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Houghton Mifflin Go Math! 3-5 Program Summary

Section 1. Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS) Alignment

Grade	TEKS Student %	TEKS Teacher %	ELPS Student %	ELPS Teacher %
Grade 3	100%	100%	N/A	100%
Grade 4	100%	100%	N/A	100%
Grade 5	100%	100%	N/A	100%

Section 2. Concept Development and Rigor

- Materials concentrate on the development of the primary focal areas outlined in the TEKS.
- Concepts sequence from concrete to representational to abstract (CRA), and materials provide some support to teachers in understanding and developing students' progression along the CRA continuum.
- Materials support coherence and connections between and within content at the grade-level and across grade levels. Resources build vertical content knowledge by accessing prior knowledge; however, lessons do not help teachers and students understand future concept progression.
- Tasks are of high-quality and engage students in the appropriate level of rigor and complexity as identified in the TEKS.
- Students have opportunities to apply mathematical knowledge and skills to solve problems in new contexts, including those arising in everyday life and society.

Section 3. Integration of Process Skills

- Materials develop students' abilities to use and apply a problem-solving model that is transferable across problem types and grounded in the TEKS.
- Students have opportunities to develop their self efficacy and mathematical identity by sharing strategies and approaches to tasks and selecting appropriate tools for the work, concept development, and grade (e.g., calculator, graphing program, virtual tools).
- Materials prompt students to effectively communicate and justify mathematical ideas, reasoning, and their implications in multiple representations.

Section 4. Progress Monitoring

- Materials include developmentally appropriate diagnostic tools; however, little guidance is provided for teachers and students to monitor progress.
- Guidance is provided for teachers and administrators to analyze and respond to data; however, administrators are not provided with the guidance or tools needed to support teachers.
- Materials include frequent, integrated formative assessment opportunities and routine progress monitoring opportunities.

Section 5. Supports for All Learners

- Materials include guidance, scaffolds, supports, and extensions that maximize student learning potential; targeted instruction and activities are provided for students who struggle with content mastery.
- Instructional methods appeal to a variety of learning interests and needs.
- Materials include supports for English Learners (ELs) with sequenced and scaffolded linguistic accommodations commensurate with various levels of English language proficiency.

Section 6. Implementation

- Materials include a cohesive, year-long plan with practice and review opportunities that support instruction.
- Materials are designed in a way that allows Local Education Agencies the ability to incorporate the curriculum into district, campus, and teacher design and considerations; however, there is no specific guidance for implementation that ensures the sequence of content is taught in an order that is consistent with developmental progression of mathematical concepts and skills.
- The visual design of student and teacher materials is neither distracting nor chaotic.

Section 7. Additional Information

- The publisher submitted the technology, cost, and professional learning support worksheets.

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2.1 Materials concentrate on the development of the primary focal area(s) for the grade-level.

- Materials spend the majority of concept development of the primary focal areas for the grade-level as outlined in the TEKS.
- Materials strategically and systematically develop students' content knowledge as appropriate for the concept and grade-level as outlined in the TEKS.
- Materials provide practice opportunities for students to master the content.

Meets 4/4

The materials provide students enough practice opportunities to master content as outlined in the third grade Texas Essential Knowledge and Skills (TEKS). Instruction is strategic and systematic, spending the majority of time dedicated to the primary focal areas for the grade level.

Evidence includes but is not limited to:

The materials spend the majority of time covering the primary focal points for grade 3, as outlined in the TEKS. According to the introduction to the "Teacher Edition," this is by design, as all instruction is "grouped around each Texas focal area." The table of contents supports this claim, identifying relevant focal areas covered in the first five of six units. Four units include the following focal points: place value and properties of operations (including data analysis), multiplication and division, fractions as numbers and equivalent fractions, and characteristics of 2-D and 3-D geometric figures. The remaining two units reinforce learning by spiraling the focal areas and using them as the basis for higher-level algebraic instruction and personal financial literacy.

In the Teacher Edition, each unit has a scope and sequence summarizing the essential question related to the focal concepts. It also describes the necessary knowledge and skills, vocabulary, mathematical processes, and concepts for before, during, and after modules. Each unit contains smaller components, or modules, that target specific TEKS within the larger focal area. Fifteen of the twenty total modules are solely devoted to grade 3 focal areas. Unit 6, which includes one module, is the only unit that does not directly address a primary focal area. However,

according to the “Texas Essential Knowledge and Skills for Mathematics Correlations” within the Teacher Edition, TEKS from key focal areas are spiraled throughout subsequent units, including Unit 6, allowing for additional opportunities to apply and reinforce key concepts.

The Teacher Edition also summarizes the systematic philosophy behind the introduction and development of students’ mathematical understandings. Lessons open with a context-based problem before building to more abstract problems along the way. Throughout each lesson, students use a variety of manipulatives, representations, pictures, and symbols. These manipulatives, models, and rigorous problems allow students to “move beyond a basic level of learning to develop deep conceptual understanding.” The bulk of the beginning two units (13 modules) begin with simpler numeric and operational concepts. Unit 1 includes place value and fraction content and then gradually progresses to modules on addition and subtraction. Eight modules in Unit 2 present and build upon the new skills of multiplication and division; the materials devote a greater amount of time to concepts that are new to grade 3 students. Later modules cover geometry, measurement, and data analysis with previous concepts like number sense and operations embedded and spiraled into the tasks. For example, a Unit 3 module includes measurement concepts integrating time, volume, and weight. Students use fractions (a previously studied concept) and apply representing fractions to distances on a number line.

Throughout the materials, students have ample practice opportunities to master content. The student edition includes practice problems for each lesson: “Share and Show” problems for students to practice with teacher assistance, problem-solving problems to practice either with a classmate or independently, “HOT” (Higher-Order Thinking) problems, and additional practice problems included at the end of the lesson. There is also a separate “Homework and Practice” section offering short-answer and multiple choice problems for students to solve. While spiraled practice is not included in the student edition, previous concepts can be reviewed during “Are You Ready?” formative assessments at the beginning of each lesson. These assessments are in an ancillary resource and not in the student edition, and teachers can also access additional review opportunities in the online “Interactive Student Edition.”

In Module 2, students learn how to represent fractions. Specifically, fractions being equal parts of a whole, representing fractions with pictorial models and number lines, naming fractions with an understanding of numerators and denominators, and decomposing fractions into units. This understanding carries into Module 3, where students are given multiple opportunities to practice comparing fractions using models and manipulatives, comparison symbols, and comparison statements.

In Module 10, students practice division by physically manipulating concrete materials, drawing different arrays, and analyzing pictorial models presented on grid paper. At the beginning of Module 13, students revisit these concepts by first discussing the question, “What is division?” The teacher then uses the Interactive Student Edition to digitally display strategies that can be used to divide by six. Students then work independently, completing a set of problems on the

digital platform to practice and show mastery. Platform capabilities include interactive manipulatives, engaging graphics, personalized interfaces, formative assessments, and rewards.

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2.2 Materials sequence concepts from concrete to representational to abstract (CRA) as is appropriate for the grade-level and content.

- Materials include a variety of types of concrete models and manipulatives, pictorial representations, and abstract representations, as appropriate for the content and grade level.
- Materials support teachers in understanding and appropriately developing students' progression along the CRA continuum.

Partially Meets 2/4

The materials appropriately sequence concepts from concrete to representational to abstract (CRA). Instruction integrates a variety of models, manipulatives, pictorial representations, and abstract representations throughout. However, teachers do not receive adequate support in understanding and appropriately developing students' progression along the CRA continuum.

Evidence includes but is not limited to:

Materials state in the Introduction that "Lessons begin with context-based situations and then build to more abstract problems. All along the way, students use models, manipulatives, quick pictures, and symbols to build mathematical understandings." The "Interactive Student Edition" contains a tool button in which students can explore and manipulate items, helping them link manipulatives to symbols. These online manipulatives include base-ten blocks, geometry sketches, and strip diagrams. "iTools Virtual Manipulatives" is another online resource students can use to interact with digital manipulatives. For non-virtual manipulatives and representations, the "Teacher Resources Blackline Masters" includes manipulatives that can be copied for student use; fraction bars and three-dimensional shape nets, for example. While lesson design and tasks acknowledge the CRA continuum, there is a lack of specific guidance for teachers to identify student understanding along the phases. Teachers do not have the support necessary to move all students through the CRA continuum. Teachers can move generally between concrete and abstract representations, but students do not receive individualized intervention for this progression.

Each module includes instruction utilizing concrete models, manipulatives, pictorial representations, and abstract representations to introduce and review mathematical concepts. For example, in Module 1, students begin by watching the teacher model the number 12,654 using base-ten blocks and a place-value chart. The students then model their own numbers using base-ten blocks and write the number as a sum of its place values. When complete, they practice how to read and write numbers using digits and words.

In Module 2, students are introduced to unit fractions. Teachers first present the concept using a pan of brownies, then represent the concept pictorially using a brownie pan graphic. The class then moves more generally to a picture of fraction bars depicting the same quantity. Later in the lesson, students write the number one as a sum of four unit fractions before explaining their thinking. A teacher note reminds teachers, "Problem 7 requires students to extend their thinking as they determine how to write the number 1 as a sum of four unit fractions. You may want to encourage students to use fraction strips as needed to solve the problem." This suggestion is general and does not quite support teachers in understanding their students' progression along the CRA continuum.

Module 3 focuses on comparing fractions and contains all three representations along the CRA continuum. For concrete, students create fraction models using paper, fraction strips, and tiles. For pictorial representations, there are fraction shapes to show wholes and circles to show fractions of a set. In addition, students have access to number lines, and pictures of food (pizzas and sandwiches) separated into equal parts. For abstract representations, the materials give fraction comparisons for students to compare using symbols and sentences.

In Module 6, students build a foundational understanding of whole number multiplication by interacting with numerous types of representations along the CRA continuum. Coming into the module having experience with number lines when working with rounding and fractions, students first use number lines to practice skip counting and showing multiplication. They create equal groups with counters and drawings and use strip diagrams to build an initial understanding of a multiplication expression. These representational models are familiar to students considering their previous experience using repeated addition to combine equal groups. The materials guide the teacher to make this connection by asking, "Why do you think this addition can be called repeated addition?"

In Module 17, students use rulers to measure perimeter. They begin by discussing how they have used rulers in the past and how rulers can be used to measure various objects. The teacher asks, "What is the problem you are trying to solve? (Find the perimeter of the triangle). What tool are you going to use? (A ruler). What are you going to measure with the ruler? (The perimeter of the triangle)." The students estimate the perimeter, then finally measure it with a ruler. This example is appropriate to the content considering this lesson is an introduction to perimeter.

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2.3 Materials support coherence and connections between and within content at the grade-level and across grade levels.

- Materials include supports for students to build their vertical content knowledge by accessing prior knowledge and understanding of concept progression.
- Materials include tasks and problems that intentionally connect two or more concepts as appropriate for the grade-level.
- Materials provide opportunities for students to explore relationships and patterns within and across concepts.
- Materials support teachers in understanding the horizontal and vertical alignment guiding the development of concepts.

Partially Meets 2/4

Instructional materials appropriately and intentionally connect concepts so that students can access cross-curricular relationships and patterns. While they often build vertical content knowledge by accessing prior knowledge, there are no module or lesson overviews to help them understand future concept progression. Additionally, there are few teacher supports meant to help them understand how concepts build over time or how concepts connect within grade-level and across grade levels.

Evidence includes but is not limited to:

The Teacher Edition includes a “TEKS for Mathematics Correlation” table listing the grade-level TEKS. Spanning each unit and learning module, teachers can determine where specific standards exist in the curriculum; Learning opportunities and assessments are listed down to the page number. While this table allows teachers to see how standards are distributed throughout the modules, there is little rationale explaining concept organization and development over time. There is no specific guiding document or integrated teacher supports meant to explain how concepts build in depth, breadth, or complexity over time.

Through lesson-specific “Are You Ready?” formative assessments located in the “Assessment Guide,” each lesson requires students to access prior knowledge before moving forward. These daily two-problem reviews build some connections between lessons over time. There is no specific follow-up direction for teachers following these assessments, but according to the Assessment Guide, “If several students have trouble with the Are You Ready? items, teachers may wish to review concepts before teaching the next lesson.”

The beginning of each unit includes a “Unit and Modules at a Glance” section detailing prerequisite skills that apply to the unit. However, this section does not help teachers understand how module concepts build over time or how the materials vertically align with future grades. For example, Unit 2 identifies the following necessary prerequisite skills: counting equal groups, skip counting by twos and fives, and understanding the meaning of division. An early lesson also includes a “Get Ready Game” meant to prepare students for the unit. The game “gives students an opportunity to practice making equal groups in preparation for the content taught in this unit,” as well as reinforces the relationship between multiplication and division.

In Module 1, students practice the new skill of rounding 4-digit numbers to the nearest thousand and 5-digit numbers to the nearest ten thousand. When introducing the concept, the teacher reminds students that the skill is similar to the second-grade skill of rounding 2-digit numbers to the nearest ten and 3-digit numbers to the nearest hundred. Accessing this prior knowledge before introducing new grade-level content provides valuable context to students. Also in this module, the teacher connects two concepts when reviewing standard form; she integrates both addition and place value knowledge into instruction. Sample prompts include: “What is fourteen thousand, four hundred nine in standard form? 14,409. Explain what the 0 in 14,409 means. The 0 means there are no tens. How would you write fourteen thousand, four hundred nine in expanded form? 10,000 + 4,000 + 400 + 9.”

When practicing multiplication in Module 6, students explore the relationship between multiplication and addition. In this activity, they use multiplication to appropriately increase recipe ingredients. First, they try to adjust the recipe by using repeated addition; then, they try making the modifications using multiplication. The last activity of the lesson is a group discussion comparing the two methods. Students reflect on the activity and answer the questions, “What is an advantage to using multiplication to solve this problem?” and “In order to use multiplication, what must be true about the number of objects in each group?” These types of questions help students recognize the relationship between multiplication and addition, but also how multiplication is different from addition.

Instruction often integrates “real world” applications into Digital Lesson Openers and initial problems so students can access their prior knowledge. These problems are designed to engage students where they are in their understanding, yet the overarching tasks often integrate new learning from the upcoming lesson. They serve as an appropriate bridge between what

students know and what they are about to learn. In Module 7, real-world problem-solving connections include using data from a pictograph and generating a multiplication number sentence. For these questions, students have to determine how many tickets were sold for a play, the total number of strings found on various instruments, and the number of shapes used in a quilt. Not only do these questions require the application of math concepts in context, but they ensure students connect two or more concepts almost daily.

Module 14 explicitly makes connections between patterns within our place value system and patterns on an addition table. Teachers have access to prompting questions like, “What patterns are in our place-value system?” and “What might you say about the relationship between each row in the addition table and the row after it?” before pointing out the similarities between the two tables. When students later study area in Module 16, the materials support connection between area and multiplication. Students use repeated addition to find the area of a garden shaped like a rectangle, before then using multiplication to find the area. Through the study of area, students examine the relationships between addition and multiplication, helping them develop a deeper understanding of each concept before they move into the associative and distributive properties.

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2.4 Materials are built around quality tasks that address content at the appropriate level of rigor and complexity.

- Tasks are designed to engage students in the appropriate level of rigor (conceptual understanding, procedural fluency, or application) as identified in the TEKS and as appropriate for the development of the content and skill.
- Materials clearly outline for the teacher the mathematical concepts and goals behind each task.
- Materials integrate contextualized problems throughout, providing students the opportunity to apply math knowledge and skills to new and varied situations.
- Materials provide teacher guidance on anticipating student responses and strategies.
- Materials provide teacher guidance on preparing for and facilitating strong student discourse grounded in the quality tasks and concepts.

Partially Meets 2/4

The materials are built around quality tasks that address content at the appropriate level of rigor and complexity. Contextual problems are integrated throughout, providing students the opportunity to apply math knowledge and skill to new and varied situations. Teachers receive some guidance outlining mathematical concepts, goals behind each task, and anticipated student responses. Additionally, the materials do not provide enough teacher guidance on executing strong task-based student discourse.

Evidence includes but is not limited to:

Students navigate CRA tools, models, and understandings with increasing depth and complexity. For example, they explore introductory fraction concepts in Modules 2 and 3: generating equal shares, naming fractions and their parts, and using models to compare fractions. The order of subtraction lessons within Module 5 follow a logical sequence: estimating differences, using place value to subtract, combining place values to subtract, and finishing with problem-solving with addition and subtraction. By Module 13, students are combining their subtraction skills with multiplication and division to solve two-step word

problems. Later in Module 16, students apply fraction concepts by decomposing pattern blocks and exploring the areas of each part. Each Module begins with an Essential Question, mathematical process description, and a list of associated TEKS. However, teachers do not have access to a clear outline describing the mathematical concepts and goals behind each task. Teacher guidance is provided *while* students complete tasks, but not prior. These reminders generally occur in lesson call-out boxes and include key point reminders, questions to ask, and possible student responses.

Modules 1 and 2 require students to apply their math knowledge to contextualized problems and real-world situations. In Module 1, students represent a four-digit number using one or more models: place-value charts, base-ten blocks, or quick pictures. Later in the module, they apply this concept when comparing the number of different types of snacks sold at a football game. These questions include a "Real World" symbol indicating they are contextual and require students to apply their math knowledge. In Module 2, a "Real World" symbol appears next to the following problem: "The first pizzeria in America opened in New York in 1905. The pizza recipe came from Italy. Look at Italy's flag. What fraction of the flag is not red?" Students revisit this situation later in the module when they review fractions by analyzing parts of a whole pizza. While these modules integrate contextual problems throughout, no guidance helps the teacher revise content so that it is relevant to their specific students, backgrounds, and interests.

Often the materials include possible student responses meant to help the teacher understand what to expect. Only one "Common Errors" support is given per lesson, but each support is paired with a teacher tip meant to help students correct the error. For example, in Module 3, students practice comparing fractions using a number line. A common error for students is to count the marks on a number line instead of the spaces, therefore labeling points on a number line incorrectly. The materials suggest having students use a fraction strip to align above the number line. Students can then label the number line based on the parts on the fraction strip.

Lessons also include "Math Talk" and "Go Deeper" sections meant to help teachers facilitate student discourse. Unlike the Common Errors section, these sections do not include redirections for student misconceptions. Instead, these features are meant to provide students an opportunity to communicate their mathematical ideas. However, questions often limit student responses by looking for one specific answer instead of generating discussion. A Math Talk in Module 14 prompts teachers to say, "Explain how the array represents the problem. How do the factors relate to the array?" Instead of opening a general discussion about arrays, this prompt is looking for a specific response about this specific problem. Outside of these sections, there are no additional resources that prepare teachers to facilitate student discourse. Nor are there any rubrics, evaluation tools, or feedback methods for teachers to measure student discussion.

Module 17 includes the following discussion prompt: "Have students discuss what mathematical operation they might use to solve the problem." Teachers have access to

additional probing questions like, “Why did you choose this mathematical operation?” and “Have students discuss different ways to measure the distance around an object.” Next, students actually measure objects in the classroom using the methods they just discussed. These questions provide more of an introduction to the topic rather than an opportunity for concept discourse. The lesson itself, measuring perimeter, is developmentally appropriate and includes some prompting questions that gauge student understanding: “Explain why you used subtraction to solve the equation” and “How can you check your answer?” Again, these questions are looking for a specific answer rather than promoting discourse.

Along with the Common Errors section, the student edition sometimes includes a section called “Error Alert” so students can recognize their own errors. In Module 19, students practice data analysis using frequency tables, pictographs, bar graphs, and dot plots. When analyzing tables, students may mistakenly represent a pattern. An Error Alert reminds students to “check that your pattern will work for all the numbers in the table.” In this specific lesson, they measure the number of batteries per flashlight, and the built-in safeguard places valuable responsibility on the students themselves to check their work.

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2.5 Materials include cohesive, year-long plan for students to develop fluency in an integrated way.

- Materials include teacher guidance and support for conducting fluency practice as appropriate for the concept development and grade.
- Materials include a year-long plan for building fluency as appropriate for the concept development and grade.
- Materials integrate fluency at appropriate times and with purpose as students progress in conceptual understanding.
- Materials include scaffolds and supports for teachers to differentiate fluency development for all learners.

Meets 4/4

While there is no specific year-long plan for building fluency, students do receive integrated, appropriate, and purposeful fluency instruction throughout the year. Lessons progress as students develop their conceptual understanding, and authentic spiraling of content guarantees grade-level proficiency. Enough teacher guidance ensures fluency practice is appropriate for the concept development and grade. Additionally, teachers have access to high quality supports that aid fluency differentiation for all learners.

Evidence includes but is not limited to:

The core instructional tool “Go Math!” is paired with additional ancillary materials like “Strategies and Practice for Skills and Fact Fluency” (Primary K–3 and Intermediate 3–6) and “Achieving Facts Fluency.” Though not explicitly identified as fluency resources, the supplemental “Grab-and-Go” activities, “Mega Math” online games, and the digital “Soar to Success” resource provide additional opportunities for students to practice prerequisite and grade-level fluency skills. While there is no year-long plan for building fluency, the materials outline the correlation and sequence between these resources. For example, as the year progresses, the correlation guide in “Achieving Facts Fluency” specifically tells teachers which

fluency practice to use with each lesson. Fluency lessons are organized into 15–30 minute "Basic Facts Workshops" that can be completed in pairs, small groups, or whole group. They come with clear, step-by-step instructions, including class structure, reproducible worksheets, and guiding questions.

These workshops range in level of fact fluency from level three to level six and are paced so they align with the "Go Math!" modules and lessons. Levels three and four cover basic facts for all operations, while levels five and six approach a given topic using number sense. These levels correspond to grade-level proficiency (three and four) and above grade-level proficiency (five and six). The "Strategies and Practice for Skills and Fact Fluency" (Primary K–3) resource also includes level one and two workshops for students who are struggling to meet grade-level fluency expectations.

The "Achieving Facts Fluency" program "gives students opportunities throughout the school year to learn, practice, and to master basic facts for addition, subtraction, multiplication, and division, as well as computational skills for whole numbers, fractions, and decimals." Teachers can use the "Basic Facts Strategies" section to access general tips to improve fluency instruction whenever appropriate. For example, "Use multiplying by 10 to multiply by 9. To find 7×9, think 7×10=70. Subtract the 7, the factor that is not a multiple of 10, from the product (70-7=63)." The resource has another suggestion when multiplying by fours: "relate learning the twos to learning the fours. For example, since 2×3 = 6, then 4×3 is double 6, or 12."

Workshop lessons are paired appropriately and integrated authentically with lessons from the core curriculum. When students estimate differences in Module 5, the teacher should use the workshop focused on strengthening students' ability to subtract two- and three-digit whole numbers. Other workshops covering more foundational skills are understandably paired with more lessons in the curriculum.

That being said, each lesson includes scripted instruction, routine description, and an explanation describing how the activity builds upon fluency skills. When teachers cover estimation and rounding in Workshop Level 5, Lesson 3, they can choose between either small group or whole group instruction. Either way, the lesson begins with students discussing real-world situations requiring them to estimate two- and three-digit numbers. The teacher then writes an addition problem on the board that is connected to one of the students' examples. After brainstorming the different estimation strategies they could use to answer the problem, students estimate using the estimation strategy that makes the most sense to them. Together they debrief the different estimation strategies and practice implementing them appropriately. Later in Workshop Level 5, Lesson 11, teachers lead a step-by-step fluency lesson on multiplying by seven. After reminding students they have already practiced multiplying by most single digits, the teacher draws a seven by seven array on a grid transparency. Together there is a discussion about the different ways to split the array into parts, and then students finish by practicing their multiplication skills.

Along with general workshop prompts and reminders, teachers can differentiate instruction using the many assessment materials. The Assessment Guide includes a “Prerequisite Skills Inventory” to assess students at the beginning of the school year. While this individual assessment is not fluency-specific, each instructional unit begins with a diagnostic assessment producing tier one, two, and three recommendations that are specific to fluency. For example, when students are using place value to subtract, teachers measure students’ understanding of the prerequisite skills using the “Are You Ready?” assessment 5.2 found in the Assessment Guide. Depending on how well students access the lesson concepts, the teacher can differentiate using the three provided lesson options as needed. The “Strategies and Practice for Skills and Fact Fluency” resource also includes a “Cumulative Practice” section containing 30 facts for each skill taught in the workshops. After each set of problems, students evaluate themselves using self-reflection to determine which facts they should focus on moving forward. This section can “assist in basic facts practice, serve as a tool for review, or provide assessment.”

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2.6 Materials support students in the development and use of mathematical language.

- Materials include embedded opportunities to develop and strengthen mathematical vocabulary.
- Materials include guidance for teachers on how to scaffold and support students' development and use of academic mathematical vocabulary in context.

Meets 4/4

Students receive consistent and embedded opportunities to strengthen their mathematical vocabulary. This instruction is paired with contextual scaffolding and teacher guidance, promoting student development and use of mathematical language.

Evidence includes but is not limited to:

Each unit begins with a "Vocabulary Builder" section that introduces new vocabulary and reviews previous vocabulary. Each Vocabulary Builder has two components, "Visualize It" and "Understand Vocabulary." In the Visualize It section, students complete graphic organizers to interact with new terms, and in the Understand Vocabulary section, they match terms to their definitions. Students can complete these worksheets individually or with partners. While vocabulary development is not the specifically stated learning goal for the Vocabulary Builder section, they do include a "Mathematical Processes" icon indicating their tasks are aligned to a process standard. Additionally, units start with a cross-content "Reading and Writing Math" activity, usually a book where students can make connections to the math concepts and vocabulary. Through intentional teacher prompting, students use math vocabulary while discussing the book. After the Reading and Writing Math activity in Unit 1, the teacher asks, "What if you didn't have paper, pencil, or a calculator? Explain how you would use mental math to solve this problem." During this discussion, the teacher encourages students to use words from the Vocabulary Builder before actually applying mental math to the specific problem. With

the correct teacher support, this is a valuable opportunity for students to strengthen their mathematical language in context.

The Unit 2 Vocabulary Builder includes a Visualize activity where students use a Venn diagram to sort words related to *division* and *multiplication*. For the Understand Vocabulary activity, students use the new vocabulary words for three fill-in-the-blank questions matching terms with definitions. While some of these terms may be unfamiliar or new to third grade students, the class debriefs definitions before moving on. To begin the lesson on the Commutative Property of Multiplication, the teacher points out the arrays at the top of the page and explains their significance to the topic. Together they read *Amanda Bean's Amazing Dream: A Mathematical Story* during the Reading and Writing activity, and the teacher encourages students "to use math vocabulary as they discuss the story's math concepts." These consistent strategies provide students a strong foundation for mathematical language development.

Individual lesson guides begin with stating vocabulary words, defining them, and then modeling them in context. Words are then used throughout the lesson and reinforced in future lessons. Questions strategically use these words, and teachers rephrase sentence stems so students use them in their responses. For example, in Module 2, Lesson 1, teachers introduce the terms *whole* and *equal parts* by asking, "What have you shared with a few friends? How did you decide how many parts to divide the object into so that each of you got the same amount?" Later, students apply their new vocabulary to other familiar concepts like *equal parts* of the week (days) and *equal parts* of the day (hours). Students continue using these terms in Module 3 as they transition from representing fractions to comparing fractions. In Module 6, students explore these concepts in a real-world context. They use four circles to represent four cakes, then draw three apples within each circle to show how many apples Tomeka needs for each cake. Afterward, they "explain how the picture you drew shows groups of equal size," but in this case, they are not required to answer using the term *equal parts*. Nor does the possible student answer require they use the new vocabulary in context. That being said, the general discussion still provides students an opportunity to strengthen their mathematical vocabulary. Finally, a formative assessment is given at the end of each module, including a vocabulary fill-in-the-blank section.

The "Teacher Resource Book" contains blackline masters for all vocabulary cards used during instruction. These cards include definitions written in student-friendly language paired with illustrations or pictures to help students visualize what the terms mean. Students organize their vocabulary cards in an easy to access format and teachers "encourage students to consult their Math Word Files to confirm meanings and check spellings." The "Teacher and Students Interactive Editions" also includes a "Multimedia Glossary" where students can review lesson vocabulary through an interactive experience including audio, diagrams, world historical context, and hyperlinks to related words. For example, the Multimedia Glossary for Module 5, Lesson 2 defines *inverse operations* and highlights the related words: *addition*, *subtraction*, *multiplication*, and *division.* While students should already be familiar with these math concepts, the hyperlinks provide additional scaffolding for students who struggle. There are

also professional development videos available to teachers guiding them through precise mathematical language usage. During each video, a model teacher demonstrates how she works from current student knowledge, promotes mathematical connections, and achieves precise math language in her classroom.

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2.7 Materials provide opportunities for students to apply mathematical knowledge and skills to solve problems in new and varied contexts, including problems arising in everyday life, society, and the workplace.

- Materials include opportunities for students to integrate knowledge and skills together to successfully problem solve and use mathematics efficiently in real-world problems.
- Materials provide students opportunities to analyze data through real-world contexts.

Meets 4/4

The materials provide students numerous opportunities to apply mathematical knowledge and skills to solve problems in new and varied contexts. Many of these opportunities require real-world problem solving and demand data analysis through real-world contexts.

Evidence includes but is not limited to:

Most lessons provide students an opportunity to apply math concepts to real-world problems; some of these opportunities include scoring points on a computer game, voting in a school election, selling tickets for a school play. For example, in Module 9 Lesson 1, students solve the following real-world, multi-step problem: “Shania makes a scrapbook about her trip to the state capitol. She makes 2 sections about the history and 4 sections about what she saw. Each history section has 30 pages, and each section about what she saw has 20 pages. How many pages does Shania’s scrapbook have?” To solve the problem, students have to access current grade-level knowledge on the distributive property and multiples of 10, as well as knowledge from previous grade levels on adding two-digit numbers. Each lesson also contains at least one “HOT” (higher-order thinking) multi-step problem presented in a real-world context. For example, the HOT problem from Module 9 Lesson 3 states, “Ava’s class bought 6 packages of

balloons for a school celebration. Each package had 30 balloons. If 17 balloons were left over, how many balloons were used for the party?" Though the lesson object involves multiplying multiples of ten by a one-digit number, this problem requires that students apply previously learned skills to solve the multistep problem.

While problem-solving tasks are present in every lesson, several lessons are solely dedicated to problem-solving: making sense of the problem, planning a strategy, and constructing an answer justification. In these lessons, students first read the problem, break down what they are trying to accomplish, identify which information is necessary, and decide on a strategy or method to solve the problem. Teachers can provide workspace suggestions and sentence stems to help scaffold appropriately. Some of these suggestions include making a table, drawing a diagram, or acting the problem out. After solving each problem, students discuss the successful and most efficient solution strategies. As a general classroom resource, students have access to the problem-solving "Math Board." This graphic organizer was introduced in a previous grade level and helps students unlock word problems. It has the following sections: Read, What do I need to find? What information am I given?; Plan, What is my strategy?; and Solve, Show how to solve the problem. The reverse side is for "Show how you know" with suggestions for Quick Pictures, Share and Show, and Essential Questions.

The materials provide opportunities for data analysis as well. For example, in Module 1, students learn about place value to the hundred thousands place. When identifying digits and their values, table data shows the population of various cities in the United States; Students analyze the data, use their knowledge of the base-ten place value system, and answer questions about the cities. Later in the school year, Module 19 is dedicated to data analysis. In this module, students have multiple opportunities to analyze data in frequency tables, pictographs, bar graphs, and pictographs. The context of these figures include favorite ice cream flavors, the lengths of students' shoes, field trip choices, the number of books read, and the number of letters in students' names. These real-world problems are grade-level appropriate and require students to record, interpret, and analyze data.

The ancillary resource, "TX English Teacher Edition STEM Activities Grade 3," provides lessons and activities that link science and math concepts together. These opportunities provide students a stronger understanding of how mathematics can be used in their own lives. For example, in Unit 3, Lesson 6, students make bagels to explore chemical changes. A two-step math question in the lesson states: "You can make 100 bagels with 10 pounds of flour. How many bagels can you make with 20 pounds of flour? Show your work." The additional "Grab-and-Go" kit also includes activities requiring students to analyze science content area data. They use animal lifespan cards (such as "Mouse 4 years" or "Canary 22 years") to create a data table based on life span length. Students then make a pictograph summarizing the data from their data tables and answer questions related to the real-world problem.

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2.8 Materials are supported by research on how students develop mathematical understandings.

- Materials include cited research throughout the curriculum that supports the design of teacher and student resources.
- Materials provide research-based guidance for instruction that enriches educator understanding of mathematical concepts and the validity of the recommended approach.
- Cited research is current, academic, relevant to skill development in mathematics, and applicable to Texas-specific context and demographics.
- A bibliography is present.

Partially Meets 2/4

While introductory components cite some research and materials seem to follow a research-based design, the research scope is limited. Of the research that was cited, there was a lack of Texas-specific context and demographics. There is a limited bibliography that does not span the full extent of instructional materials, and there is little instructional guidance meant to enrich educators' understanding of math concepts.

Evidence includes but is not limited to:

Prior to the first unit of instruction, the Teacher Edition (TE) cites research about the design of instructional materials. The Introduction states, "Our unique organization lets you completely focus on your grade level TEKS, with all instruction grouped around each Texas focal area. The process standards are completely integrated - weaving knowledge and skills together so students use and apply math." One section titled "Mathematical Process Standards" lists the specific curriculum features that support the process standards. In this section, some important research-based instructional techniques remain general: "representing problems in different ways is a useful tool for building understanding and communicating mathematical ideas (NCTM, 2000)." The section also discusses how the "Math Talk" and "Go Deeper" sections provide

students opportunities to communicate their mathematical ideas, citing the following research: “the most productive discussions around mathematical ideas seem to happen in classrooms where students question each other about their work (Kline, 2008).” The same section notes that students engage in problem-solving activities when using the Problem-Solving MathBoard: “understanding is a result of solving problems and reflecting on the thinking done to solve the problems (Lambdin, 2003).” Materials go on to describe their concrete, representational, abstract (CRA) approach to developing students’ conceptual understanding and procedural fluency. Lessons begin with “context-based situations and then build to more abstract problems. All along the way, students use models, manipulatives, quick pictures, and symbols to build mathematical understandings.”

The section, “Texas Essential Knowledge and Skills for Mathematics,” includes research by author Matthew R. Larson, Ph.D. K-12 Curriculum Specialist for Mathematics of Lincoln Public Schools. Larson asserts that the materials use TEKS as a starting point for its “comprehensive system of mathematics instruction that provides teachers the tools and resources to support students’ successful mastery of the TEKS.” The section describes the curriculum’s deep integration of the mathematical process standards with the content knowledge and skills of the TEKS. The curriculum is “research-based and includes multiple instructional approaches, diagnostic assessments linked to differentiated instructional resources, tiered interventions, and technology solutions” designed to ensure student success. Larson states that the program is “research-based,” however, he does not reference specific research for this claim beyond what is cited in the article.

This limited research is somewhat current, academic, relevant to mathematics, and applicable to Texas-specific context. Cited research ranges from 2000–2012 and comes from sources like *Education Week, Teaching Children Mathematics, Teaching mathematics through problem-solving: Prekindergarten–Grade 6*, the National Center for Education Statistics, and the National Council of Teachers of Mathematics. The most dated citation comes from the National Council of Teachers of Mathematics in 2000. The program does not describe the context and demographics of the research used to design the program. Citations only include national data sets, such as the Nation's Report Card, and national mathematics standards. A bibliography is present for the two sections in the introduction but not throughout the instructional materials. Additional cited research remains minimal, and educators have few opportunities to deepen their own understanding of mathematics.

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3.A.1 Materials develop student ability to use and apply a problem-solving model.

- Materials guide students in developing and practicing the use of a problem-solving model that is transferable across problem types and grounded in the TEKS.
- Materials prompt students to apply a transferrable problem-solving model.
- Materials provide guidance to prompt students to reflect on their approach to problem-solving.
- Materials provide guidance for teachers to support student reflection of approach to problem-solving.

Meets 4/4

Throughout the materials, students use and apply a problem-solving model that is both transferable across problem types and grounded in the TEKS. When finished, students reflect on their problem-solving approach and teachers have the necessary guidance to support this reflection when necessary.

Evidence includes but is not limited to:

The "Mathematical Process Standards" section of the Teacher Edition states: "students are expected to use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students engage in these problem-solving activities when they use a structured plan such as the 'Problem-Solving MathBoard' to solve problems. This offers a consistent approach to unlocking problems that builds success." The Problem-Solving MathBoard includes three parts: *Read*, *Plan*, and *Solve*. In the *Read* section, guiding questions include, "What do I need to find and what information am I given?" The *Plan* section asks, "What is my plan or strategy?" Finally, the *Solve* section gives students space to solve the problem using computations, record necessary steps, describe how to act out the problem, draw a diagram to explain the answer, and complete tables or sentence stems; this section varies based on the type of problem students solve. This problem-solving

model is first introduced in Module 5, where students are working on the operations of addition and subtraction. After introduced, the problem-solving model can be found explicitly modeled and/or practiced in the majority of subsequent modules.

For modules that include the problem-solving model, lessons begin with two problems for students to fill in. After these two problems, students follow a routine called “Unlock the Problem.” Teachers have access to different tips to help students if they are struggling with the content. This routine usually begins with the teacher and student working together on a problem. Then, students follow a step-by-step format to answer a related question with teacher support. This routine is useful in that it explains in detail the multiple steps necessary to complete a task. Many times teachers present one way to solve a problem and then follow up with another way to solve the problem. The teacher has access to certain prompts that promote student reflection; other times, the “Math Talk” call-outs prompt students to reflect on their problem-solving approach.

Module 4 Lesson 6 is an early lesson requiring students to apply a problem-solving model. They follow three steps to determine the total amount of money from a collection of coins and bills. Steps include first counting bills, finding the value of each coin, and then adding the two amounts together to find the total. In Module 5, students first use the Problem-Solving MathBoard to solve multi-step problems. Before completing the lesson, students reflect on their approach to problem-solving; as a class, they answer the essential question: “How can you use the strategy ‘draw a diagram’ to solve one- and two-step addition and subtraction problems?”

Module 6, Lesson 3, has students draw strip diagrams to model multiplication. After first reading the problem, students determine what the question is asking, what information is given, and what plan or strategy to use. Teachers follow step-by-step prompts to support student problem-solving, and then at the end students answer the question, “How can you tell if you answered the question and if your answer is reasonable?” The materials help teachers measure and respond to student understanding with the possible answer: “I can read the problem again to make sure I answered the question, and then I can try solving the problem a different way to make sure my answer is reasonable.”

In Module 9, Lesson 1, students apply the Read, Plan, Solve model through a digital lesson on the distributive property. Teachers lead a discussion about MathBoards, and students consider how the resource helps them organize their problem-solving. Students apply a similar problem-solving model in Module 10, but instead, they use physical counters to act out a division problem. To conclude the lesson, they reflect on their approach by discussing the questions, “How does acting out the problem help to solve it?” and “How do you know your answer is correct?”

Later in Module 15, Lesson 3, students use the “Draw a Diagram” strategy, but not the other steps of the Read, Plan, Solve model. They draw and label a Venn diagram to show one way to sort shapes (parallelogram, rectangle, square, trapezoid, and rhombus). In this case, students practice the problem-solving strategy, but not within the context of a full problem; they are transferring part of the model to this specific context.

Finally in Module 19, Lesson 1, students use data tables to make comparisons. After completing the Read, Plan, Solve model, students share their work. At this point in the year, students “should be able to communicate the steps they used.” Once complete, the class discusses the following prompts: “What strategy did you use to solve the problem?” “Why did you choose that strategy?” “How is a frequency table helpful in solving problems?”

As an additional resource, teachers have access to professional development videos that guide them through problem-solving techniques. During each video, a model teacher demonstrates how she works from current student knowledge and promotes mathematical connections. In one of the videos, the teacher helps her students identify their own errors when calculating an amount of money. She models how to critique reasoning aloud, and then students try it themselves. In another video, the teacher guides her students through fraction questioning and discussion as they analyze their own reasoning. The materials also provide some problem-solving resources in the “Teacher Resources Blackline Masters” for student usage.

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3.A.2 Materials provide opportunities for students to select appropriate tools for the task, concept development, and grade.

- Materials provide opportunities for students to select and use real objects, manipulatives, representations, and algorithms as appropriate for the stage of concept development, grade, and task.
- Materials provide opportunities for students to select and use technology (e.g., calculator, graphing program, virtual tools) as appropriate for the concept development and grade.
- Materials provide teacher guidance on tools that are appropriate and efficient for the task.

Meets 4/4

Students have substantial opportunities to select appropriate real objects, manipulatives, representations, technology, and algorithms as they work. These opportunities reflect task need, concept development, grade, and age. Additionally, teachers receive enough instructional guidance to ensure students select tools that are appropriate and efficient for each task.

Evidence includes but is not limited to:

In the interactive Student Edition, students have ample opportunities to use both physical and virtual tools during instruction. They use student pages to draw on directly, photographs for analysis, and computation depictions for modeling. Throughout the lessons, the "Problem-Solving MathBoard" provides students the opportunity to "show how you know" and justify solutions using their chosen method. In the online Student Edition, students have access to a range of virtual manipulatives such as base-ten blocks and three-dimensional figures. Each virtual manipulative includes a *Help* section instructing students how to use different tools for different purposes. "Math on the Spot" videos provide additional guidance to both students

and teachers if necessary. These videos go into a further depth description of which tool to use and how to use them correctly. A toggle feature allows students to explore different virtual manipulatives within the same task and decide for themselves which object, manipulative, or tool is appropriate. Also available to teachers, the “Teacher Resources” section of each lesson provides teachers tool guidance. For example, when teaching estimation, this section scripts out how to reinforce strategies, addresses common errors, suggests manipulatives, and provides intervention strategies.

An additional virtual resource called “Math iTools G3-6” provides students a library of online manipulatives that allow them to explore mathematical ideas through various representations; these tools include virtual base-ten blocks, number lines, fraction strips, graphs, and tables. Relevant iTools are listed and summarized at the beginning of each Unit and Module at a Glance. When a lesson references a physical manipulative or tool, the same manipulative or tool can be accessed digitally. Each “object” comes with provided tutorials and prompts to support student and teacher understanding. For example, when a student needs counters to complete a multiplication question, they can find virtual Math iTool counters along with a specific set of instructions for the activity. A separate set of instructions is available when students use counters for addition or subtraction.

In Module 3, students use physical tools when comparing fractions. At the beginning of the module, students use square pieces of paper to fold and shade, representing a quilt they are designing. In small groups, students use these quilt designs to compare shape usage. Here they use pictorial fraction strips and number lines to aid in their comparison. Later in the module, students use fraction circles, fraction rectangles and squares, and pictures of food divided into equal parts to compare fractions with the same numerator or the same denominator.

In Module 6, Lesson 4, students interact with array models for the first time. In the Lesson Opener, teachers facilitate a discussion meant to help students understand how to use the tool: “Ask students to look at the image of the leaves lined up in rows and columns. Ask students to discuss how this model makes it easier to solve the problem.” A teacher sidebar reminds them of possible errors students may make when creating arrays, like not using the correct number of rows or columns.

Students move from arrays to shape maps in Module 15, Lesson 5. Using these maps and manipulatives, students chart faces, edges, and vertices of several three-dimensional solids. Then, they discuss how these qualities and characteristics are related. To conclude the lesson, students respond to the following question in writing: “How are the faces of a rectangular prism alike? How are they different?”

By Module 19, students progress to using online graphing tools so they can represent and analyze data. Initially, they graph data by hand using blank graphing templates provided in the textbook. Once students have enough practice completing this task, they access digital

templates via iTools. Each type of graph used in the textbook has a corresponding template in iTools, and when students input data the graphs immediately generate results.

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3.A.3 Materials provide opportunities for students to select appropriate strategies for the work, concept development, and grade.

- Materials prompt students to select a technique (mental math, estimation, number sense, generalization, or abstraction) as appropriate for the grade-level and the given task.
- Materials support teachers in understanding the appropriate strategies that could be applied and how to guide students to more efficient strategies.
- Materials provide opportunities for students to solve problems using multiple appropriate strategies.

Meets 4/4

Students have ample opportunity to select appropriate strategies and techniques for the work, concept development, and grade. These opportunities include solving problems using multiple strategies. Teachers receive enough support to understand each strategy and ensure students consistently choose the most efficient one.

Evidence includes but is not limited to:

The instructional design integrates authentic opportunities for students to learn multiple appropriate strategies for solving problems. When lessons introduce a concept, often there are example problems that show “One Way and Another Way” or “One Way and Other Ways.” Multiple strategies are modeled and practiced in these examples. For example, when students divide by six, “One Way” is to divide by making equal groups; “Other Ways” include writing related multiplication facts and using factors. Throughout the remainder of the lesson, students have the opportunity to explore all possible strategies and techniques before choosing which method is best. Both students and teachers receive support helping them understand fully the different strategies that could be applied to a problem. Students have multiple “Math Talk” prompts that guide reflection and consideration of the similarities and differences between

strategies. For teachers, the Teacher Edition includes additional information regarding the purpose of Math Talks, as well as the specific understandings that students should gain by the end of each lesson.

In Module 3, students learn different strategies to compare fractions. In all, students learn how to solve these problems using pictures, comparison sentences, and the same denominator/same numerator strategy. They practice each strategy one at a time; during this part of the module, explicit instruction determines which strategy students should use: "Use fraction strips and a number line" for this problem. After mastering each, they are able to apply the best strategy when appropriate: "Encourage students to use any of the methods they have learned to compare the fractions."

At the beginning of Module 4, students review rounding with both the place value method and the number line method. Students should have some experience with these two methods from previous grade levels. After reviewing each separately, they discuss how the methods are similar and different. When completing practice problems, they may use either method as necessary. This freedom is continued into Module 4 as students practice finding the difference between two numbers. Again, students review two different strategies first: place value and combining place values. Later in the module, students get to decide which strategy they want to use when solving addition problems. This is slightly different from Module 4 practice in that students apply techniques to a new but related task.

In Module 6, students develop several strategies for multiplication: repeated addition, making equal groups, skip counting on a number line, drawing strip diagrams, creating arrays, and using the commutative property of multiplication. To promote a deeper understanding of how these strategies relate to one another, a Math Talk prompt asks students to consider how grouping can be similar to a number line. The Teacher Edition guides teachers through teaching this concept: "focus on students' understanding of how to show equal groups on a number line. Make sure students understand to start at zero and jump the same number of spaces each time." These supports ensure students use different techniques but also understand their purpose and relationship.

In Module 9, students begin to multiply two-digit numbers. Early lessons focus on using distributive properties and partial products when multiplying; The standard algorithm is not presented until later in the module. In Lesson 2, students use strategies for multiplying multiples of ten, beginning with base-ten pictures and then progressing to more efficient methods using number lines and place value. Materials state, "These strategies will help students make connections between multiplication and the number system, counting, and place value." Lesson 3 provides the following teacher sidebar support: "Properties are an important part of developing mental math skills. Knowing how to change the order and grouping of numbers will help students recognize situations where mental math can be used instead of paper and pencil." This reminder helps teachers communicate the rationale behind

the activity. By Lesson 5, students can decide between the partial products algorithm and the regrouping technique when solving a selection of problems.

Students move on to dividing two-digit numbers in Module 12. Moving from strategy to strategy, teachers model each concept following a step-by-step guide. Lessons also include additional context about the strategies themselves. When students divide using equal circle groups, the Teacher Edition informs the teacher: this strategy is "division as partitioning into equal groups and connecting the model to recording division." When students apply this concept, they take time to *think* and *record*. They *think* about what the different parts represent, how many are in all, how many equal groups, and how many in each group. Then, students *record* their thinking using a division sentence and a long division format. These practices help build a strong understanding, ensuring students understand how the many strategies work and how they relate to one another.

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3.A.4 Materials develop students' self efficacy and mathematical identity by providing opportunities to share strategies and approach to tasks.

- Materials support students to see themselves as mathematical thinkers who can learn from solving problems, make sense of mathematics, and productively struggle.
- Materials support students in understanding that there can be multiple ways to solve problems and complete tasks.
- Materials support and guide teachers in facilitating the sharing of students' approaches to problem solving.

Meets 4/4

Students successfully develop self-efficacy skills and a mathematical identity through opportunities to share with one another. Engaging in reflection and discussion, they build an understanding that there can be multiple ways to approach a problem. Teachers help facilitate this skill, and by the end of the year, students successfully see themselves as mathematical thinkers.

Evidence includes but is not limited to:

Students have daily opportunities to communicate their thinking to peers and teachers. Lessons begin with a "Making Connections" lesson opener meant to engage all students in a discussion about mathematical concepts. While completing practice problems, different student and teacher "Math Talk" prompts help students build their math identity. Some questions have students reflect on struggle: "What can you do if you don't know how to solve a problem?" Other questions promote student discourse and critical thinking: "What do you think about what she said?" "What do you want to ask her about that method?" "Why did you decide to use…?" Teachers also have access to questions that help facilitate the sharing of students' approaches: "Why did you choose that operation? What did you do first? Why? Why does that operation represent the situation? Why is that a good model for this problem?" Also, many

lessons include a “Share and Show” section during which students complete their work on whiteboards using their own strategies. They then share their work with the teacher and the class, justify their methods, and discuss their understanding.

Higher-Order Thinking (HOT) questions are another major instructional practice that help students develop their confidence, work through productive struggle, and share their approach to tasks. While these problems are designed to offer students a challenge, “Math on the Spot” video tutorials are available in case students need additional support. “Through the Math on the Spot Video Tutor, students will be guided through an interactive solving of this type of HOT problem. Use this video to also help students solve the HOT problem in the Interactive Student Edition.” When students write fraction word problems based on a picture of a pizza, the Math on the Spot teacher models a think-aloud analyzing the task, creating a problem, and working through the steps. Additionally, teachers have access to anticipated student errors that could help students better develop their approach to problem solving. With each mistake in the “Common Errors” section, teachers have suggestions to address the error. This tool is useful for facilitating productive struggle and showing students there can be multiple ways to solve a problem.

Early in the first module of the year, students set the foundation for solving problems and tasks using multiple strategies. Starting with the lesson opener, the teacher models how to represent a four-digit number using place-value charts, base-ten blocks, and quick pictures. Before practicing, students identify which provided information is valuable and which information can be ignored. They discuss how the different models help solve the problem, and end by justifying why they chose their specific model to solve the problem.

Discussion continues in Module 6, Lesson 1, after addition and multiplication practice. Math Talk prompts require students to verbalize how they relate the two concepts. Students discuss the following: “Explain how the picture you drew shows groups of equal size.” and “How would you change this model so you could write a multiplication sentence to match it?”

Then in Module 10, Lesson 4, students explore the relationship between subtraction and dividing. In this lesson, they divide following two methods: repeated subtraction and counting backward on a number line. Provided teacher prompts are meant to promote the critical discussion of these two methods: “Explain in your own words how to subtract to divide” “Why is it important to keep subtracting until you get 0?” “What is an advantage of using division to solve the problem?” These questions require students to critically reflect on the concepts in order to make sense of the underlying mathematics. Then at the end of the lesson, students communicate their understanding through a written response to the question, “How is division related to subtraction?”

Often, HOT questions require students to apply different strategies and techniques to real-world contexts. In Module 14, Lesson 7, the HOT question focuses on a data table containing

information about picnic supplies, the number included in each pack, and the cost of each supply. The problem asks, “What if Tanisha needs 40 bowls for the picnic? Explain how to write an equation with a letter for an unknown factor to find the number of packs she should buy. Then find the unknown factor.” Teacher guidance directs them to support students as they attempt to solve the problem, stating: “Students must write and solve an equation with a letter for an unknown factor. They must find a number that, when multiplied by 6, is close to 40 in order to make sure that Tanisha buys enough packs of bowls.” This open-ended application question requires students to view the world as problem solvers and leverage their toolbox to complete the task.

Throughout Module 18, students approach problems in many different ways. In Lesson 2, students determine elapsed time using two methods: using a number line to find the ending time and using a clock to find the ending time. To conclude this lesson, the teacher facilitates a discussion with the Math Talk prompt, “Explain how to find the starting time when you know the ending time and the elapsed time.” By promoting multiple pathways to a solution, the materials frame problem solving as efficient and generalizable, as opposed to a set of memorized procedures. After continuing their exploration of time in Lesson 3, teachers extend learning by having students explain how they could solve Problems 3 and 4 in two different ways.

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3.B.1 Materials prompt students to effectively communicate mathematical ideas, reasoning, and their implications using multiple representations.

- Materials provide students opportunity to communicate mathematical ideas and solve problems using multiple representations, as appropriate for the task.
- Materials guide teachers in prompting students to communicate mathematical ideas and reasoning in multiple representations, including writing and the use of mathematical vocabulary, as appropriate for the task.

Meets 4/4

Throughout the instructional materials, students have ample opportunities to effectively communicate mathematical ideas and reasoning. These opportunities require them to solve problems and communicate their implications using multiple representations. Teachers receive the necessary guidance to prompt student communication, both verbally and through writing, as appropriate for the task.

Evidence includes but is not limited to:

Each lesson begins with a “Literacy and Mathematics” section that prompts students to effectively communicate ideas through explaining, writing, discussing, and sharing. For example, when students practice dividing into equal parts, students must first respond to the following prompt: “Write a story that involves sharing something equally among friends. Have them draw a picture of what is to be shared and divide it into equal parts using 3, 4, 6, or 8 as the number of parts.” This practice provides students a familiar and consistent opportunity to communicate their math ideas. During practice, they are routinely asked to describe their reasoning with real-life examples, verbal and written explanations, tables and graphs, manipulatives, diagrams, and symbols. Lessons include specific teacher prompts through “Math Talk” and “Go Deeper” sidebars that often include potential student responses. Generally,

teachers can also reference the page of questioning prompts found in the introduction to the Teacher Edition. At the end of each lesson, a "Write Math" prompt requires students to write and respond to the lesson's essential question. These questions usually require justification or explanation of an idea, reasoning, or strategy: "How can you compare fractions with the same denominator?"

To ensure students use mathematical vocabulary, teachers have access to a list of terms for review, preview, and practice. Each unit begins with a "Vocabulary Builder" section introducing students to the different mathematical vocabulary found within the unit. Throughout the unit, vocabulary is defined, reviewed, and used in conversation; teacher question prompts prioritize these terms, and teacher guidance helps promote vocabulary usage in student responses. Students can freshen up on their knowledge either through the Student Edition glossary or the online multimedia e-glossary. These resources offer definitions, pictures, diagrams, and in some cases, world history so students can better grasp vocabulary meaning and usage.

In Module 3, students compare fractions using a variety of representations. They must communicate their understanding via fraction squares, fraction strips, number lines, manipulatives, statements, and symbols. Along with making comparisons, students are given multiple opportunities to communicate their mathematical ideas through both oral and written communication. One of these opportunities is performing an error analysis; Students analyze fraction bar models, find the errors, explain them, and describe how to correct them. Another opportunity is through Math Talk; Students explain why fractions increase in size as they move right on the number line.

Module 10 focuses on the many topics related to division. In Lesson 3, students review many topical vocabulary terms, including *equation*, *dividend*, *divisor*, and *quotient*. Lesson-specific teacher prompts require students to use these vocabulary terms during discussion. The teacher asks the class to "explain how they solved various division problems using the terms *division*, *divisor*, and *quotient* in their explanations." Communication opportunities continue in Lesson 4 when students learn two new methods for dividing: repeated subtraction and counting backward on a number line. Teacher prompts for this lesson conclude: "Explain in your own words how to subtract to divide" "Why is it important to keep subtracting until you get 0?" "What is an advantage of using division to solve the problem?" Teachers help students respond to these prompts by modeling the two methods and providing a think-aloud of the steps. At the end of the lesson, students respond to the Write Math prompt, "How is division related to subtraction?" In the next lesson, several students are chosen to share their preferred method for solving division problems. They can reference the two methods from Lesson 4, or include previous methods like drawing groups or using an array. The Teacher Edition includes rationale for each method in case students need support communicating their ideas. For example, students may draw groups because "it's easier when you can see the problem in a picture." Students may use a number line because "it's easy to count the jumps to get the quotient."

Towards the end of the year, students continue using math vocabulary in their responses and communicate through multiple representations. In Module 17, Lesson 1, the teacher introduces the *perimeter*. She follows the following prompt: “Do you know what the term perimeter means? In this lesson, you will learn how to find the perimeter of a figure. Make sure students understand that perimeter is a measure of the distance around a figure.” Throughout the lesson, students have to use the term in context; to complete the lesson, they communicate their math ideas by producing a poster that describes the perimeter of different classroom objects. In Module 19, Lesson 2, students continue their exploration of graphs and figures with the *pictograph*. The lesson’s main point is that, based on data, quantity must match the pictograph symbols. Students convey their learning by constructing their own pictographs from scratch. They first take a survey and tally their results in a student-created frequency table. Then, they use the collected data to construct a pictograph with appropriate symbols, labels, and key. To end the lesson, students discuss and share how their pictographs are similar and different.

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3.B.2 Materials provide opportunities to discuss mathematical ideas to develop and strengthen content knowledge and skills.

- Materials provide opportunities for students to engage in mathematical discourse in a variety of settings (e.g., whole group, small group, peer-to-peer).
- Materials integrate discussion throughout to support students' development of content knowledge and skills as appropriate for the concept and grade-level.
- Materials guide teachers in structuring and facilitating discussions as appropriate for the concept and grade-level.

Partially Meets 2/4

Students engage in math discourse in a variety of settings, developing and strengthening their content knowledge and skills. These opportunities are grade-level appropriate and are often integrated throughout; however, teachers receive limited guidance in structuring and facilitating these discussions.

Evidence includes but is not limited to:

Each lesson begins with a Lesson Opener that provides students an opportunity to discuss math concepts. These introductions consist of a short digital video and sometimes a shared experience, usually in the form of a modeled problem the students and teacher complete together. Following the quick activity, students discuss prior knowledge, the topic of the day, or provided teacher prompts. During lessons, the materials include continual built-in discussion points. Though the daily lesson structure remains the same, student discussion opportunities reflect where students are within the concept development of the current mathematical idea. When students are at the concrete level of a concept, questions help them think through how to transition from concrete representations to more abstract representations. "Math Talk" call-

outs provide students daily open-ended discussion opportunities. Often they consider the questions on their own before discussing with a peer or in a group. As students are introduced to new strategies, these Math Talks center around why a particular strategy would be useful or preferred over others.

The Teacher Edition includes its own set of Math Talks, "Go Deeper" prompts, and sidebars that offer some discussion interventions. There are scripted sentence starters, sentence stems, questions, and possible student answers to promote mathematical discussion. Though teachers have access to these provided prompts, they are lacking guidance in structuring and facilitating intentional discussion. There are no suggested norms, routines, or grouping strategies for the teacher to move beyond informal and short interaction. The introduction of the Teacher Edition includes a page of general questions to help promote critical thinking, but they are to be used more on a one-to-one teacher-student basis and do not always help peer or group discussion.

In Module 2, students learn how to represent fractions. Teachers begin by introducing fractions as equal shares, and students name fractions as part of a whole using pictorial models. The lesson concludes with students representing fractions on a number line and writing sums as unit fractions. Quick discussion opportunities are integrated throughout, supporting students' development of content knowledge. Math Talk prompts ask students to explain how cookies can be divided into equal shares, determine what number represents the denominator, explain the purpose of numerators and denominators, use fraction strips to model fractions on a number line, and write fractions as a sum of unit fractions. Similar prompts continue into Module 3 as students begin comparing fractions using these representations. Not all Math Talks require discussion, and they rarely occur beyond a teacher-student setting; teachers could better vary how students discuss and with whom.

To start Module 4, Lesson 1, teachers activate prior knowledge by asking the question, "What are the names of the places in a 3-digit number?" Students watch a short video about rounding numbers and respond to video-specific questions: "Why do you think Doc said rounding will help you get a better idea of how high the biplane is?" and "What information is given to you in this problem?" While the first question is better suited for discussion, the second question is asking for a specific answer. This is also true for the lesson's Math Talk call-out: "What is the greatest number that rounds to 50 when rounded to the nearest ten? What is the least number? Students must "explain" their answer here, but potential discussion is limited. There are no additional structure or facilitation suggestions for teachers to further the depth of conversation.

Multiplication concepts are introduced in Module 6. When exploring equal groups, students discuss how repeated addition and skip counting on a number line relate to one another. Later in the module, they discuss how arrays represent multiplication and can display the same product (6 rows of 3 and 3 rows of 6). These consistent opportunities support students' mathematical development as appropriate for the concept; however, these discussions do not take place in a variety of settings. In Modules 7 and 8, students learn specific strategies and

properties of multiplication. Students discuss how the Commutative and Associative Properties can be used to make certain problems easier to solve. This discussion is more open-ended than others. In Module 9, students begin using partial products and the Distributive Property to explore multiplying by 2-digit numbers. Teachers present the traditional multiplication algorithm last, and discussion centers on how to use place value and regrouping to multiply efficiently.

Module 10, Lesson 3 includes questions that promote open-ended discussions about division. Students begin by telling the teacher what they already know about division. As students explore concrete models, the teacher asks a variety of discussion-based questions like, “How do you know your answer is correct?” and “Compare the strip diagram with using counters. How are they alike and different?” These questions appropriately facilitate discussion, but both take place in a whole group setting. During the *Explain* phase of the lesson, students use new vocabulary terms, *dividend, divisor,* and *quotient*, while discussing various ways to record division.

In Module 17, Lesson 3, students participate in some peer-to-peer work after engaging in a whole-class discussion on quadrilaterals. In this activity, students write their own problems for a classmate. They explain the problem, exchange with one another, complete the problems, and check each other’s work. However, they finish with independent practice and do not have a structured opportunity to strengthen their content knowledge through discussion.

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3.B.3 Materials provide opportunities for students to justify mathematical ideas using multiple representations and precise mathematical language.

- Materials provide opportunities for students to construct and present arguments that justify mathematical ideas using multiple representations.
- Materials assist teachers in facilitating students to construct arguments using grade-level appropriate mathematical ideas.

Meets 4/4

Students are given opportunities to construct and present arguments that justify mathematical ideas. Consistently, they are required to use multiple representations and precise mathematical language. Teachers have the appropriate resources and guidance to support these opportunities.

Evidence includes but is not limited to:

The Teacher Edition includes an introductory section titled “Texas Mathematical Process Standards” that provides teachers discussion prompts and student discussion rationale. In this section, the instructional materials communicate the importance of students forming positions and explaining their work; “the most productive discussions around mathematical ideas seem to happen in classrooms where students question each other about their work. ‘Math Talk’ and ‘Go Deeper’ features provide opportunities for students to communicate their mathematical ideas. When students explain and justify their conjectures and ideas, they apply Process (G)” of the mathematical process standards. “At first, students may need prompting to explain their thinking, but they will eventually offer explanations and react to explanations from other students.” To achieve this goal, teachers have access to general/universal teacher prompts,

including: “Will that method always work? How do you know?” “Why do you agree/disagree with what he said?” “What do you want to ask her about that method?” “How can you use math vocabulary in your explanation?” While these prompts are excellent in helping students construct arguments, they are not unique to specific lessons. Instead, teachers have access to Math Talk, Go Deeper, and sidebar prompts to help them facilitate strong student arguments.

Additionally, each lesson has an “Enrich” section that often includes opportunities for students to extend their mathematical arguments and explain their reasoning. For example, when students determine the area of rectangles, the Enrich section requires student justification. First, they have to draw rectangles on a grid paper given the provided dimensions. Next, the teacher increases rigor by multiplying the width by 2, 3, and 4 times. Students must determine how this multiplication affects area, organize their argument, and explain their position using the examples.

In Module 3, Lesson 1, students compare fractions. To begin the lesson, they are presented with the question: “How can you prove that 3/6 is less than 5/6?” Using models to write comparison statements, students work together to try and solve the problem; they have to justify their final answer with this work. To help guide students in their justifications, the teacher has access to an exemplar student answer: “My model shows that 3 of the 6 buttons for Jen are red, and that 5 of the 6 buttons for Maggie are red. So, 3/6 is less than 5/6.” Later in the lesson, students have another opportunity to construct arguments when presented with a fraction model error analysis. They are asked to find the error, explain how to correct it using fraction strips, and orally present their complete argument.

Students use arrays to compare related multiplication and division facts in Module 11. A Go Deeper prompt tells teachers to “Ask students if this is a set of related facts. They should justify their answers.” Additional prompts offer teachers two ways to help students justify their answers: either suggest students generalize about the set quantities or suggest they reference their array models. These types of prompts sufficiently help students construct arguments. However, explicit debate routines and structures could make positions, justifications, and discourse even stronger.

In Module 17, Lesson 1, students measure perimeter using different strategies and manipulatives; these tools include geoboards, rubber bands, paper, pencil, verbal discussion, and a variety of measuring tools. First, they discuss as a class what mathematical operation might help solve a perimeter problem. Then they choose different objects around the classroom, measure their perimeters, and individually justify their specific operation. To conclude the lesson, they order these objects from least to greatest perimeter, compile the different objects on a large poster board, and present their findings to the class.

Students continue this trend of critical thinking in Module 20, Lesson 3, when they examine personal finance. In this activity, they track planned and unplanned expenses and measure their

effect on spending decisions. A Math Talk call-out asks: “What if Carlos sees the baseball glove on sale for $39 next week? Would it be a wise or unwise purchase? Explain.” When presenting their answer, students have to justify their reasoning using content-specific vocabulary.

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4.1 Materials include developmentally appropriate diagnostic tools (e.g., formative and summative progress monitoring) and guidance for teachers and students to monitor progress.

- Materials include a variety of diagnostic tools that are developmentally appropriate (e.g., observational, anecdotal, formal).
- Materials provide guidance to ensure consistent and accurate administration of diagnostic tools.
- Materials include tools for students to track their own progress and growth.
- Materials include diagnostic tools to measure all content and process skills for the grade level, as outlined in the TEKS and Mathematical Process Standards.

Partially Meets 1/2

The materials include a variety of developmentally appropriate diagnostic tools for teachers to monitor student progress. These assessments measure all content as outlined in the TEKS, and appropriate guidance ensures teachers can successfully administer these tools. However, there is no such guidance for students to track their own progress and growth. Additionally, tools to measure Mathematical Process Standards are not included.

Evidence includes but is not limited to:

The “Assessment Guide” includes most diagnostic tools, assessment rationale, and administration guidance within the instructional materials. This document also includes “Individual Record Forms” (IRF) meant to help teachers monitor student performance and guide teachers’ instructional choices. The record forms are aligned to the Texas Essential Knowledge and Skills for this grade level.

The “Prerequisite Skills Inventory” is an assessment administered at the beginning of the school year or as needed when a new student arrives. The data obtained from this assessment provides teachers “information about the review or intervention that students may need in order to be successful in learning the mathematics related to the TEKS for the grade level.” All questions are open-ended, with several asking students about their strategies of thinking instead of a specific numerical answer. For example, questions ask: “What tens fact can you use to find 15 – 7?” “What is a question that can be answered using the pictograph?”

There are three formal multiple choice assessments students take throughout the year. The Beginning-of-Year Test determines which grade-level skills students may already understand. The Middle-of-Year Test assesses the same TEKS as the Beginning-of-Year Test, allowing teachers to track student progress. Like the Beginning-of-Year Test, all questions are multiple-choice, and the format mimics the Texas state assessment. The End-of-Year Test also helps teachers document student growth; this should give them a fair understanding of how well students will perform on their state assessment.

Individual Units and Modules also have their own assessments and tests. Located in the Student Edition, “Module and Unit Assessments” indicate “whether additional instruction or practice is necessary for students to master the concepts and skills taught in the module or unit.” These tests include multiple choice, griddable, and constructed-response items. For example, The Module 2 Assessment includes two fill-in-the-blank problems to assess vocabulary, four constructed-response items, three multiple-choice items, and one griddable item. Located in the Assessment Guide, the “Module and Unit Tests” evaluate student mastery of the module or unit. They mirror the structure of the Texas state assessment, including both multiple-choice and griddable items.

Integrated lesson-specific diagnostic tools also help teachers monitor student progress: primarily “Show what You Know” assessments, “Are You Ready?” checks, “Lesson Quick Checks,” and the “Daily Assessment Task.” The Show What You Know assessments occur early in the unit or module; they measure how well students grasp content from previous grade levels and in previous lessons. The Are You Ready? checks occur at the beginning of each lesson, include two quick multiple-choice questions, and help teachers determine if students have the prerequisite skills necessary to access the content. For example, students complete an Are You Ready? check before exploring the relationships between addition and multiplication. This asks students to complete two tasks: first, they need to solve a repeated addition problem, and second, they need to identify the total number of objects when presented with three equal groups of three. Next, Lesson Quick Checks occur partway through a lesson and help teachers make data-driven instructional decisions. Finally, students complete the Daily Assessment Task at the end of most lessons. This assessment consists of three multiple choice problems formatted to look like the Texas state assessment. Depending on how well students perform, teachers are directed toward interventions or next steps to take.

Outside of the Assessment guide and lesson-specific diagnostic tools, students also have access to the digital Personal Math Trainer (PMT). This online tool is used in conjunction with the Assessment Guide; it monitors student assessments, quizzes, and homework, providing individual targeted support to students. Additional formative assessment opportunities are also available for intervention. Another digital component with assessment capabilities is the *Soar to Success Math Intervention* software. The program adaptive and responds to student proficiency levels throughout each lesson. Program-specific assessments are used to monitor progress and provide customized interventions.

While diagnostic tools measure all content TEKS within the grade level and some from prior grade levels, process skills, as defined by the Mathematical Process Standards, are not directly measured. They are indirectly assessed through the many different formative assessments, but teachers are not equipped to track student progress over time. Additionally, there are no student-facing progress trackers so they can measure their own growth throughout the year.

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4.2 Materials include guidance for teachers and administrators to analyze and respond to data from diagnostic tools.

- Materials support teachers with guidance and direction to respond to individual students' needs in all areas of mathematics, based on measures of student progress appropriate to the developmental level.
- Diagnostic tools yield meaningful information for teachers to use when planning instruction and differentiation.
- Materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data.
- Materials provide guidance for administrators to support teachers in analyzing and responding to data.

Partially Meets 1/2

The materials include some guidance for teachers and administrators to analyze and respond to data from diagnostic tools. Teachers have access to a variety of resources meant to help them plan differentiation. While administrator guidance helps them support teachers as they analyze this data, it does not help them support teachers responding to data.

Evidence includes but is not limited to:

The "Assessment Guide" includes Individual Record Forms (IRF) for all tests. This resource correlates each test item to its related TEKS, and it recommends intervention resources to address student areas for growth. For each test item, teachers have access to common errors, suggestions *why* students may have difficulty with the question, and next steps for intervention

through “Soar to Success Math” and Response to Intervention (RTI) Tier 1 lessons. The web-based Soar to Success intervention program includes additional diagnostic testing, prescriptive data reports, and individualized adaptive instruction. It correlates with TEKS and assessments from the Assessment Guide and the Student Edition. Alternatively, Tier 1 RTI lessons reteach concepts, usually in a whole-group setting. While administrators can support teacher planning using data from these IRFs, the data does not include class, grade level, and school information. Additional administrator-specific guidance is not included. The “Online Assessment System” mentioned in the Assessment Guide could provide relevant data reports; however, reviewers do not have access to this resource.

Additionally, results from the “Prerequisite Skills Inventory” provides information about incoming skills students may need extra support to master. Throughout the school year, Beginning-, Middle-, and End-of-Year Tests help teachers measure and document student growth. The online component could be used to track year-long data, but teachers who only have access to the paper-and-pencil resources will not have the same data-tracking capabilities.

At the beginning of each unit, “Show What You Know” assessments measure student comprehension of content from previous grade levels and content taught earlier in the year. Teachers can use this information as needed to differentiate for the upcoming lessons. For example, the Show What You Know for Unit 2 assesses students’ readiness for grade-level multiplication and division by assessing counting equal groups, skip counting, and the meaning of division. Teachers use this data to identify students in need of small-group, Tier 2 support and one-on-one, Tier 3 support. Based on student results, teachers receive specific intervention recommendations integrating the RTI ancillary, Soar to Success Math, the online *Enrich Book*, and the “Grab-and-Go Differentiated Centers Kit.”

The differentiated math centers found in the Grab-and-Go Differentiated Centers Kit are often integrated into module lessons. However, teachers can also implement them one-on-one based on student needs. Activities include activity cards, games, and short grade-level texts based on a mathematical concept. Teachers can utilize grab and go activities for both reinforcement or extension, but there is limited guidance directing *when* and *how* to leverage them. There is no administrator-specific guidance for this resource.

Within each lesson, the “RTI Quick Checks” provide teachers with information useful when deciding how to move instruction forward. If students miss the questions from the RTI Quick Check, the teacher can differentiate instruction for those students with a specific RTI Tier 1 Lesson. If students need further support, additional Tier 2 and 3 supports are provided. Tier 1 activities are used to reteach a concept, Tier 2 activities address prerequisite skills gaps, and Tier 3 activities include scaffolded examples. All of the RTI activities can be done whole group, small group, or individually with a student. The RTI resource includes instructional strategies that are typically hands-on and utilize manipulatives or pictures to represent mathematical ideas. All of this information is organized in a table, making it easy to interpret and implement for individualized intervention.

Lessons also include a “Daily Assessment Task,” usually a three to four multiple choice problem set. Based on student results, these assessments also include teacher directions for moving instruction forward. For example, in Module 1, Lesson 1, sidebar support asks teachers: “Can students represent 4-digit numbers in different ways?” There is an If/Then flowchart directing teachers on how to respond and with what resource. If a student cannot complete this task, teachers are directed to the Soar to Success Math Warm-Up 2.24 for intervention. If the student can complete the task, teachers can offer extensions like the Enrich 1 activity or the Homework and Practice Lesson 1.1. After the Daily Assessment Task, students also complete a “Texas Test Prep Coach” question. These questions offer students an opportunity to complete a multiple choice question that mirrors the Texas state assessment. In response, teachers have access to a brief error analysis describing why students reached the wrong conclusion. For example, in this lesson, if students selected A–C as an answer choice, then they did not correctly combine or break apart crates, boxes, and stacks.

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4.3 Materials include frequent, integrated formative assessment opportunities.

- Materials include routine and systematic progress monitoring opportunities that accurately measure and track student progress.
- Frequency of progress monitoring is appropriate for the age and content skill.

Meets 2/2

There are routine and systematic formative assessments integrated throughout instruction. These progress monitoring opportunities accurately measure and track student progress, and their frequency is appropriate, considering student age and content skill.

Evidence includes but is not limited to:

The materials outline the assessment options in the Teacher Edition and the separate "Assessment Guide." Included is a suggested timeline of when to administer each assessment. The Assessment Guide "contains several types of assessment for use throughout the school year," including diagnostic, formative, and summative assessments. The assessment tools are designed so students demonstrate their understanding in a variety of ways; task types include: short answer, vocabulary questions, fill-in-the-blank, simple computation questions, constructed response, multiple-choice questions, and griddable items. Diagnostic assessments include the "Prerequisite Skills Inventory," "Beginning-of-Year Test," and "Show What You Know."

Formative assessments are offered at the beginning of every lesson and at specific points within the lesson. These tools help teachers informally assess student understanding of lesson

materials. They are administered in response to student progress and the difficulty of the content skill. These assessments include: “Module Assessments,” “Module Tests,” “Are You Ready?,” and the “Middle-of-Year Test.” Teachers also have access to in-lesson assessments that could also serve as formative assessments when necessary: “Response to Intervention (RtI) Quick Checks,” “Daily Assessment Tasks,” “TEXAS Test Prep,” and “Homework and Practice.”

Finally, summative assessments occur at the end of each unit and cover all modules within the unit. They include the “Unit Assessment,” “Unit Test,” and the “End-of-Year Test.” These tests are integrated with the overall curriculum and provide teachers accurate measurement data. An “Online Assessment System” can also be used for summative assessment. This supplemental tool provides assessments to each child based on individual TEKS. Results are automatically scored by the Online Assessment System, and this data can easily be used to track student progress over time.

Each unit begins with a Show What You Know assessment consisting of numerical-response items. Based on this data, teachers decide whether students need intervention for the unit’s prerequisite skills. For example, in Unit 2, a section of the Show What You Know requires students to count the number of equal groups, the number of dots in each group, and then determine how many dots there are in all. If a student misses more than one of these problems, teachers should intervene with a specific RTI Tier 3 lesson or “Soar to Success” lesson. These assessments are intuitively connected to the beginning of each unit and provide teachers an appropriate opportunity to monitor progress.

Each lesson begins with a short Are You Ready? assessment to determine if students have the prerequisite skills for the day’s particular content. Similar to Show What You Know assessments, teachers can use this information to intentionally address gaps before moving forward with new instruction. As students progress through a lesson, teachers monitor progress using specific RtI Quick Check problems. These problems are open-ended and may or may not require numerical responses. For example, the RtI Quick Check-in Lesson 2.1 requires students to draw lines on images of baked goods to show how much each person gets if they share equally. After students complete the RtI Quick Check, teachers are directed to a specific RtI Tier 1 lesson if students struggle. Lessons end with a Daily Assessment Task that includes several multiple choice questions and a specific teacher question. For example, the teacher question in Lesson 2.1 asks: “Can students explain why they need to know how to make equal shares?” If the answer is yes, teachers are pointed towards a specific enrichment activity. If the answer is no, the materials recommend a specific Soar to Success lesson for intervention.

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5.1 Materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.

- Materials provide recommended targeted instruction and activities for students who struggle to master content.
- Materials provide recommended targeted instruction and activities for students who have mastered content.
- Materials provide additional enrichment activities for all levels of learners.

Meets 2/2

The materials include guidance, scaffolds, supports, and extensions that maximize student learning potential. There are recommended targeted instruction and activities for students who struggle and for students who have mastered content. All learners are provided with additional enrichment activities.

Evidence includes but is not limited to:

The Teacher Edition provides differentiated activities at the beginning of each unit to target the prerequisite skills necessary for all students to access the content. Teachers perform a “Quick Check” on individual students to assess mastery of each lesson, and the curriculum provides a specific Response to Intervention (RtI) lesson to help struggling students master that specific content. For example, in Lesson 1.1, the teacher does a Quick Check on independent practice problems 1 and 3. If the student misses those problems, the teacher provides additional instruction through RtI Tier 1, Lesson 1. These resources are designed for small group or

individual instruction, depending on the level of intervention needed. The Tier 1 lessons are for reteaching grade-level lessons; Tier 2 resources provide targeted practice in prerequisite skills; Tier 3 resources provide scaffolded examples of real-world problems that can be used in conjunction with Tier 2 lessons.

Each lesson within the module provides teachers with formative assessment points in order to identify students who need differentiated support. These assessments include the “Are You Ready?” pre-assessment, the Quick Check, and the “Daily Assessment” task." The Are You Ready? checks occur at the beginning of a lesson and measure students’ understanding of the prerequisite skills for that lesson. If students struggle, intervention suggestions are given in the Teacher Edition. After the “Module assessment” at the end of each lesson, interventions for individual use or whole class instruction are provided based.

Throughout each 5E-IA lesson, there are multiple points where recommendations and scaffolds are offered. For instance, when giving models, teachers have access to a teacher script listing additional ways to think about a concept. Questions and possible student answers are also included throughout lessons. Sidebar supports in the Teacher Edition identify common student errors and suggestions for how to eliminate errors. For example, in Lesson 4.1 on rounding, a sidebar support says that when rounding 438 to the nearest hundred, some students “may look at the 8 and round to 500.” A tip suggests students circle the number they are rounding and then underline the digit immediately to the right so they are focusing on the correct numbers to round. There are also “Go Deeper” sidebars that help the teacher personalize and extend each lesson. In Module 15, Lesson 5, students evaluate the attributes of 3-D shapes in order to classify them. In the “Go Deeper” activity, students write additional statements using the words *all, some,* or *none.*

The Teacher Edition also provides targeted extensions at the beginning of each new unit. For instance, students can find additional independent activities from the “Enrich Book,” the “Grab-and-Go Differentiated Centers Kit,” or “HMH Mega Math.” The Enrich Book provides an additional extension activity for each lesson. The Grab-and-Go Differentiated Centers Kit includes activities that extend mathematical concepts and skills. Grab-and-Go Math Center Activities and practice games are also available throughout the lessons. An example of a practice game for Module 11 is “Game 13: Division Cover-Up.” In this two-player game, players take turns drawing cards with division facts on them. Players then say the missing number in the division number sentence and cover the number on the gameboard. The first player to cover up 10 numbers is the winner.

Enrichment activities are provided for every lesson under the *Explain* section in the Teacher Edition. For example, in Lesson 5.2, student pairs play a subtraction dice game to deepen their mastery of 3-digit subtraction. In Lesson 16.3, students explore the concept of area with rectangles; they draw a rectangle with specific dimensions and then determine the effect on the area when the width is multiplied by 2, 3, and 4. Students then make a conjecture about the effect on the area when the width is multiplied by any number. In Lesson 17.1, students extend

their learning by finding the perimeter of five different classroom objects, create a poster to represent the findings, and then present their posters to the class.

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5.2 Materials provide a variety of instructional methods that appeal to a variety of learning interests and needs.

- Materials include a variety of instructional approaches to engage students in mastery of the content.
- Materials support developmentally appropriate instructional strategies.
- Materials support flexible grouping (e.g., whole, small, individual).
- Materials support multiple types of practices (e.g., guided, independent, collaborative) and provide guidance and structures to achieve effective implementation.

Meets 2/2

The materials provide a variety of developmentally appropriate instructional methods to engage students and appeal to needs. These methods are flexible, interesting, and utilize different structures, including guided, independent, and collaborative.

Evidence includes but is not limited to:

Each instructional lesson is grounded in a consistent instructional routine. They begin with an *Engage* video and discussion before progressing to an "Unlock the Problem" section. Here, teachers provide step-by-step guidance through a problem or concept. This is followed by a "Share and Show," which gives students a chance to practice problems and explain their thinking. The next practice opportunity is through "Problem Solving." This opportunity offers

skill-based problems, word problems, real-world connections, and higher-order thinking (HOT) problems. This is followed by a “Daily Assessment Task” and “TEXAS Test Prep,” giving students practice problems with multiple choice. Finally, each lesson concludes with “Homework and Practice,” which is a combination of all the types of practice throughout the lesson. All lessons include additional practice opportunities through an Enrich section, “Enrich Activity Guide,” and “Grab-and-Go Activity Center Cards.”

In Module 1, Lesson 2, teachers lead a classroom discussion to make connections and focus learning on using place value to subtract. After direct instruction, students access the digital lesson for reinforcement and begin their individual practice. The teacher performs a quick check and works through the Response to Intervention (RtI) process with students as needed; Other students pair up for an enrichment activity game. Lesson 5 includes common errors and solution suggestions for teachers: “Students compare numbers by digit rather than place value. Have students write 1,321 above 897 so that the digits in each place align. Remind students that when they compare numbers, they must compare digits in the same value place.” This teacher support ensures they remain aware of the most up-to-date and developmentally appropriate instructional strategies.

In Module 2, Lesson 4, teachers are instructed to “guide students to complete the number line” before having students complete the independent “Quick Check” exercises as a formative assessment. Opportunities for additional independent practice from the Grab-and-Go Differentiated Centers Kit are also referenced. The materials suggest students read a story called “Pizza Parts!” to find equal parts and write fractions and a math center called “Fish for Fractions,” in which they match fraction symbols, words, and pictures.

In Module 4, Lesson 4, students perform an error analysis on a mock student problem using expanded notation form. Students have to describe the error Lexi made when she used the “break apart strategy” to find 145 + 203. Lexi gets 375 for her answer. The example includes a Lexi created, and this diagram is where she made her error. Students describe her error and then calculate the correct sum. This type of engaging practice provides students the opportunity to problem-solve, offer feedback, and justify their answers.

In Module 13, Lesson 3, the lesson opening is scripted for whole-class guided learning. Then, students begin individual work, dividing by eight on their math boards and in their workbooks. Then, students are challenged to write their own division problems before taking turns and sharing them with partners. Afterward, students can practice individually or with peers. In Lesson 5, the teacher asks, “If 12 beetles are put into 2 equal groups, how many are in each group?” The Teacher Edition suggests using toy beetles to allow the students to act out the problem. Then the “Interactive Student Edition” reinforces the concept in a digital learning platform.

In Module 14, Lesson 2, students complete an Unlock the Problem task, which incorporates real-world application. Students explore strategies to solve the following subtraction problem: “A sunflower can grow to be very tall. Dylan is 39 inches tall. She watered a sunflower that grew to be 62 inches tall. How many inches shorter was Dylan than the sunflower?” The same lesson also includes two HOT problems that ask students to apply new concepts in novel ways. The first HOT problem requires students to apply their understanding of subtraction to a multi-step problem, while the second requires students to write and solve their own subtraction word problem.

In Module 16, Lesson 1, students participate in an investigation style activity using manipulatives to solve a problem. Students cut out one-inch squares and use the squares to find the area of given rectangles. Then they have to line up the square tiles carefully, with edges just touching. The lesson ends with a discussion on why it is important no tiles overlap when measuring area. In Lesson 4, students use pattern blocks to build a hexagon and then trace on graph paper. Students use colored pencils to shade in the decomposed parts of the hexagon and then write fraction names for each piece and the whole hexagon. Students use the boxes on the graph paper to find the area of the figures.

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5.3 Materials include supports for English Learners (EL) to meet grade-level learning expectations.

- Materials must include accommodations for linguistics (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency.
- Materials provide scaffolds for English Learners.
- Materials encourage strategic use of students' first language as a means to develop linguistic, affective, cognitive, and academic skills in English (e.g., to enhance vocabulary development).

Meets 2/2

The materials include supports for English Learners (EL) to meet grade-level learning expectations. Linguistic accommodations are communicated, sequenced, and scaffolded, and they are commensurate with various levels of English language proficiency. They often include students' first language as a means to linguistic, affective, cognitive, and academic development.

Evidence includes but is not limited to:

The "ELL Activity Guide" describes strategies for effective language teaching specifically related to math instruction. Each of the four stages of language development is described in detail, and the document offers correlated supports and strategies for each. For example: "Help Beginning

students by giving simple, clear directions and using gestures and facial expressions to convey meaning. Be sure to model correct English sentence structure and pronunciation and provide many hands-on experiences." Similar suggestions are made for students at the Intermediate, Advanced, and Advanced High levels. General recommendations include giving opportunities to use academic vocabulary in various group settings, allowing English Learners additional processing time, and encouraging them to justify and explain work. The correlated activities can be completed in pairs or small groups, usually within 15 minutes or less. Activities cover a wide range of student actions, including: draw, describe, identify relationships or patterns, define, explore context, rephrase, restate, model concepts or language, and create.

The Vocabulary Charts found in this resource are broken down by relevant grade-level concepts. Each chart includes the English vocabulary word, a Spanish cognate if available, a definition, and "Teacher's Tips." These tips sometimes utilize students' first language as a means to linguistic development, but consistently they help students access mathematical concepts in English. For example, one tip helps students differentiate between symbol usage: "decimals used instead of commas to separate digits to indicate place value." Another tip states: "Terms like difference/diferencia and dividend/dividendo are cognates. If students are familiar with the Spanish term, help them relate it to the English term by pointing out similarities and differences between the Spanish word and the English word." While the Vocabulary Charts are helpful, students' use of their first language would only apply when a term has a Spanish cognate. Still, general suggestions can be applied more broadly.

"Strategies for Effective Language Teaching" also provides suggestions that utilize students' first language. These strategies are "Build Background" and "Provide for Primary Language Support." For Build Background, the materials state: "Video clips, pictures, magazines, trade books, and printed materials in students' primary language can all be used to provide the background knowledge needed for success." For Provide for Primary Language Support, the materials state: "English Learners who do not receive formal content-area instruction in their primary language need support. Teachers can use peer and cross-age tutors as well as parents and community volunteers. If a paraprofessional is available to provide primary language support, have them preview the upcoming lesson in the students' primary language. After the lesson is taught by the teacher in English, have the paraprofessional review the lesson to identify any misunderstandings that could be related to language barriers." These suggestions are more broadly applicable beyond just students that speak Spanish.

In Module 2, Lesson 4, teachers receive level-specific guidance when students represent and locate fractions on a number line. Beginning students work in pairs to draw a long number line and label only the first and last numbers. Next, each student writes five fractions on index cards and then turns them all upside down. Partners take turns turning over a card and placing it at the correct position on the number line. Intermediate students participate in an "Identify Relationship" activity; they work in small groups sorting vocabulary words into two categories, in this case multiplication words and division words. Advanced and Advanced High students use the strategy "Rephrase" in an activity called "What's the Problem?" Students listen as the

teacher reads a story problem, then work in pairs to make a list of the important information. Afterward, partners rephrase and discuss while also pointing out any unnecessary information. Finally, partners discuss how to solve each part of the problem and write their answers in complete sentences.

In Module 6, Lesson 1, the "ELL Language Support" activity is implemented in a small group setting, should last approximately ten minutes, and covers multiple ELPS. The strategy chosen for this activity is to "Describe," and students will need a set of counters to participate. The instructions state: "Have students work through the steps to solve the problem on page 173 with two color counters. Ask them to complete and say the following sentences to describe their work. Fir*st, make __ groups to show the cakes. Put __ counters in each group to show the number of apples in each cake. Then, count the counters. There are __ apples in 4 cakes."*

In Module 12, Lesson 2, students use strategies to divide by ten. In this lesson, a verbal linguistic scaffold is integrated directly into the model. Teachers write division equations on index cards with ten as the divisor. They then shuffle the cards and have students work together making a division equation. To help students learn math vocabulary in the English language, the teacher explicitly models how to read each equation. If students need additional support, they work with the teacher one-on-one reading the equation aloud, pointing to each card as they read.

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6.1 Materials include year-long plans with practice and review opportunities that support instruction.

- Materials include a cohesive, year-long plan to build students' mathematical concept development and consider how to vertically align instruction that builds year to year.
- Materials provide review and practice of mathematical knowledge and skills throughout the span of the curriculum.

Partially Meets 1/2

The materials include a year-long plan with practice and review opportunities that support instruction. However, this plan does not show how instruction vertically aligns or year to year. Some review and practice of foundational skills are provided throughout the span of the curriculum.

Evidence includes but is not limited to:

The "TEKS for Mathematics Correlation" table found at the beginning of the Teacher Edition lists out the grade-level TEKS, the learning opportunities, and page numbers, and when TEKS appears on an assessment. This table does allow for teachers to see if a particular TEKS is found in multiple modules, though the teacher would have to look through the page numbers to see the exact module and lesson. "Unit and Modules at a Glance" provide an additional plan for

teachers. This breaks down each unit, shows the sequence of the modules and lessons within, and includes the module and lesson titles, the big ideas, and the TEKS.

The year-long plan spans 141 days and includes module, unit, and diagnostic assessments. There are six units containing 20 modules and 103 lessons within those modules. Each unit overview clearly outlines each module and its module and unit tests. In most cases, the last lesson of each unit includes these two assessments. Unit overviews do not mention how or when to administer additional diagnostic assessments, but there are extra days in the calendar that can be used to complete those assessments. There are no assessment reviews to help teachers contextualize each exam.

The primary student and teacher resources, the Teacher and Student Editions, provide practice problems applicable to the content within the associated lesson, but they do rarely include practice problems that are aligned to previously taught content. Materials do not contain consistent reviews in each unit or module. However, ancillary materials, such as the "Grab-and-Go" Kit, "Mega Math" games, "Soar to Success Math" Program, and "Personal Math Trainer" online practice component could serve as a review for previously taught content.

Instead, content is designed to build upon students' current level of understanding. For example, Unit 1 begins by assessing students' prior knowledge of place value, addition and subtraction, and fractions with a "Show What You Know" diagnostic assessment. Students then have an opportunity to practice some of these prerequisite skills during a "Get Ready Game." Each individual lesson also helps students access prior knowledge with two "Are You Ready?" assessment questions specific to the prerequisite skills. Before learning how to write a fraction as a sum of unit fractions with the same denominator in Module 2, Lesson 5, the Are You Ready? questions ask students to (1) identify which fraction names each part of a fraction strip divided into four sections and (2) name the shaded section of a fraction strip that has two of six sections shaded.

Also, in Modules 6–9, the materials focus on multiplication models and strategies. In Module 10, the materials introduce division concepts and models. These modules connect and build upon each other, leading to Module 11, which connects multiplication and division together through writing related facts. The module states that being able to write related facts "deepens the understanding of the inverse relationship between multiplication and division." In this module, students have the opportunity to build an array model using square tiles. Students then write the appropriate multiplication and division facts for the array model.

While the content clearly builds upon students' prior knowledge, the vertical alignment of TEKS within and between lessons and grade levels is not explicitly stated. The materials lack guidance for the teacher in understanding the vertical alignment between the preceding, current, and subsequent grade levels. For example, the Show What You Know assessment for Unit 2 assesses prior knowledge according to three skills: counting equal groups, skip counting by twos

and fives, and the meaning of division. While the materials list these skills and reference RtI resources for intervention, the associated TEKS or grade level are not included. Without this information, teachers will not understand the depth and complexity of the relevant standards.

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6.2 Materials include implementation support for teachers and administrators.

- Materials are accompanied by a TEKS-aligned scope and sequence outlining the essential knowledge and skills that are taught in the program, the order in which they are presented, and how knowledge and skills build and connect across grade levels.
- Materials include supports to help teachers implement the materials as intended.
- Materials include resources and guidance to help administrators support teachers in implementing the materials as intended.
- Materials include a school years' worth of math instruction, including realistic pacing guidance and routines.

Partially Meets 1/2

While materials are accompanied by an extensive TEKS-aligned scope and sequence, there is no explanation of how the knowledge and skills build and connect across grade levels. Some supports are included to help teachers implement the materials as intended, but there are no supports specifically for administrators to help in this process. There is a year's worth of math instruction, but a pacing guide is not included at the unit and lesson levels.

Evidence includes but is not limited to:

The sequence of the lessons follows that of the TEKS. There is no stand-alone scope and sequence or year-long plan to guide the teacher. Instead, the curriculum is designed to follow the sequence grade-level TEKS. This sequence can be located in the table of contents for both the Teacher and Student Editions; The Table of Contents lists each unit, module, individual lesson, and corresponding TEKS. There is also a "Texas Essential Knowledge and Skills for Mathematics Correlations" resource in the introductory portion of the teacher edition. This table lists out the grade-level TEKS, the learning opportunities and page numbers, and when they appear in an assessment. This table does allow for teachers to see if a particular TEKS is found in multiple modules. The teacher would have to look through the provided page numbers to see the exact module and lesson where the TEKS is revised. Though some grade-level alignment can be found when searching through the materials, there is no explicit description of how the essential knowledge and skills build and connect across grade levels.

While included lessons and activities cover all grade-level TEKS, there is no included pacing guidance at the unit and lesson level aside from the table of contents and unit outlines. Instruction spans 141 days, based on one day per lesson within each module. However, in practice, some lessons could take more than one day. The materials do not make mention of which lessons may span multiple days.

Materials are available in both print form and digital format to support ease of use for the teacher. This also limits the need for additional technology equipment if a classroom is unable. The Teacher Edition includes a page that describes the digital resources: the "Interactive Student Edition," "Math on the Spot" videos, and the "Interactive Teacher Digital Management Center." Each resource has a corresponding picture and brief overview. For example, the "Interactive Student Edition" offers a tablet-based environment where "students rapidly move beyond procedural knowledge to in-depth understanding and application of TEKS content and processes."

While materials do not include a program guide for teachers, each unit contains a comprehensive list of modules, lessons, print and digital resources, and correlating RtI resources. Additionally, units also have an essential question for the unit to help teachers connect ideas within the unit and how they are grouped. For example, the unit essential question for Unit 1 is, "How can you represent and compare whole numbers and fractions?" A narrative description of the unit and how the ideas and concepts within the unit connect and build to other units is not included. For administrators specifically, there are no resources and guiding documents to help them support teachers in implementing the materials as intended. Teachers, students, and administrators all have the same implementation guides and tutorials intended to support data access on the online platform. There is no administrator guidance for evaluating and supporting the classroom environment and implementing the lessons.

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6.3 Materials provide implementation guidance to meet variability in programmatic design and scheduling considerations.

- Materials provide guidance for strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression.
- Materials are designed in a way that allow LEAs the ability to incorporate the curriculum into district, campus, and teacher programmatic design and scheduling considerations.
- Materials support development of strong relationships between teachers and families.
- Materials specify activities for use at home to support students' learning and development.

Partially Meets 1/2

The materials provide some implementation guidance to meet programmatic design and scheduling considerations. However, there is no evidence of specific guidance for strategic implementation, ensuring content is taught following a developmental progression. Additionally, there are no supports allowing easy adjustment and incorporation into varying school designs.

Evidence includes but is not limited to:

The design of the units, modules, and lessons allow for interconnections between the development of conceptual understanding and procedural fluency. However, there are no specific suggestions for implementation that ensure this sequence is taught consistently in other formats. Instruction does follow a logical sequence aligned to the grade-level Math Texas Essential Knowledge and Skills. All lessons follow the order of grade-level TEKS and not a stand-alone scope and sequence or year-long plan. For example, modules and lessons introduce concepts of multiplication and division before specific strategies and fact fluency. Any alternative implementation runs the risk of disrupting the sequence of content.

As well, there are no suggestions allowing LEAS the ability to incorporate curriculum into a predetermined schedule and design. Suggestions for how to implement the materials with school years of varying length, varying lengths of time for mathematics instruction, options for full class and small group intervention times, co-teaching, multi-grade classrooms, and online schools are not included. While instruction is such that it can be incorporated into district, campus, and teacher programmatic design, the onus is on the LEA in adjusting materials appropriately.

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6.4 Materials provide guidance on fostering connections between home and school.

- Materials support development of strong relationships between teachers and families.
- Materials specify activities for use at home to support students' learning and development.

Does Not Meet 0/2

There is little guidance on fostering connections between home and school; while some online activities could be used at home, there are no specific activities for use at home. Additionally, materials do not support the development of strong relationships between teachers and families.

Evidence includes but is not limited to:

In the Student Edition, the only resource available for home distribution is an introductory letter that provides a general overview of the program. A parent communication form letter is included within the fact fluency Support Masters as well. In this form letter, students can denote where they need additional practice; Home support can record the date and who helped the student with those facts. This resource is auxiliary and not integrated into the core curriculum.

The “Personal Math Trainer” online component includes a four-page tip sheet designed to help parents implement assignments at home. However, tips are limited to practical information about the online platform and do not communicate how adults can support students with the instructional material itself.

There are no additional activity recommendations for parents to connect to the classroom, nor are there suggestions and examples of exemplary family engagement practices. The materials do not include resources to guide teachers as they plan effective communication systems.

Students do have online access to certain materials; Through their student-accounts, they can access “Things to Do,” “My Library,” and “My Scores.” If the teacher assigns Things to Do online, students can view their scores in the My Scores section. In the My Library section, students have access to the “Student Edition ebook,” “Interactive Student Edition,” “Math on the Spot” videos, “Math Concept Readers,” “Math iTools,” and “Mega Math” games. While there are numerous online materials, there are no resources specifically built so adults can work with children at home. Students can access the online “Personal Math Trainer” assignments at home, but it is not meant to be a home program, nor are there family resources. There are no school-to-home supports, tips for parents to practice new skills, or suggested real-world home activities.

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6.5 The visual design of student and teacher materials (whether in print or digital) is neither distracting nor chaotic.

- Materials include appropriate use of white space and design that supports and does not distract from student learning.
- Pictures and graphics are supportive of student learning and engagement without being visually distracting.

Meets 2/2

Student and teacher materials are visually supportive of learning and engagement. Whether in print or digital, materials are neither distracting nor chaotic. There is appropriate use of white space, design pictures, and graphics throughout.

Evidence includes but is not limited to:

Visually, mostly all materials are appropriately designed to support student learning; they include appropriate use of white space, large font, and easy-to-read graphics. Pages are not cluttered and leave plenty of room for students to work out problems in the consumable Student Edition. For example, in Lesson 2.3, seven questions is the greatest number of questions on any single page. Each page provides a large space for showing work and multiple

lines so students can justify an answer. All tables, charts, and visuals are clear and concise. They are easily identifiable and support student learning.

However, the Elaborate and Evaluate components of the "Personal Math Trainer" sometimes reference graphics and pictures that can be unclear or difficult to identify. For example, in Lesson 2.1, a problem states: "Keith baked 2 cherry pies and 3 apple pies. He wants to share each type of pie equally among 6 of his neighbors. How much of each type of pie will each neighbor get?" The figures related to this question can be fuzzy, out of focus, and mildly distracting. While this is inconvenient, the low quality of the images would not prevent a student from completing the problem. The infrequency of districting visuals means students stay focused on learning the majority of the time; most figures notably increase content effectiveness.

The "Interactive Student Edition" makes use of "User Control and Freedom" by allowing students to easily "go back" if they make a mistake in navigation. It uses "Error Prevention" by providing a brief description or label for each online tool when a user hovers over it, ensuring users choose the proper tool for the task at hand. Some of the support features include bookmarks, note-taking documents, and varied page views. A "Resources" tab also includes links to lesson-level resources and core instruction resources. The pictures and graphs used throughout instruction are colorful and easy to understand without being distracting. For example, Module 2 includes a variety of real and abstract models that clearly identify fractions of a whole: cookies, brownies, pies, cheese sticks, fraction circles, fraction strips, and number lines. These authentic photographs and clear drawings help students visualize and recall concepts. Auxiliary "Math Concept Readers" incorporate pictures and charts that are clear and pertinent to instruction; The font used for this resource is clear and easy to read.

Teacher guides are intuitive, designed in a way that teachers can easily locate important information. Each unit begins with an overview including the essential question, TEKS, vocabulary, RtI interventions, enrichment opportunities, materials needed, and a list of necessary print and digital resources. Its structure, look, and location is consistent throughout the year. Each lesson is then outlined in the "Lesson at a Glance," including: lesson number, title, focus, essential question, TEKS, process standards, vocabulary, materials needed, relevant print resources, relevant digital resources, and space for teacher notes. All instructional support is clearly stated and easily identifiable. The first page of each lesson includes a summary box listing all digital resources, a list of vocabulary, and the TEKS addressed within the lesson. A clear sidebar summarizes process standards and offers a reminder to use the "Are You Ready?" assessment to diagnose student understanding. Then throughout the lessons, additional sidebars provide suggested questions in bold and possible student answers in pink. Distinct "Common Errors" call-out boxes offer error look-fors, examples, and potential solutions. "Differentiated Instruction" supports are clearly shown and are organized by specific EL support strategies.

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6.6 If present, technology or online components included are appropriate for grade level students and provide support for learning.

- Technology, if present, aligns to the curriculum's scope and approach to mathematics skill progression.
- Technology, if present, supports and enhances student learning as appropriate, as opposed to distracting from it, and includes appropriate teacher guidance.

Not Scored

Technology components provide support for learning and are grade-level appropriate. They align to the curriculum's scope and approach to math instruction, include appropriate teacher guidance, and enhance student learning.

Evidence includes but is not limited to:

There are technology components for both students and teachers that support and enhance student learning as appropriate. Resources include: "Math on the Spot" videos, "Mega Math" games, the "Interactive Student Edition," and the "Soar to Success" online intervention resource. Math on the Spot videos guide students through higher-order thinking (HOT) problems. Mega Math games enhance students' learning and facilitate review. Students can listen to audio from the Interactive Student Edition, access its glossary, and utilize its built-in manipulatives. This resource also increases student usability since each lesson is isolated;

Students do not have to find lessons in the 400-page physical Student Edition. Finally, the Soar to Success provides mini intervention lessons and reteaches concepts to students in a different format.

The digital resources are listed at the beginning of each unit and lesson and include all virtual items mentioned during instruction. For example, Module 10, Lesson 1 lists the following digital resources: the Interactive Student Edition, Math on the Spot video tutor, iTools virtual manipulatives, Soar to Success Math Online Intervention, eTeacher Edition, and online assessment system. The digital materials are all accompanied by a comprehensive "help" section, which includes FAQ sheets, how-to-videos, and step-by-step instructions. These resources help teachers utilize the technology and support student use.

Students are able to complete practice problems in the Interactive Student Edition, similar to those in the physical Student Edition. However, this resource also provides immediate feedback through the "Personal Math Trainer." In the print version of Module 6, Lesson 4, one problem states, "Mr. Bloom grows vegetables in his garden. Draw an array and write the multiplication sentence to show how many corn plants Mr. Bloom has in his garden." Students must then look at a table to see that Mr. Bloom's garden has five rows of nine corn plants. Students can find a similar question in the Personal Math Trainer: "Mr. Bloom planted 2 rows of 8 carrots in his garden. Could Mr. Bloom have planted his carrots in equal rows of 4? Complete the explanation." In the Personal Math Trainer, however, students must also complete a provided sentence stem. They fill in three blanks having to do with the number of rows and the number of carrots per row. If a student still has difficulty answering the question, she has several options: view another example, have the problem broken down step by step, watch a "Math on the Spot" video, or preview a PDF of the textbook lesson. If the student answers incorrectly, the Personal Math Trainer prompts them to try again with a helpful explanation of why their original answer was incorrect.

Each lesson in the Teacher Edition contains sidebar supports for digital resources, both for the student and for the teacher. For example, in Module 1, Lesson 1, a sidebar denotes digital resources for the students: Interactive Student Edition, Math on the Spot video tutor, iTools virtual manipulatives, and Soar to Success online intervention. The sidebar also denotes teacher resources like the "Digital Management Center," which allows teachers to organize program resources by TEKS. Teachers can also use the "Browse" option on the online platform to identify all digital materials that align with a specific TEKS. For example, if a teacher is searching for TEKS 3.3A, they will receive suggestions like the virtual iTools, the Personal Math Trainer practice problems and assessments, Mega Math games, physical manipulatives, and specific Math on the Spot videos.