the year." They are used "to practice or solidify the mathematical ideas of a unit." There are two types of centers: Addressing (focusing on current lesson content) and Supporting (reviewing prior

knowledge). Addressing centers address the work of a lesson or section of a unit, thus creating extension activities for students demonstrating proficiency. For example, in Unit 1, Five in a Row: Multiplication (3–5) states, "Students take turns generating numbers and placing counters on a board. The first partner to have five counters in a row wins." This activity extends student learning of the Unit 1 objective to represent and solve multiplication problems through the context of scaled pictures, bar graphs, and equal-group situations.

- For proficient students who need more of a challenge, the materials offer enrichment activities through Exploration Problems. These problems are designed to be more open-ended and challenging, providing deeper engagement with grade-level mathematics. The materials provide two or more exploration problems per unit. The guidance provided explains that one type of exploration problem features hands-on opportunities, while the other is designed to be "more open-ended and challenging." In Unit 5, Lesson 18, the *Teacher Resource Guide* states, "This activity can also be extended to invite students to think about other aspects of their fun run theme, including researching charities that align with causes that are important to themselves, their families, or their greater community. This also might provide opportunities for students to add and subtract within 1,000 and multiply and divide within 100 as they consider other factors when designing their run, including setting a fundraising goal, establishing ticket prices, and thinking about which stations might attract more people."

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 to be learned explicitly. Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches. Materials support multiple types of practice and include guidance for teachers and recommended structures 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).

- The materials provide prompts and guidance for teachers to model concepts and support student learning. The "Principles of IM Curriculum Design" emphasize the importance of understanding progressions in the materials to connect prior knowledge with upcoming content. Each lesson follows a consistent structure: an invitation to mathematics, a deep study of concepts, and a consolidation of understanding. The *Course Guide* outlines the three phases of each instructional activity: launch, activity work time, and activity synthesis, with specific directions to help students understand the context and problem during each phase. For instance, in Grade 3, Unit 3, Lesson 1, teachers are guided on what to say or how to respond when students are doing the "Which 3 go together?" activity for students to come to the same understanding even if they did not at first. This structured approach helps teachers anticipate, monitor, and select student work for whole-group discussions. Each unit culminates in a lesson that explicitly addresses modeling skills while integrating the mathematical work of the unit.
- The materials include both prompts and guidance to support the teacher in modeling the concepts to be learned directly and explicitly. The materials include examples of sample student responses to prompts. For example, in Unit 1, Lesson 2, Activity 1, the Launch section prompts and guides the teacher to lead the whole class in representing class data in a picture graph in seven explicit steps. The teacher then provides students with the activity to represent the same data in a bar graph. Below the activity, the Student Response section has a clear example of what a student graph might look like with all of the necessary components. The Design Principles section of the *Teacher Resource Guide* also states, "In all lessons, teachers

are supported in the practices of anticipating, monitoring, and selecting student work to share during whole-group discussions." This guidance supports the teacher in modeling student work for the whole class. The Design Principles section also states, "In addition to the precursor skills and modeling stages that appear across lessons, each unit culminates with a lesson that explicitly addresses these modeling skills and stages while pulling together the mathematical work of the unit."

- Materials include prompts and guidance to support the teacher in explaining concepts. For example, Advancing Student Thinking in Unit 3, Lesson 1, Activity 2 provides the following support: "If students don't generate decompositions based on place value, consider asking: How did you decompose the number? How could you use base-ten blocks to devise other ways to decompose the number?"
- The materials also support the teacher explaining concepts in the Design Principles section of the *Teacher Resource Guide* by stating, "The materials foster conversation so that students voice their thinking around mathematical ideas, and the teacher is supported to make use of those ideas to meet the mathematical goals of the lessons." It states teachers can "look to warm-ups and activity launches for built-in preparation, and to teacher-facing narratives for further guidance." Two sections within each lesson plan support teachers in learning more about what each student knows and provide guidance on how to respond to students' understandings and ideas. For example, in Unit 1, Lesson 2, Activity 1, the Response to Student Thinking section guides teachers by stating "If students create bar graphs that do not match the data in the class picture graph, consider asking: 'Tell me about how you made your bar graph,' and, 'How could we use the data in the class picture graph to help make the bar graph?'" Teachers are encouraged to "explain" the math to students through questioning more than through direct statements and explanations.
- Materials include prompts and guidance to support the teacher in communicating concepts. Activity narratives and descriptions provide guidance and directions. The activity's Launch provides support for direct communication of ideas. For example, at the start of each lesson, the materials provide the teacher with Goals, a Student Facing Learning Objective statement, a Lesson Purpose statement, and a Narrative section that provides the teacher with a detailed description of the lesson's goals and how it fits into the broader learning of the given concept. In A Typical IM Lesson section of the *Teacher Resource Guide*, the material states each lesson has a Lesson Synthesis to "assist the teacher with ways to help students incorporate new insights gained during the activities into their big-picture understanding." Materials direct teachers to choose to pose questions verbally and call on volunteers to respond, ask students to respond to prompts in a written journal, ask students to add to a graphic organizer or concept map or add a new component to a persistent display like a word wall. Recommended questions are embedded within each Lesson Synthesis, and suggested journal prompts are provided in the *Teacher Resource Guide* section, Key Structures In This Course. For example, Unit 1, Lesson 2, Activity 1, Activity Synthesis offers question prompts and examples of student responses for teachers, such as, "How are our picture graph and bar graph alike? How are our picture graph and bar graph different?

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

- Materials include teacher guidance and recommendations using a variety of instructional approaches for effective lesson facilitation. Instructional resources describe the four phases: Warm-Up, Instructional Activities, Lesson Synthesis, and Cool-Down. The Warm-Up is described as an instructional routine that engages students in the lesson. The *Course Guide* provides descriptions for various Warm-Up Routines, such as Act It Out, Choral Count, Estimation Exploration, How Many Do You See, Notice and Wonder, Number Talk, Questions About Us, True or False, What Do You Know About _____, and Which Three Go Together. The following guidance and recommendations are provided for the Warm-Up Number Talk. The materials state, "The sequence of problems in a Number Talk encourages students to look for structure and use repeated reasoning to evaluate expressions and develop computational fluency. As students share their strategies, they make connections and build on one another's ideas, developing conceptual understanding."
- Materials include teacher guidance and recommendations using a variety of instructional approaches for effective lesson delivery. Each lesson includes a Lesson Narrative and an Activity Narrative. The Lesson Narrative includes information about the mathematical content of the lesson and its place in the learning sequence, with the meaning of any new terms introduced in the lesson and how the mathematical practices come into play. The Activity Narrative explains the mathematical purpose of the activity and its place in the learning sequence, what students are doing during the activity, and what teachers should look for while students are working on an activity to orchestrate an effective Activity Synthesis. The Activity Narrative also explains that teachers should make connections to the mathematical practices when appropriate.
- The materials include teacher guidance and recommendations for effective lesson delivery using a variety of instructional approaches such as discussions, journal prompts, and mathematical language routines to engage students in higher-level thinking to demonstrate their understanding of mathematics. The Design Principles section of the *Teacher Resource Guide* states, "Instructional routines provide opportunities for all students to engage and contribute to mathematical conversations. Instructional routines are invitational, promote discourse, and are predictable in nature." The materials highlight a small set of carefully chosen routines to "reduce the cognitive load for teachers." Professional learning materials provide guidance to teachers for effective lesson delivery through videos of these routines being used in the classroom. For example, in Unit 1, Lesson 3, Activity 2, the instructional routine lists "Number Talks," where students explain their strategies and apply them as they develop fluency. This is one of several instructional approaches described in the *Teacher Resource Guide* to provide teacher guidance and recommendations for effective lesson delivery.
- The Design Principles section of the *Teacher Resource Guide* states, "In lessons in which there are opportunities for students to make connections between representations, strategies, concepts, and procedures, the lesson and activity narratives provide support for teachers also to use the practices of sequencing and connecting, and the lesson is tagged so teachers can easily identify these opportunities." For example, the Unit 1, Lesson 2 Narrative guides

teachers through the lesson facilitation to support sequencing and connecting by stating, "Students solved one-step problems about data in grade 2. In this lesson, students create a picture graph and a bar graph representing how they get home from school. Then they solve one- and two-step 'how many more?' and 'how many fewer?' problems using data presented in a bar graph."

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.

- The instructional materials include recommended structures for the effective implementation of lessons. For example, Unit 3, Lesson 1, Activity 2, Launch provides information to suggest implementation of the activity with groups of four. It suggests 30 seconds of thinking time before sharing and recording responses. Step-by-step directions with structures are provided. For example, the Activity Synthesis in Unit 3, Lesson 4, Activity 1 states, "For each method, ask a student to share their explanation. As students share, record the sequence of steps they describe in their explanation. Consider asking: Who can restate _____ 's reasoning in a different way? Did anyone have a similar idea but would explain it differently? Did anyone explain the method in a different way? Does anyone want to add on to____'s explanation? As students add on, edit the steps so the class is in agreement about how each method works. Lin and Han used algorithms to solve this problem. An algorithm is a set of steps that works every time as long as the steps are carried out correctly. How are Lin and Han's algorithms the same? (They both add ones to ones, tens to tens, and hundreds to hundreds.) How are the algorithms different? (Lin writes the number in expanded form, but Han doesn't. Lin hasn't added the sums of hundreds, tens, and ones, but Han has.) Consider asking: Can we tell which place Lin started with? Why or why not? (We can't really tell with Lin's method because of how the numbers are next to each other. She might have started with the ones or the hundreds. No matter which place she starts with she would get the same sum.)"
- There are multiple types of practice included in the instructional materials. Materials provide step-by-step instructions for practice, including guided, independent, and collaborative practice. For example, the grade 3, Unit 3, Lesson 1, Activity 2 Launch suggests groups of two with independent think time included. The Launch states, "Display Kiran's algorithm from the previous lesson. Here's a subtraction algorithm you saw in an earlier lesson. What might be the first thing you'd do if you are to use this algorithm to find the value of the subtraction expressions in the activity?" The materials provide guidance to teachers to support students in writing the numbers in expanded form and stacking them. Teachers should give students access to base-ten blocks. For the students to work, it guides the teacher to provide one minute of quiet think time and then time to share responses.
- The materials provide frequent opportunities for student collaboration and specific teacher guidance to facilitate cooperation. Lesson components provide teacher guidance, like student group size suggestions, and indicate which lesson and activity components are designed to be completed collaboratively. For example, in Unit 5, Lesson 1, the materials specify that

students should work in groups of two for the Launch and Activity portion of the lesson. Teachers are also provided with question prompts to guide groups through the tasks.

- The lesson narratives provide guidance for teachers to support effective implementation. For example, in Unit 1, Lesson 2, the Narrative recommends, "Consider launching the lesson with a read-aloud of Last Stop on Market Street by Matt de la Peña."
- Material includes recommended structures such as small group and individual work to support effective implementation. The "How to Use These Materials" section of the *Teacher Resource Guide* states, "The launch for an activity frequently includes suggestions for students to work individually, with a partner, or in small groups." An example of this is in Unit 1, Lesson 1, Activity 1, where the Launch guides teachers to place students in groups of two for the activity. The Design Principles section of the *Teacher Resource Guide* also states, "The curriculum materials include classroom structures that support students in taking risks, engaging in mathematical discourse, productively struggling through problems, and participating in ways that make their ideas visible."

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 one level of language proficiency [as defined by the English Language Proficiency Standards (ELPS)]. Materials do not include teacher guidance on providing linguistic accommodations for various levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)]. 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 materials include teacher guidance on providing linguistic accommodations for one level of language proficiency. The Mathematical Language Development and Access for English Learners states "Support sense-making, scaffold tasks, and amplify language so students can make their own meaning. Optimize output to strengthen opportunities for students to describe their mathematical thinking to others orally, visually, and in writing. Cultivate conversation to strengthen opportunities for constructive mathematical conversations and maximize meta-awareness to strengthen the meta-connections and distinctions between mathematical ideas, reasoning, and language." Mathematical Language Routines (MLRs) are instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language. Each unit includes MLRs in select activities to provide students with explicit opportunities to develop mathematical and academic language

proficiency. These embedded MLRs are described in the teacher notes for the lessons where they appear. The instructional materials include Access for English Learners with lesson activities; however, various accommodations are not included to differentiate between language proficiency levels.

- The materials include supports for students, such as sentence stems, visible displays, and word collections. The Supporting Diverse Learners section of the Teacher Guide states "Each lesson also includes optional, suggested Mathematical Language Routines that can be used to support access and language development for English learners, based on the language demands students will encounter." This is described in the activity narrative under the heading Access for English Learners. For example, in Unit 6, Lesson 5, Activity 1, the "Access for English Learners" section lists MLR8, Discussion Supports. It gives guidance to teachers stating the following: "Synthesis: Revoice student ideas to demonstrate and amplify mathematical language use. For example, revoice the student statement 'It lined up with one of the half thingies' as 'It lined up with one of the half-inch marks,' or 'We recorded it in halves' as 'We recorded it in half inches.'" This accommodation only provides one level of support for students and does not provide accommodations for students at various proficiency levels.
- The materials include sentence frames to support student language production by providing a structure to communicate about a topic. The recommended generic sentence frames and question starters are listed by language function in a chart in the Supporting Diverse Learners section of the Teacher Guide. It states, "Some of the lessons in these materials include suggestions of additional sentence frames that could support the specific content and language functions of that lesson." For example, Unit 1, Lesson 2, Activity 2 gives teacher guidance, stating "Consider providing these sentence stems if students need support explaining their reasoning: 'I knew the statement was false because...' and 'I knew the statement was true because...'"
- The Course Guide explains that MLRs are "instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language." While the Course Guide provides general guidance about the various MLRs, it does not provide specific guidance for leveling supports based on student needs. For example, the Course Guide states that teachers can "Adapt these flexible routines to support students at all stages of language development in improving their use of English and disciplinary language." Still, it does not explicitly provide the teacher guidance on how to make these adaptations. It also states, "Use the MLRs, as needed, and phase them out as students develop understanding and fluency with the English language," but does not guide how to evaluate if a student is ready to have decreased language support.
- Kiddom's Approach to English Language Proficiency in Texas Math document aligns the MLRs to the ELPS but does not provide linguistic accommodations for the various levels of language proficiency as defined by the ELPS. The document states that "Teachers should use their professional judgment about which routines to use and when, based on their knowledge of the individual needs of students in their classroom."

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

- The materials provide guidance and implementation support for teachers of emergent bilingual students, such as one-pagers, lesson guidance for "Access for English Learners," and four design principles that promote mathematical language use and development. For example, the Supporting Diverse Learners section of the Teacher Guide gives an information page for "Mathematical Language Development and Access for English Learners." This page guides teachers in creating a language-rich classroom environment. This page also includes information on MLRs and states "They are particularly well-suited to meet the needs of linguistically and culturally diverse students who are learning mathematics while simultaneously acquiring English."
- The materials provide Kiddom's Approach to English Language Proficiency in Texas Math that aligns the MLRs that are referenced throughout the materials to the ELPS. The Course Guide supports the teacher over the design principles that the language supports are based on in the materials. At the lesson level, lesson plans include Access for English Language Learners, which provides specific guidance for suggested language supports to implement for a given activity. For example, in Unit 5, Lesson 1 of the Teacher Edition, the materials provide information on MLR2, Collect and Display. The materials state "Collect the language students use while sorting the shapes. Display words and phrases, such as partition, split, parts, equal parts, equal-size parts, halves, thirds, fourths, and whole." During the Activity Synthesis, the materials encourage the teacher to invite students to suggest ways to update the display by asking, "'What are some other words or phrases we should include?' Encourage students to borrow language from the display as needed." This synthesis advances conversing and reading.

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 materials implement a set of core mathematical language routines (MLRs) throughout the resource to support access and language development for emergent bilingual students. The MLRs used in the materials vary depending on the demands of the lesson or activity and target different aspects of supporting language development. For example, the MLR Collect and Display provides academic vocabulary support as well as building background knowledge support in both oral and written discourse. The Collect and Display excerpts from the Course Guide state "The intent of this routine is to stabilize the varied and fleeting language in use during mathematical work, in order for students' own output to become a reference in developing mathematical language. Organize, revoice, or explicitly connect to other terms in a display that all students can refer to, build on, or make connections with during future discussion or writing. Throughout a unit (and beyond), reference the displayed language as a model, update and revise the display as students' language changes, and make bridges between prior student language and new disciplinary language (Zwiers et al., 2017)."

- According to the Supporting Diverse Learners section of the Teacher Guide, to support students who are learning English in their language development, the resource includes instruction devoted to fostering language development alongside mathematics learning and fostering language-rich environments where there is space for all students to participate. An example of this oral discourse that fosters academic vocabulary is in Unit 4, Lesson 2, Activity 3. The Access for English Language Learners section states "Lead a discussion comparing, contrasting, and connecting the different representations. Ask, 'What specific words or language helped you understand how to solve the problems? Are there any additional details or language that you have questions about?' To amplify student language and illustrate connections, follow along and point to the relevant parts of the displays as students speak." An example of written discourse that fosters academic vocabulary and increases comprehension is in Unit 3, Lesson 3, Activity 2. The Narrative guides the teacher to lead the class in a written journal response to one of the prompts, "'What math did you do today that connected to something you did in an earlier grade?' or 'Describe something you really understand after today's lesson.'" The teacher asks the students to take some time to respond to at least one of the journal prompts. Then, the students share their responses with a partner for a few minutes.
- According to the Supporting Diverse Learners section of the Teacher Guide, "In an effort to advance the mathematics and language learning of all students, the materials purposefully engage students in sense-making and using language to negotiate meaning with their peers." For example, in Unit 5, Lesson 2, Activity 2 addresses MLR8, Discussion Supports, by stating "At the appropriate time, give students 2–3 minutes to make sure that everyone in their group can explain their process for partitioning their rectangles and determining how to label each part. Invite groups to rehearse what they will say when they share with the whole class."
- Materials include embedded guidance for teachers to support emergent bilingual students in increasing comprehension through written discourse in the Key Structures of This Course in the Teacher Guide. The materials state "Journal writing can provide an additional opportunity to support each student in their learning of mathematics." Journal prompts are included for "Reflecting on Content and Practices" and "Reflecting on Learning and Feelings about Math." For example, in Unit 3, Lesson 3, Activity 2, the Support for English Language Learners states "MLR6 Three Reads: Keep books or devices closed. Display only the problem stem without revealing the question. 'We are going to read this problem 3 times.' After the 1st Read: 'Tell your partner what this situation is about.' After the 2nd Read: 'List the quantities. What can be counted or measured?' Reveal the question(s). After the 3rd Read: 'What strategies can we use to solve this problem?'"
- The Course Guide specifies five practices for building background knowledge and making connections as Other Instructional Routines. These practices are implemented during the Activity Synthesis stating " ...students collectively reveal multiple approaches to a problem and make connections between these approaches (MP3)." For example, MLR5, Co-craft Questions, "Allows students to get inside a context before feeling pressure to produce answers and creates opportunities for students to produce the language of mathematical questions" and MLR2, Collect and Display, "Captures a variety of students' oral words and phrases into a stable, collective reference. Output can be organized, revoiced, or explicitly

connected to other languages in a display that all students can refer to, build on, or make connections with during future discussion or writing.

- Compare and Contrast develops academic vocabulary through oral discourse as students "identify, compare, and contrast different mathematical approaches and representations. Students are prompted to reflect on, and linguistically respond to, these comparisons; for example, exploring why or when one might do or say something a certain way, or by identifying and explaining correspondences between different mathematical representations or methods."

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 materials do not specify that they are designed for dual language immersion programs. Materials do not include resources that outline opportunities that address transfer from English to the partner language. However, the materials do include the Supporting Diverse Learners section of the Teacher Guide. This section states "Both metacognitive and metalinguistic awareness are powerful tools to help students self-regulate their academic learning and language acquisition." However, the materials lack resources and strategies to integrate metalinguistic skills into lesson activities.

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

- Materials include practice opportunities throughout each lesson and unit, including instructional assessments, that require students to demonstrate depth of understanding. The materials include a TEKS guide that provides the proper TEKS alignment. The Lesson Activity Routines embed structures within the lessons' tasks that allow students to engage in the content and collaborate in ways that support the development of student thinking and precision with language. For example, in Unit 6, Lesson 5, Activity 1, the Narrative states, "The purpose of this activity is for students to make sense of partitioning number lines that extend beyond one. Clare and Diego's work surfaces two common misconceptions students often make while partitioning number lines into fractions. Clare partitions the entire number line into fourths, and Diego places 4 tick marks to show fourths. Students analyze these misconceptions (MP3) before they locate and label unit fractions on number lines of various lengths in the next activity."
- Materials highlight a deep study of concepts and procedures, as well as the depth of TEKS. The Design Principles section of the *Teacher Resource Guide* states, "Each unit, lesson, and activity has the same overarching design structure: the learning begins with an invitation to mathematics, is followed by a deep study of concepts and procedures, and concludes with an opportunity to consolidate understanding of mathematical ideas." For example, Unit 2, Lesson 4, Activity 2 directs students to find the area of rectangles by counting squares. This activity allows them to demonstrate depth of understanding of the Lesson 4 objective, " ...continue to count squares to create rectangles and to find the area of rectangles with larger numbers than in the previous lesson."
- The materials include a variety of assessments that require students to demonstrate learning at a depth of understanding that is aligned with the objectives and reaches the depth of the TEKS. In grade 3, end-of-unit assessments are provided and include multiple question types

that vary in difficulty and depth of knowledge, according to the Assessment section of the *Teacher Resource Guide*.

- The Coherent Progression section of The Principles of IM Curriculum Design in the *Course Guide* explains the materials designed with concept progression in mind. It states, "The basic architecture of the materials supports all learners through a coherent progression of the mathematics, based both on the standards and research-based learning trajectories. Activities and lessons are parts of a mathematical story that spans units and grade levels. This coherence allows students to view mathematics as a connected set of ideas that makes sense."

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

- Questions and tasks in the materials progressively increase in rigor and complexity. For example, in grade 3, Unit 1, Lesson 1 starts with a Warm-Up where students notice and wonder about the data presented. In Activity 1, they explain graph categories, and in Activity 2, they create questions and answer complex ones using graph data. Materials build on prior learning, as seen in Unit 8, where students revisit and build on fraction concepts, represent fractions in various forms, and estimate their sizes. Students practice identifying fractions on a number line and analyze general statements about fractions, refining their understanding through discussions. The *Teacher Resource Guide* highlights three essential aspects of rigor: conceptual understanding, procedural fluency, and application. Tasks prompt students to apply their knowledge and fluency to new problems. For instance, Unit 4, Section A has students explore division by interpreting descriptions, diagrams, and expressions, understanding different division scenarios, and generalizing their observations.
- The materials include a strategic learning progression to build a new understanding of previous foundations within and across grade levels. For example, in Unit 5, the Lesson 1 Narrative explains how the concept relates to concepts learned in the prior grade and how they will build upon and extend the idea to reach grade-level proficiency. The grade 3, Unit 5, Lesson 1 Narrative states, "The purpose of this lesson is for students to be introduced to fractions as numbers we write to describe the parts of a whole that have been partitioned into equal parts. In previous grades, students partitioned circles and rectangles into two, three, or four equal pieces and described the pieces as halves, thirds, and fourths." Students have previously used the more concrete term *pieces*. In this lesson, students extend this understanding to partition rectangles into six or eight equal parts and describe the parts as sixths or eighths. The term *parts* is used in these materials moving forward, but students recognize that *pieces* and *parts* are interchangeable and can use either one. In the lesson synthesis, students learn the fractions 1/2, 1/3, 1/4, 1/6, and 1/8 as the numbers used to represent the parts described as one-half, one-third, one-fourth, one-sixth, and one-eighth.
- Materials include a variety of assessment questions that progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards. As stated in the Design Principles section of the *Teacher Resource Guide*, "It is our intent to create a problem-based curriculum that fosters the development of mathematics learning communities in

classrooms, gives students access to the mathematics through a coherent progression, and provides teachers the opportunity to deepen their knowledge of mathematics, student thinking, and their teaching practice." For example, as stated in the Assessment section of the *Teacher Resource Guide*, the End-of-Course Assessment and Resources consist of three portions, which demonstrate progression in rigor and complexity: items that assess key work of the grade, fluency items that target the key fluencies of the grade, and one or more in-depth problem that leads students to apply the key ideas they have learned over the year.

- Tasks in materials increase in rigor and complexity as the learning progression evolves from concrete understanding, representation, and abstract thinking. Grade 3 tasks prompt students to apply their conceptual understanding and procedural fluency to new problems and situations. For example, the Unit 4 Section Level Planning Guide, Section A Narrative, states, "In this section, students encounter situations involving the questions 'how many in each group?' and 'how many groups?' They make sense of division in terms of finding the answers to these questions." The focus here is on interpreting descriptions, diagrams, and expressions that represent division situations. Students see that the same diagram or expression can represent different questions. Later, students generalize their observations about division situations and interpret division expressions without context.

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 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 grade levels and what will be learned in future grade levels to the content to be learned in the current grade level. Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade levels 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.

- Materials include a unit description, which explains the sequence of the unit and how the previous grade level connects to the current unit. For example, Unit 1: Introducing Multiplication states, "In this unit, students interpret and represent data on scaled picture graphs and scaled bar graphs. Then, they learn the concept of multiplication." This is the first of four units that focus on multiplication. In this unit, students explore scaled picture graphs and bar graphs as an entry point for learning about equal-size groups and multiplication. In grade 2, students analyzed picture graphs in which one picture represented one object and bar graphs that were scaled by single units. Here, students encounter picture graphs in which each picture represents more than one object and bar graphs. The idea that one picture can represent multiple objects helps to introduce the idea of equal-size groups. Students can relate the idea of equal groups and the expression to the rows and columns of tools to represent and solve problems.
- The Scope and Sequence included in the *Course Guide* of the materials provides unit narratives that outline how the concepts progress throughout the unit and detail how the concepts build upon previous learning. The Scope and Sequence overview includes the Learning Goals Section that explains how the unit's learning goals, and the concepts align with

previous and current grade-level concepts. For example, the Unit 2 Learning Goal focuses on students learning about area concepts and relating area to multiplication and addition. In this unit, students encounter the idea of area, relate the area of rectangles to multiplication, and solve problems involving area. In grade 2, students explored attributes of shapes, such as the number of sides, number of vertices, and length of sides. Students measured and compared lengths, including side lengths of shapes. In this unit, students make sense of another attribute of shapes: a measure of how much a shape covers. They begin informally by comparing two shapes and deciding which one covers more space. Later, they compare more precisely by tiling shapes with pattern blocks and square tiles.

- The Coherent Progression section of the *Course Guide* explains that the material notes are designed to align student learning within and across grade levels. It states, "The basic architecture of the materials supports all learners through a coherent progression of the mathematics, based both on the standards and research-based learning trajectories. Activities and lessons are parts of a mathematical story that spans units and grade levels. This coherence allows students to view mathematics as a connected set of ideas that makes sense."
- The Dependency Chart Section of the *Course Guide* outlines how previously learned concepts are connected across grade levels and in the current grade level. It explains, "An arrow indicates that a particular unit is designed for students who already know the material in a previous unit. Reversing the order of the units would have a negative effect on mathematical or pedagogical coherence."

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

- The grade 3 Scope and Sequence Narrative in the Digital Review describes the learning goal of the unit or the big idea. It describes the connections within patterns and relationships of concepts. For example, "The big ideas in grade 3 include: developing understanding of multiplication and division and strategies for multiplication and division within 100; developing understanding of fractions, especially unit fractions (fractions with numerator 1); developing understanding of the structure of rectangular arrays and area; and describing and analyzing two-dimensional shapes.
- The materials include visual models for concept development, connecting patterns to big ideas, and abstract relationships within mathematical concepts. For example, in grade 3, Unit 2, when learning about area and multiplication, the Unit Narrative states, "They begin informally, by comparing two shapes and deciding which one covers more space. Later, they compare more precisely by tiling shapes with pattern blocks and square tiles." Students then focus on the area of rectangles. They notice that a rectangle tiled with squares forms an array, with the rows and columns as equal-size groups. This observation allows them to connect the area of rectangles to multiplication as a product of the number of rows and a number of squares per row.
- The materials connect big ideas across units. The materials include a Unit Narrative overview that explains the big ideas, tools, and representations used throughout the unit. The unit

narrative connects to previous units or grade levels where students learned prior knowledge needed for the upcoming unit. For example, to connect the grade 3, Unit 4 big idea objective of relating multiplication to division, the Unit Narrative states, "Previously, students learned that multiplication can be understood in terms of equal-size groups. The expression 5×2 can represent the total number of objects when there are 5 groups of 2 objects, or when there are 2 groups of 5 objects." Materials also include a "CCSS Progressions Document" within the *Teacher Resource Guide*, which describes the progression of a topic across grade levels, notes key connections among standards, and discusses challenging mathematical concepts. This table provides a mapping of the particular progressions documents that align with each unit in the K–5 materials.

- The grade 3 Scope and Sequence Narrative outlines the learning goals and connections within mathematical concepts. Grade 3 math is divided into eight units: Introducing Multiplication, Area and Multiplication, Wrapping Up Addition and Subtraction within 1,000, Relating Multiplication to Division, Fractions as Numbers, Measuring Length, Time, Liquid Volume, and Weight, Two-dimensional Shapes and Perimeter, and Putting it All Together. The materials connect current learning to past and future concepts. For example, Unit 3 builds on grade 2 strategies for adding and subtracting within 1,000 and prepares students for grade 4 algorithms. The narrative highlights the importance of understanding place value and connecting multiplication to division. Visual models and tools are used to connect patterns to big ideas, with each unit explicitly linking to prior knowledge and future learning. For example, Unit 4 explains multiplication in terms of equal-size groups, while Unit 7 focuses on attributes of two-dimensional shapes and perimeter, building on earlier grades' knowledge.
- The materials provide coherence across units, connecting how the understanding of a concept in a unit relates to other concepts to be learned later in the course or in another course. For example, the grade 3, Unit 7, Unit Narrative states "In this unit, students reason about attributes of two-dimensional shapes and learn about perimeter. Students began to describe, compare, and sort two-dimensional shapes in earlier grades. Here, they continue to do so and to develop language that is increasingly more precise to describe and categorize shapes. Students learn to classify broader categories of shapes (quadrilaterals and triangles) into more specific sub-categories based on their attributes."

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 grade 3 Scope and Sequence in the Digital Review describes the previous grade content and makes connections to future content learned. The materials include guidance for students to explore various algorithms but are not required to use a specific one. They should, however, move from the strategy-based work of grade 2 to algorithm-based work to set the stage for using the standard algorithm in grade 4. If students begin the unit with knowledge of the standard algorithm, it is still important for them to make sense of the place-value basis of the algorithm. Understanding of place value also comes into play as students round numbers to the nearest multiple of 10 and 100. Students do not need to know a formal definition of

'multiples' until grade 4. At this point, it is enough to recognize that a multiple of 10 is a number called out when counting by 10 or the total in a whole-number of tens (such as 8 tens). Through the description, the use of language learned in the previous grade level is connected to the content to be learned.

- The materials include guidance in the *Course Guide* that provides connections to content learned in the previous and future grade-level lessons and connect language from the previous grade level to the current unit. Students learn to describe, compare, and sort two-dimensional shapes in earlier grades. Students continue to develop language that is increasingly more precise to describe and categorize shapes. Students learn to classify broader categories of shapes (quadrilaterals and triangles) into more specific subcategories based on their attributes.

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 Teacher Resource Guide includes a Scope and Sequence, which details each unit and connects prior and future learning. For example, Unit 2 introduces area by relating it to multiplication and solving area problems. Previously, in grade 2, students explored shape attributes and measured side lengths. In grade 3, students build on this by comparing shapes and learning that area is the number of square units covering a shape. They connect the area of a rectangle to multiplication and progress from concrete to abstract representations.
- Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures to new mathematical knowledge. As stated in the Instructional Routines section of the *Course Guide*, "They (instructional routines) provide opportunities for students to bring their personal experiences as well as their mathematical knowledge to problems and discussions." The instructional routine begins with a warm-up and moves to lesson activity routines. The Instructional Routines section states, "Each lesson begins with a Warm-Up Routine intentionally designed to elicit student discussions around the mathematical goal of the lesson. The Lesson Activity Routines embed structures within the tasks of the lessons that allow students to engage in the content and collaborate in ways that support the development of student thinking and precision with language."
- The materials include Centers that connect concepts and procedures from prior grades to the current grade. For example, the Creating Line Plots Center, recommended for grades 2–5, provides opportunities for students to create and analyze line plots based on measurement data they collect. The center design includes four stages. In all stages of the center, students measure up to eight objects to the nearest centimeter or inch and work with a partner to create a line plot to represent their measurement data. As the stages progress, students make more advanced measurements and are given additional tasks to complete, such as "ask their partner two questions that can be answered based on the data in their line plot that use addition, subtraction, or multiplication."
- The Student Journal Prompts section included in the Key Structures for this Course section of the *Course Guide* explains that the materials include journal writing prompts to allow students

to clarify their thinking and develop a deeper understanding of the content. The journal prompts provide two categories. The first category facilitates the student making connections to prior learning. It states, "Prompts for the first category focus on students' learning or specific learning objectives in each lesson. Students reflect on the mathematical content because the act of writing generally entails careful analysis, encouraging the explicit connection between what is known and new knowledge, which becomes incorporated into a consciously constructed network of meaning (Vygotsky, 1987). For example, when students write about ways in which the math they learned in class that day is connected to something they knew from an earlier unit or grade, they explicitly connect their prior and new understandings."

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 spaced 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.

- Materials provide opportunities for frequent spaced retrieval practice of skills across lessons through the lesson warm-ups. The A Typical IM Lesson section states that one of the purposes for the warm-ups in every lesson is "to get them thinking about where the previous lesson left off." It also states, "The warm-ups provide opportunities for students to bring their personal experiences and mathematical knowledge to problems and discussions." For example, in Unit 3, Lesson 1, the Warm-Up provides an opportunity to recall previously learned place value skills and concepts. The Narrative states, "This warm-up prompts students to compare numbers represented differently. It allows the teacher to hear how students use terminology and talk about the characteristics of the items in comparison to one another. During the synthesis, ask students to explain the meaning of any terminology they use, such as place value, hundreds, tens, ones, sum, or base-ten diagram."
- Materials provide opportunities for spaced retrieval practice for previously learned skills and concepts across units through centers. As stated in the How To Use These Materials section of the *Teacher Resource Guide*, "Centers are intended to give students time to practice skills and concepts developed throughout the year. There are two types of centers. Addressing centers address the work of a lesson or section of a unit, and Supporting centers review prior unit or prior grade-level understandings and fluencies." For example, the grade 3, Unit 3, Section Level Planning Guide Puzzles: Addition and Subtraction, Stage 5 as the center for "ongoing practice."
- The materials integrate spaced retrieval opportunities to reinforce previously learned concepts across lessons and units. For instance, in Unit 8, students consolidate their understanding of fractions, number line placement, perimeter, area, and scaled graphs. Activities include designing tiny houses with cost calculations and playing multiplication and division fluency games. The final section prompts students to create activities resembling familiar warm-up routines like Notice and Wonder, Estimation Exploration, How Many Do You See, and Number Talk. Additionally, pre-unit practice problems align with prior content, aiding

in reviewing prerequisite skills or serving as assessments. Tape diagrams exemplify this approach, initially used for fractions in Unit 3 and later applied to measurement scenarios in Unit 6. This model supports students in interpreting problem situations, analyzing representations, and formulating relevant questions. Centers are also incorporated within the materials to offer ongoing practice across units, emphasizing current and prior grade-level understandings and fluencies. For instance, in grade 3, Unit 3, the "Number Puzzles: Addition and Subtraction, Stage 5" center facilitates continuous skill reinforcement.

- Materials also provide spaced retrieval opportunities for previously learned concepts across lessons and units. For example, Unit 8 states, "In this unit, students revisit major work and fluency goals of the grade, applying their learning from the year. In section A, students reinforce what they learned about fractions, their size, and their location on the number line. In section B, students deepen their understanding of perimeter, area, and scaled graphs by solving problems about measurement and data. Two lessons invite students to design a tiny house that meets certain conditions and calculate the cost of furnishing it. Section C enables students to accomplish multiplication and division fluency goals through games. In the final section, students review the major work of the grade as they create activities in the format of the warm-up routines they have encountered throughout the year.

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

- The materials offer interleaved practice across lessons, encouraging students to use diverse strategies rather than relying on a single approach. For instance, in Unit 2, students explore the area by relating it to multiplication, progressing from counting to multiplying side lengths and using increasingly abstract representations of rectangles. Practice problems in this unit are open-ended, requiring students to demonstrate their work and reasoning using various strategies. Similarly, activities emphasize diverse strategies used across lessons, such as Unit 4, Lesson 1. Students collaboratively create posters to solve 'how many groups?' problems, encouraging them to employ strategies and visual representations that make sense to them, followed by a gallery walk to share their solutions.
- The materials provide interleaved practice opportunities with previously learned skills and concepts across units. Materials include practice opportunities that require students to select and use diverse strategies, promoting using the most efficient strategy rather than relying on a single plan for every problem. The sequence of the issues in a Number Talk encourages students to look for structure and use repeated reasoning to evaluate expressions and develop computational fluency. As students share their strategies, they connect and build on one another’s ideas, developing conceptual understanding.
- Purposeful Representations are utilized throughout the materials and provide embedded interleaved practice opportunities for previously learned skills and concepts across lessons, units, and grade levels. According to the *Course Guide* provided in the materials, Purposeful Representations are a key structure utilized in the course. The materials explain how mathematical representations in the materials serve two main purposes: to help students develop an understanding of mathematical concepts and procedures and to help them solve

problems. Across lessons and units, students are systematically introduced to representations and encouraged to use those that make sense to them. As their learning progresses, students make connections between different representations and the concepts and procedures they show. Over time, they see and understand more efficient methods of representing and solving problems, which supports the development of procedural fluency.

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 materials include questions and tasks that require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations. Materials include questions and tasks that require students to create a variety of models to represent mathematical situations. Materials include questions and tasks that 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.

- The materials include questions and tasks that allow students to interpret, analyze, and evaluate concepts. For example, students in Unit 4, Lesson 2 Activity 2 participate in a Gallery Walk. The Activity Synthesis instructs the teacher to "Give students a chance to ask questions they have about any posters. 'What is the same about the thinking shown on the posters? What is different about the thinking shown on the posters?'"
- The materials provide questions and tasks that require students to interpret, analyze, and evaluate situations. For example, the Lesson Purpose in Unit 4, Lesson 3 states, "The purpose of this lesson is for students to interpret descriptions or drawings of division situations and recognize whether they involve finding an unknown number of groups or objects in each group."
- The materials include exploration problems as practice problems. There are two types of exploration problems. "One type is a hands-on activity directly related to the unit's material that students complete in class if they have free time or at home. The second type of exploration problem is more open-ended and challenging. These problems go deeper into grade-level mathematics. They are not routine or procedural and are not 'the same thing again but with harder numbers.'"

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

- Questions and tasks included throughout the units require students to create various models to represent mathematical situations. The Design Principles section of the *Teacher Resource Guide* states, "Across lessons and units, students are systematically introduced to representations and encouraged to use representations that make sense to them. As their learning progresses, students are given opportunities to make connections between different representations and the concepts and procedures they represent." In Unit 4, Lesson 1 Activity 1, students create representations as they solve for "how many groups?" in the problems. The Narrative states, "When students represent the situation with objects, concrete drawings, or abstract drawings, they are reasoning abstractly and quantitatively."
- The materials include principles that guide instruction. "Modeling with mathematics is problem solving. It is a problem solving that offers opportunities for students to notice, wonder, estimate, pose problems, create representations, assess reasonableness, and continually make revisions as needed. In the early grades, these opportunities involve various precursor modeling skills that support students in solving problems flexibly." The Narrative in Unit 4, Lesson 2 Activity 1 allows students to create various models to represent a mathematical situation and show their thinking. Students have access to connecting cubes and counters. The Narrative explains how to monitor students as they represent the situation with concrete objects, such as putting 20 cubes into four groups one by one. Students may also draw the objects by drawing 20 apples and then splitting them into four groups, or students may make an array and draw four rows with one apple in each row to reach two.

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

- The *Course Guide* includes Instructional Resources, which sets up classroom questions and tasks to provide opportunities for conceptual understanding. The 5 Practices routine allows "students to solve problems in ways that make sense to them. Monitor to uncover and nurture conceptual understandings during the activity, as students engage in a problem meaningfully." Students make connections when engaged in the Card Sort routine. Using the Card Sort routine in class, "They organize objects into categories or groups, based on shared characteristics or connections. A card-sorting task allows students to analyze representations, statements, and structures closely and make connections (MP2 and MP7). As students work, monitor the different ways groups choose their categories and encourage increasingly precise mathematical language (MP6)." The Number Talk routine "encourages students to look for structure and use repeated reasoning to evaluate expressions and develop computational fluency (MP7 and MP8). As students share their strategies, they connect and build on one another's ideas, developing conceptual understanding."
- The materials include questions and tasks that provide opportunities for students to apply conceptual understanding to new situations and contexts. As stated in the Design Principles section of the *Teacher Resource Guide*, "Opportunities to connect new representations and language to prior learning support students in building conceptual understanding. Access to

new mathematics and problems prompts students to apply their conceptual understanding and procedural fluency to novel situations." It continues to explain that warm-ups, practice problems, centers, and other built-in routines help students develop procedural fluency, which develops over time. The Design Principles also state that "There are three aspects of rigor essential to mathematics: conceptual understanding, procedural fluency, and the ability to apply these concepts and skills to mathematical problems with and without real-world contexts. These aspects are developed together and are therefore interconnected in the materials in ways that support student understanding."

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 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 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.

- Materials provide tasks that are designed to build student automaticity and fluency in the Design Principles of the *Teacher Resource Guide*. "There are three aspects of rigor essential to mathematics: conceptual understanding, procedural fluency, and applying these concepts and skills to mathematical problems with and without real-world contexts. These aspects are developed together and are therefore interconnected in the materials in ways that support student understanding."
- Materials provide tasks that are designed to build student automaticity and fluency. According to the Design Principles of the *Teacher Resource Guide*, "Warm-ups, practice problems, centers, and other built-in routines help students develop procedural fluency, which develops over time." The center's activities target specific skills or concepts that build fluency. The section also states, "In addition to lessons and assessments, units have aligned center activities to support the unit content and ongoing procedural fluency. Access to new mathematics and problems prompt products to apply their conceptual understanding and procedural fluency to novel situations." The *Course Guide* states that the warm-up provides "students an opportunity to strengthen their number sense or procedural fluency and automaticity." Warm-ups ask students to do mental arithmetic or reason numerically or algebraically. It allows students to make deeper connections and become more flexible in their thinking.

- The materials include instructional routines such as a Number Talk. The Number Talk "encourages students to look for structure and use repeated reasoning to evaluate expressions and develop computational fluency (MP7 and MP8)." Purposeful Representations in the *Course Guide* states, "Across lessons and units, students are systematically introduced to representations and encouraged to use those that make sense to them. As their learning progresses, students make connections between different representations and the concepts and procedures they show. Over time, they see and understand more efficient methods of representing and solving problems, which supports the development of procedural fluency."

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 materials include tasks that offer multiple entry points. Students can choose different strategies to solve while building conceptual understanding and practicing and applying procedural skills for fluency. The Design Principles section of the *Teacher Resource Guide* states, "Each unit, lesson, and activity have the same overarching design structure: the learning begins with an invitation to the mathematics, is followed by a deep study of concepts and procedures and concludes with an opportunity to consolidate understanding of mathematical ideas. The invitation to the mathematics is particularly important because it offers students access to the mathematics. It builds on prior knowledge and encourages students to use their own language to make sense of ideas before formal language is introduced, both of which are consistent with the principles of Universal Design for Learning." For example, in Unit 4, Section D, The Learning Goals narrative in the Scope and Sequence states, "Use properties of operations, place value understanding, and the relationship between multiplication and division to develop strategies to divide within 100." The narrative describes how students have the flexibility to choose methods that are most efficient for them for any given problem, whether they are multiplying or dividing.
- The materials include warm-ups and activity tasks that ask students to apply mathematical procedures or strategies offered by peers within the lessons and throughout the units. For example, in Unit 4, Lesson 6 Warm-Up, Notice and Wonder Activity, the narrative states, "The purpose of this warm-up is to elicit the idea that multiplication and division are related, which will be useful as students learn to understand division as an unknown factor problem. While students may notice and wonder many things about these equations, ideas about how multiplication and division are alike and different are important discussion points. Students have seen division expressions, but this will be their first time seeing division equations."
- Materials provide opportunities for students to practice the application of mathematical procedures that are efficient and accurate in the warm-ups, activities, and lesson practice problems. As stated in the *Course Guide*, the warm-up component of each lesson "is an instructional routine that invites all students to engage in the mathematics of the lesson. The warm-up routines offer opportunities for students to bring their personal experiences as well as their mathematical knowledge to problems and discussions. These routines place value on the voices of students as they communicate their developing ideas, ask questions, justify their responses, and critique the reasoning of others. A warm-up serves one or both of two

purposes: Help students get ready for the day's lesson. Allow students to strengthen their number sense or procedural fluency.

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

- The materials allow students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy. For example, the Lesson Narrative in Unit 4, Lesson 2 states, "Students again have the flexibility to represent and solve problems using any strategy that makes sense to them in this lesson." The *Teacher Resource Guide* states, "In K–5, modeling with mathematics is problem-solving. Problem-solving offers students opportunities to notice, wonder, estimate, pose problems, create representations, assess reasonableness, and continually make revisions as needed. In the early grades, these opportunities involve various precursor modeling skills that support students in solving problems flexibly." The Activity Synthesis in Unit 4 Lesson 2 Activity 2 guides instruction to provide opportunities for students to evaluate solutions efficiently and accurately with flexibility. The Activity Synthesis states, "Give students a chance to ask questions they have about any posters. 'What is the same about the thinking shown on the posters? What is different about the thinking shown on the posters?'"
- The materials intentionally include tasks that ask students to solve problems using multiple appropriate strategies, particularly in the lesson warm-ups. As stated in the A Typical IM Lesson section of the *Teacher Resource Guide*, "A warm-up that is meant to strengthen number sense or procedural fluency asks students to do mental arithmetic or reason numerically or algebraically. It gives them a chance to make deeper connections and become more flexible in their thinking." For example, in Unit 3, the Lesson 4 Warm-Up prompts students to compare three expressions and one three-digit number. Students are then "asked to explain the meaning of any terminology they use, such as the value of each expression and ways that place value was used to write the number 247 in different ways." Students discuss this with a partner during the Activity Synthesis. Students have to explain why they picked the correct answers but also give one reason why the other answers did not belong. This leads to the discussion in the Lesson Synthesis, where students compare and contrast two different algorithms. In Lesson 5, another algorithm is introduced, and in Lesson 6, they learn strategies to help decide the best one to use when there are multiple ways to solve.

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

- The materials contain embedded supports for teachers to guide students toward efficient approaches. Units, lessons, and activities include a Narrative, which includes details for the corresponding unit, lesson, and activity. For example, In Unit 4, the Lesson 2 Narrative provides information to guide students toward efficient approaches. The Narrative describes that students previously solved "how many groups?" problems in a way that made sense to them. "In this lesson, students extend problems involving sharing into groups of equal size to

include 'how many are in each group?' problems. Students again have the flexibility to represent and solve problems using any strategy that makes sense to them in this lesson. If students use connecting cubes, encourage them to draw a picture to match their work. At the end of this lesson, division is defined as finding the number of groups or the size of each group when we share into groups of equal size."

- The materials include embedded support with each activity. Each activity comprises guidance for efficient approaches by providing step-by-step directions and leading questions. Unit 4, Lesson 2 Activity 1 states, "Solve these problems and show your thinking using objects, a drawing, or a diagram. 5–7 minutes: independent work time. As students work, consider asking: 'How can you represent what you are thinking? Where can you see the boxes at work? Where can you see how many apples are in each box in your work?' Monitor for students who solve the first problem in the same way. Arrange them into groups of two to create a poster together ..."
- According to the *Teacher Resource Guide*, the materials state, "Instruction is grounded in equitable structures and practices that provide all students with access to grade-level content and provide teachers with the necessary guidance to listen to, learn from, and support each student. The curriculum materials include classroom structures that support students in taking risks, engaging in mathematical discourse, productively struggling through problems, and participating in ways that make their ideas visible. Through these classroom structures, teachers have daily opportunities to learn about and leverage students' understandings and experiences and to position each student as a capable learner of mathematics."

Balance of Conceptual and Procedural Understanding

5.3	Balance of Conceptual Understanding and Procedural Fluency	14/16
5.3a	Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.	**0/2**
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 do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. Questions and tasks include using concrete models and manipulatives, pictorial representation, and abstract representations. Materials include support for students in connecting, creating, defining, and explaining concrete and representational models to abstract concepts.

Evidence includes, but is not limited to:

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

- The materials provide a TEKS guide, but the lessons do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. The materials intentionally target the conceptual and procedural standards addressed. The lessons and units include explicit learning objectives highlighting key conceptual and procedural skills and concepts to be covered. According to the *Teacher Resource Guide*, "Each unit is organized around two or three learning goals that describe the mathematical focus. Unit goals are aligned to the standards. Each section in a unit includes section learning goals that describe the focus of each section. The section learning goals are aligned to the unit learning goals."
- The materials do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. According to the *Teacher Resource Guide*, "Three aspects of rigor are essential to mathematics: conceptual understanding, procedural fluency, and applying these concepts and skills to mathematical problems with and without real-world contexts. These aspects, developed together, are interconnected in the materials to support students' understanding."

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

- The materials include questions and tasks that use concrete models and manipulatives. The *Teacher Resource Guide* states, "Curriculum representations, and the grade levels at which they are used, are determined by their usefulness for particular mathematical learning goals. More concrete representations are introduced before those that are more abstract."

- The materials include questions and tasks that use pictorial and abstract representations. For example, the *Teacher Resource Guide* provides information regarding area diagrams: "An area diagram is a rectangular diagram used to represent multiplication and division of whole numbers, fractions, and decimals. The area diagram, overlaid with a grid, shows individual units. As students move from working with an area diagram overlaid with a grid to one without, they move from a more concrete to a more abstract understanding of the area."
- The lesson and unit materials include abstract representations in questions and tasks, such as symbolic notations, numeric expressions, and algorithms to illustrate concepts. The Design Principles states, "In later grades, these familiar representations are extended so that as students encounter larger numbers, they can use place-value diagrams and more symbolic methods, such as equations, to represent their understanding."

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

- The materials include supports for students to connect concrete models to abstract concepts. Purposeful Representations in the *Teacher Resource Guide* states, "Curriculum representations, and the grade levels at which they are used, are determined by their usefulness for particular mathematical learning goals. More concrete representations are introduced before those that are more abstract. In later grades, these familiar representations are extended so that as students encounter greater numbers, they use place-value diagrams and symbolic methods, such as equations, to represent their understanding. When appropriate, the reasoning behind selecting certain representations in the materials is made explicit."
- The *Teacher Resource Guide* provides a diagram illustrating concrete model progression and definitions addressed with explanations of each concrete model representation. "A couple of key progressions of representations occur across grade bands in different domains. These progressions, described here, support students who have unfinished learning and would benefit from more concrete representations to make sense of mathematical concepts." The area diagram states, "An area diagram is a rectangular diagram used to represent multiplication and division of whole numbers, fractions, and decimals. The area diagram, overlaid with a grid, shows individual units. As students move from working with an area diagram overlaid with a grid to one without, they move from a more concrete to a more abstract understanding of the area. The unit squares are not explicitly represented in an area diagram without a grid. This makes this diagram useful when working with greater numbers or fractions and making connections to the distributive property and algorithms."
- The materials include opportunities for students to consolidate their understanding of mathematical concepts and procedures through modeling, creating, and discussing, specifically through the Activity Synthesis, which is included at the end of each lesson. The Design Principles section of the *Teacher Resource Guide* states, "The activity ends with a synthesis to ensure students have an opportunity to consolidate their learning by making connections between their work and the mathematical goals." For example, in Unit 5, Lesson 1, the narrative states, "In this lesson, students extend this understanding to partition

rectangles into six or eight equal parts and describe the parts as sixths or eighths. The term *parts* is used in these materials moving forward, but students recognize that *pieces* and *parts* are interchangeable and can use either one. In the lesson synthesis, students learn the fractions 1/2, 1/3, 1/4, 1/6, and 1/8 as the numbers used to represent the parts described as one half, one third, one fourth, one sixth, and one eighth."

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 using 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.

- Materials provide opportunities for students to develop their academic mathematical language. The A Typical IM Lesson of the *Teacher Resource Guide* states, "The purpose of each activity is described in its narrative." Units include learning goals in the Lesson Narratives for students to develop academic mathematical language centered around visuals, such as visuals and manipulatives. For example, the Activity Narrative in Unit 5, Lesson 10 Activity 2 states, "The purpose of this activity is for students to use fraction strips to identify equivalent fractions and explain why they are equivalent. Highlight explanations that make clear that the parts representing the fractions are the same size and the parts of the fractions refer to the same whole."
- According to the section A Typical IM Lesson, a unit activity can serve multiple purposes to develop academic mathematical language, such as introducing a new concept and the associated language, introducing a new representation, formalizing a definition of a term for an idea informally encountered before, and practicing using mathematical language. For example, in Unit 5, Lesson 1, students "Partition shapes into 2, 3, 4, 6, or 8 parts with equal

area and name those parts as halves, thirds, fourths, sixths, and eighths. Recognize that equal-size parts in a shape can be named with numbers called fractions."

- The Teacher Edition includes other language supports. For example, Access for English Language Learners in Unit 3, Lesson 3 Activity 2 includes "MLR6 Three Reads: Keep books or devices closed. Display only the problem stem without revealing the question. We are going to read this problem 3 times. After the 1st Read: Tell your partner about this situation. After the 2nd Read: List the quantities. What can be counted or measured? Reveal the question. After the 3rd Read: What strategies can we use to solve this problem?"
- Materials provide a lesson synthesis at the end of a lesson to help students consolidate learning, including connections around mathematical language, using a variety of language development strategies. As stated in the A Typical IM Lesson section, "Teachers can use this time in any number of ways, including posing questions verbally and calling on volunteers to respond, asking students to respond to prompts in a written journal, asking students to add on to a graphic organizer or concept map, or adding a new component to a persistent display like a word wall."

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

- Materials provide embedded guidance for teachers addressing scaffolding, supporting student development, and using academic mathematical vocabulary in context. According to the *Teacher Resource Guide*, "Mathematical Language Routines (MLRs) are instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language. The MLRs included in this curriculum were selected because they simultaneously support students' learning of mathematical practices, content, and language." As stated in the Supporting Diverse Learners section of the *Teacher Resource Guide*, "To support students who are learning English in their development of language, this curriculum includes instruction devoted to fostering language development alongside mathematics learning, fostering language-rich environments where there is space for all students to participate." It describes four design principles guiding teachers to promote mathematical language use and development, including Principle 1. Principle 1 focuses on scaffolding tasks and amplifying language so students can make their own meaning. The materials state that "Teachers can make language more accessible by amplifying rather than simplifying speech or text. Simplifying includes avoiding the use of challenging words or phrases. Amplifying means anticipating where students might need support in understanding concepts or mathematical terms and providing multiple ways to access them."
- The materials include scaffolds teachers can use for students as they develop and use academic vocabulary. As stated in the Supporting Diverse Learners section of the *Teacher Resource Guide*, "Sentence frames can support student language production by providing a structure to communicate about a topic. Helpful sentence frames are open-ended, to amplify language production, not constrain it. The table shows examples of generic sentence frames that can support common disciplinary language functions across a variety of content topics." Several sentence frames and starters are listed in a chart for teacher guidance. For example,

the materials use sentence frames and discussion starters to scaffold the use of vocabulary when speaking and writing about mathematics within the lesson. For example, in Unit 5, Lesson 12, Activity 1 provides the following discussion support: "Display sentence frames to support whole group discussion. 'First, I _____ because ___,' 'I noticed _____ so I ___'."

- The materials include guidance for scaffolding student development and vocabulary use. The *Teacher Resource Guide* suggests, "Use choral response or repetition to give all students opportunities to produce verbal output and to support the transfer of new vocabulary to long-term memory." Principle 3 also states, "Conversations act as scaffolds for students developing mathematical language because they offer opportunities to make meaning simultaneously, communicate that meaning (Mercer & Howe, 2012; Zwiers, 2011) and refine the way content understandings are communicated."

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 include embedded teacher guidance to prepare for and facilitate robust student discourse grounded in quality tasks and concepts that use appropriate academic vocabulary, specifically through the Mathematical Language Routines provided in select activities in each unit. This guidance for discourse includes vocabulary and syntax to support conversations using sentence starters and sentence frames. The Supporting Diverse Learners section of the *Teacher Resource Guide* states, "Mathematical Language Routines (MLRs) are instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language. The MLRs included in this curriculum were selected because they simultaneously support students' learning of mathematical practices, content, and language."
- The materials include guidance for teachers to support conversations that provide opportunities for students to hear, use, and refine math language with peers. The *Teacher Resource Guide* states, "The materials foster conversation so that students voice their thinking around mathematical ideas and support the teacher in using those ideas to meet the mathematical goals of the lessons. Additionally, the first unit in each grade level features lesson structures that build a math community, establish norms, and invite students into mathematics with accessible content. Each lesson offers the teacher and students opportunities to learn more about one another, develop mathematical language, and become increasingly familiar with the curriculum routines."
- Materials include support for teachers to facilitate mathematical conversations that allow students to hear, refine, and use language with peers to develop their mathematical language toolkit over time. The Supporting Diverse Learners section of the *Teacher Resource Guide* states, "Students are expected to say or write mathematical explanations, state assumptions, make conjectures, construct mathematical arguments, and listen to and respond to the ideas of others. To advance the mathematics and language learning of all students, the materials

purposefully engage students in sense-making and using language to negotiate meaning with their peers." For example, students in Unit 5, Lesson 11, Activity 1 work with their partner to discuss if they agree and show their reasoning. The Activity Synthesis states, "Select previously identified students to share their responses and reasoning. Display their work for all to see. As students explain, describe the strategies students use to show equivalence. Ask if others in the class showed equivalence the same way."

- The materials provide a set of discussion questions, tasks, and exemplar responses in each lesson throughout all units that can be used to facilitate discourse without limiting student responses, guiding students to exemplar responses to questions and tasks using their developed mathematical language. The Student-Facing Task Assessment questions provided at the end of each activity include a "Note for Evaluating Student Response" to each question, which gives the teacher an exemplar response. For example, Advancing Student Thinking in Unit 5, Lesson 11, Activity 1, states, "If students do not explain how the pairs of fractions are equivalent, consider asking: 'What does it mean for fractions to be equivalent? How could we show both fractions to determine if they are equivalent?'" The *Teacher Resource Guide* "provides commentary on expected student responses and opportunities to advance students' thinking. Adjust instruction depending on what students are doing in response to the task. Ask the suggested questions to gain insight into students' thinking."

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 materials include process standards that 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.

- The materials include a How to Use These Materials section that contains The Math Process Standards Chart. The chart outlines the TEKS process standards that are integrated in the materials.
- The materials include evidence of the process standards within the Activity Narrative description of each lesson. The mathematics process standards aligned to the lesson are in parentheses at the end of the description.

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

- The How to Use These Materials section describes how process standards are incorporated and connected throughout the course. It states, "The Math Process Standards describe the types of thinking and behaviors students engage in as they are doing mathematics." For example, "Students have an opportunity to explore the tools before they are asked to use them to represent mathematical situations in later lessons."
- The online materials include evidence of a description of how process standards, or mathematical practices, are connected throughout the course. In the How to Use These Materials section of the Teacher Guide, there is a Math Process Standards Chart section that states, "Teachers will notice that some instructional routines are generally associated with certain mathematical practices." Following, there is a description of how instructional

routines throughout the course align with mathematical practices. The chart also demonstrates how process standards connect throughout the course.

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

- The materials include a description for each unit of how process standards are incorporated and connected throughout the unit. In the How to Use These Materials section, there is a Math Process Standards Chart. This chart correlates the process standards present in each unit of the materials and each lesson.
- The materials include a Process Standards Integration Document for the TEKS and illustrate how the process standards build and connect throughout the units by connecting the student expectation with a narrative description of how the process standard(s) are represented in the units.

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

- The materials include a description for each unit of how process standards are incorporated in the lessons. In the How to Use These Materials section, there is a Mathematical Process Standards Chart. This chart provides a useful overview of how the process standards are incorporated into each lesson.
- Mathematical Process Standards are found in the warm-up activity of every lesson throughout the units. In the A Typical IM Lesson section, the materials state that the warm-ups "place value on students' voices as they communicate their developing ideas, ask questions, justify their responses, and critique the reasoning of others."

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 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 think mathematically. According to the Design Principles included in the *Course Guide* of materials, "Teachers also guide students in understanding the problem they are being asked to solve, ask questions to advance students' thinking in productive ways, provide structure for students to share their work, orchestrate discussions so students have the opportunity to understand and take a position on the ideas of others, and synthesize the learning with the whole class at the end of activities and lessons." For example, in Unit 3, Lesson 7 requires students to use various subtraction strategies, including the standard algorithms, and encourages them to utilize strategies that make sense. The Number Talk warm-up states, "The purpose of this Number Talk is to elicit students' strategies and understandings for subtracting numbers within 1,000. These understandings help students develop fluency and will be helpful as students relate subtraction algorithms to strategies they have used to subtract within 1,000."
- Materials provide students opportunities to think mathematically through the teacher questions provided in the Advancing Student Thinking section of the lessons. According to the Design Principles section of the *Teacher Resource Guide*, "Effective teaching requires being able to support students as they work on challenging tasks without taking over the process of thinking for them (Stein et al., 2000)." As the teacher gains insight into student learning, "The Advancing Student Thinking section provides teachers questions that advance student understanding of mathematical concepts, strategies, or connections between representations." For example, in Unit 3, Lesson 1, Activity 1, Advancing Student Thinking, the materials state, "If students don't match base-ten numerals to the other representations, consider asking: 'What does each digit in the number represent?' and 'How could we use what

each digit represents to match it to another representation?'" This requires students to think mathematically about numbers represented in different forms.

- Materials provide opportunities for students to persevere through solving problems. The Design Principles included in the *Course Guide* are as follows: "The curriculum materials include classroom structures that support students in taking risks, engaging in mathematical discourse, productively struggling through problems, and participating in ways that make their ideas visible. Through these classroom structures, teachers will have daily opportunities to learn about and leverage their students' understandings and experiences and how to position each student as a capable learner of mathematics." For example, in Unit 3, Lesson 5, Activity 2, students are tasked with comparing two addition strategies and exploring the process of an algorithm. It states, "The purpose of this activity is for students to consider how the composition of new tens and hundreds are recorded in the algorithm they saw in the previous activity. Students interpret the work and thinking of others and discuss the similarities and differences in two different strategies for finding a sum. Students see that in Elena's algorithm, when the sum of the digits in a place has more than one digit, a newly composed ten or hundred is recorded as '10' or '100' above the addends, while the remaining value is recorded as a single digit below the addends. The synthesis clarifies how to record newly composed units when adding two numbers."
- Materials allow students to persevere through problem-solving and engage in productive struggle. The Design Principles section of the *Teacher Resource Guide* states, "The curriculum materials include classroom structures that support students in taking risks, engaging in mathematical discourse, productively struggling through problems, and participating in ways that make their ideas visible." For example, in Unit 2, Lesson 4, Activity 1, students create and describe rectangles of a given area. The Activity Narrative states, "The goal of this activity is to get both partners in a group to draw the same rectangle without looking at each other's drawing."
- Materials provide opportunities for students to make sense of mathematics. According to the Design Principles in the *Course Guide*, "Students learn mathematics by doing mathematics, rather than by watching someone else do mathematics or being told what needs to be done. Doing mathematics can be defined as learning mathematical concepts and procedures while engaging in mathematical practices, reasoning abstractly and quantitatively, making arguments and critiquing the reasoning of others, modeling with mathematics, making appropriate use of tools, attending to precision in their use of language, looking for and making use of structure, and expressing regularity in repeated reasoning. By engaging in mathematical practices with their peers, students can see themselves as mathematical thinkers with worthwhile ideas and perspectives." For example, in Unit 3, Lesson 5, the Synthesis presents students with a scenario in which the standard algorithm for the addition was performed backward and challenges students to determine if using the strategy in this way would make sense. The Lesson Synthesis states, "Display an expression from the last activity, such as 174+352." In this lesson, we have been adding from right to left, starting with the one's place. Let's look at this expression again. Let's consider what would happen if we started adding from the left with hundreds of place." Work with the class to find the sum, setting it up like Elena's algorithm, but start by adding the hundreds. Teachers should be prepared to ask, "What would happen next?" or "Can we add from left to right?"

- The materials include opportunities for students to make sense of math using various strategies and contexts. The materials include problems with real-world context. The Design Principles section of the *Teacher Resource Guide* states, "Doing mathematics can be defined as learning mathematical concepts and procedures while engaging in the mathematical practices sense of problems ..." For example, Unit 2, Lesson 10 Activity Narrative states, "The purpose of this activity is for students to solve a real-world problem involving area. The activity includes a rectangle where the side lengths are labeled. When students solve problems with multiple solutions and have to choose and justify a solution, they make sense of problems and persevere in solving them." Students use the real-world context of finding the area of a wall to paint in a community garden.

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

- Materials support students in understanding that there can be multiple ways to solve problems and complete tasks. For example, in Unit 3, Lesson 12, the narrative states, "Students have learned several subtraction algorithms in prior lessons. Now, students consider when it makes sense to use an algorithm and when it makes sense to use another strategy, such as those learned in grade 2. Students will consider how thinking about the numbers in the problem can help them use their knowledge of subtraction to subtract within 1,000 flexibly."
- Materials support students in understanding that there can be multiple ways to solve problems and complete tasks. Materials include lessons and units that introduce students to representations and encourage them to make sense of them. The Design Principles section of the *Teacher Resource Guide* states, " ...students are given opportunities to make connections between different representations and the concepts and procedures they represent. Over time, they will see and understand more efficient methods of representing and solving problems, which supports the development of procedural fluency." For example, in Unit 4, Lesson 10, Activity 2, the narrative states, "In this activity, students are given expressions that represent strategies for finding the area of rectangles. The strategies are based on the distributive and associative properties of multiplication." In this task, students must understand that there can be multiple ways to represent strategies for finding areas and use these strategies to solve the given task and problems.
- Materials support students in explaining that there can be multiple ways to solve problems and complete tasks. For example, in Unit 4, Lesson 20, the narrative states, "Previously, students use base-ten blocks, diagrams, and other representations or strategies to reason about division within 100. In this lesson, they extended and formalized this work by writing a series of equations to find the value of a quotient. In analyzing various strategies to represent division, students reinforce their understanding of place value, properties of operations, and the relationship of multiplication and division."
- In the *Teacher Resource Guide*, materials include curriculum design principles and explanations of how they support teachers and students in the development of learning mathematics, including explaining multiple ways to solve problems and complete tasks. The

Instructional Routines design principle has the specific purpose of supporting students in explaining and communicating mathematics. As stated in the Design Principles section of the *Teacher Resource Guide*, "While each routine serves a different specific purpose, they all have the general purpose of supporting students in accessing mathematics, and they all require students to think and communicate mathematically." For example, Unit 1, Lesson 10 Warm-Up uses the instructional routine "How Many Do You See?" In groups of two, students view images of dots and subitize using grouping strategies and skip counting before explaining with math language "how many more." Following the task, students solve similar problems, explaining how many dots they see and how they see them.

- Materials support students in justifying that there can be multiple ways to solve problems and complete tasks. According to the Instructional Routines Section of the *Course Guide*, "Instructional Routines are interaction designs that invite all students to engage in the mathematics of each lesson. They provide opportunities for students to bring their personal experiences and mathematical knowledge to problems and discussions. They place value on students' voices as they communicate their developing ideas, ask questions, justify their responses, and critique the reasoning of others." Students are given opportunities to justify and support their mathematical strategies and findings in problems and tasks featured throughout the lessons included in the materials. For example, in Unit 2, Lesson 1, Activity 1 requires students to compare shapes and justify their ideas to partners. The Lesson Synthesis states, "Which shapes did you change your mind about as you discussed your ideas with your partner? Consider asking: 'What questions do you have?' 'Do you agree with their reasoning?' 'Did you justify your choice in a different way?'"
- The materials include opportunities that require students to justify that there are multiple ways to solve a problem and complete tasks. The Design Principles section of the *Teacher Resource Guide* defines doing math as " ...making arguments and critiquing the reasoning of others." For example, Unit 1, Lesson 3, Activity 2 Narrative guides teachers to ask, "When it's your turn to share, explain your thinking so that it is clear to your partner,' and 'When it's your turn to listen, pay close attention to your partner's explanation. If you disagree or are unclear about a statement they make, ask questions or discuss the disagreement.'" The Activity Narrative suggests a task for students to justify their strategies to complete it, stating, "Consider asking them to create a visual display that shows their reasoning and include details to help others understand their thinking."

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

- Materials are designed to require students to make sense of mathematics through doing math with peers and teachers. The Design Principles Section of the *Course Guide* outlines the collaborative structure of the materials and emphasizes the concept of "learning mathematics by doing mathematics." The Design Principles state, "By engaging in the mathematical practices with their peers, students have the opportunity to see themselves as mathematical thinkers with worthwhile ideas and perspectives" and, "The teacher has many roles in this framework: listener, facilitator, questioner, synthesizer, and more. In all these roles, teachers

must listen to and make use of student thinking, be mindful about who participates, and continuously be aware of how students are positioned in terms of status inside and outside the classroom. Teachers also guide students in understanding the problem they are being asked to solve, ask questions to advance students' thinking in productive ways, provide structure for students to share their work, and orchestrate discussions so students have the opportunity to understand and take a position on the ideas of others, and synthesize the learning with the whole class at the end of activities and lessons." For example, in Unit 3, Lesson 6, Activity 1, students work with addition strategies with partners. The materials provide teacher support to facilitate meaningful partner work and provide guiding questions. It states, "Discuss with your partner how the newly composed ten and hundred were recorded differently in the two methods. 2–3 minutes: Partner discussion. Share student responses. Now, work with your partner to try the second method of recording to find each sum in the second set of problems. 5–7 minutes: Partner work time. Monitor for student work where the second method of recording is used to share during the synthesis."

- Materials are designed to require students to make sense of math by doing it with peers and teachers. As the Design Principles section of the *Teacher Resource Guide* states, "Students learn math by doing math ...By engaging in the mathematical practices with their peers, students have the opportunity to see themselves as mathematical thinkers with worthwhile ideas and perspectives." For example, in Unit 5, Lesson 2, Activity 1, the narrative directs teachers to demonstrate how to fold strips of paper to make fractions and share how they partitioned and labeled the parts with a partner.
- Materials are designed to require students to make sense of mathematics through writing about math with peers and teachers. The Key Structures in this Course section of the *Course Guide* explains that the materials embed writing opportunities through open-ended written response questions and journaling. As stated in the Key Sections in This Course section of the *Teacher Resource Guide*, "Writing can be a useful catalyst in learning mathematics because it not only supplies students with an opportunity to describe their feelings, thinking, and ideas clearly, but it also serves as a means of communicating with other people (Baxter et al., 2002; Liedtke & Sales, 2001; NCTM, 2000). NCTM (1989) suggests that writing about mathematics can help students clarify their ideas and develop a deeper understanding of the mathematics at hand. It explains that writing about math can help students progress in their learning, and "To encourage the use of journal-writing in math class, we have provided a list of journal prompts that can be used at any point in time during a unit and across the year. These prompts are divided into two overarching categories: Reflections on Content and Reflection on Beliefs and Feelings." In addition to journaling, the materials have embedded written response questions that require students to write about their mathematical ideas and justify or explain their thinking. For example, in Unit 3, Lesson 6, the Cool-Down asks students, "Would you use an algorithm or another strategy to find the value of 299+179? Explain your reasoning."
- Materials are designed to require students to make sense of mathematics through discussing math with peers and teachers. As stated in the Instructional Routines section of the *Course Guide*, the materials are designed to embed mathematical discussions and collaboration in each lesson. It states, "Each lesson begins with a Warm-Up Routine intentionally designed to elicit student discussions around the mathematical goal of the lesson. The Lesson Activity Routines embed structures within the tasks of the lessons that allow students to engage in the

content and collaborate in ways that support the development of student thinking and precision with language." For example, in Unit 3, Lesson 6, Number Talk Warm-Up, students are tasked with discussing strategies for adding within 1,000. The materials provide the following discussion prompts: "What made these numbers easier to add mentally? Consider asking: 'Who can restate _____ 's reasoning in a different way?' 'Did anyone have the same strategy but would explain it differently?' 'Did anyone approach the problem in a different way?' and 'Does anyone want to add on to____'s strategy?'"

- Materials are designed to require students to make sense of math through discussion with peers and teachers. According to the Key Sections in This Course section of the *Teacher Resource Guide*, "Opportunities for communication, in particular classroom discourse, are foundational to the problem-based structure of the IM K–5 Math curriculum ...Opportunities for each area (speaking, writing, reading, and listening) are intentionally embedded directly into the curriculum materials through the student task structures and supported by the accompanying teacher directions." For example, in Unit 7, Lesson 3, Activity 1 asks students to play a game of Mystery Quadrilateral by asking each other questions. The Activity Synthesis guides the teacher in leading a discussion on what types of questions help solve the mystery. The Activity Narrative states, "Students play a round of this game against the teacher. In the next activity, students will play this game in groups of two."

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. As stated in the Key Structures in this Course section of the *Teacher Resource Guide*, "Opportunities for each of these areas (speaking, writing, reading, listening) are intentionally embedded directly into the curriculum materials through the student task structures and supported by the accompanying teacher directions." For example, Unit 2, Lesson 10, Activity 1 Activity Synthesis guides teachers, "Consider asking: 'How do you know that would be enough to cover the whole wall? Would there be paint left over? Enough to paint how many square yards?'"
- The materials guide students to share their problem-solving approaches using explanations. For example, activities suggest students use explanations to share in discussions. Unit 1 Lesson 5 Activity 1 suggests teachers monitor students who use the term *multiple* in their explanation. In Activity 2, students "Reason about factors and multiples and use the vocabulary in their explanations."
- Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including arguments. The Design Principles section of the *Teacher Resource Guide* states, "Doing mathematics can be defined as learning mathematical concepts and procedures while engaging in the mathematical practices—making sense of problems, reasoning abstractly and quantitatively, making arguments and critiquing the reasoning of others ..." For example, in Unit 2, Lesson 1, Activity 1 guides teachers, "Are there shapes you still disagree about? Have students share their justifications for any lingering disagreements."
- The materials provide opportunities for students to reflect on their problem-solving approaches with explanations and arguments. For example, the Activity Synthesis in Unit 1, Lesson 2 Activity 1 states, "Before we walk around and look at all the posters, take a minute to reflect on the numbers you worked with. What did you notice and wonder as you worked on this activity?" Unit 2 Lesson 9 Activity 1 states, "When students analyze and criticize the

reasoning presented in the activity statements and when they discuss their work with classmates, they are critiquing the reasoning of others and improving their arguments."

- Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including justifications. The How to Use These Materials section of the *Teacher Resource Guide* states that one of the "I can" statements students can make while engaging in Mathematical Practice is, "I can explain or show my reasoning in a way that makes sense to others." For example, Unit 2, Lesson 2, Activity 1 Activity Synthesis states, "Tell your partner which shape in each pair you thought was larger. Explain how you decided." The materials guide teachers to allow partners to discuss for three minutes and monitor for justifications about how much space each shape covers and disagreements students discuss.
- The materials provide opportunities for students to share and reflect on their problem-solving approaches with justifications. Unit 2, Lesson 6, Optional Activity 2 states, "As students discuss and justify their decisions, they share a mathematical claim and the thinking behind it."

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

- Materials offer guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions. As stated in the A Typical IM Lesson section of the *Teacher Resource Guide*, "Next-day supports, such as providing students access to specific manipulatives or having students discuss their reasoning with a partner, are recommended for cool-down responses that should be addressed while continuing to the next lesson. Teachers are directed to appropriate prior grade-level support for cool-down responses needing more attention." For example, Unit 2, Lesson 2 Cool-Down guides teachers to check for students who incorrectly record an area different from the number of square tiles in the figure. The Next Day Supports states, "During the launch of the next day's lesson, have students discuss how covering a figure with several square tiles tells us the area of the figure in square units."
- Materials offer teacher guidance in providing explanatory feedback based on student responses and anticipated misconceptions in each lesson cool-down. As stated in the Assessment section of the *Teacher Resource Guide*, "When appropriate, guidance for unfinished learning, evidenced by the cool-down, is provided in two categories: next-day support and prior-unit support. This guidance is meant to provide teachers ways to continue grade-level content while giving students the additional support they may need." For example, Unit 2, Lesson 8, Cool-Down guides teachers to look for student misconceptions and responses about not accurately multiplying the side lengths or counting the square inches in the rectangle. The Next Day Supports states, "During the launch of the next day's lesson, have students brainstorm ways to find the total number of square units in a rectangle where no square units are visible. The work in this lesson builds from measurement concepts developed in a prior unit."