Great Minds PBC + Zearn

Supplemental English Mathematics, 5

Math Catalyst Texas + Zearn Math for Texas, Grade 5

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Supplemental	**9798894179025**	**Both Print and Digital**	**Adaptive**

Rating Overview

TEKS SCORE	TEKS BREAKOUTS ATTEMPTED	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	119	10	Flags Addressed	Not Applicable	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	26 out of 28	93%
2. Progress Monitoring	21 out of 21	100%
3. Supports for All Learners	39 out of 43	91%
4. Depth and Coherence of Key Concepts	16 out of 16	100%
5. Balance of Conceptual and Procedural Understanding	38 out of 38	100%
6. Productive Struggle	19 out of 19	100%

Breakdown by Suitability Noncompliance and Excellence Categories

SUITABILITY NONCOMPLIANCE FLAGS BY CATEGORY	IMRA REVIEWERS	PUBLIC	Flags NOT Addressed by November Vote
1. Prohibition on Common Core	0	0	0
2. Alignment with Public Education's Constitutional Goal	0	0	0
3. Parental Rights and Responsibilities	1	0	0
4. Prohibition on Forced Political Activity	1	0	0
5. Protecting Children's Innocence	0	0	0
6. Promoting Sexual Risk Avoidance	0	0	0
7. Compliance with the Children's Internet Protection Act (CIPA)	1	0	0

SUITABILITY EXCELLENCE FLAGS BY CATEGORY	IMRA REVIEWERS
Category 2: Alignment with Public Education's Constitutional Goal	0
Category 6: Promoting Sexual Risk Avoidance	0

IMRA Quality Report

1. Intentional Instructional Design

Materials support educators in effective implementation through intentional course and lesson-level design.

1.1 Course-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.1a	All criteria for guidance met.	5/5
1.1b	All criteria for guidance met.	3/3
1.1c	All criteria for guidance met.	2/2
1.1d	All criteria for guidance met.	2/2
1.1e	All criteria for guidance met.	2/2
—	**TOTAL**	14/14

1.1a – Materials include an alignment guide outlining the TEKS, ELPS, and concepts covered, with a rationale for learning paths across grade levels (vertical alignment) and within the same grade level (horizontal alignment) as designed in the materials.

In *Zearn Math*, the "Course Guide" outlines the Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS) for each mission, providing a written rationale for the sequence. The Curriculum Overview presents a structured progression from place value and operations to geometry, data, and volume. The materials explain how early concepts, such as decimal place value, support later learning, including fractions and coordinate graphing. The platform and guide connect these instructional sequences to future concepts, such as proportional reasoning and algebra, supporting both vertical and horizontal alignment.

In *Math Catalyst*, the materials organize "Alignment Guides" by concept strands such as Place Value, Operations, and Fractions. These guides demonstrate vertical alignment from kindergarten through grade 5, emphasizing increasing complexity across grade levels. Each guide includes numbered TEKS, corresponding lessons, the TEKS Mathematical Process Standards (MPS), and ELPS in all four language domains.

1.1b – Materials include an implementation guide with usage recommendations and strategies for effective educator use in various contexts, such as just-in-time supports, advanced learning, or as a course.

In *Zearn Math*, the "Course Guide" includes a Classroom Implementation section outlining recommended instructional groupings, pacing structures, and strategies for integrating digital and small-group

instruction. The materials provide weekly schedules and instructional routines that support consistent implementation across varied classroom settings.

In *Math Catalyst*, the "Implementation Guide" offers guidance on using the materials effectively, including recommendations aligned to a Multi-Tiered System of Supports (MTSS). The materials provide sample schedules, suggest instructional groupings, and describe how teachers can flexibly use lesson components to meet the needs of students across various instructional formats.

1.1c – Materials include a TEKS correlation guide with recommended skill entry points based on diagnostic assessment results.

In *Zearn Math*, the materials do not include a diagnostic assessment to identify student proficiency levels or determine appropriate skill entry points. While the program provides formative assessments, such as the Tower of Power and Mission-Level Assessments, these tools are not tied to diagnostic data and do not establish initial instructional placement. Instruction follows a fixed mission sequence, beginning with place value, decimal fractions, and base-ten operations, and concluding with coordinate graphing and data analysis. Reports, such as the Pace Report and Tower Alerts, offer insight into student progress but do not provide diagnostic recommendations or support individualized entry points.

In *Math Catalyst*, the materials include a Concept Diagnostic for each assessment that can be administered before or during instruction to collect data on student understanding, strengths, and areas for growth. This data is designed to inform instruction and provide timely intervention. Each Concept Diagnostic is supported by a Progression Toward Proficiency Rubric, which includes TEKS alignment and the related Concept Mini Lesson Objective. Problems in the assessment are sequenced from simple to complex, and questions aligned to each objective are included to help teachers make instructional decisions about student entry points based on assessment data.

1.1d – Materials include protocols with corresponding guidance for unit and lesson internalization.

In *Zearn Math*, the Structure of a Mission section of the "Course Guide" provides comprehensive unit-level internalization support, including prioritized TEKS, anticipated misconceptions, and vocabulary. Lesson-level tools, such as Guided Practice, Fluency Activities, and Exit Tickets, help teachers prepare effectively and respond to student understanding in real time.

In *Math Catalyst*, the "Implementation Guide" and "Concept Guides" provide protocols and reflective questions to support unit and lesson internalization. These resources include preparation steps, anticipated misconceptions, visual lesson sequences, and guiding questions to help teachers plan instruction and monitor student progress.

1.1e – Materials include resources and guidance for instructional leaders to support educators with implementing the materials as designed.

In *Zearn Math*, the "Implementation Playbook" provides a structured four-phase model—Prepare, Launch, Grow, Reflect—that guides instructional leaders through planning, classroom integration, and ongoing implementation support.

The "Getting Started with *Zearn Math*" guide and the *Zearn Math* School Implementation Checklist include pacing guidance for 60-, 75-, and 90-minute math blocks, weekly instructional schedules, and step-by-step onboarding tools to help leaders monitor teacher progress and support implementation milestones. The Leader Implementation Toolkit, *Zearn* Professional Learning Modules, and "Model Lessons and Walkthrough Guides" provide facilitation resources, asynchronous training, and sample lessons to support instructional coaching and professional learning throughout the school year.

1.2 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	The materials do not include detailed lesson plans with learning objectives or assessment resources aligned with the ELPS.	5/7
1.2b	All criteria for guidance met.	5/5
1.2c	All criteria for guidance met.	2/2
—	**TOTAL**	12/14

1.2a – If designed to be static, materials include detailed lesson plans with learning objectives, teacher and student materials, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

In *Math Catalyst*, each lesson includes a TEKS-aligned learning objective, such as "Represent decimals to thousandths in standard form and expanded notation," located in Objective 3.

In *Math Catalyst*, the "Teacher Guide" allocates approximately 10 minutes for each objective lesson in every mini-lesson. The Progress Check section before each unit contains progress checks aligned to TEKS, which can be used before, during, or after lessons, along with rubrics to evaluate proficiency.

In *Math Catalyst*, the "Concept Guide" for each unit contains a list of teacher and student materials needed for lessons throughout the unit.

In *Math Catalyst*, the materials do not include assessment resources or learning objectives aligned to the ELPS.

1.2b – If designed to be adaptive, materials include detailed lesson overviews with learning objectives, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

In *Zearn Math*, the materials include lesson overviews with TEKS- and ELPS-aligned learning objectives and embedded instructional components, such as guided practice, scaffolded fluency, and independent digital tasks. For example, in a lesson aligned to TEKS 5.3K, students identify and generate equivalent fractions using visual models and number lines. In the same lesson, students describe fractional relationships using academic vocabulary, such as numerator, denominator, and equivalent, supported by sentence frames and visual aids aligned to ELPS 1.E, 2.D, and 3.E. The "Course Guide" further supports planning by including lesson overviews with TEKS- and ELPS-aligned objectives, suggested timeframes for teacher-led instruction, and related assessment resources.

1.2c – Materials contain support for families in Spanish and English for each unit, with suggestions on supporting the progress of their student(s).

In *Zearn Math*, each mission includes a Family Tip Sheet in English and Spanish that outlines unit goals, introduces academic vocabulary, and provides guiding questions and home activities. For example, the grade 5 Mission 5 Tip Sheet asks, "How do you know if two fractions are equivalent?" and includes a number line activity to support conceptual understanding at home. Each tip sheet aligns with the TEKS addressed in the corresponding mission.

In *Math Catalyst*, the "Teacher Guide" includes a Family Math/Matemáticas en familia page for each concept, available in both English and Spanish. Each page begins with a letter to families explaining the concepts and models students will use. The resource also includes guiding questions and sample student responses to support at-home conversations. For example, guiding questions such as "How can you draw on the place value chart to represent the place value units?" are paired with sample student responses to support meaningful family conversations about the math content.

2. Progress Monitoring

Materials support educators in effective implementation through frequent, strategic opportunities to monitor and respond to student progress.

2.1 Instructional Assessments

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.1a	All criteria for guidance met.	2/2
2.1b	All criteria for guidance met.	2/2
2.1c	The materials do not include digital assessments with printable versions and accommodations, such as text-to-speech, content and language supports, and calculators, which educators can enable or disable to support individual students.	Not Scored
2.1d	All criteria for guidance met.	4/4
2.1e	All criteria for guidance met.	4/4
—	**TOTAL**	12/12

2.1a – Materials include the definition and intended purpose for the types of instructional assessments.

In *Zearn Math*, the Course Guide defines multiple embedded instructional assessments, such as Lesson Checkpoints, Tower of Power, Mission-Level Assessments, and Selected Response Practice. The materials explain the purpose of each assessment type, highlighting how they measure progress, address misconceptions, and support instructional decisions. For example, the Tower of Power provides scaffolded, mastery-based tasks at the end of digital lessons, while Lesson Checkpoints offer immediate support to ensure concept mastery.

In *Math Catalyst*, the "Implementation Guide" defines formative assessments and outlines their role in informing instruction, identifying misconceptions, and monitoring student progress. The materials describe specific examples, including application activities, the Read–Draw–Write Tool, the Pause and Monitor Tool, and project check options. These support teachers in gathering formative data to guide instruction.

2.1b – Materials include guidance to ensure consistent and accurate administration of instructional assessments.

In *Zearn Math*, the materials include an End-of-Mission Rubric that outlines clear criteria for scoring student responses, helping educators evaluate progress objectively and in alignment with learning goals. Assessments, such as Lesson Checkpoints and the Tower of Power, are placed at consistent points within the instructional sequence, allowing for the accurate measurement of student learning. The grade 5

"Course Guide" also specifies when to administer key assessments, including Mid-Mission and End-of-Mission Assessments.

In *Math Catalyst*, educators use "Progress Checks" supported by the Progression Toward Proficiency Rubric, which classifies student performance as "Proficient," "Partially Proficient," or "Not Yet Proficient." Each Progress Check includes sections titled "About the Progress Check Tool, Using the Progress Check Tool to Inform Instruction," and a Teacher Tip to support implementation. For example, the "Divide with Unit Fractions and Whole Numbers" progress check consists of a prompt instructing students to draw a model and complete a related statement to verify their work.

2.1c – Digital assessments include printable versions and accommodations, including text-to-speech, content and language supports, and calculators, that educators can enable or disable to support individual students.

In *Zearn Math*, the materials do not include printable versions of digital products. While digital assessments offer features such as text-to-speech and visual representations, educators cannot enable or disable these tools for individual students. The materials also lack adjustable accommodations, such as calculators or content language supports, to meet diverse learner needs.

In *Math Catalyst*, the materials do not include digital assessments. Instead, assessments appear only as PDFs in the guidebook or student materials. The program does not provide accommodations, such as text-to-speech, calculators, or content language supports, that educators can customize based on student needs.

2.1d – Materials include diagnostic assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

In *Zearn Math*, the materials do not include a diagnostic assessment to identify student needs or inform placement decisions. While the platform offers ongoing formative assessments, it does not provide beginning-of-year or end-of-year diagnostics to support individualized learning plans or targeted instruction. The guidance recommends placing students in the first-grade unit aligned with the core curriculum.

In *Math Catalyst*, the materials include a Concept Diagnostic Assessment for each concept, providing teachers with data on student understanding. The assessment problems are sequenced from simple to complex, allowing teachers to evaluate knowledge at different levels of rigor. Item types include multiple choice, number lines, place value charts, arranging cards or counters, fill-in-the-blank, and open response. Students are also encouraged to show their work, providing teachers with additional insight into their reasoning and any misconceptions.

2.1e – Materials include a variety of formative assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

In *Zearn Math*, the materials include formative assessments with TEKS-aligned tasks and questions that require students to apply math knowledge through multiple representations. Tasks include using area models, place value models, strip diagrams, and word problems to demonstrate understanding. Students are also asked to represent quotients, compare strategies, and model multiplication and division relationships. The assessments vary in complexity, progressing from representing equations and analyzing number relationships to applying multiple strategies for solving problems. Additional tasks extend learning through real-world word problems and pictorial models. However, the materials include only two interactive item types, limited to text entry and drag-and-drop.

In *Math Catalyst*, the materials provide a variety of TEKS-aligned formative assessments, including quick checks, quizzes, exit tickets, and embedded lesson tasks. Quick checks at the end of each objective assess mastery with increasing levels of complexity. For example, in grade 5, students begin by using fraction tiles to create like units for adding and subtracting fractions, then progress to constructing number lines, completing area models, and using multiplication to find common denominators. Application questions extend to word problems in a game setting and real-world analysis through Solve a Task. The program also includes interactive item types in the Progress Check Tool, such as plot the point, order numbers, fill-in-the-blank, and multiple choice, offering diverse opportunities for students to demonstrate their learning.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	All criteria for guidance met.	3/3
2.2b	All criteria for guidance met.	1/1
2.2c	All criteria for guidance met.	2/2
2.2d	All criteria for guidance met.	2/2
2.2e	All criteria for guidance met.	1/1
—	**TOTAL**	9/9

2.2a – Instructional assessments include scoring information and guidance for interpreting student performance, including rationale for each correct and incorrect response.

In *Zearn Math*, the materials include scoring rubrics for the Mid-Mission Assessment and End-of-Mission Assessment, which outline four levels of student performance:" Initiating Understanding," "Developing Understanding," "Nearing Understanding," and "Full Understanding." Each level provides descriptions and examples of student work to guide the interpretation of student performance. For example, in grade 5, Mission 4, the End-of-Mission Assessment rubric notes that a student who produces a valid fraction model but records an incorrect equation demonstrates "Developing Understanding" of fraction multiplication. Additionally, Selected Response Practice items include rationales for correct and incorrect responses, supporting teachers in analyzing student thinking.

In *Math Catalyst*, the materials provide informal and formative assessments, including Progress Checks, which include numerical scoring information and guidance for interpreting student performance. Students are rated as "Not Yet Proficient," "Partially Proficient," or "Proficient" for each item. While these scoring levels help teachers identify student needs, the assessments do not include rationales for correct or incorrect responses, limiting the support available for addressing misconceptions.

2.2b – Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.

In *Zearn Math*, the materials offer clear guidance for using assessment reports to track trends in student understanding and adjust instruction. According to the grade 5 "Course Guide," the Progress Report gives teachers a quick overview of lesson completion and Tower of Power performance over time, helping them plan instruction based on long-term student progress. Real-time tools, such as the Tower Alerts Report, notify teachers when a student misses three or more questions, signaling a need for intervention. This report also indicates whether the student accessed in-lesson supports, which helps teachers determine if reteaching is necessary. Additionally, teachers can link these results to specific TEKS and assign small-group lessons or foundational lessons from earlier grades to address individual gaps.

In *Math Catalyst*, the materials provide instructional guidance based on student performance on formative assessments. For instance, in grade 5, the Progression of Mini Lesson Objectives for adding fractions, unlike denominators, helps teachers choose starting points based on what students can already do. The guidance says, "Start here if students can represent fractions with unit tiles," or "Start here if students can add fractions with like units using concrete objects." This structured progression allows teachers to respond directly to student needs and tailor instruction accordingly.

2.2c – Materials include tools for teachers to track student progress and growth, and tools for students to track their own progress and growth.

In *Zearn Math*, the materials offer a range of teacher-facing tools to monitor student progress and growth. Reports such as the Class Report, Curriculum Progress, Pace and Progress, Tower Alerts, and Sprint Alerts enable teachers to identify trends, track lesson completion, and adjust instruction based on student needs. The Tower Report specifically helps monitor progress on TEKS-aligned checkpoints, while small-group lesson materials include assessment keys and recording sheets to support performance tracking on targeted standards. Student-facing tools, such as the Student Lesson Calendar, Weekly Goal Tracker, and Challenge Trackers, help students track the completion of digital lessons and enrichment activities. However, these tools do not support students in monitoring their growth in understanding or mastery of grade-level concepts over time.

In *Math Catalyst*, the materials include tools that allow teachers and students to track student progress and growth. Teachers use the Observational Data Recording Sheet to capture anecdotal notes by objective and student. Students track their progress using the Pause and Monitor Tool, where they indicate their understanding with levels like "Getting started," "On my way," or "I got it!" This visual tracking system encourages reflection and ownership of learning throughout each concept or objective.

2.2d – If designed to be static, materials provide prompts and guidance to support educators in conducting frequent checks for understanding at key points throughout each lesson or activity.

In *Math Catalyst*, the materials support frequent checks for understanding by providing targeted prompts embedded throughout each lesson. For example, in the lesson "Add Unit Fractions with Related Units by Using Objects," Objective 1 includes checks such as, "Can the student use unit fraction tiles to rename fractions with related units as equivalent fractions with like units?" and "Can the student correctly rewrite the addition expression by using the equivalent fraction?" These questions help teachers assess student thinking in real time.

Teacher Tips in the lessons guide educators in monitoring student thinking. For example, the materials remind educators that "it is not necessary for students to find the least common denominator when they add fractions." These supports help educators adjust instruction on the spot to address misconceptions or extend learning.

2.2e – If designed to be adaptive, materials provide frequent checks for understanding at key points throughout each lesson or activity.

In *Zearn Math*, the materials embed checks for understanding within each lesson using digital feedback, checkpoints, and scaffolded supports that respond to real-time student input. These features guide corrective pathways and help ensure content mastery before students progress. Each mission includes a Mid-Mission Assessment that evaluates conceptual understanding, reasoning, and problem-solving after several lessons.

Rubrics support teachers in analyzing student thinking, identifying misconceptions, and planning targeted small-group instruction.

Every digital lesson concludes with a Tower of Power, a mastery-based assessment that determines whether students advance in the digital sequence. If students struggle, they receive a scaffolded Boost and another opportunity to demonstrate understanding, reinforcing a consistent formative assessment cycle throughout instruction.

3. Supports for All Learners

Materials support educators in reaching all learners through design focused on engagement, representation, and action/expression for learner variability.

3.1 Differentiation and Scaffolds

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.1a	All criteria for guidance met.	1/1
3.1b	All criteria for guidance met.	4/4
3.1c	In both *Zearn Math* and *Math Catalyst*, the materials do not include explicit educator guidance for enrichment and extension activities for students performing above-grade-level content and skills.	1/2
3.1d	*Math Catalyst*, a static program without digital components, and *Zearn Math* do not include digital materials with accommodations, including text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students.	0/3
3.1e	All criteria for guidance met.	2/2
—	**TOTAL**	8/12

3.1a – Materials include explicit educator guidance for lessons or activities scaffolded for students who have not yet reached proficiency in prerequisite or grade-level concepts and skills.

In *Zearn Math*, the materials include explicit educator guidance for supporting students who have not yet reached grade-level proficiency. In Mission 4, teachers guide students in using area models, number lines, and equations to represent multiplication and division of fractions. Scaffolded fluency supports in Mission 2 direct teachers to focus on tenths and hundredths separately before progressing to mixed decimal operations, using money and metric models to build understanding. Small-group lessons include guided questions, manipulatives, such as fraction tiles and grids, and sample prompts like, "Shade 0.6 on the grid. What does this represent? How would you write it as a fraction?" to connect visual models to numerical representations.

In *Math Catalyst*, the materials provide explicit educator guidance, along with topic-specific scaffolds and activities, for students who have not yet reached proficiency. In the grade 5 "Concept Guide" for rounding decimals, teachers receive support to address misconceptions by using place value charts to show how zeros hold place but do not add value. The materials in the Subtract Fractions with Unlike Denominators "Concept Guide" instruct educators in using a step-by-step scaffolded sequence to help students rename fractions with like units, along with clear prompts for clarifying and reinforcing foundational concepts.

3.1b – Materials include explicit educator guidance for language supports, including pre-teaching and embedded supports for developing academic vocabulary and unfamiliar references in text.

In *Zearn Math*, the materials embed vocabulary supports within lessons by prompting students to use and apply vocabulary terms such as *numerator*, *denominator*, and *unit fraction* when modeling fraction multiplication and division in Mission 4. The materials provide vocabulary development in context through modeling and student interaction; for example, Mission 5 lessons introduce terms, such as *volume* and *cubic units*, using visual models and manipulatives. In Mission 6, lessons reinforce the use of place value language in decimal and financial contexts.

In *Math Catalyst*, the materials include explicit educator guidance for language support in each unit's Language Support section of the "Teacher Concept Guide." In the "Compare and Order Decimals to Thousandths" lessons, the materials prompt educators to use number lines when students verbally compare decimals. In the grade 5 Objective 4 Mini Lesson "Add Fractions with Related or Unrelated Units," the materials recommend providing sentence frames to help students describe how to add fractions by finding equivalent fractions numerically.

3.1c – Materials include explicit educator guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level and above grade-level content and skills.

In *Zearn Math*, the materials include enrichment activities that deepen students' understanding of grade-level content. For example, in Mission 5, lessons prompt students to reason about volume by predicting how doubling or tripling cube dimensions affects measurements and encourage them to create rules for calculating volume across varying units. The materials also provide designated enrichment lessons and components for students demonstrating proficiency, including Multiple Means of Engagement and Concept Exploration tasks that extend learning through geometric reasoning, coordinate plane reflections, and applied design challenges. Although educators can adjust digital pacing to provide enrichment, the materials do not include explicit guidance for extending learning beyond grade-level expectations.

In *Math Catalyst*, the materials include explicit educator guidance for enrichment and extension activities for students with proficiency in grade-level skills. In the grade 5 "Teacher Concept Guide" for "Subtract Fractions with Unlike Denominators," the Activities, Structures, and Considerations section offers clear teacher directions for using enrichment activities independently or in pairs. Each unit's Application section provides guidance for tasks like Solve a Task and Partner Games, designed to extend and enrich grade-level learning. However, the materials do not include guidance on specific enrichment and extension activities to support students performing above-grade-level content.

3.1d – Digital materials include accommodations, including text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students.

In *Zearn Math*, the materials do not include digital materials that include accommodations, such as text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students. The materials embed text-to-speech features that automatically read prompts and questions aloud in digital lessons and assessments. Content and language supports, including verbal cues, visual scaffolds, and sentence frames, are also built in and accessible to all students by default. Educators cannot enable or disable these features for individual students, and the materials do not include a digital calculator or other adjustable tools to customize accommodations.

In *Math Catalyst*, the materials are print-focused and do not provide digital tools, such as text-to-speech, content and language supports, or calculators, that educators can adjust to meet individual student needs.

3.1e – Materials include educator guidance on offering options and supports for students to demonstrate understanding of mathematical concepts in various ways, such as perform, express, and represent.

In *Zearn Math*, the materials prompt students to model and explain operations with fractions and decimals through flexible activities, such as hands-on station work and real-world design challenges. In Mission 4 small-group lessons, teacher materials include guidance for using manipulatives and visual models to help students build and discuss representations of fraction multiplication, division, and decimal relationships. The Concept Exploration and Lesson Synthesis sections offer structured opportunities for students to demonstrate understanding through verbal explanations, drawings, and physical modeling using grid models, area models, and number lines. Additionally, students engage with digital manipulatives during Guided Practice and reinforce their learning by completing related paper-based Student Notes, supporting multiple means of expression.

In *Math Catalyst*, the materials include educator guidance on providing students with options to demonstrate understanding in various formats. For example, in "Compare and Order Numbers to 100,000," a Teacher Tip explains that students can write expanded form vertically before adding, giving students flexibility in representing numbers. In "Divide Decimals by Two-Digit Numbers," a Teacher Tip suggests providing place value disks so students can use concrete representations to distribute and exchange disks when dividing, supporting varied ways to model concepts.

3.2 Instructional Methods

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.2a	All criteria for guidance met.	5/5
3.2b	All criteria for guidance met.	2/2
3.2c	All criteria for guidance met.	3/3
3.2d	All criteria for guidance met.	2/2
3.2e	All criteria for guidance met.	2/2
—	**TOTAL**	14/14

3.2a – Materials include explicit (direct) prompts and guidance for educators to build knowledge by activating prior knowledge, anchoring big ideas, and highlighting and connecting key patterns, features, and relationships through multiple means of representation.

In *Zearn Math*, the materials provide explicit prompts and teacher guidance to activate prior knowledge and anchor key mathematical ideas. For example, in Mission 1, Lessons 1 and 2, instruction builds from earlier place value concepts by prompting students to read and write decimals in unit form and connect these values to whole numbers. This sequence supports continuity from prior-grade learning into grade 5 decimal work. Lessons also highlight key patterns and relationships through multiple representations, including standard, word, fraction, expanded, and unit forms, often using a place value chart to visually anchor these formats. Teacher guidance helps students connect each decimal place to adjacent values using explicit language (e.g., "each place is ten times or one-tenth the value of the one next to it"), gestures, and visual models that reinforce mathematical structure.

In *Math Catalyst*, the materials do not include direct prompts or guidance for educators to activate prior knowledge or explicitly anchor big ideas. While lessons are sequenced to build on previously taught concepts and support conceptual development, the materials rely on lesson progression rather than instructional prompts to make connections. The materials do not provide guidance for intentionally highlighting patterns, features, or relationships across visual and symbolic representations.

3.2b – If designed to be static, materials include educator guidance for effective lesson delivery and facilitation using various instructional approaches.

In *Math Catalyst*, the materials include teacher guidance and recommendations to support effective lesson delivery and facilitation through various instructional approaches. Teachers are encouraged to incorporate strategies such as Turn and Talk routines, hands-on exploration, and the use of manipulatives within Concept Mini Lesson objectives. For example, in a Differentiation Teacher Tip for Objective 2, "Decompose to Divide Decimals," teachers are advised to offer place value disks for students needing concrete support when distributing and exchanging values. In the "Multiplication of Multi-Digit

Numbers by Multi-Digit Numbers" unit, educators provide direct instruction and guided practice, followed by prompts in Plan Future Practice to structure support strategically with teacher or peer assistance. The Application section includes real-world problem-solving opportunities, such as Solve a Task, where students analyze scenarios (e.g., peanuts grown on plants and peanut butter in jars). Students complete these tasks independently or in small groups.

3.2c – Materials include multi-tiered intervention methods for various types of practice and structures and educator guidance to support effective implementation.

In *Zearn Math*, the materials include multi-tiered intervention methods across guided, independent, and collaborative learning structures. The digital sequence features Math Chat for guided instruction and the Tower of Power for independent practice, with a Boost automatically triggered when an incorrect answer is submitted. This scaffold breaks the task into manageable steps and provides corrective feedback. Teacher materials support differentiated structures—whole group, small group, or individual—and include prompts encouraging students to compare strategies like area models and standard algorithms to address misconceptions. The "Course Guide" outlines intervention tools, such as the Tower Alerts Report, to identify students needing reteach support. Foundational Lessons, fluency activities, and Sprint Alerts offer targeted practice to strengthen essential skills.

In *Math Catalyst*, the materials include a structured intervention system built around the "Progress Tool" and scoring rubric, which help educators identify the appropriate entry point for each student based on proficiency with targeted TEKS. For example, in the "Multiplication of Multi-Digit Numbers by Multi-Digit Numbers" unit, students who need support with problems involving no regrouping begin on Objective 3, which includes guided practice using the standard algorithm followed by independent work. Similarly, in "Division of Multi-Digit Numbers by Two-Digit Numbers," Objective 3 scaffolds learning with area models before transitioning to vertical form. The "Implementation Guide" offers additional flexibility, stating that Progress Checks may be used for pre-assessment, post-assessment, or small-group work. Additionally, lesson components such as Practice and Application can be completed independently, with a partner, or in small groups, allowing for varied instructional delivery based on student needs.

3.2d – Materials include enrichment and extension methods that support various forms of engagement, and guidance to support educators in effective implementation.

In *Zearn Math*, the materials include enrichment and extension strategies that promote various forms of engagement. In Mission 5, the Multiple Means of Representation section features geometry tasks that require students to construct and classify triangles based on their angles and side lengths. The Multiple Means of Engagement section prompts students to apply surface area calculations in real-world contexts by researching flooring options and comparing cost estimates. Extension opportunities also appear in fraction subtraction lessons, where students use consecutive denominators to identify patterns and describe mathematical structures. Additional tasks encourage modifying real-life scenarios to extend problem-solving beyond core content. The "Course Guide" offers strategies for implementing these

enrichment activities, including Digital Bonuses, optional problems, and small-group prompts designed to increase lesson complexity and deepen understanding through independent exploration or discussion.

In *Math Catalyst*, the materials include multiple enrichment and extension methods with accompanying educator guidance to promote deeper engagement. For instance, in the "Multiplication of Multi-Digit Numbers by One-Digit Numbers" unit, students participate in Solve a Problem, Play a Game, and Solve a Task activities. These tasks can be completed independently or with partners. The materials provide teacher guidance, such as "consider inviting students to share their work with a partner" to compare strategies and make connections between representations. In the Application section of "Round Decimals to Tenths or Hundredths," students engage in three tasks designed to apply and extend their understanding of rounding decimals. These structured enrichment opportunities support student choice and reinforce conceptual understanding while encouraging flexible, collaborative exploration of mathematical ideas.

3.2e – Materials include prompts and guidance to support educators in providing timely feedback during lesson delivery.

In *Zearn Math*, the materials include prompts and guidance to support the delivery of timely feedback during instruction. In Mission 1, the Concept Exploration section features open-ended questions such as, "How do you know your quotient makes sense?" and "Can you explain the steps you used to solve it?" These prompts encourage students to articulate their reasoning while enabling teachers to assess understanding and address misconceptions in the moment. Teacher-facing materials include exemplar responses and discussion guidance to support immediate and meaningful feedback through student discourse. The digital component also supports real-time correction through embedded scaffolds. When students make an error in the Tower of Power, a Boost breaks the task into smaller steps, guiding students back toward conceptual understanding.

In *Math Catalyst*, the materials do not provide explicit guidance for educators on delivering timely feedback during instruction. While the materials provide teachers with prompts to monitor progress, they lack embedded suggestions or strategies for offering corrective or reinforcing feedback in response to student misconceptions during lesson delivery.

3.3 Support for Emergent Bilingual Students

An emergent bilingual student is a student who is in the process of acquiring English and has another language as the primary language. The term emergent bilingual student replaced the term English learner in the Texas Education Code 29, Subchapter B after the September 1, 2021 update. Some instructional materials still use English language learner or English learner and these terms have been retained in direct quotations and titles.

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.3a	All criteria for guidance met.	4/4
3.3b	All criteria for guidance met.	4/4
3.3c	All criteria for guidance met.	1/1
3.3d	All criteria for guidance met.	8/8
3.3e	This guidance is not applicable to the program.	N/A
—	**TOTAL**	17/17

3.3a – If designed to be static, materials include educator guidance on providing and incorporating linguistic accommodations for all levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

In *Math Catalyst*, the materials include educator guidance on providing and incorporating linguistic accommodations for all levels of language proficiency. The "Alignment Guide" includes descriptors that support students at all levels—pre-production, beginning, intermediate, high intermediate, and advanced. For example, in grade 5's "Divide Multi-Digit Numbers by Two-Digit Numbers," strategies include using gestures, think-alouds, modeling, and vocabulary supports. The guide also addresses listening, speaking, reading, and writing skills across ELPS levels. It recommends using concrete manipulatives and pictorial representations during games, sentence stems to describe procedures, and Turn and Talk opportunities to help students explain their mathematical thinking.

3.3b – If designed to be adaptive, materials include embedded linguistic accommodations for all levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

In *Zearn Math*, the materials include linguistic accommodations for all levels of language proficiency as defined by the 2026 ELPS ("Pre-Production," "Beginning," "Intermediate," "High-Intermediate," and "Advanced"). Support for beginning-level students includes visual models, audio narration, and scaffolded vocabulary in Digital Lessons and the grade 5 "Course Guide." For example, visuals and vocabulary labels reinforce key terms such as *volume*, *faces*, and *unit cube*, along with bilingual supports. For intermediate-level students, the materials include sentence frames in the Lesson Synthesis and oral language routines

featured in Small-Group Lessons. Prompts such as "The total volume is . . . because . . ." guide students in using academic vocabulary to communicate mathematical reasoning.

3.3c – Materials include implementation guidance to support educators in effectively using the materials in state-approved bilingual/ESL programs.

In *Zearn Math*, the materials provide educator guidance on implementing the program within state-approved bilingual and ESL instructional models, including dual language, transitional bilingual, and ESL pull-out programs. The Supports for Emergent Bilingual Students section of the "Course Guide" outlines accommodations and strategies to help educators provide targeted support for language development alongside mathematical instruction.

In *Math Catalyst*, the materials include a dedicated section in the "Implementation Guide" that provides explicit guidance for supporting emergent bilingual students in building vocabulary, comprehension, and conceptual knowledge. Teachers are encouraged to strategically group students by mathematical or English proficiency and, when possible, pair students who share the same home language to promote sense-making in both languages. Further guidance suggests creating cross-linguistic anchor charts that list terminology in English and the student's home language, accompanied by visuals, to reinforce understanding. The "Implementation Guide" also includes a section titled "Using *Math Catalyst* in State-Approved Bilingual/ESL Programs," which details alignment with dual language one-way, dual language two-way, and ESL pull-out models, along with strategies to strengthen both language development and mathematical proficiency.

3.3d – Materials include embedded guidance to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

In *Zearn Math*, the materials include guidance for developing academic vocabulary through oral and written discourse. Supports include sentence frames, partner talk in Concept Exploration, and bilingual vocabulary notebooks described in the Vocabulary Notebook section and the grade 5 "Course Guide." Instructional features use Spanish cognates and visual models to reinforce terms such as *volume*, *unit cube*, and *product*. The materials recommend using structured discussion, guided prompts, and culturally responsive contexts to support comprehension and background knowledge. For example, in Concept Exploration, students explain fraction comparisons using diagrams and write justifications for equivalence using accessible academic language. Cross-linguistic connections appear through Spanish-language materials, bilingual glossaries, and preview opportunities that pair visuals with aligned vocabulary (e.g., *faces*/*caras* and *volume*/*volumen*).

In *Math Catalyst*, the materials provide support in developing academic vocabulary and making cross-linguistic connections. In "Compose, Decompose, and Represent Decimals to Thousandths," the Language Support encourages the use of precise mathematical language (e.g., prompting students with

"What is the value of the thousandths disks?"). In "Divide with Unit Fractions and Whole Numbers," a Language Support in Objective 2 suggests Turn and Talk routines to help students define mathematical terms and use academic vocabulary with peers. The "Alignment Guide" suggests building cross-linguistic connections through oral and written discourse by grouping students with different proficiency levels and using anchor charts that pair vocabulary in students' home languages with English terms and visuals. However, the materials do not include embedded guidance designed to help emergent bilingual students increase comprehension through oral discourse or develop academic vocabulary, background knowledge, and comprehension through written discourse.

3.3e – If designed for dual language immersion (DLI) programs, materials include resources that outline opportunities to address metalinguistic transfer from English to the partner language.

This guidance is not applicable because the program is not designed for dual language immersion (DLI) programs.

4. Depth and Coherence of Key Concepts

Materials are designed to meet the rigor of the standards while connecting concepts within and across grade levels/courses.

4.1 Depth of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.1a	All criteria for guidance met.	2/2
4.1b	All criteria for guidance met.	4/4
—	**TOTAL**	6/6

4.1a – Practice opportunities throughout learning pathways (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

In *Zearn Math*, the materials include practice opportunities and instructional assessments embedded throughout learning pathways that require students to demonstrate depth of understanding aligned with the TEKS. For example, in grade 5, Mission 5, students engage in lessons that build conceptual understanding of volume by constructing 3D figures, exploring measurement properties, and applying numerical reasoning. Practice sections and assessments, such as Exit Tickets, Mid-Missions, and End-of-Mission Assessments, further support TEKS alignment through tasks involving fractions, decimals, geometry, and measurement. These assessments progress from concrete to abstract representations, reinforcing coherence and conceptual development.

In *Math Catalyst*, students demonstrate TEKS-aligned depth of understanding through practice activities and assessments embedded within lessons. For example, in "Add Fractions with Unlike Denominators," students use concrete tools, such as number lines and area models, before transitioning to more abstract tasks. Application activities and Progress Check Tools provide assessment opportunities to reflect real-world contexts and require students to apply their understanding of fraction operations.

4.1b – Questions and tasks, including enrichment and extension materials, increase in rigor and complexity, leading to grade-level and above grade-level proficiency in the mathematics TEKS.

In *Zearn Math*, the materials include questions and tasks that increase in rigor and complexity to support mastery of grade-level and above-grade-level TEKS. Lessons build on prior knowledge and scaffold new concepts, and enrichment opportunities offer tasks that deepen conceptual understanding through word problems and visual models.

In *Math Catalyst*, each Concept Mini Lesson progresses in rigor and complexity through sequenced objectives. For example, in the "Divide with Unit Fractions and Whole Numbers" lesson, students

progress from identifying the number of groups to finding the group size and then dividing unit fractions. The materials include enrichment and extension opportunities within application activities that require students to analyze errors and explain reasoning.

4.2 Coherence of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.2a	All criteria for guidance met.	1/1
4.2b	All criteria for guidance met.	1/1
4.2c	All criteria for guidance met.	4/4
—	**TOTAL**	6/6

4.2a – Materials demonstrate coherence across concepts horizontally within the grade level by connecting patterns, big ideas, and relationships.

In *Zearn Math*, the materials include practice opportunities through learning pathways that require students to demonstrate a depth of understanding aligned with the TEKS. For example, in grade 5, Mission 5, Lesson 1 prompts students to use unit cubes to build three-dimensional figures and explore volume properties. In Lesson 2, students construct paper cubes to investigate volume measurement, then decompose numbers within a prism in Lesson 3 to connect numerical reasoning to geometric understanding. The Practice Problems sections provide additional tasks, including building centimeter cube models, identifying angle types, and categorizing lines as perpendicular or parallel. The materials also include instructional assessments throughout learning pathways that require students to demonstrate a depth of understanding aligned with the TEKS. Exit Tickets, Mid-Lesson Assessments, and End-of-Mission Assessments include tasks such as adding fractions with unlike denominators using estimation and area models, representing decimals in expanded and word form to compare values, and applying measurement concepts to solve problems involving area and volume. The assessments reinforce coherence by guiding the progression from concrete representations to abstract reasoning, supporting conceptual understanding, and connecting new learning to previously taught content.

In *Math Catalyst*, the materials demonstrate coherence across concepts horizontally. For example, in grade 5, students connect ideas related to the division of multi-digit numbers by two-digit numbers to the division of decimals and further connect these ideas to the division of fractions.

4.2b – Materials demonstrate coherence vertically across concepts and grade bands, including connections from grade K–6, by connecting patterns, big ideas, and relationships.

In *Zearn Math*, the materials demonstrate vertical coherence by systematically connecting mathematical concepts across grade levels from kindergarten through grade 6. According to the grade 5 "Course Guide," the sequence begins with counting and composing numbers in the early grades and progresses to operations with addition, subtraction, multiplication, and division. Geometry follows a similar path, starting with shape identification and advancing to classification, measurement, and spatial reasoning. For example, in Mission 4: "Multiply and Divide Fractions," students develop fraction operation skills that support later learning of ratios and proportional reasoning in middle school.

The materials reinforce vertical alignment through scaffolding and instructional models that connect prior grade-level content to new learning. In Mission 1: "Place Value with Decimals," the video lesson builds on earlier place value concepts and extends the chart to include additional decimal places, aligning with the grade 5 TEKS. In Mission 5: "Volume, Area, and Shapes," the Teacher Lesson Materials reference prior instruction on two-dimensional figures from grade 4 to support geometry learning. Mission 4 also emphasizes the relationship between part-whole reasoning and fraction operations, connecting area models, number lines, and unit fractions. Instruction moves from visual models to equations, enabling students to understand multiplication and division of fractions as an extension of their prior knowledge of whole-number operations and measurement.

In *Math Catalyst*, the materials do not demonstrate vertical coherence across grade levels by systematically connecting mathematical patterns, big ideas, or relationships through grade 6. While the program includes a "Strand by Grade Scope and Sequence" to outline concept progression, it does not explicitly link prior learning to future grade-level content within instructional lessons.

4.2c – Materials demonstrate coherence across lessons or activities by connecting students' prior knowledge of concepts and procedures to the mathematical concepts to be learned in the current grade level and future grade levels.

In *Zearn Math*, the materials consistently connect current instruction to prior knowledge and future learning. In grade 5, Mission 1, students build on place value and operations to perform decimal calculations using charts, number lines, and expanded form. In Mission 3, instruction extends understanding of fractions through part-whole reasoning with visual models and number lines, preparing students for proportional reasoning. In Mission 5, students apply their prior knowledge of area and geometry to calculate volume, connecting additive reasoning and multiplication to three-dimensional problem-solving.

In *Math Catalyst*, the materials do not demonstrate strong coherence across lessons or activities. They do not connect students' prior knowledge to current grade-level concepts or future mathematical learning. Additionally, the materials lack consistent teacher guidance on activating students' prior knowledge in daily instruction.

4.3 Coherence and Variety of Practice

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.3a	All criteria for guidance met.	2/2
4.3b	All criteria for guidance met.	2/2
—	**TOTAL**	4/4

4.3a – Materials provide spaced retrieval opportunities with previously learned skills and concepts across learning pathways.

In *Zearn Math*, the materials provide spaced retrieval opportunities by revisiting previously taught skills throughout lessons and missions. For example, in Mission 1, Warm-Ups include problems that review multiplication and subtraction while focusing on decimals. Fluency activities such as Make and Break 10 and timed Sprints reinforce number relationships and automaticity. In Mission 4, fluency tasks revisit multiplying and dividing decimals by 10, 100, and 1,000, helping bridge prior concepts to current instruction and procedural fluency.

In *Math Catalyst*, the materials do not provide opportunities for spaced retrieval of previously learned skills. The focus remains on current learning objectives without revisiting prior concepts across the instructional pathway.

4.3b – Materials provide interleaved practice opportunities with previously learned skills and concepts across learning pathways.

In *Zearn Math*, the materials provide interleaved practice that prompts students to apply previously learned strategies in new contexts. For example, in the fractions unit, Warm-Ups include tasks involving repeated addition, strip diagrams, number lines, and the standard algorithm. These strategies, introduced in earlier whole-number instruction, are now applied to fractional operations. Fluency activities revisit place value, coordinate grids, and multiplication strategies, reinforcing mission connections. Real-world problems and routines in Missions 2, E, and F require the use of area models and the distributive property to solve tasks involving multi-digit operations, measurement, and decimals.

In *Math Catalyst*, the materials do not include interleaved practice opportunities. Activities and interventions focus on individual objectives, without encouraging students to revisit or apply previously taught skills across different contexts or learning pathways.

5. Balance of Conceptual and Procedural Understanding

Materials are designed to balance conceptual understanding, procedural skills, and fluency.

5.1 Development of Conceptual Understanding

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.1a	All criteria for guidance met.	3/3
5.1b	All criteria for guidance met.	2/2
5.1c	All criteria for guidance met.	1/1
—	**TOTAL**	6/6

5.1a – Questions and tasks provide opportunities for students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations.

In *Zearn Math*, the materials provide opportunities for students to interpret mathematical models using concrete and pictorial tools, such as place value charts, strip diagrams, and number lines. For example, in Mission 1 and Mission 3, students interpret place value and fraction models during Math Chat and Learning Lab to understand decimal operations and subtraction, and determine what the model represents before solving. The materials support students in analyzing visual models by comparing representations and identifying mathematical relationships. In volume and geometry lessons, students analyze features of shapes and solids using manipulatives and visual models, and use strip diagrams and rectangular models in fraction units to analyze relationships and identify equivalence. Lessons also prompt students to evaluate mathematical representations to assess their accuracy and reason through their effectiveness, such as justifying classifications of triangles, determining whether numbers are prime or composite using arrays, and solving multistep word problems involving decimals and fractions.

In *Math Catalyst*, the materials include questions and tasks that prompt students to interpret, analyze, and evaluate models and representations. For example, in "Compare and Order Decimals to Thousandths," students begin using a number line and are asked, "When one tenth is partitioned into ten equal parts, what is the new unit?" They analyze where to place decimals like 0.04 and 0.09. Students then evaluate numbers in place value charts to order 0.408, 0.312, and 0.477 and answer questions such as, "How can you compare the value of the digit in the hundredths place of these two numbers?" In "Divide Decimals by Two-Digit Numbers," students use a place value chart to model division, interpret the dividend and divisor, and analyze how to regroup whole numbers into decimals. They also evaluate whether their model remains equal to the original dividend when asked, "How can you rename a unit into smaller units?"

5.1b – Questions and tasks provide opportunities for students to create concrete models and pictorial representations to represent mathematical situations.

In *Zearn Math*, the materials enable students to construct concrete models using manipulatives, such as fraction tiles, decimal grids, and number lines, to support their conceptual understanding of fraction and decimal operations. For example, in Mission 4, Lesson 3, students use fraction tiles to model the multiplication of a whole number by a fraction, aligning tiles in equal groups to represent repeated addition. The materials include tasks that guide students in creating pictorial representations, such as drawing models of solids on dot paper, representing arrays to show factor pairs, and partitioning area models to solve fraction problems. The instructional materials include lessons that explicitly connect concrete and pictorial models, such as volume and decimal division lessons, where students build with cubes or disks and then represent their thinking with drawings, dot paper, or visual models.

In *Math Catalyst*, the materials provide opportunities for students to create concrete and pictorial models to represent mathematical situations. For example, in "Compare and Order Numbers to 100,000," students begin by using place value disks. In the next lesson, students use a place value chart and compare numbers based on the largest units, and then create number lines to place numbers in order between benchmark numbers. In "Divide Decimals by Two-Digit Numbers," students draw disks in a place value chart. If a student needs additional assistance, a Teacher Tip states, "If a student needs a concrete representation, make place value disks available and allow students to distribute and exchange the disks."

5.1c – Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

In *Zearn Math*, the materials provide opportunities for students to apply conceptual understanding to real-world contexts, such as converting between hours and minutes, planning garden plots using volume, and solving multistep problems involving metric conversions, packaging, and shipping. The materials include word problems that connect conceptual understanding to everyday experiences, including identifying fractional preferences in a class survey, determining how much milk was consumed and left over, and interpreting multiplication and comparison scenarios in practical contexts. The materials guide students in applying concepts to new problem situations through open-ended tasks and design-based applications, such as generating and solving extension problems from existing tasks, calculating volume using changing dimensions, and constructing rules for decomposing rectangular prisms.

In *Math Catalyst*, the materials provide opportunities for students to apply conceptual understanding to new problem-solving situations and contexts. For example, in Adding Fractions, after students experience how to add fractions conceptually, they engage with problems such as "Yuna continues walking clockwise. She completes one full loop. Then she keeps walking. When she gets to the 13-mile distance marker, she turns around and goes back to the start of the path. How many miles does Yuna walk on the walking path?" In the Application section of "Place Value: Rounding Decimals to Tenths or Hundredths,"

after students have mastered rounding in different ways, a table displays a veterinarian's chart of weights for four dogs given to the thousandths place. Students use rounding to identify a given weight of 5.6 kg.

5.2 Development of Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.2a	All criteria for guidance met.	2/2
5.2b	All criteria for guidance met.	3/3
5.2c	All criteria for guidance met.	3/3
5.2d	All criteria for guidance met.	1/1
—	**TOTAL**	9/9

5.2a – Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level mathematical tasks.

In *Zearn Math*, the materials include tasks specifically designed to build automaticity and fluency for completing grade-level mathematical tasks. For example, in Mission 2, Lesson 9, students complete a timed Sprint focused on multiplying by 10 and 100, with two practice rounds and accuracy-based feedback to reinforce place value fluency. The materials embed daily fluency activities within teacher-led and digital lessons, such as Pair Compare in Mission 3, Lesson 11. In this fluency activity, students strengthen decimal reasoning by quickly selecting comparison symbols under timed conditions. The "Course Guide" highlights digital routines such as Sprints, Totally Times, and Fraction Action, all designed to develop procedural fluency and automatic recall of math facts through repeated and targeted activities.

In *Math Catalyst*, the materials do not include tasks designed to build automaticity. The materials include fluency-building games that support conceptual development in composing, decomposing, and representing numbers in various forms. For example, in the Application—Play a Game section of "Place Value Compose, Decompose, and Represent," students match number forms through a partner game that reinforces connections between standard, word, unit, and expanded form. In the "Multiplication of Multi-Digit Numbers by Multi-Digit Numbers" unit, students roll dice and multiply values as a fluency activity.

5.2b – Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures throughout learning pathways.

In *Zearn Math*, the materials provide frequent opportunities to develop efficient, flexible, and accurate mathematical procedures across instructional pathways. Lessons offer multiple strategies for solving problems, such as multiplying mixed numbers using area models, converting to improper fractions, and applying simplification through cancellation. Students select the most efficient method and explain their reasoning. Multistep problem-solving tasks ask students to estimate products, apply properties of operations, and reflect on the accuracy and efficiency of their chosen approach. The "Course Guide" supports ongoing practice of efficient strategies across concepts such as factoring, prime and composite

numbers, and place value-based algorithms, integrating fluency and strategic decision-making into warm-ups and problem-solving routines.

In *Math Catalyst*, the materials support accurate and efficient mathematical procedures through structured progressions. In "Multiplication of Multi-Digit Numbers by Multi-Digit Numbers," students begin with area models and place value charts to understand the distributive property, then move to vertical form using partial products before transitioning to the standard algorithm. This approach connects concrete understanding to more efficient procedures. Similarly, in "Division of Multi-Digit Numbers by Two-Digit Numbers," students use estimation, strip diagrams, and area models to determine partial quotients. They gradually shift to solving division problems using the standard algorithm, supporting procedural efficiency while reinforcing conceptual understanding through visual and symbolic representations.

5.2c – Materials provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for efficiency, flexibility, and accuracy throughout learning pathways.

In *Zearn Math*, the materials include instructional prompts that support students in evaluating the efficiency, accuracy, and flexibility of mathematical strategies and models. For example, in Mission 5, students compare approaches for multiplying mixed numbers using the area model, partial products, and the distributive property. Teacher guidance encourages students to reflect on the most efficient strategy and explain why. Additional evaluation opportunities appear in Lesson Synthesis prompts. For example, in fraction lessons, students consider how strategy selection may shift as problem complexity increases. The "Course Guide" extends this emphasis through Wrap-Up prompts, which ask students to analyze decompositions and compare multiple representations.

In *Math Catalyst*, students also engage in structured evaluation of mathematical strategies and representations. For instance, in "Multiplication of Multi-Digit Numbers by Multi-Digit Numbers," the practice section includes a problem where students solve 34 × 637 using an area model, partial products, and the standard algorithm. Accompanying questions guide students to compare the strategies for efficiency and accuracy, such as, "Can you picture an area model to help you think about how to break apart the factors?" Additionally, Error Analysis tasks embedded throughout the practice components allow students to evaluate correct and incorrect representations. In "Subtract Fractions with Related and Unrelated Units," students identify errors in a model and explain the reasoning behind the mistake.

5.2d – Materials contain guidance to support students in selecting increasingly efficient approaches to solve mathematics problems.

In *Zearn Math*, the materials provide clear guidance to support students in selecting increasingly efficient problem-solving strategies. For example, in Mission 5, students solve volume problems using a progression of strategies, from counting unit cubes to applying the volume formula ($V = l \times w \times h$).

Teacher materials prompt students to reflect on the efficiency of each method, helping them evaluate which strategy best fits the problem's dimensions and context. Similar structured comparisons appear in fraction computation lessons, where students move from repeated visual models to symbolic representations. Prompts guide students in considering the complexity of a task and help them select the most effective approach. The "Course Guide" further supports this progression by encouraging teachers to help students compare multiple methods, such as repeated addition, area models, and equations.

In *Math Catalyst*, students are guided to adopt more efficient mathematical strategies through sequenced objective lessons. In the "Multiplication of Multi-Digit Numbers by Multi-Digit Numbers" unit, students begin with area models and the distributive property and then progress to vertical form with partial products. As their understanding develops, they transition to the standard algorithm, which involves multiple regroupings. A similar scaffolded approach is present in the "Division of Multi-Digit Numbers by Two-Digit Numbers" unit, where students estimate quotients, use strip diagrams and area models, and eventually apply the standard algorithm. Throughout these lessons, students reflect on the strategies used and consider which is most efficient given the problem context.

5.3 Balance of Conceptual Understanding and Procedural Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.3a	All criteria for guidance met.	2/2
5.3b	All criteria for guidance met.	3/3
5.3c	All criteria for guidance met.	6/6
—	**TOTAL**	11/11

5.3a – Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.

In *Zearn Math*, the materials explicitly state the conceptual emphasis of the TEKS in Mission 4, Topic A, by developing an understanding of fraction multiplication through area models and contextual problems. Lesson guidance focuses on interpreting products as parts of wholes and connecting visual models to real-world contexts. In Mission 5, the materials extend conceptual understanding by modeling volume with unit cubes and showing how volume is additive across layers. The materials highlight the procedural emphasis in Mission 6, where lesson guidance shifts to symbolic operations with fractions and decimals. Students write and solve numerical expressions using standard notation and apply volume and area formulas with precision. Lessons reinforce procedural fluency by building on visual models and scaffolded written methods. The grade 5 "Course Guide" outlines the progression from conceptual models to procedural strategies across major content strands, such as moving from tape diagrams and decimal grids to standard algorithms.

In *Math Catalyst*, the materials include an "Implementation Guide" that explains how the program balances conceptual understanding and procedural fluency. The guidance states, "The objectives in Concept Mini Lessons progress in complexity and provide opportunities for students to develop conceptual understanding and procedural fluency. The Practice component helps students solidify their conceptual understanding and procedural skills." For example, while learning to compose, decompose, and represent decimals to the thousandths, students use place value disks and charts before moving to unit, standard, expanded, and word forms. In the Progression of Mini Lesson Objectives for the "Multiplication" unit, the materials explicitly describe how students advance from using the distributive property and vertical form to solving with the standard algorithm and multiple regroupings, demonstrating the program's structured shift from conceptual models to procedural mastery.

5.3b – Questions and tasks provide opportunities for students to use concrete models, pictorial representations, and abstract models as required by the TEKS.

In *Zearn Math*, the materials provide structured opportunities for students to engage with concrete, pictorial, and abstract models across lessons. In Mission 1, students use base-ten blocks and place value disks to represent whole numbers and decimals, grounding their conceptual understanding in tangible tools. In Mission 3, students construct rectangular prisms using unit cubes and calculate volume, while

Mission 6 incorporates fraction tiles and area models to visualize fraction and mixed number operations. Students draw diagrams to compare fractions, sketch prisms to explore volume, and use area models to multiply decimals. These strategies appear in Concept Exploration and Warm-Up segments to bridge hands-on experiences with symbolic representations. Abstract models emerge after conceptual development, such as writing expressions with parentheses and exponents, converting units using equations, and applying volume and area formulas in standard notation.

In *Math Catalyst*, the materials provide opportunities for students to interact with concrete models, pictorial representations, and abstract models throughout the Concept Mini Lessons. For example, in "Compose, Decompose, and Represent Decimals to Thousandths," students begin by using place value disks to represent decimals and whole numbers. In the same lesson sequence, students transition to pictorial representations using a place value chart and later replace the dots with digits to write numbers in word form. In "Divide Multi-Digit Numbers by Two-Digit Numbers," Objective 1 uses strip diagrams for division, Objective 3 introduces area models for partial quotients, and Objective 4 progresses to the standard algorithm.

5.3c – Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts, as required by the TEKS.

In *Zearn Math*, the materials include explicit support for connecting concrete and representational models to abstract mathematical concepts. For example, in Mission 1, Lesson 4, students use base-ten blocks to represent decimals and then connect those visuals to expanded and standard forms. In Mission 3, students build rectangular prisms with unit cubes and transition to using the volume formula $V = l \times w \times h$, with lesson prompts guiding reflection on how each variable corresponds to a physical dimension. Instruction also supports the development of understanding through the creation of models. Mission 6 includes fraction tiles, number lines, and area models that help students estimate, justify, and solve fraction problems before translating their work into symbolic expressions. Across Student Lesson Materials and Digital Lessons, students are routinely prompted to define and explain how concrete and visual models align with abstract representations.

In *Math Catalyst*, the materials provide a clear progression from concrete and pictorial models to abstract thinking across units. In "Compose, Decompose, and Represent Decimals to Thousandths," students begin with place value disks to decompose decimals, progress to using place value charts, and ultimately express values in expanded notation. In the "Multiplication of Whole Numbers and Fractions" unit, students start with fraction tiles and number lines to model multiplication as repeated addition. For example, Objective 1 guides students to write repeated addition equations equivalent to a multiplication expression using fraction tiles. In later objectives, they transition to pictorial models, such as grids and shading, and finally to symbolic representations involving fractions. While the materials provide a sequence of supports from concrete to abstract, they do not include explicit support for helping students

define and explain the alignment between physical or visual models and abstract concepts, as required by the TEKS.

5.4 Development of Academic Mathematical Language

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.4a	All criteria for guidance met.	1/1
5.4b	All criteria for guidance met.	2/2
5.4c	All criteria for guidance met.	1/1
5.4d	All criteria for guidance met.	2/2
5.4e	All criteria for guidance met.	2/2
—	**TOTAL**	8/8

5.4a – Materials provide opportunities for students to develop academic mathematical language using visuals, manipulatives, or other language development strategies.

In *Zearn Math*, academic vocabulary is introduced through explicit modeling supported by visuals, narration, and manipulatives. In Mission 3, Lesson 6, students explore area models to support decimal multiplication while teachers use narration to introduce and reinforce terms such as *tenths* and *hundredths*. In Mission 3, Lesson 12, students divide whole numbers by unit fractions using digital manipulatives and are guided to describe the process using terms such as *reciprocal* and *quotient*. In Mission 5, Lesson 13, vocabulary development is reinforced through a tactile activity where students pack unit cubes into rectangular prisms and repeat the term *volume* aloud, combining physical modeling with verbal language to strengthen understanding.

In *Math Catalyst*, the materials provide embedded opportunities for vocabulary development using manipulatives and visuals throughout lesson components. In the "Place Value: Compose, Decompose, and Represent Decimals to Thousandths" unit, the Teacher Guide includes a Language Support section with sentence frames such as "The digit ___ is in the ___ place, so its value is ___," helping students describe decimal composition using place value charts and disks. In the "Fractions" unit, students use unit fraction tiles and academic terms such as *compose*, *decompose*, *halves*, *fractional unit*, *renaming*, and *equivalent fractions* to explain operations and describe their thinking throughout the lesson.

5.4b – Materials include embedded educator guidance to scaffold, support, and extend students' use of academic mathematical vocabulary in context when communicating with peers and educators.

In *Zearn Math*, the materials embed educator guidance to scaffold and extend the use of academic mathematical vocabulary during discussions. In Mission 1, Lesson 3, students draw place value disks and use sentence frames to describe decimals with terms such as *value* and *standard form*. Teachers prompt students to apply this vocabulary in partner discussions and written responses, supporting accuracy through structured oral language practice and repetition. In Mission 2, Lesson 4, vocabulary development is further supported through multimodal strategies. Teachers model the concept of volume using gestures and linking cubes, helping students connect terms such as *cubic unit* and *volume* to physical

experiences. Prompts such as "What does each cubic unit represent?" encourage deeper reasoning. In Mission 6, Lesson 5, explicit vocabulary instruction is embedded within financial literacy contexts. Students are introduced to terms such as *income*, *budget*, *expense*, and *savings* using labeled visuals. Teacher prompts guide students in applying precise language to meaningful scenarios and justifying their financial decisions.

In *Math Catalyst*, the materials include educator guidance to scaffold student use of academic vocabulary during discussion. In "Composing Decimals to the Thousandths," sentence frames help students describe place value relationships using structured language. For example, "The digit ___ is in the ___ place, so its value is ___." In "Add Fractions with Unlike Denominators," sentence frames guide students in discussing equivalent fractions, such as "The fractions ___ and ___ do not have like units because ___." These supports help students articulate reasoning using mathematical terms. However, the materials do not provide guidance for extending vocabulary use beyond initial scaffolds in peer or class discussions.

5.4c – Materials include embedded guidance to support student application of appropriate mathematical language and academic vocabulary in discourse.

In *Zearn Math*, the materials include embedded teacher-facing supports that guide students in applying academic vocabulary during structured problem solving and discourse. In Mission 1, Lesson 9, students use terms such as *row*, *array*, *number of groups*, *size of group*, *product*, and *area model* to describe and compare multiplication strategies. Prompts in the Lesson Synthesis section, such as "How does the array help find the total?" encourage vocabulary use in both oral and written explanations. In Mission 1, Lesson 3, the Concept Exploration and Guided Practice sections prompt students to use terms such as *repeated addition*, *unit form*, and *multiplication* to explain problem-solving strategies. Teachers ask questions like "How does the unit form support writing the multiplication sentence?" to reinforce language use. In Mission 7, Lesson 5, vocabulary is applied in financial literacy contexts. Prompts like "What is meant by high demand and low supply?" and "How does this strip diagram explain the price difference?" support the use of terms such as *supply*, *demand*, *price*, and *value* to justify reasoning with real-world connections.

In *Math Catalyst*, the materials include embedded teacher guidance to support student use of academic vocabulary in problem-solving. In the "Add Mixed Numbers" unit, Objective 3 includes a think-aloud that models the use of terms such as *commutative property* and *like units* before students participate in a Turn and Talk discussion about adding mixed numbers. In "Round Decimals to Tenths or Hundredths," Objective 1 prompts students to analyze vertical number lines and use vocabulary such as *fractional units, compose*, *decompose*, and *equivalent fractions*. These opportunities guide students to apply precise vocabulary while reasoning through mathematical concepts.

5.4d – Materials include embedded guidance to facilitate mathematical conversations allowing students to hear, refine, and use math language with peers.

In *Zearn Math*, the materials include embedded guidance to support structured peer conversations using academic mathematical vocabulary. In Mission 1, Lesson 3, sentence frames such as "___ tenths plus ___ tenths equals ___," and "I used a place value chart because . . ." help students explain decimal addition during guided discussions. Teachers are directed to model these frames and monitor peer dialogue. In Mission 3, Lesson 11, the Multiple Means of Representation and Lesson Synthesis sections include structured prompts for students to discuss decimal multiplication using terms such as *area model*, *equation*, and *product*. Teacher questions such as "How does the model relate to the equation?" support vocabulary use during comparison and reasoning. In Mission 6, Lesson 7, peer conversations about volume are supported by visuals and prompts within the Math Chat routine. Students use terms such as *unit cube*, *cubic unit*, and *volume formula* to describe and verify their understanding, guided by questions like "How can we use a formula to check our volume?"

In *Math Catalyst*, the materials provide opportunities for peer dialogue using academic vocabulary. In "Add Mixed Numbers," students engage in Turn and Talks with prompts such as "What do you notice about the fractional units?" and "How can you use the commutative property to add?" that guide them in refining their thinking with mathematical language. In "Fractions as Numbers: Representations of Non-Unit Fractions," Objective 2 includes teacher guidance to invite students to discuss how non-unit fractions are represented on the number line, encouraging collaborative use of academic terms.

5.4e – Materials include embedded guidance to anticipate a variety of student answers including exemplar responses to questions and tasks, including guidance to support and/or redirect inaccurate student responses.

In *Zearn Math*, the materials include embedded guidance to anticipate a range of student answers, including possible misconceptions, and provide exemplar responses to questions and tasks. For example, in Mission 4, Lesson 7, the "Teacher Guide" lists solution strategies students might use when dividing decimals and includes sample correct answers that model efficient approaches. The materials also provide explicit prompts and instructional moves to redirect inaccurate responses. In Mission 6, Lesson 12, teachers are guided to address errors in interpreting data on line plots by prompting students to re-examine plotted points and explain how the data supports or challenges their conclusions. However, exemplar responses and redirection guidance are not consistently included across all lessons. In some cases, only correct answers are provided without instructional strategies for addressing misconceptions, which limits consistent teacher support.

In *Math Catalyst*, the materials provide exemplar responses to accompany teacher questions, ensuring clear expectations for student thinking. For example, in the "Teacher Guide" for "Multiply a Whole Number by a Fraction Using Strip Diagrams," Objective 2 includes the prompt, "How many copies of 1/4 do you see?" with the exemplar response, "8 copies," followed by, "What multiplication expression does

the strip diagram show?" with the response, "8 × 1/4." In "Add Mixed Numbers," the teacher asks, "What fractional unit can I use to make like units that are related to ninths and sixths?" with the exemplar response, "Eighteenths and thirty-sixths." The Concept Mini Lesson component includes visual examples of sample student work, helping teachers understand what proficient solutions look like. Each lesson also includes an Analyze Student Progress section with Questions to Advance Student Thinking that support teachers in interpreting strategies, identifying misconceptions, and scaffolding feedback. Additionally, the Addressing Student Misconceptions section of each "Concept Guide" offers explicit guidance for responding to common errors, equipping teachers with actionable strategies to redirect inaccurate responses.

5.5 Process Standards Connection

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.5a	All criteria for guidance met.	1/1
5.5b	All criteria for guidance met.	2/2
5.5c	All criteria for guidance met.	1/1
—	**TOTAL**	4/4

5.5a – TEKS process standards are integrated appropriately into the materials.

In *Zearn Math*, the materials explicitly teach and embed the TEKS process standards through structured instructional routines. The RDW (Read–Draw–Write) process is consistently used in Independent Digital Lessons and supported through modeled problem-solving in Math Chat, written justifications in Tower of Power, and small-group activities. Students engage with real-world problems using tools such as strip diagrams, area models, and equations in Guided Practice and Tower of Power, with tasks requiring justification of reasoning and evaluation of strategies. Lessons are aligned to specific TEKS Process Standards, as outlined in the grade 5 "Course Guide," supporting the intentional integration of standards 5.1A–5.1G across missions.

In *Math Catalyst*, the TEKS process standards are integrated into the instructional design through application-based tasks. In "Add Mixed Numbers," students use the Read–Draw–Write process to organize and solve problems involving mixed numbers. Similarly, in "Round Decimals to Tenths or Hundredths," students apply the same tool to support their reasoning as they round and align decimals. These tasks reinforce the connection between content and process, guiding students to organize their thinking and apply mathematical reasoning.

5.5b – Materials include a description of how process standards are incorporated and connected throughout the learning pathways.

In *Zearn Math*, the materials explain how the TEKS process standards are embedded to support mathematical concept development. The Mission 1 Overview outlines connections between modeling, reasoning, and communication, describing how early experiences with place value and base-ten patterns build toward operations with decimals. The overview emphasizes representing quantities in multiple ways and justifying strategies for comparing, rounding, and computing with decimals. In Mission 1, Lesson 7, students use number lines and visual models to locate tenths and hundredths, relate values to benchmarks, and explain their reasoning using academic vocabulary. In Topic E, Lessons 18–20, students compare and order decimals using expanded form, number lines, and symbolic representations, integrating multiple TEKS process standards through modeling, justification, and mathematical communication rooted in place value understanding.

In *Math Catalyst*, the "Implementation Guide" describes how the TEKS Process Standards are embedded across learning pathways. For example, in "Add Mixed Numbers," students use number lines to decompose and solve equations, reinforcing the connection between conceptual representations and procedural strategies. In "Round Decimals to Tenths or Hundredths," students use vertical number lines to identify benchmark values and apply rounding strategies. The "Alignment Guide" for each math strand lists the process standards addressed, such as 1A, 1C, 1D, 1E, 1F, and 1G in the multiplication pathway, and shows how these integrate across units.

5.5c – Materials include an overview of the TEKS process standards incorporated into each lesson.

In *Zearn Math*, the grade 5 "Course Guide" includes a detailed Grade 5 Mathematical Process Standards by Lesson per Mission section that maps each TEKS process standard (5.1A–5.1G) to specific lessons across all missions. For example, process standards 5.1C and 5.1D are addressed throughout Lessons 5–13 in Mission 3, while standards 5.1A and 5.1E are present in multiple lessons in Mission 5, including Lessons 2–8. Each standard is tracked individually and linked to lesson numbers, giving educators a structured and transparent view of where students engage in problem-solving, representation, justification, and strategy selection. This organized mapping supports consistent integration of the process standards throughout the instructional sequence.

In *Math Catalyst*, the materials do not provide an overview of the process standards embedded in each lesson. While the "Alignment Guide" for each unit includes a section listing the applicable process standards for the overall strand, it does not break down or associate those standards with specific lessons.

6. Productive Struggle

Materials support students in applying disciplinary practices to productive problem-solving, including explaining and revising their thinking.

6.1 Student Self-Efficacy

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.1a	All criteria for guidance met.	3/3
6.1b	All criteria for guidance met.	3/3
6.1c	All criteria for guidance met.	3/3
—	**TOTAL**	9/9

6.1a – Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.

In *Zearn Math*, the materials provide structured opportunities for students to think mathematically, make sense of mathematics, and persevere through solving problems. In Mission 4, students work in pairs to model multiplicative comparison problems involving fractions and respond to questions such as, "What conclusions can you make from your drawing?" Students engage in peer feedback and evaluate their solutions for reasonableness. The materials guide students in analyzing patterns, using representations, and selecting strategies when solving complex problems. In Mission 5, students solve volume word problems using rectangular prisms, using tools such as isometric dot paper or digital drawing apps to reduce frustration and promote persistence. In digital Tower of Power lessons, embedded feedback helps correct misconceptions and reinforces mathematical reasoning. Multistep problems and open-ended questions throughout the program require modeling, justification, and evaluation of reasonableness. Tasks such as calculating hourly wages or determining fair pricing using operations with fractions and multi-digit division support estimation, justification, and peer discussion to help students make sense of mathematics.

In *Math Catalyst*, the materials present tasks that increase in complexity to help students build confidence as they solve more difficult problems. In "Subtract Mixed Numbers," lesson objectives, scaffolded learning, and teacher questions support deep thinking, such as "What strategy can you use to subtract the whole number from the mixed number?" and "Can you draw something to represent the subtraction?" In "Division: Divide Decimals by Two-Digit Numbers," students are given information and images to support solving multistep problems. The materials prompt students to think critically and reason through the task using a variety of strategies and tools.

6.1b – Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.

In *Zearn Math*, the materials guide students in understanding and explaining that problems can be solved using multiple strategies. In Mission 5, students solve volume problems and compare approaches, such as estimating cube counts or decomposing fractional expressions. Teachers prompt reflection with questions like "Could we have decomposed 29 eighths in another way?" to support analysis of alternate methods. Lessons provide structured opportunities for students to justify strategies using models, algorithms, and estimation. For example, students compare area models and the standard algorithm, identifying differences in efficiency and representation. Prompts like "What makes 25 a friendly factor?" help students explain their reasoning and defend rounding choices. The materials also encourage evaluating multiple solution paths using mathematical properties and flexible reasoning. Tasks that involve multistep operations with fractions and decimals guide students to group terms strategically, rearrange operations, and justify their choices during peer discussions and Lesson Synthesis activities. Students compare strategies and explain which method is more efficient or conceptually accurate.

In *Math Catalyst*, the materials support students in understanding, explaining, and justifying multiple ways to solve a problem. In the "Teacher Guide" for "Multiplication of Multi-Digit by Multi-Digit Numbers," the Solve a Problem activity within the Application section encourages students to share their work with a partner. Students compare solution paths and make connections between different representations. In "Representing Multiplication of Decimals by Whole Numbers," the Read–Draw–Write Tool scaffolds student thinking by helping them understand the problem, explain their reasoning, and justify their chosen strategy.

6.1c – Materials are designed to require students to make sense of mathematics through multiple opportunities for students to do, write about, and discuss math with peers and/or educators.

In *Zearn Math*, the materials include collaborative tasks that prompt students to do math and discuss strategies with their peers. In Mission 3, the Concept Exploration guides partners through adding and subtracting fractions using number lines and equivalency. Students also solve multi-digit division problems and are encouraged to discuss methods for organizing their work and identifying mistakes. The materials provide consistent opportunities for students to write about their mathematical thinking through visual models and equations. Lessons include drawing arrays, decomposing numbers in area models, and composing written explanations. Students reflect on how decisions such as the orientation of factors or the order of partial products influence structure without changing the outcome. Structured discussion prompts and partner-based dialogue help students articulate reasoning and reflect on their problem-solving processes. Teachers pose questions such as, "How can you be sure your answer is reasonable?" and "How did you organize your thinking?" to support explanation, comparison of approaches, and communication of mathematical understanding.

In *Math Catalyst*, the materials provide regular opportunities for students to do, write about, and discuss math in collaborative settings. In the "Teacher Guide" for "Multiplication of Multi-Digit by Multi-Digit Numbers," the Application section includes a Solve a Problem task where students share their work with a peer and make connections between different representations. Students use the Read–Draw–Write Tool to organize and reflect on their problem-solving strategies. In "Fractions—Subtract Fractions with Unlike Denominators," the Study a Solution section guides students in analyzing a correct solution that involves a fractional quantity in a recipe. Students identify the known and unknown values, explain how the drawing supports the solution, and reflect on how the written response answers the problem.

6.2 Facilitating Productive Struggle

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.2a	All criteria for guidance met.	6/6
6.2b	All criteria for guidance met.	4/4
—	**TOTAL**	10/10

6.2a – Materials support educators in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.

In *Zearn Math*, the materials support educators in guiding students to explain, argue, and justify their thinking during problem solving. In Mission 3, students use the Read, Draw, Write process to model and solve problems, followed by partner discussions to explain why they selected certain models and justify their strategies. In Mission 5, students explore volume concepts using cube models and communicate their solution paths through labeled diagrams. The materials embed structured prompts to deepen explanation and reflection. For example, in Mission 2, the Lesson Synthesis includes questions such as, "Did you see other solutions that surprised you?" and "Why should we assess reasonableness after solving?" These prompts support reflection and encourage students to revise and justify their thinking. Throughout lessons focused on volume and multi-digit division, students categorize problems, compare strategies, and defend their reasoning. The materials provide teachers with guidance to facilitate classroom discussions that prompt students to evaluate errors, consider alternative approaches, and articulate which methods are most efficient or conceptually sound.

In *Math Catalyst*, the materials support educators in guiding students to share and reflect on their problem-solving approaches using explanations, arguments, and justifications. In the "Teacher Guide" for "Subtract Mixed Numbers," students participate in Turn and Talk discussions to explain how they subtract a fraction from a mixed number during Objective 2. In the Application activity for the same lesson, students play a game called Three in a Row. As part of the game, students solve equations and, if there is disagreement, they share their work and identify the error. This activity fosters mathematical communication by encouraging students to justify their thinking and engage in productive discussions before continuing.

6.2b – Materials include prompts and guidance to support educators in providing explanatory feedback based on student responses and anticipated misconceptions.

In *Zearn Math*, the materials include prompts to help educators respond to student responses. In Mission 2, Lesson 4, the teacher is guided to ask follow-up questions as students work through problems. The materials provide the teacher with prompts, as well as anticipated student answers. For example, "There are 18 classes, but I am not sure exactly how many students are in each class. What could I do to find a number that is close to the actual number of students in our school? Great idea. What number could help me make an estimate for the number of students in each class? True, but 23 is a little more difficult to

multiply in my head. I would like to use a number that I can multiply mentally. What could I round 23 students to so it is easier to multiply?" In Mission 2, Lesson 6, the materials provide educator guidance in Notes on Multiple Means of Action and Expression on what to do if students are not ready to multiply two-digit and three-digit numbers mentally. For example, the materials state, "If students are not yet fluent with their basic multiplication facts, be prepared to adjust numbers in calculations to suit the learner's level of fluency."

In *Math Catalyst*, the materials include prompts to help educators anticipate and address common misconceptions. However, they do not provide guidance for responding to students' correct or incorrect answers during instruction. In the "Teacher Guide" for "Division: Divide Decimals by Two-Digit Numbers," educators are encouraged to have students use place value disks to visualize how to represent the dividend on the place value chart. While these suggestions aim to clarify misunderstandings, the materials lack detailed support for providing explanatory feedback based on student responses during lessons.