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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 fourth 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 4, 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 four of the six units. These four units include the following focal points: four-arithmetic operations with whole numbers (including data analysis), angles, and addition and subtraction using decimals and fractions. 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. Twelve of the eighteen total modules are solely devoted to grade 4 focal areas. Units 5 and 6, each containing only one module, do 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 Units 5 and 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 (10 modules) begin with simpler numeric and operational concepts. In Unit 1, students first review place value, decimal, and fraction concepts. They then gradually progress to modules on addition and subtraction before adding and subtracting decimals. This structure allows students to build a foundational understanding of fractions and decimals before they are introduced to operations with fractions and decimals. Five modules in Unit 2 present and build upon operations in multi-step problems; the materials devote a greater amount of time to concepts that are new to grade 4 students. Later models integrate previous concepts into instruction. For example, when students are introduced to angles in Unit 4, the concept is related to fractions first. They use fraction circles to compare fraction piece angles and then progress to comparing angles in clock faces.

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."

At the beginning of Module 4, students revisit fractions by first discussing the question, "What are equivalent fractions?" The teacher then uses the Interactive Student Edition to digitally display strategies that can be used to represent fractions. Students then work independently, completing a set of problems on the digital platform to practice and show mastery. Platform capabilities include interactive manipulatives (fraction circles, fraction strips, and number lines), engaging graphics, personalized interfaces, formative assessments, and rewards.

In Module 6, students practice subtracting whole numbers and decimals using algorithms both in isolation and within problem-solving situations. There is step-by-step guidance for students to work through each place value, focusing on regrouping and renaming numbers as needed. Students also estimate sums and differences prior to finding the actual sums and differences. When complete, they then check the reasonableness of their answer. This builds upon Module

1's focus, Whole Number Place Value and Rounding, and Module 2's focus, Decimals Place Value.

Module 11 covers multi-step problems; a comprehensive application of previous concepts, including addition, subtraction, multiplication, and division of whole numbers and decimals. Students use strip diagrams to represent one-operation word problems and then progress to using strip diagrams to represent multi-step problems. Halfway through the module, students are creating strip diagrams, writing corresponding equations to represent the problem, and then solving the problems. Ideas build upon one another and increase in rigor as the module progresses.

In Module 17, students use dot plots to solve problems with fraction data. They have to find the sum or difference between particular mixed number data points. In order to solve these problems effectively, students must apply the previously learned skill of adding and subtracting fractions. One such problem asks, "What is the difference in length between the longest button and the shortest button in Jen's collection?"

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. Not only do students interact with these representations, but instruction requires they create original representations as well. For example, in Module 2, students practice decimal place value by first interacting with base-ten blocks, decimal expander strips, and a physical number line. They use index cards attached to clothespins to move numbers along their own string number line. Students then practice with pictorial representations, including place-value charts,

decimal grids/squares, and number lines. When ready, students move to practicing decimals in standard form, word form, and expanded form. The use of virtual manipulatives can be seen in Module 4 when students access online fraction strips, fraction circles, and number lines from the iTools Virtual Manipulatives resource. When they get to the "Unlock the Problem" section of the lesson, they move from this pictorial representation to using the abstract concept of benchmarks to compare fractions.

Similar transitions along the CRA continuum can be found in Module 5 when students get introduced to fraction concepts that are new to them. They first add fractions with like denominators using pictures of fraction strips. A teacher note reminds teachers, "Some students may erroneously add the denominators and the numerators to find a sum. Example 2/6 + 3/6 = 5/12." If this occurs, teachers model 2/6 + 3/6 and another model of 5/12 and 5/6. With this intervention, students should be able to see which model reflects the correct amount. However, this suggestion remains general and does not help teachers understand their students' progression along the CRA continuum. Later in the module, when students use fraction benchmarks, the example and first problem are both structured with similar pictures of fraction strips. However, the rest of the student problems contain only numeric expressions. In the next lesson, students add and subtract mixed numbers with regrouping. Two examples include fraction figures for context, but all student problems utilize only the algorithm. In some cases, visuals are foregone completely, and students must rely on abstract, numerical representations only.

In Module 8, students first find products by using a break-apart place-value model, and then they find partial products without using the model; In both instances, they compare methods and solutions. To complete the lesson, they solve a partial product problem using a pictograph and finally an algorithm. Later in the module, students use a clock to compare seconds, minutes, and hours. They move along the CRA continuum, using a conversion chart to solve problems in the Student Edition. Finally, the teacher moves students to the abstract phase by having them write a fraction comparing days and weeks: "there are 7 days in 1 week, so 1 day is equal to 1/7 of a week." This is another example where teachers lead students through the CRA continuum. One example where students do not move along the continuum is in Module 15, when students have to regroup mixed measurements. This is a new concept to grade 4 students, but instruction only depends on abstract numbers. Later in the module, when students have to convert measurements for the first time, they do not have access to models or pictures for context. They are asked to convert from a smaller unit of measurement to a larger unit of measurement without going through the CRA phases.

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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: practicing multiplication facts, modeling division as arrays, and three-digit subtraction within 1,000. An early lesson also includes a “Get Ready” game meant to prepare students for the unit. The game “gives students an opportunity to practice dividing whole numbers in preparation for the content taught in this unit.”

In Module 5, students explicitly build connections between concepts. Coming into the grade level, they already have an understanding of the commutative and associative properties of addition; in this module, they apply this knowledge to the addition of fractions with like denominators. The teacher leads a Math Talk drawing direct attention to this connection: “Make sure the explanations include the idea that regrouping the fractions creates an opportunity to add two fractions using only mental math.” Lessons continue, providing students practice with the four operations. Over time instruction builds upon third grade concepts, asking students to dive deeper by multiplying two-digit numbers and putting them into more sophisticated problem-solving situations.

When multiplication is introduced in Module 7, students must apply their knowledge of place value in order to multiply tens, hundreds, and thousands. In this lesson, the goal is to have students understand the pattern of zeroes: more zeroes in a factor results in more zeroes in the product. Later in the module, students use expanded form, another place value concept, to multiply. Module 8 also requires that students integrate knowledge concepts; At the beginning of the module, they discuss the third grade skill of multiplying a one-digit by a two-digit number. Next, they use previous knowledge about arrays to multiply more difficult, fourth grade level multiplication problems. First, they build arrays and push them together to form area models. Next, they break apart the arrays into number combinations that are easier to multiply; through discussion, they connect the models to the symbolic form of the distributive property.

Materials frequently include “real-world” problem-solving in the introductory portion of the lesson, both in the Digital Lesson Opener and in an initial problem teacher and students solve together. In Module 10, the real-world problem-solving connections include separating students into equal-sized teams and separating photos into albums. Students also have a chance to evaluate other students’ strategies in a “sense or nonsense” activity. For this task, the materials give students a division problem, and two students work using a pictorial model. Not only do these questions require the application of math concepts in context, but they ensure students connect two or more concepts almost daily.

One Lesson Opener in Module 17 requires students to share things they already know about data collection. At the beginning of a lesson focused on using frequency tables, the teacher asks the following questions: “Have you ever collected data?” “What subject did you collect data about?” “What did you do with the data?” Later in the same module, students make a connection between data representations and personal experience, answering the question, “Have you ever seen a meteor shower or a shooting star? Tell us about it.” Throughout this module, students access their prior knowledge to connect and explore concepts.

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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 basic fraction concepts in Modules 3 and 4: generating equivalent fractions, naming a fraction in its simplest form, and using models to add and subtract fractions. By Module 14, students engage in new math concepts like relating fractional parts of a circle to angles. The lessons in Module 16 follow a logical sequence: starting with simple unit conversions (minutes to hours or weeks to days) and ending with word problems involving intervals of elapsed time. For a concept like multiplication that is revisited throughout the year, rigor increases appropriately. At the beginning of the year, students are multiplying by

ten, and by the end of the year, students are multiplying interest rates in order to calculate monthly payments.

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. The Teacher Edition includes the "Texas Mathematical Process Standards" section providing a large list of questions designed to support mathematical instruction. For example, if a teacher wants to help a student access the standard, "create and use representations to organize, record, and communicate mathematical ideas," she can ask the following questions: "How does that drawing support your work?" "Why is that a good model for this problem?" "What conclusions can you make from your model?" "How would you change your model if…?" These questions are useful in one-to-one or small group contexts but lack lesson-specificity and do not promote group discourse. Teacher guidance is provided *while* students complete tasks, but not prior. Reminders generally occur in lesson call-out boxes and include key point reminders, questions to ask, and possible student responses.

Lessons include a "Math Talk" section meant to help teachers facilitate student discourse. While this section does not include redirections for student misconceptions, it provides 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 1 prompts teachers to ask, "Which digit has the greatest value in 262,400?" Instead of opening a general discussion about place value, this question is looking for a specific response. Other Math Talk questions are somewhat open-ended: "How else could you find the sum?" or "How can you figure out how many hours are equal to 375 minutes?" Outside of this section, 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.

Student misconceptions are primarily addressed in the "Common Errors" section of a lesson. These possible student responses are meant to help the teacher understand what to expect when teaching a concept. 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 5, students add and subtract mixed numbers for the first time. A common error when students regroup is to accidentally subtract the fractions but not the whole numbers. The materials suggest having students "write the problem in vertical form. This will help remind them to subtract both the fraction and the whole number parts of the mixed numbers."

Often modules require students to apply their math knowledge to contextualized problems and real-world situations. In Module 6, students add and subtract whole numbers and numbers with decimals. After practicing these concepts abstractly, they apply their understanding to find the total area of a state, the population of a given area, the height difference between two mountains, and the area difference between two states. These types of questions include a

“Real-World” symbol indicating they are contextual and require students to apply their math knowledge.

In Module 13, students investigate a variety of geometric concepts using everyday objects. Primarily, they are identifying points, lines, and rays in the following examples: a tip of a pencil, a line in the middle of the street, and a One Way directional sign. Later in the module, students investigate the letters in the “Hollywood” sign in California as they look for real-world examples of symmetry.

In Module 18, students learn about the difference between fixed and variable costs. Students begin by sorting different costs into fixed or variable categories (clothing, a car payment, eating out expenses, etc.). After discussing why they categorized the costs the way they did, they adjust variable costs in order to balance a budget. While this module integrates contextual problems throughout, no guidance helps the teacher revise content so that it is relevant to their specific students, backgrounds, and interests.

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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.” Workshop lessons are paired appropriately and integrated authentically with lessons from the core curriculum. When students practice dividing by nine in Module 13, the teacher has access to three specific Level 4 workshop lessons that strengthen students' fact fluency on multiplying and dividing by 9. These different lessons give the teacher autonomy to strategically and flexibly choose the appropriate strategy for the grade-level task. For multiplying, workshop lessons cover concepts like using the distributive property, multiplying with expanded form, calculating partial products, and completing mental math. Workshops covering more foundational skills are understandably paired with more lessons in the curriculum.

Each lesson includes scripted instruction, routine description, and an explanation describing how the activity builds upon fluency skills. When teachers review multiplying by two, teachers follow step-by-step instructions promoting classroom discussion. First, the teacher displays two rows of four counters on a transparency and asks students how many counters they see. Then, the teacher asks, “What multiplication fact names this array?” Students respond, the teacher turns the transparency some, and she asks again, “What multiplication fact names this array, now?” Together they discuss the different characteristics of this array and how they can translate these multiplication facts to division facts. Later, when teachers cover division, they can choose between either small group or whole group instruction. Either way, the lesson begins with students discussing the scenario, “A high school stadium seats 1580 people. There are 8 sections, and each section has the same number of seats. How many people sit in each section?” After brainstorming the question, students use compatible numbers to estimate the quotient. Together they use the standard algorithm to solve 1580 ÷ 8 before practicing division independently.

Along with general workshop prompts and reminders, teachers can differentiate instruction using the many assessment materials. Each instructional unit begins with a diagnostic assessment producing tier one, two, and three recommendations that are specific to fluency. For example, when students multiply and divide money, teachers measure students’ understanding of the prerequisite skills using the “Are You Ready?” Assessment 16.4 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 an assessment.” To address potential areas of improvement, this document offers additional lessons for multiplication and division practice. These ancillary lessons cover a wide range of topics: repeated subtraction, partial quotients algorithm, partial quotients area model, and long division.

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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 materials do not explicitly state vocabulary development as a learning goal, the vocabulary builders include a "Mathematical Processes" icon, indicating they 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 are encouraged to write down the connections made using new vocabulary. For example, in Unit 2, the Teacher Edition encourages teachers to have students point and record math concepts as they read the book *Great Estimations.* Students also discuss key math concepts the book presents. An additional activity asks students to create a Word Log to be used throughout each entire unit. Students create a list of new vocabulary words, assess themselves on if they are already familiar with the word, and write its meaning after each lesson is completed. Many of the words added to the Word Log are math-related vocabulary words.

The Unit 2 Vocabulary Builder includes a Visualize vocabulary word sort related to division and multiplication in a Venn diagram. Definitions are not given, even though some terms may be new to grade 4 students. The bottom portion of the Vocabulary Builder includes several fill-in-the-blanks for students to fill in the new vocabulary term that fits the definition. While some of these terms may be unfamiliar or new to grade 4 students, the class debriefs definitions before moving on. 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 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, the vocabulary words *decimal*, *tenths*, and *hundredths* are introduced in Module 2. They continue to be used in Module 6 when students apply their knowledge of the decimals place value to adding and subtracting decimals. Finally, at the end of each module, a formative assessment is given in the textbook, which includes 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. Lessons that include vocabulary words have the words bolded so the teacher can plan ahead for when specific words will be introduced. While students should already be familiar with most of the math concepts, provided hyperlinks offer 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 filling a jar with sand, fractional parts of pizza, fraction parts of a loaf of bread, eating a pie, and making a poster for a book report. For example, in Module 8, Lesson 7, students solve real-world, multi-step problems using a “drawing diagram” strategy. The opening problem describes the average bald eagle counts in Alaska, and students have to identify how many more were counted in 2010 compared to 2009. Given provided sentence stems, they have to analyze the situation, identify a plan, and describe how drawing a diagram will help them solve the problem. A provided teacher support offers a step-by-step description of how to draw the strip diagram. To push rigor, the Math Talk call-out asks students to then explain another strategy they could use to solve the problem. 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, “In three minutes, a damselfly’s wings beat 2,700 times, and a butterfly’s wings beat 2,100 times. About how many more times did the damselfly’s wings beat in one minute than did the butterfly’s wings?” Students must integrate their newly developed division skills with previously learned subtraction knowledge in order to solve this multi-step 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 "MathBoard." 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 2, students learn about decimals place value. Representing tenths as a decimal, table data shows the name and types of 10 rocks in a collection. Students use this table to establish the *whole* and then write fractions and decimals based on the data. Later in Module 9, Lesson 4, students analyze a table listing the number of heartbeats in five minutes for five different animals. They answer the following questions: "About how many times does a chicken's heartbeat in one minute?" "About how many times faster does a cow's heartbeat than a whale's?" "What's the question? The answer is about 100 beats in one minute." Another example from Module 10 includes giving students a table showing a sports card collection and the number of cards for each sport. Students use the data from the table, find the total for each individual sport, then divide the amount into storage boxes. Finally, Module 17 is dedicated to data analysis. In this module, students have multiple opportunities to analyze data in frequency tables, dot plots, and stem-and-leaf plots. The context of these figures includes distance walked, scores from a game, and the number of minutes spent on homework, chores, or reading. 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 4," 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 4, Lesson 4, students determine how cost-effective it is to insulate a home. In this activity, they explore heat conductivity and energy conservation, solving real-world math problems as they go. The Grab-and-Go kit also includes activities requiring students to analyze science content area data. They use average high and low temperatures from five U.S. cities to create a data table. Students then use the tables to make double bar graphs depicting the data on grid paper 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 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 model for this grade level is a continuation from the previous; 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 3, where students are using tables and models to determine equivalent fractions. After reintroduced, 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. For example, in Module 1 Lesson 3, students explore two ways to compare numbers and order them from least to greatest: using a place value chart (steps included) and using a number line. The teacher also 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. One example of these Math Talk speech bubbles can be found in Module 3, Lesson 4, when students find equivalent fractions. After the lesson, students discuss the question: “What strategy did you use and why?”

Module 6 and Module 8 both have students completing problem-solving questions and reflecting on their approach. Module 6, Lesson 3 has students drawing diagrams to solve comparison problems using addition and subtraction. Once complete, they discuss the question, “How will the strip diagram help you solve the problem?” In Module 8, Lesson 7, the teacher leads a discussion revising diagrams and exploring how they can be used to find solutions. The teacher asks the students, “In what situations have you drawn a diagram to help you solve a problem?”

In Module 11, Lesson 4, students draw strip diagrams to model multi-step division problems. After first reading the problem, students determine what the question is asking, what information is given, and what plan or strategy to use. Teachers help facilitate reasoning by asking, “What does the first strip diagram represent?” and “What name might you give to the way you checked your answer in Exercise 2?” These questions steer students in the right direction and also prompt students to reflect on their problem-solving approach.

Later in Module 12, Lesson 15, students use the Problem-Solving MathBoard to solve multi-step problems. In this lesson, they underline important facts and choose a strategy they know to “unlock” their math problems, in this case, a problem about area and perimeter. In the middle of the problem-solving model, the class reflects on their strategy and discusses the question: “Is there any other way to solve this problem? Is it simpler?” This type of recursive question strategy makes the problem-solving model transferable and applicable to many situations and contexts throughout the curriculum.

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. When exploring angle concepts, students use physical protractors to construct, measure, and deconstruct angles. They can then apply these skills accordingly for future geometry questions and units. 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 further tool guidance. For example, when teaching multiplication, this section scripts out how to reinforce strategies, addresses common errors, suggests digital base-ten blocks as a manipulative, 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 have access to both physical and virtual tools when representing decimals. The textbook introduces decimal place values using base-ten blocks. Students can use physical base-ten blocks or access virtual base-ten blocks (whole numbers) and place value chips (decimals) in the iTools. In this activity, students can practice with both before selecting which is appropriate for them.

Teachers also have available guidance built in to help them communicate why certain tools or strategies are efficient for a task. In Module 8, Lesson 1, the teacher summarizes how to multiply a two-digit number by tens using a place value chart. During practice, students answer the question: “Why is 3 tens easier to use than 30?” The teacher then uses prompts to emphasize how efficient and practical it is to multiply by ten: “Make sure students understand that they need to retain the tens, and then change the product that is expressed as tens to a number in standard form” in order to multiply efficiently.

Module 9, Lesson 4 includes sidebar supports reminding teachers to emphasize the rationale behind abstract methods: “In this lesson, compatible numbers are used to estimate quotients. It may help to review how students have used compatible numbers to estimate products. In upcoming lessons, students will use their understanding of -compatible numbers to help place the first digit in a quotient.” While students do not use physical manipulatives or tools to estimate quotients, the algorithmic reminder is appropriate for the stage of concept development.

In Module 10, students divide using various strategies. The module begins with students practicing division through repeated subtraction. Students use counters, record their subtractions on grid paper, and represent their findings on a number line. Next in the module, they divide by regrouping using base-ten blocks. With both concrete and pictorial

manipulatives, they explore the concept before connecting their understanding to the long division algorithm. Students then complete practice problems together with base-ten blocks and the algorithm side by side. Towards the end of the module, students divide independently; The strategy is not specified and allows for student choice.

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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 round numbers, “One Way” is to use a number line; “Another Way” is to use place value. Throughout the remainder of the lesson, students have the opportunity to explore all possible strategies and techniques before choosing which method is best. At the end of this specific lesson, students respond to the prompt, “How can you round numbers?” In their answer, they have to explain that they can use either strategy to arrive at the correct answer. 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. For example, in

Module 5, students use numerators and denominators to compare fractions. The teacher explains that using benchmarks is not always useful, but using certain numerators and denominators can always be helpful.

In Module 6, students learn different techniques to add and subtract decimal numbers. These techniques include: estimation, a pictorial model, and using the algorithm. Teachers have access to useful prompts, ensuring students understand each method: “Use Math Talk to focus on students’ understanding of how to use an estimate to check the reasonableness of an answer and Estimate. Then find the sum or difference.”

Teach prompts also help them communicate why some methods are more appropriate and efficient than others. In Module 8, Lesson 1, students learn how to multiply a 2-digit number by tens. When introducing how to use place value, the teacher asks, “Why is 3 tens easier to use than 30?” The materials remind teachers to “make sure students understand that they need to retain the tens, and then change the product that is expressed as tens to a number in standard form.” This prompt ensures students recognize the efficiency behind multiplying by tens instead of larger numbers.

In Module 9, Lesson 5, students investigate how to use the distributive property to find quotients; During this lesson, they make connections to other strategies, including creating arrays. The Math Talk reminder asks students to “Describe another way you could use the Distributive Property to solve 68 ÷ 4.” This reflection requires students to critically consider all potential strategies. They reflect on this further when they get to the lesson’s higher-order thinking (HOT) problem. This question asks them to evaluate two strategies for breaking up a dividend: “To find the quotient 91 ÷ 7, would you break up the dividend into 90 + 1 or 70 + 21? Explain.”

The Module 16, Lesson 2, Math Talk has students discussing elapsed time. Instead of counting backward on a timeline, students can subtract the given elapsed time from the end time to find the start time. Instead of counting forward on a timeline, they can add the given elapsed time to the start time to find the end time. This is a much more efficient method for solving elapsed time problems.

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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 to 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 explore these similarities between a rhombus and a square are alike, the Math on the Spot teacher models a think-aloud analyzing the attributes of both shapes. 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. For example, when students measure using benchmarks, they may choose benchmarks that are too small. Teachers are given a tip to “remind students that benchmarks are used to estimate, and not find actual measures.” If it takes a great deal of time to use a benchmark, a larger benchmark should be chosen.

Early in the first module of the year, students set the foundation for solving problems and explaining their reasoning. In Lesson 1, students review the value of each type of base-ten block and the relationship between the different types. They make sense of these manipulatives by answering the following questions: “How many of the small cubes would it take to make 1 long?” “How many of the flats would it take to make 1 large cube?” “Ten is how many times greater than 1?” Later in the lesson, students examine two sets of base-ten blocks, deciding which shows that 300 is 100 times as much as 3. Independently, they conclude the lesson by writing about whose model makes sense, whose model is nonsense, and explain their reasoning. This last task requires students to take on a problem-solving mathematical identity.

Essential Questions serve as a useful tool for teachers to ground discussion and promote sharing. Module 4, Lesson 3, begins with the essential question, “How can you order fractions?” Then throughout the lesson, teachers relate strategies and tasks back to this question. The teacher “hooks” the students with an engaging topic (money) and holds their attention by returning to that easily understandable example. Teacher prompts from the “Making Connections” section help them facilitate student share-out: “Invite students to talk about using fractions and distances. Ask these questions. Write the phrase ‘quarter of a mile’ on the board and ask students why one-fourth is also known as one-quarter? What are equivalent fractions?” As the teacher begins incorporating other fractions into the conversation, students transition from passive math learning to active math learning; They share their approach more and more as they become confident with the concept.

In Module 5, Lesson 2, students approach problems in multiple ways. When adding fractions, they learn how to add using pictures and add using fraction strips. Later, the teacher facilitates a discussion comparing the two strategies: “How is this problem similar to the first problem? How is it different?” By promoting multiple pathways to a solution, the materials frame problem solving as efficient and generalizable, as opposed to a set of memorized procedures.

The Essential Question for Module 8, Lesson 2 directly promotes the exploration of multiple approaches: “What strategies can you use to estimate products?” During the lesson, students learn rounding, mental math, and using compatible numbers to estimate products. These strategies will help students realize that there are multiple, effective ways to estimate products. They complete the lesson using all three strategies to model and solve various problems.

The Module 17, Lesson 6 HOT question focuses on the number of minutes Martin spent reading. Students explore stem-and-leaf plots to answer the question: “How many more times did Martin read for less than 39 minutes than he read for more than 39 minutes?” Students do not just provide their answer; teachers require students to explain and discuss *how* they found their answer.

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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 represent numbers in Module 1, they must work with a partner responding to the following prompt: “Use base-ten blocks or number lines to make models that represent the numbers in the problem.” 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 decimals?”

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 2, students learn different ways to represent, compare, and order decimals. These representations include: base-ten blocks, place value charts, decimal squares, number lines, fractions, symbols, and money. To communicate their understanding, students perform an error analysis on sample students' pictorial representations. They examine the decimal representations, discuss with a classmate, and explain the error that was made. Another opportunity is through Math Talk; Students example the numbers 0.39 and 0.42 and discuss whether you can compare the two by only focusing on the tenths place value.

Later in the year, students review the Commutative and Associative properties of addition and discuss how they can be applied to adding fractions. In Module 5, Lesson 7, teachers model how both properties can be used to simplify the addition process. Then, students explain why grouping the fractions differently makes it easier to find the sum. A sidebar support reminds teachers: regrouping fractions creates an opportunity to add two fractions using only mental math, and that no matter which property is used, the sum does not change. This mathematical idea is essential to the lesson. Students have to communicate their understanding during the "Problem-Solving" portion of the lesson; They solve addition problems independently and then write about how they used each property in their work.

In Module 8, Lesson 7, teachers conclude the lesson on measurement with an engaging writing activity. After the class discusses how cars use gallons of gas, students partner up to write a short-story math problem about carpooling. Each story has to include a math problem that could be solved using a drawing or strip diagram. Together, students discuss the meaning of their stories, predict a way in which a diagram might be used to solve a problem, and then write their problem. To conclude, partners trade stories, complete the problems, and check their answers.

Toward the end of the year, Module 13 focuses on geometric vocabulary. In Lesson 1, teachers introduce various topical vocabulary terms: *point*, *line, angle*, *acute*, and *obtuse.* Lesson-specific teacher prompts require students to use these vocabulary terms during discussion. The teacher asks, "How do an acute angle and an obtuse angle compare to a right angle?" and "How can you use your right angle to classify other angles?" Both of these questions move past one-word answers, require students to justify their ideas, and ensure students use mathematical vocabulary in the process.

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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.

Module 2 introduces decimal concepts. Students use base-ten blocks to symbolize tenths and hundredths before exploring patterns they see on a place value decimal chart. Teachers have access to discussion prompts that directly relate to the concept: “In Step C, why did you represent 0.4 with 4 longs?” and “Describe the pattern you see when you move one decimal place value to the right and one decimal place value to the left.” These prompts are good examples of open-ended questions that promote discourse.

In Module 3, Lesson 2, the lesson begins with a whole class discussion on equivalent fractions. The teacher guides class discussions with questions like, “What are equivalent fractions?” and “What model can you use to show a fraction that is equivalent to a given fraction?” Students can discuss in pairs or with the teacher. The teacher meets with struggling students so that they may explain their thinking. While the teacher is meeting with struggling students, students who are performing at or above level work with others to identify equivalent fractions. They trade sets with a partner and solve. To conclude the activity, partners discuss the strategies used to identify nonequivalent fractions.

In Module 9, Lesson 2, the lesson begins with a discussion about what students already know about fractions. During the Explore phase of the lesson, a Math Talk prompt asks them to explain what remainders mean in the context of a word problem. A second Math Talk prompt requires students to explain why they would not write a fractional remainder when finding the number of vans needed to transport soccer players to their game. While students get the opportunity to explain their answers here, often Math Talk prompts look for pointed one-word answers; In those questions, potential discussion is limited. These questions also rarely occur beyond a teacher-student setting. Teachers could better vary how students discuss and with whom. Additionally, there are no structure or facilitation suggestions for teachers to further the depth of conversation.

In Module 18, Lesson 3, students discuss the importance of saving money. The lesson opener begins with students sharing what they know about keeping their personal items safe. The questions, “Where do you safely keep your personal items, such as your allowance, books, or toys?” and “Why do you keep these items in those places?” help increase student interest. Next, students discuss the meaning of the word *savings* in a larger context. They brainstorm situations where an item or items would need to be saved, discuss which items they save, and share what methods they use to save them. The teacher asks students if they have heard of

savings accounts in a bank before discussing other savings options and their advantages and disadvantages. During “Math Talk,” students discuss why earning interest is one of the advantages of a savings account. These discussions do not take place in a variety of settings but rather in a whole group setting.

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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

The materials meet the requirements of this indicator by providing students with opportunities to justify mathematical ideas using multiple representations and precise mathematical language. Students are given opportunities to construct and present arguments that justify mathematical ideas using multiple representations. The materials assist teachers in facilitating students to construct arguments using grade-level appropriate mathematical ideas.

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 in Texas GO Math! 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 and Go Deeper 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 use benchmarks to compare and order fractions, the *Enrich* section requires student justification. First, they have to model and record on a number line fractions a little less than the benchmark 1/2, a little more than the benchmark 1/2, and near the benchmark 1 whole. Next, the teacher challenges students to place fractions on the number line that are greater than 1/2 and close to 2. Students must determine how to answer this problem, organize their argument, and explain their position using the examples.

In Module 2, students represent decimals using concrete and pictorial models. To begin the lesson, they are presented with the question: "Are 0.5 and 0.50 equivalent? Explain." They can justify their answer using a picture, place value chart, number line, or generalization. Later in the module, students have another opportunity to construct an argument. Presented with a pictorial decimal model, they are asked to complete an error analysis. Specifically, they find the error, explain how to correct it using a place value chart, and orally present their complete argument.

Module 5, Lesson 5, provides students two "Sense or Nonsense?" tasks. In this type of activity, students criticize models, sentences, or algorithms, determining if the specific example makes *sense* or is *nonsense.* The first task states: "Brian says that when you add or subtract fractions with the same denominator, you can add or subtract the numerators and keep the same denominator. Is Brian correct? Explain." Here, teachers receive guidelines for student justifications: In order for a student to be successful, they must reference a physical representation in their reasoning. They need to describe the *number* of equal-size parts as the numerator and then describe the *size* of the parts as the denominator. The second Sense or Nonsense? task reads: "Harry says that 1/4 + 1/4 = 2/4. Jane says 1/4 + 1/4 = 2/8. Whose answer makes sense? Whose answer is nonsense? Explain your reasoning." Both opportunities allow students to explore their mathematical ideas and present arguments justifying their conclusions.

In Module 14, students connect two concepts together: angle to fractional parts of a circle. A Go Deeper prompt tells teachers to ask, "What is another way to describe the size of the angle...Explain." Additional prompts offer teachers two ways to help students justify their answers: either use fraction pieces or explain fractional parts in relation to a whole of a circle. These types of prompts sufficiently help students construct arguments. However, explicit debate routines and structures could make positions, justifications, and discourse even stronger.

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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.

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 13 Assessment includes five fill-in-the-blank problems to assess vocabulary, nine constructed-response items, and four multiple-choice items. 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 prior to adding and subtracting parts of a whole. This asks students to complete two tasks: first, they need to identify what fraction of an area model is shaded, and second, they need to identify a fraction equivalent to 4/7. 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 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. 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, a sidebar support asks teachers: "Can students describe the relationship between two place-value positions?" There is an If/Then flowchart directing teachers on how to respond and with what resource. If a student cannot describe the relationship between two place-value positions, teachers are directed to the Soar to Success Math Warm-Up 2.27 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 as an answer choice, they multiplied by 10 instead of divided by 10; A similar error analysis is given for choices B and C. But if students selected answer choice D, they simply “did not understand the question.”

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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

The materials meet the requirements of this indicator by including frequent, integrated formative assessment opportunities. The 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.

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; tasks 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 1, a section of the Show What You Know asks students to write a fraction that names the shaded part of a circle. If a student misses two or more of the six problems, teachers should intervene with a specific RTI 2 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 1.1 requires students to write a number in word form. The Quick Check-in Lesson 5.1 asks students to write an equation from a given fraction model. After students complete this 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 9.1 asks: "Can students use arrays to divide whole numbers that do not divide evenly?" 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 8.1, the teacher does a Quick Check on independent practice problems 4 and 5. If the student misses those problems, the teacher provides additional instruction through RTI Tier 1, Lesson 34. 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.

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 15.1 on measurement benchmarks, a sidebar support says that some students choose a benchmark that is too small. Teachers are given a tip to “remind students that benchmarks are used to estimate, and not find actual measures.” They help students understand that if it takes a great deal of time to use a benchmark, a larger benchmark should be chosen. In Module 6, Lesson 3, students solve subtraction problems using a comparison strip diagram. The Go Deeper activity asks students how their answer would be different if given a number that was 1,000 greater. This questioning allows for students to connect back to place value, use mental math strategies, and justify their answers.

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.

Enrichment activities are provided for every lesson under the *Explain* section in Teacher Edition. For example, In Lesson 5.2, the teacher provides two fraction riddles for students to solve. After some practice, students write their own fraction riddles, exchange with a partner, and solve. In Lesson 12.3, students model perimeter formulas. To extend their understanding, they create perimeter index cards; each card has a rectangle with measurements on it, a missing variable, and the complete perimeter measurement. A second set of index cards list the unknown side measurement for the rectangle. Each student makes four different pairs of cards and lays the cards face down in an array. Taking turns, the students pick up two cards. If the cards are a rectangle and its matching unknown side length, they keep the cards.

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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 2, students explore decimal place value through hands-on, concrete practice; different learning strategies utilize base-ten blocks, money, string, index cards, and clothespins. Students also work with picture representations like decimal grids and number lines to show both fractions and decimals. More abstract instructional representations are integrated as necessary, including: place-value charts, foldables, standard form, word form, expanded form, and renaming decimals (ex. 23 tenths = 2.3). In the *Enrich* section, students model a decimal using only a limited amount of base ten blocks. Students then model the decimal in two different ways and record a pictorial model after building. They complete the activity by explaining how their models are similar or different to other students. The activity explicitly states it is meant for individual or partner practice and gives clear directions for what the students will do in both formats.

In Module 4, Lesson 1, the teacher asks, "What do the numerator and denominator of a fraction tell you?" and What models can you use to represent a fraction?" Then, students use fraction strips, fractions circles, or a number line to represent two fractions that they are comparing. Teacher guidance helps them implement this activity through independent, collaborative, or guided practice. In Lesson 2, the lesson opener is scripted for whole-class guided learning. The students work to compare fractions and being with individual work on their math boards and in their workbooks. The teacher performs a quick check and works through the Response to Intervention (RTI) process with students as needed. Then, students work through HOT problems using the "Interactive Student Edition." Students can complete this practice individually or with peers.

Module 7, Lesson 7, begins with a video clip that models problem-solving for the specific lesson. Directly after, students and teachers work together to solve a similar problem. Heavy scaffolding is provided through smaller steps and "think-aloud" space for students to work through the problem. Students work together with the teacher to draw an array model representing seats in a splash zone at a sea park. The problem requires multiple steps, but each step is displayed with blanks for students to fill in. Students write the problem in their own words, select a plan, and solve. Afterward, students discuss how they knew their answers were reasonable.

Module 14 includes some "Try This!" tips that remind students of common errors and provide additional questions to help with problem solving. Additionally, the "springboard to learning" also offers students reminders and quick fixes for careless errors. An example includes students not lining up one of the rays in an angle to the baseline of their protractors to measure an angle. The springboard to learning is adding tape to the baseline on the protractor, and having students highlight one of the rays on the angle that is going to be measured. These supports are developmentally appropriate and catch the attention of students as they work.

In Module 17, Lesson 6, teachers ask guiding questions as students complete a stem-and-leaf plot; questions include, "In counting the number of floors greater than 40, why do you include

all the leaves next to the stem 4?" and "Why don't you include the digit for the stem in your count?" Afterward, students complete the independent "Quick Check" exercises as a formative assessment. This lesson also references additional opportunities for independent practice from the "Grab-and-Go Differentiated Centers Kit." For this lesson, students also read a story called "What's the Weather?" to analyze data. A math center called "What's Your Order?" is also included where they compare and order fractions on a number line.

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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 1, Lesson 3, teachers receive level-specific guidance when students compare and order numbers. 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 use the strategy "Identify Relationships" as they work in pairs using sentence frames to compare numbers or lengths. After making a set of applicable number cards, each partner draws one. Partners then compare the number using a list of sentence frames. Advanced and students use the strategy "Describe" as they ask and answer questions in pairs. The materials state: "Students should answer the questions in complete sentences that use comparison words, such as *more than* and *fewer than*." Teachers also engage Advanced High students in the "Describe" strategy; Instead, students write a letter

to a friend about the current topic of study. They write their letters individually and then share them so they can compare the explanations.

In Module 5, Lesson 5, 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 "Restate," and students practice writing fractions. The instructions state: "Emphasize and restate the vocabulary used to discuss this problem. For example, say: *The number 1 does not have a denominator. We know there are eight eighth-size parts in 1*."

In Module 10, English Learners can participate in an additional language learning activity called "Activity 8: Number Cube Operations Game." Beginning students roll number cubes, use the digits rolled to create a problem with a specific operation, solve the problem, and compare their answers with a partner. Another activity is "Activity 3: Draw to Explain." This is tiered toward Intermediate students and allows them to draw diagrams about math problems, concepts, stories, or events. Activities provided for Advanced and Advanced High students include reading Math stories and playing a Hangman-type vocabulary review game.

Module 11, Lesson 3 requires that students represent multi-step problems using equations. In this lesson, a verbal linguistic scaffold is integrated directly into the model. Teachers explain that in story problems, students may read that a given number of items hold or contain some number of smaller items. Using content vocabulary, they explain exactly what that means. Teachers model how to represent the total number of pages in three notebooks using multiplication: $3 \times 100 = 300$ pages. Students then practice writing their own equations to represent situations that measure a total. If students need additional support, teachers work with them one-on-one, reading the problems aloud.

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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 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 131 days and includes module, unit, and diagnostic assessments. There are six units containing 18 modules and 99 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 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 with a "Show What You Know" diagnostic assessment that measures students' prior knowledge of three prerequisite skills: reading and writing numbers within 1,000, identifying fractions of a whole, and identifying fractions on a number line. Students then have an opportunity to practice some of these necessary 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. For example, before comparing and ordering numbers within one billion, the Are You Ready? questions ask students to compare and order smaller numbers within 1,000.

In Module 2, students use some of their knowledge and skill from Module 1 to practice decimal place values. They use concrete base-ten blocks that were previously used with whole numbers. The hundreds block, or flat, is now considered the whole; The tens rod, or long, now represents tenths; and the ones, or small cube, now represents the hundredths. A direct connection is made between fraction parts and wholes. Next, students extend their use of a place value chart from Module 1 to include the tenths and hundredths place values. Students also write decimals in standard form, expanded form, and word form; this is similar to the different forms used with whole numbers. When students get into the later lessons of the module, they represent tenths and hundredths on a decimal grid square and on a number line. Finally, at the end of the module, the materials allow students to connect and make a relationship between decimals, fractions, and money.

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: three-digit subtraction within 1,000, practicing multiplication facts, and modeling division with arrays. 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's 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's 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 Essential Question for Unit 2 is, "How do you perform computations with decimals and whole numbers?" 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 or for 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 allows for interconnections between 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 the 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 an 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 9.1, students use arrays to explore division of whole numbers with remainders. In the

printed edition and the Student eBook, students solve problems using graphics of arrays. However, in the online Personal Math Trainer, the same problem instead provides an inconsistent graphical model of circles and equal groups. While this is inconvenient and somewhat confusing, this likely would not keep students from completing the problem correctly. 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 9 includes a photo of a child arranging square tiles into an array on the same page as a graphical depiction of an array made from square tiles. This is supportive of student learning, as some students may not recognize how a rectangular graphic made of small squares is representative of the concrete manipulatives they use to solve the problem. 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 are 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 with 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 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 13, 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 1, Lesson 3, one problem states, "What's the Question? Compare: 17,643,251; 17,633,512; and 17,633,893. The answer is 17,633,512." Students must then come up with a question that has that answer. Students can find a similar question in the Personal Math Trainer: "Compare: 21,873,293; 21,863,145; and 21,863,717. The answer is 21,863,145. What's the question?" However, in the Personal Math Trainer, students have access to an additional question stem to help them access the task: "Which of these three numbers has the….value?" 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, offering the helpful suggestion of using a place-value chart to order numbers from smallest to largest.

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 4.2A, they will receive suggestions like the virtual iTools, using base-ten blocks to represent numbers to the thousands, the Personal Math Trainer practice problems and assessments, and specific Math on the Spot videos.