Great Minds PBC + Zearn

Supplemental English Mathematics, 3

Math Catalyst Texas + Zearn Math for Texas, Grade 3

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%	218	13	Flags Not in Report	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	40 out of 43	93%
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	0	0	0
4. Prohibition on Forced Political Activity	0	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)	0	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" includes a Curriculum Overview that presents a clear rationale for the instruction sequence across the year. The materials build on foundational concepts and progress toward more advanced applications, with a rationale that explains how the sequence supports vertical and horizontal alignment, conceptual development, and readiness for future learning.

In *Math Catalyst*, the materials include alignment strands organized by concept, demonstrating vertical progression from kindergarten through grade 5. Each strand includes defined Texas Essential Knowledge and Skills (TEKS), lesson correlations, and connections to the English Language Proficiency Standards (ELPS).

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 use lesson components flexibly to meet student needs 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 include formative assessments, such as the Tower of Power, and Mission-Level Assessments, but these tools do not establish initial instructional placement. The materials do not include a diagnostic assessment.

In *Math Catalyst*, the materials include a "Start here if students . . ." section in the lessons that provides guidance on where to begin based on progress checks. However, the materials do not include a diagnostic assessment.

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" offer 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 provide pacing guidance for 60-, 75-, and 90-minute math blocks, as well as 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 has a TEKS-aligned learning objective, such as "Represent numbers to 100,000 in standard form, expanded form, and expanded notation," located on Objective 3.

In *Math Catalyst*, the "Teacher Guide" allocates approximately 10 minutes for each objective lesson in every Mini Lesson. The Progress Check section, located 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 provide lesson overviews with TEKS- and ELPS-aligned learning objectives. Instructional components include guided practice, scaffolded fluency, and independent digital tasks. For instance, a grade 3 lesson focuses on determining the area of a rectangle by multiplying side lengths, aligning with TEKS 3.6C. Students also meet an ELPS objective by explaining their strategy using vocabulary like *length*, *width*, and *product*, supported by sentence frames and visuals, aligning with ELPS 1.E, 3.D, and 4.F.

In *Zearn Math*, the Tower of Power digital Exit Tickets and Mission-Level Assessments are aligned to the TEKS but do not include alignment to the ELPS.

In *Zearn Math*, materials do not include suggested time frames for individual lesson components.

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 available in English and Spanish. These resources provide an overview of unit goals, introduce relevant academic vocabulary, and suggest guiding questions and home activities aligned to the TEKS. For example, the grade 3 Mission 5 Family Tip Sheet asks, "How do you know if two fractions are equivalent?" and includes an activity using number lines to compare fractions, helping families engage with grade-level content.

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, in the "Composing, Decomposing, and Representing Numbers" unit, families are prompted to ask, "What is the largest unit in each number?" along with example language to listen for in student answers.

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 scoring criteria to support objective evaluation of student work. Assessments such as Lesson Checkpoints and the Tower of Power are placed at consistent points in the instructional sequence, allowing educators to locate and administer them with ease. The "Course Guide" specifies when to deliver each assessment, including

Lesson Checkpoints, the Tower of Power tasks, and Mid-Mission and End-of-Mission Assessments, ensuring they align with lesson pacing and instructional goals.

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, in the Represent Contextual Multiplication check, students use counters to model groups, while teachers receive clear guidance on evaluating and adjusting instruction based on student responses.

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 *Math Catalyst*, the materials also do not include a diagnostic assessment. Although tools like the Analyze Student Progress section, Observational Data Recording Sheet, and Progress Check Tool support progress monitoring, they do not provide diagnostic assessment items to determine student entry points.

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 TEKS-aligned formative assessments with tasks such as using arrays, number bonds, skip counting, creating number sentences with counters, drawing pictures for division problems, and discussing operation relationships. These assessments vary in complexity, from identifying grouped objects to representing multiplication with visual models. The assessments include interactive item types, such as text entry and drag-and-drop.

In *Math Catalyst*, the materials include a variety of TEKS-aligned formative assessments, such as Quick Checks, Quizzes, Exit Tickets, and embedded tasks within lessons. Quick Checks at the end of each

objective assess student mastery and are designed with varying levels of complexity. For example, in grade 3, formative assessments begin with a simple task of writing a division number sentence from given information and progress to solving a multistep word problem. The student practice pages follow a concrete-to-abstract progression, starting with the use of objects to model division and moving toward solving abstract word problems. Application questions extend learning by asking students to solve division word problems in a game setting and analyze real-world scenarios through Solve a Task activities. In addition, the Progress Check Tool incorporates interactive item types, such as plot the point, order numbers, fill in the blank, and multiple choice, offering students multiple ways to demonstrate understanding.

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 both the Mid-Mission Assessment and the End-of-Mission Assessment, which outline four performance levels: "Initiating Understanding," "Developing Understanding," "Nearing Understanding," and "Full Understanding." Each level includes descriptions and student work samples to help teachers interpret student performance. For example, in grade 3, Mission 7, a rubric example notes that a student who draws a correct visual model but cannot use it to solve the problem demonstrates "Initiating Understanding" of perimeter. However, the materials do not provide a rationale for individual answer choices. There are no item-level explanations that clarify why a response is correct or incorrect for assessments.

In *Math Catalyst*, the materials include informal and formative assessments with numerical scoring guidance and performance labels such as "Not Yet Proficient," "Partially Proficient," and "Proficient." However, the materials do not provide a rationale for correct or incorrect responses.

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 3 "Course Guide," the Progress Report provides teachers with 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 shows whether the student accessed in-lesson supports, which helps teachers determine if reteaching is needed. 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 offer guidance tied to Progress Check results. For example, student performance on a rounding task determines which of four aligned objectives the teacher begins with, supporting differentiated instruction.

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 provide prompts that support educators in checking for understanding throughout the lesson. For example, in "Compose and Decompose Numbers to 100,000," Objective 1 includes guiding questions such as: "Can the student represent numbers to 100,000 by using place value disks and drawings in place value charts?", "Can the student use place value units to compose and decompose numbers to 100,000?", and "Can the student find the value of each place value unit?"

Teacher Tips in the lessons guide educators in monitoring student thinking. One example states, "Students can use unit form to represent a number in multiple ways. Consider having students decompose the number by using place value in other ways." This supports educators in assessing understanding through varied representations.

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	All criteria for guidance met.	2/2
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**	9/12

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 3, the Teacher Lesson Materials prompt educators to guide students in using strip diagrams and paper strips to model multiplication comparison problems. Teachers lead students to trace and label rows in arrays and use targeted questions to connect visual models to multiplication expressions. The materials also provide scaffolded fluency supports in Mission 5, advising teachers to limit practice to the first few multiples of each number and to build foundational fluency with factors such as 2, 3, and 5 before progressing to more complex factors. The Teacher Lesson Materials also offer structured, scripted small-group lessons that develop conceptual understanding and procedural fluency in multiplication, including sample prompts like, "Show three groups of four counters. How many do you have in each group? What is the total?"

In *Math Catalyst*, the materials include explicit guidance for educators to support students in each Concept Mini Lesson. For example, in the Concept Mini Lesson Objective 3, Differentiation Support, the guidance suggests providing pre-partitioned number lines for students who need help drawing them. The materials in the Multiplication Unit "Concept Guide" address common misconceptions, such as inefficiently drawing each piece of an array instead of using length and width. The materials prompt teachers to help students slide their fingers along the sides of the rectangle while saying the terms aloud to reinforce the concept.

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 provide educator guidance on incorporating linguistic accommodations for all levels of English proficiency as defined by the 2026 ELPS. For example, in Mission 1 lessons, students practice vocabulary by saying new words aloud while tracing arrays with fingers or colored pencils and using real-world objects, such as cupcake pans, to reinforce the terms *row* and *array*. In Mission 4, new academic terms, such as *array* and *area model*, are paired with visual representations and teacher-led discussions, while Lesson 15 introduces strategies to strengthen unfamiliar language, such as informally presenting the word distribute before formal instruction and guiding students to read, say, and apply the term parentheses when solving expressions. To reinforce academic language, additional supports include sentence frames in teacher notes, glossary tools for academic vocabulary, embedded visual models, and prompts for structured partner discussions.

In *Math Catalyst*, the materials also provide explicit educator guidance for pre-teaching and reinforcing academic vocabulary through the Language Support section of the "Concept Guide" in each unit. For example, in the Mini Lesson for Place Value Objective 1, teachers model how to compare the value of digits while gesturing to corresponding place value disks. In Place Value Objective 3, educators are guided to create an anchor chart with key lesson terms to pre-teach vocabulary. Similarly, in Objective 1 , Round Numbers to the Nearest Ten Using Vertical Number Lines, explicit guidance is provided to formally name or substitute terms, such as *graduated cylinder*, with accessible language for students who are unfamiliar. The "Concept Guide" also includes Key Terminology cards with student-friendly definitions and visuals, offering flexible opportunities for teachers to pre-teach and embed academic mathematical language throughout instruction.

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 Small-Group Lesson Materials with margin notes and prompts that extend mathematical discourse and critical thinking. The program designates specific enrichment lessons for students demonstrating proficiency, such as Lessons 7 and 8 in Mission 4, which are intended for use only when students show deep understanding. Enrichment opportunities also include activities that deepen grade-level content knowledge. For example, in Mission 2, students write and exchange original word problems based on personal experiences, and in Mission 6, Topic A, Lesson 3, students apply financial literacy concepts by researching professions and salaries of interest to connect math learning to real-world contexts. Educators can adjust the digital pacing to provide enrichment and extension opportunities for students demonstrating above-grade-level proficiency; however, the materials do not include explicit teacher guidance for implementing these opportunities.

In *Math Catalyst*, the materials include explicit guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level skills. For example, in the "Teacher Concept Guide for Round to the Nearest Ten and Hundred," the section titled "Activities, Structures, and Considerations" chart provides teachers with guidance on implementing enrichment tasks and extension opportunities. These activities are designed for independent or partner work and are further supported through Teacher Tips that help educators extend learning for students who have mastered grade-level content. Each unit also includes an Application section with enrichment components such as Solve a Task and Partner Games that are structured to extend and deepen mathematical understanding. In addition, the "Strand by Grade Scope and Sequence" document provides teachers with a clear view of how concepts progress across grade levels, helping identify opportunities for extending learning beyond the current grade. The Progression of Mini Lesson Objectives chart includes "Start here if students can . . ." statements, which direct teachers to enrichment or extension activities aligned with above-grade-level skills.

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 for students.

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 could 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 their understanding of math concepts in multiple ways. For example, in Mission 5 small-group lessons, teachers guide students to partition wholes and create fraction art museum tasks, using manipulatives and visual models to support conceptual understanding. Lessons encourage students to show their thinking by drawing, labeling, and verbally explaining their ideas. Digital Guided Practice also incorporates interactive tools and paper-based Student Notes to help students justify their reasoning in writing and discussion.

In *Math Catalyst*, the materials provide educator guidance to offer options for students to demonstrate understanding in various formats. For example, in "Compare and Order Numbers to 100,000," the materials provide educator guidance that expanded form can be stacked vertically and added to represent values differently. In Understand Division Concepts, the materials suggest that students act out division with physical objects, draw groups to show equal sharing, or use paper and pencil methods. This flexibility enables students to model their thinking to match their learning needs.

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 include explicit prompts and guidance to activate prior knowledge and anchor big ideas at the start of instruction. For example, in Mission 1, Lesson 2, teacher materials prompt a review of skip counting from earlier grades as a foundation for multiplication. The lesson builds conceptual understanding by using counters and finger models to form equal groups, helping students connect repeated addition to multiplication. The materials highlight key patterns and relationships through multiple representations, such as linking arrays, number bonds, and multiplication equations. Teacher prompts, such as "What did you notice is the relationship between the two side lengths and the area?" encourage students to connect visual and numerical reasoning.

In *Math Catalyst*, the materials include explicit prompts and guidance for educators to build knowledge by activating prior understanding and anchoring big ideas. For example, in the Concept Guide for Objective 1 , Representations of Multiplication, teachers are guided to connect the relationship between addition and multiplication by modeling "4 threes is 12" as repeated addition, in unit form, and as a multiplication equation. The materials emphasize, "Multiplication is another way to write repeated addition. Instead of writing addition of the same number over and over, we can write the number of groups times the number of objects in each equal group." The materials also highlight and connect key patterns, features, and relationships through multiple means of representation. In Multiplication as Multiplicative Comparisons, students are directed to use varied models such as cubes in Objective 1, strip diagrams in Objectives 2 and 3, and expressions in Objective 4. The materials explain, "When we describe multiplication as a comparison, the first factor tells us how many times to repeat the unit. The second factor tells us which unit is being repeated." This explicitly links multiplication to addition, reinforcing a foundational skill that students are expected to have mastered before beginning multiplication instruction.

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 provide guidance to support effective lesson delivery and facilitation through various instructional strategies. For example, in Representations of Multiplication, teachers are encouraged to use hands-on tools such as tiles, arrays, and number lines to help students explore multiplication concepts. In *Math Catalyst*, the Plan Future Practice section advises educators to structure additional practice with teacher or peer support based on student need. Similarly, in the Place Value unit, guidance prompts teachers to use place value disks before transitioning students to pictorial representations, and connect this learning to real-world contexts, such as comparing the number of library books using word problem cards.

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 provide structures and guidance that support collaborative and independent learning within a multi-tiered support system. For example, in Mission 5, Lesson 1, students work with partners to complete a measurement task using different units, then compare answers and discuss using provided question prompts, reinforcing peer collaboration and conceptual understanding. The materials are adaptable for whole-group, small-group, or individual intervention, with digital lessons offering embedded scaffolds through tools like the Tower of Power. A Boost breaks down the task when students make errors to support correction and mastery. The "Course Guide" includes data-driven supports, such as the Tower Alerts Report, which helps educators group students for reteaching and target instruction based on real-time performance data.

In *Math Catalyst*, the materials guide educators in using assessment tools, such as the Progress Tool and its accompanying rubric, to place students in the appropriate Concept Mini Lesson based on their proficiency. For example, in the "Representations of Multiplication" unit, students who need support in identifying group size in arrays would begin with Objective 3, using hands-on materials, followed by independent practice. In Multiplication as Multiplicative Comparisons, students use strip diagrams and sentence stems before transitioning to independent or partner-based Application tasks. The "Implementation Guide" offers additional flexibility, stating that Progress Checks may be used for pre-assessment, post-assessment, or small-group work. Also, lesson components such as Practice and Application may 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 student engagement through application and exploration. For example, in Mission 4, Lesson 7, students are

challenged to write real-world word problems based on area models, extending their understanding beyond core content. In Mission 7, Lesson 11, a perimeter task incorporates unit conversions to deepen mathematical reasoning and stretch student thinking. Teacher-facing prompts in the Multiple Means of Engagement section support deeper discussion and reflection. The "Course Guide" provides additional strategies for enrichment, including the use of Digital Bonuses, Optional Practice Problems, and targeted small-group prompts to accelerate pacing or push students toward more complex concepts through independent tasks and analytical reasoning.

In *Math Catalyst*, materials embed enrichment and extension methods throughout lessons, providing educator guidance to support implementation. In the "Representations of Multiplication" unit, students complete activities such as Solve a Problem, Play a Game, and Solve a Task, with teacher suggestions such as having students compare solution paths and connect different representations. In Solve a Task, the guidance recommends using manipulatives to scaffold higher-level thinking. In the "Fractions as Numbers" unit, students explore real-life fraction scenarios using strip diagrams to model food distribution and number lines to represent fractional portions. These activities offer opportunities for in-depth exploration and conceptual application that extend beyond the initial objective.

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. For example, in Mission 1, Lesson 1, the Concept Exploration section asks, "How can you figure out the cost of the yellow hat?" This open-ended prompt encourages student reasoning and allows the teacher to assess understanding and provide in-the-moment clarification. Additional prompts such as "Can you explain your thinking?" and "Why did you choose that strategy?" help students articulate their approach and enable teachers to provide immediate, targeted feedback. 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 include prompts and guidance to support educators in providing timely feedback during lesson delivery. For example, in the "Teacher's Guide for Multiplicative Comparisons," teachers are prompted to ask students what the factors in an equation represent when using sticky notes as models. After students respond, the guide provides explicit feedback strategies to address common misconceptions, stating, "When we describe multiplication as a comparison, the first factor tells us how many times to repeat the unit. The second factor tells us which unit is being repeated." This structured feedback ensures that teachers can immediately clarify misunderstandings and reinforce accurate mathematical reasoning during instruction.

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*, materials include educator guidance on incorporating linguistic accommodations for all levels of English language proficiency. Each "Alignment Guide" connects to the ELPS and provides specific supports based on language levels. For example, in the "Representations of Non-Unit Fractions" unit, guidance for pre-production learners includes repeating the term numerator while pointing to the corresponding part of a visual model. For beginning learners, teachers provide one-sixth unit fraction tiles to support partitioning intervals on a number line. At the intermediate level, students activate prior knowledge of unit fractions by naming non-unit examples, such as 2/4, with teacher prompts highlighting the meaning of the prefix non. For high intermediate students, the materials incorporate the Read–Draw–Write process to support comprehension of word problems. Advanced students analyze and explain incorrect strip diagrams through written responses.

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). Digital lessons embed visual models and interactive representations to support students at the Pre-Production and Beginning levels. At the Intermediate and High-Intermediate levels, sentence frames and

structured response prompts in teacher notes guide students' oral and written expression. For Advanced learners, glossary tools define academic vocabulary in context, and teacher materials include questions that require precise mathematical language, supporting students in using content-specific terminology accurately.

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 or ESL instructional models, including dual language, transitional bilingual, and ESL pull-out programs. The "Course Guide" features a section titled "Supports for Emergent Bilingual Students" that outlines accommodations and strategies to help educators support language development alongside mathematical understanding.

In *Math Catalyst*, the "Implementation Guide" includes a dedicated section that provides support for emergent bilingual students, including guidance on vocabulary, comprehension, and knowledge development. The materials encourage teachers to strategically group students by levels of mathematical or English language proficiency and recommend pairing students who speak the same home language to support understanding through translanguaging. The guide also suggests that educators create cross-linguistic connections anchor charts, which include terminology in both English and students' home languages, along with supporting visuals to reinforce meaning.

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 such as sentence frames, partner talk in Concept Exploration, and bilingual vocabulary notebooks help students articulate mathematical thinking. Lesson materials connect academic terms to Spanish cognates—for example, *factors* and *factores*—to reinforce meaning across languages. To support comprehension and background knowledge, the materials recommend using familiar terms instead of culturally specific words (e.g., replacing *hayrides and orchard* with *rides and carnival*). Visual models and guided questions also help students understand mathematical concepts such as multiplication and time. The materials embed cross-linguistic connections through bilingual glossaries, visual supports, and targeted vocabulary preview strategies.

In *Math Catalyst*, the materials embed guidance to support emergent bilingual students in developing academic language and comprehension through oral and written discourse. Language Supports embedded throughout the Concept Mini Lessons prompt teachers to use precise terminology and create visual anchors. For example, in "Compose, Decompose, and Represent Numbers to 100,000," teachers ask, "What is the value of the thousands disks?" while emphasizing correct terminology. Additional

guidance recommends creating anchor charts showing standard form, expanded notation, expanded form, and unit form for numbers such as 43,215. In the "Compare Fractions" unit, Language Supports suggests using anchor charts with comparison symbols and corresponding language and word banks that contain key vocabulary such as *unit fraction tiles*, *gaps*, *overlaps*, *numerator*, and *denominator*. Phrase stems and structured prompts help students use academic language to express fraction comparisons and number line reasoning.

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 through learning pathways that require students to demonstrate a depth of understanding aligned with the TEKS. For example, in grade 3, Mission 4, Lesson 1, students place square tiles to measure the area of rectangles and write number sentences to represent multiplication. The Practice Problems provide additional tasks such as identifying arithmetic patterns, solving multiplicative comparison problems, and using strip diagrams to model equal groups. Instructional assessments such as Exit Tickets, Mid-Mission Assessments, and End-of-Mission Assessments include tasks like decomposing composite figures, using arrays to solve multiplication problems, and interpreting strip diagrams. These assessments guide the progression from concrete representations to abstract reasoning, supporting conceptual understanding and connecting new learning to previously taught content.

In *Math Catalyst*, the materials support depth of understanding by guiding students in exploring rounding through real-world contexts. In the "Round Two-Digit Numbers to the Nearest 10 on a Vertical Number Line" activity, students use graduated cylinders to visualize number lines and apply their understanding to temperature-based problems. Lessons progress to word problems that require students to visualize their thinking and justify their solutions. The Progress Check Tool for rounding reinforces these ideas through application-based tasks that are aligned with the learning objective.

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 core tasks that progress in rigor and complexity toward grade-level proficiency and extend beyond grade-level expectations. Enrichment and extension activities feature multistep application problems and opportunities for students to generalize strategies across contexts. For example, adaptive digital lessons increase in difficulty within missions, while teacher materials

provide extension problems that require students to explain their reasoning, compare solution strategies, and apply concepts in varied contexts.

In *Math Catalyst*, each Concept Mini Lesson is structured around learning objectives that progress in complexity. For example, in the Representation of Multiplication lessons, students begin with equal groups, then move to arrays, area models, and number lines to represent multiplication facts. Enrichment and extension opportunities are embedded in the form of application activities, but not offered as separate tasks. Similar to *Zearn Math*, the materials do not include questions or tasks that build toward above-grade-level proficiency in the mathematics TEKS.

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 structured learning pathways that require students to demonstrate a depth of understanding aligned with the TEKS. For example, in grade 3, Mission 4, Lesson 1, students place square tiles to measure the area of rectangles and represent the process with number sentences. Additional practice tasks include identifying arithmetic patterns, solving multiplicative comparison problems, and using strip diagrams to model equal groups. Instructional assessments such as Exit Tickets, Mid-Mission Assessments, and End-of-Mission Assessments reinforce this depth by prompting students to decompose composite figures, solve multiplication problems using arrays, and interpret strip diagrams. These assessments guide the learning progression from concrete models to abstract reasoning, ensuring coherence and conceptual understanding.

In *Math Catalyst*, the materials demonstrate horizontal coherence by sequencing concepts so they build on one another. In the "Representations of Multiplication" Mini Lesson, students begin with equal groups using tiles to connect repeated addition to multiplication. In subsequent objectives, they build on this foundation by using arrays for skip counting and then progressing to number lines, which support multiple strategies such as repeated addition and modeling multiplication equations. This sequencing supports students in building flexible mathematical strategies and a connected understanding of multiplication.

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 do not demonstrate vertical coherence across the full kindergarten through grade 6 band, but they do make consistent instructional connections through grade 5. According to the grade 3 "Course Guide," learning sequences begin with early foundational skills, such as counting and composing numbers, and progress to addition, subtraction, multiplication, and division operations. For example, in Mission 5, "Fractions as Numbers," students develop a foundational understanding of fractions, which supports future learning in grade 4. The materials reinforce vertical alignment by building on prior knowledge through scaffolded models. In Mission 1, "Multiply and Divide Friendly Numbers," the Math Chat revisits repeated addition from grade 2 using real-world models, helping

students shift from concrete representations to symbolic multiplication. In Mission 4, students use arrays and repeated addition to explore area, later decomposing composite shapes—reinforcing the connection between operations and geometry and preparing students for more advanced spatial reasoning in upper grades.

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 in grade 3 demonstrate coherence by connecting prior knowledge to current and future learning. In Mission 4, students build on their understanding of multiplication as repeated addition to explore the concept of area. Instruction begins with arrays and progresses to using multiplication to calculate the area of rectangles, reinforcing connections between operations and geometric measurement. In Mission 5, students extend their foundational understanding of parts of a whole by using number lines and visual models to develop concepts of fractions, including equivalence and comparison—skills that set the stage for operations with fractions and decimals in grade 4. Missions 1 and 2 focus on procedural fluency with place value, addition, and subtraction, which students apply to real-world problems involving length, weight, and capacity. This sequence builds readiness for more complex multistep problem-solving in later grades.

In *Math Catalyst*, the Concept Mini Lessons include sample dialogue and teacher tips that prompt educators to activate prior knowledge at the start of instruction. For example, in Objective 2 of Representations of Non-Unit Fractions, teachers are guided to connect students' understanding of unit fractions to non-unit fractions, encouraging them to draw on existing knowledge as a foundation for new concepts. The materials also emphasize coherence across grade levels. In grade 3, the area model is consistently used with basic multiplication facts, laying the groundwork for its more complex application in multi-digit multiplication in later grades. This intentional design helps students build on what they already know while preparing for future mathematical ideas. Additionally, embedded teacher tips offer targeted guidance for extending strategies. For example, in Objective 4 of Multiplication as Multiplicative Comparison, educators receive explicit prompts for advancing student strategies beyond repeated addition or drawing arrays. These supports deepen conceptual understanding and create bridges to more advanced mathematical thinking, reinforcing readiness for future learning.

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 intentionally revisiting previously taught skills across lessons and missions. For example, in Grade 3, Mission 1, Lesson 1, the Warm-Up includes a word problem that reviews two-digit addition and subtraction using the standard algorithm. By Lesson 4, students are prompted to recall multiplication strategies, such as arrays and number bonds, while learning division, reinforcing coherence across operations. The digital lessons further support spaced practice through fluency activities, such as Make and Break 10 and timed Sprints with multiplication and division facts involving 10, helping students internalize number relationships and improve automaticity. Small-group instruction and warm-ups also contribute to spaced retrieval by revisiting strategies like skip-counting and the associative property. In Mission 3, for example, students move from concrete models to abstract algorithms through structured repetition and progressively complex tasks.

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 offer interleaved practice by prompting students to apply previously learned strategies in new contexts across missions. For example, in grade 3, the Warm-Up in the measurement learning pathway includes word problems that require using the distributive property, standard algorithm, and strip diagrams—strategies introduced in earlier work during Mission 1, "Multiply and Divide Friendly Numbers." This approach helps reinforce fluency and facilitates the transfer of learning between content strands. Additionally, warm-up and fluency activities revisit prior models and representations. In Mission 1, Lesson 1, students engage in skip-counting and strip diagram tasks that scaffold toward abstract multiplication sentences in the digital lesson. Later, in Mission 7, students solve multistep real-world problems using number bonds and strip diagrams. Geometry lessons also build on earlier concepts by linking attributes of shapes, perimeter, and area, allowing students to integrate and apply previous learning throughout the year.

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 disks, strip diagrams, and arrays. For example, in Mission 3, Lesson 18, students interpret place value charts and arrays during Math Chats to understand multiplication of tens and determine what the model represents before solving. The materials support students in analyzing visual models by comparing representations and identifying mathematical relationships, such as in Mission 3, Lesson 20, where students analyze differences between partial product models and place value charts. Lessons also prompt students to evaluate representations to assess their accuracy and reason through their effectiveness. For instance, in the area unit, students evaluate whether overlapping tiles affect the accuracy of an area model and explain why gaps or overlaps change the measured space.

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 Numbers to 100,000," students use place value disks to compare and order numbers, analyze a place value chart when asked, "What is the next largest unit? How do you know?", and create a number line to evaluate the placement of numbers like 21,064 relative to 20,000 and 22,000. In Understand Division Concepts, students use cubes to model equal groups, interpret the meaning of the dividend when asked, "What does the number 10 represent in this problem?", and analyze parts of a division equation by identifying the total, the number of groups, and the size of each group.

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 place value disks, counters, and square tiles, to build a conceptual understanding of multiplication, equal groups, and area. For example, in Mission 3, Lesson 5, students use square tiles to build arrays that represent multiplication expressions and count rows and columns to determine the total area, with

teacher prompts like, "What do the rows represent? How can you find the total using multiplication?" The materials also guide students in creating pictorial representations, such as drawing strip diagrams to model multiplication and labeling sides of drawn arrays to calculate area in Missions 1, 3, and 4. Lessons explicitly connect concrete and pictorial models, such as area lessons where students build arrays with tiles and then draw and shade matching arrays on grid templates, bridging the transition from physical to visual representations.

In *Math Catalyst*, the materials provide opportunities for students to create concrete and pictorial models to represent mathematical situations. In the "Understand Division Concepts" lesson, students begin by using cubes to model division, then draw models of buttons to illustrate equal sharing, and extend to drawing strip diagrams representing groups. In "Compare and Order Numbers to 100,000," students use place value disks; then move to place value charts to compare numbers by the largest units; and finally create number lines to put numbers in order between benchmark values.

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

In *Zearn Math*, the materials include word problems that connect conceptual understanding to everyday experiences, such as using multiplication to solve scenarios like grouping lemons for lemonade or interpreting arrays of eggs in cartons, as seen in Missions 1 and 2. The materials provide opportunities for students to apply conceptual understanding to real-world financial contexts, including writing coin combinations with matching equations in Mission 6, and analyzing how the availability of resources impacts cost using strip diagrams and discussion prompts. Lessons guide students in applying concepts to new problem situations through open-ended tasks and data interpretation, such as creating real-life word problems from composite area models, reasoning about salaries using large whole numbers, and analyzing dual bar graphs to explain trends in supply and demand.

In *Math Catalyst*, the materials provide opportunities for students to apply conceptual understanding to new problem-solving situations and contexts. For example, in the "Place Value and Rounding" unit, students extend their understanding by solving problems like, "Mr. Davis buys 2 adult tickets and 3 child tickets. What is the total cost of the tickets, rounded to the nearest ten dollars?" using a visual table of ticket prices. Early in the multiplication unit, students use concrete objects to understand multiplication, and later in the Application section, they apply conceptual understanding to tasks such as creating stories to match multiplication equations and determining ingredient amounts in a cake recipe by multiplying quantities.

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 intentionally designed to build automaticity and fluency with foundational operations. In Mission 1, Lesson 8, students complete a timed Multiplication-By Pattern Sheet during the Fluency Practice section, using strategies such as skip counting to recall multiplication facts efficiently. Additional fluency-building resources listed in the "Course Guide" include Sprints, Totally Times, and Fraction Action. The games are embedded as targeted digital practice to reinforce mastery of key number operations and fluency needed for grade-level tasks.

In *Math Catalyst*, the materials do not include tasks designed to promote automaticity. The materials provide fluency-building opportunities through interactive games, reinforcing number composition, decomposition, and understanding of place value. For example, in the "Compose, Decompose, and Represent Numbers to 100,000" unit, students play a matching game to pair numbers in different forms (standard, expanded, and word form), promoting recognition and flexibility with number representations. In the "Fractions as Numbers" unit, students use matching cards to connect visual models to unit fractions.

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 offer consistent opportunities for students to practice accurate, flexible, and efficient mathematical procedures. For example, in Mission 2, Lesson 20, students solve multi-digit addition problems using mental math, place value reasoning, or the standard algorithm. Afterward, students engage in structured reflection, explaining why a particular strategy was efficient or accurate for the problem. In Lesson 22, students estimate sums by rounding and apply models, such as number lines or strip diagrams, to solve problems. Guided discussion prompts help students evaluate which strategy is most appropriate.

In *Math Catalyst*, students build procedural accuracy and flexibility by engaging with multiple representations and strategies across lessons. In the "Representations of Multiplication" unit, students begin with concrete models and progress to drawing arrays and number lines, then reflect on efficient

solution paths through questions such as, "How does the drawing help you see a solution path for finding the unknown?" In the "Comparing Fractions" unit, students use manipulatives, such as fraction tiles, before transferring their understanding to number lines.

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 provide structured opportunities for students to evaluate and reflect on their choice of mathematical strategies and representations. For example, in Mission 1, Lesson 2, the Wrap-Up section prompts students to compare array and area models by asking, "How are the array and area models similar, and when might each be useful for solving a problem?" Similarly, in Mission 1, Lesson 8, paired strategies are presented through the Multiple Means of Representation section, where students solve a multiplication fact using both addition and subtraction, followed by teacher prompts such as, "Which strategy made the problem easier to solve?" Lessons also guide students in selecting strategies, as in Mission 3, Lesson 9, where they apply the distributive or commutative property and reflect on their decision-making. Additional prompts in the "Course Guide" encourage students to analyze decompositions and articulate why one method may be more efficient or accurate than another.

In *Math Catalyst*, students engage in strategy evaluation and comparison through tasks embedded in lessons, such as Representations of Multiplication, where they analyze multiple models—arrays, number lines, and repeated addition—and determine which model does not belong. In the Study a Solution activity, students review a solved problem and decide which method to use. Error analysis tasks also encourage evaluation of strategies and representations. For example, in Represent Numbers to 100,000 in Unit Form, students identify and correct mistakes in visual models and then choose a strategy to solve similar problems.

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

In *Zearn Math*, the materials provide explicit guidance to help students transition from less efficient to more efficient strategies. For example, in Mission 1, Lesson 1, the teacher materials guide instruction by stating, "When equal groups are present, multiplication is a more efficient way to find the total than repeated addition," prompting students to move beyond basic strategies. In Mission 1, Lesson 17, a digital Math Chat leads students through a structured progression from tiling units to skip counting, and ultimately to multiplication equations. Similarly, in Mission 4, Lesson 8, students explore multiple strategies for solving composite area problems, either by adding decomposed parts or subtracting from a larger shape, and then reflect on which method is more efficient using prompts like, "Which approach would take fewer steps for this shape?"

In *Math Catalyst*, the materials provide guidance to help students develop and transition to more efficient strategies as their understanding of the material deepens. In the Multiplication as Multiplicative Comparisons unit, students begin with concrete models and gradually move toward more abstract strategies for comparing numbers as multiples. As students gain proficiency, the materials introduce methods that improve efficiency. Teacher-facing notes highlight strategy advancement. For instance, in the Objective 4 Mini Lesson, "Two-Digit by One-Digit Multiplication," a Teacher Tip reminds educators that while repeated addition and arrays may be accurate, they are not the most efficient strategies. The materials prompt teachers to support students in identifying more advanced methods and to make connections between familiar and efficient strategies.

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 1, Topic A, by introducing multiplication through repeated addition, equal groups, and arrays. Lesson guidance focuses on developing conceptual understanding by connecting concrete representations to real-world scenarios and supporting multiplication as a foundational concept. In Mission 5, the materials deepen conceptual understanding of fractions by using fraction strips and number lines to represent unit fractions, establish part–whole relationships, and explore equivalence and comparison. The materials also clearly state the procedural emphasis of the TEKS in Mission 5, as it transitions students from concrete and pictorial models to symbolic representations. Students use number bonds, fraction strips, and number lines to compose and decompose fractions, compare values, and write equations using standard notation. The grade 3 "Course Guide" outlines the instructional progression from conceptual modeling to procedural strategies across key strands. For example, students develop understanding through unit fractions and area models before applying symbolic notation and standard algorithms for comparison and operations.

In *Math Catalyst*, the "Implementation Guide" includes a Balance of Conceptual Understanding and Procedural Fluency, noting that Concept Mini Lessons are intentionally sequenced to build conceptual understanding and fluency across lessons. The Practice component reinforces both skills through problem-solving. The materials in the Place Value Compose, Decompose, and Represent "Teacher Guide" provide explicit guidance on how to link concrete tools, such as cubes and sticky notes, to early multiplication strategies like arrays and strip diagrams. In the Progression of Mini Lesson Objectives for the "Multiplication" unit, students multiply using concrete models that illustrate the distributive property, then advance to place value drawings, vertical representations of partial products, and finally the standard algorithm. This progression demonstrates how the materials support a balanced approach by connecting conceptual learning to procedural accuracy.

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 multiple opportunities for students to engage with concrete models to develop conceptual understanding. In Mission 1, students use counters to build multiplication concepts through equal groups and repeated addition. In Mission 2, place value disks support

exploration of metric conversions and problem-solving involving length, mass, and volume. In Mission 4, students manipulate square tiles to understand area. The materials consistently extend this work through pictorial representations. During Concept Exploration and Warm-Up activities, students use number lines for modeling time and fractions, tape diagrams to visualize multiplication and division, and area models in geometry lessons. Abstract models are introduced following concrete and pictorial experiences to ensure mastery of grade-level content. Students write multiplication and division equations, use inequality symbols to compare numbers, and express fractional relationships in standard notation.

In *Math Catalyst*, the materials provide opportunities for students to engage with concrete, pictorial, and abstract models across the Concept Mini Lessons. In "Compose, Decompose, and Represent Multi-Digit Numbers," Objective 1 begins with students using place value disks to compose and decompose numbers within a place value chart. In Objective 2, students shift to pictorial representations of place value and write numbers in unit form. In "Compare Fractions with the Same Numerator or Denominator," students begin with fraction tiles in Objective 1 to build a concrete understanding. In Objectives 2 and 3, students transition to strip diagrams and number lines. By Objective 4, students apply abstract representations using comparison symbols to demonstrate the concepts of "greater than" and "less than."

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 support for connecting concrete and representational models to abstract concepts. In Mission 2, Lesson 6, students use place value disks and expanded notation to build multi-digit numbers and then connect these models to multiplication expressions representing the same values. In Mission 5, Lesson 12, students use fraction strips and number lines to represent equivalent fractions before transitioning to symbolic comparisons using inequality symbols. Lesson prompts guide students to match each visual to a written statement and justify the equivalence or comparison based on visual evidence. The materials support the creation of concrete and representational models to represent mathematical ideas. In Concept Exploration lessons throughout Mission 1, students build arrays using square tiles to model equal groups and then draw diagrams of the arrays to visualize repeated addition and multiplication. In Mission 4, students construct area models for rectangles and decompose composite figures into smaller rectangles using diagrams, physically manipulating tiles, and sketching figures to create meaning from structure. The materials support defining and explaining how visual or physical models align with symbolic representations. In Student Lesson Materials in Mission 2, students explain how regrouping on a place value chart connects to the steps in a multiplication algorithm. In Mission 5, students describe how numerators and denominators relate to shaded parts in a visual model and use sentence frames to define what each number represents. In printed and digital formats, lesson prompts and Lesson Synthesis discussions encourage students to articulate how strategies such as strip

diagrams, number lines, and equations represent the same mathematical relationship, reinforcing their ability to define and explain abstract concepts using precise language and structured reasoning.

In *Math Catalyst*, students engage in activities transitioning from concrete to pictorial and abstract models. In "Compose, Decompose, and Represent Numbers to 100,000," students use place value disks to represent numbers using concrete models in Objective 1. Students progress to pictorial representations with place value charts in Objective 2. In Objective 4, students use place value charts to replace the dots with digits, writing numbers in word form. In "Compare Fractions with the Same Numerator or Denominator," students represent fractions with fraction tiles. In Objective 2, students transition to using number lines. Students transition to comparison symbols to represent fraction comparisons in Objective 4. The materials do not include supports for students in defining and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) 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*, the materials introduce academic vocabulary through explicit modeling supported by visuals, narration, and manipulatives embedded in lesson activities. For example, in Mission 1, Lesson 3, grouped visuals of bananas are paired with narration to introduce the terms repeated addition and multiplication, with students using modeled language to describe the groupings. In Mission 1, Lesson 9, digital manipulatives support sorting cookies into equal groups and drawing arrays, allowing students to label operations as division and make connections to multiplication. In Mission 4, Lesson 1, students physically trace the edge of a paper square with string while repeating the term *perimeter*, reinforcing vocabulary through kinesthetic learning.

In *Math Catalyst*, the materials support vocabulary development by integrating manipulatives, visuals, and teacher modeling. In "Place Value Composing and Decomposing," students engage with unit fraction tiles, teacher repetition, and visual cues to explore academic terms, such as *numerator* and *denominator*. In the "Multiplication: Relate Multiplication to Area" unit, students use physical tiles and visual representations to develop language related to area, side length, rows, columns, multiply, and square unit.

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 lesson discussions. In Mission 1, Lesson 9, the Multiple Means of Representation section prompts students to trace arrays while repeating terms like *array* and *row*, then describe their visual models in partner discussions and journal reflections. Lesson guidance supports oral language development through repetition and structured discussion. In Mission 2, Lesson 2, teachers model the gesture for a column by moving a hand vertically, helping students connect vocabulary to a visual structure. Students use strip diagrams to describe equations with terms such as *commutative property* and *factor*, supported by guided questions, including "How does this diagram show the commutative property?" The materials in Mission 7, Lesson 5, embed explicit vocabulary instruction in

financial literacy contexts. Labeled visuals and teacher prompts like "How does the price change when fewer resources are available?" help students apply meaningful content-specific terms, including *price*, *value*, *cost*, and *demand*.

In *Math Catalyst*, the materials provide embedded educator guidance to scaffold students' use of academic mathematical vocabulary in context. In the "Multiplication" unit, Objective 1 includes sentence stems such as "You have ___ cubes. I have ___ times as many cubes as you." In "Representations of Multiplication," sentence frames guide students in describing equal groups and quantities. However, the materials do not include guidance on extending vocabulary use beyond initial scaffolding when communicating with peers and educators.

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 mathematical vocabulary during structured discourse. In Mission 1, Lesson 9, teachers prompt students to use terms such as *row*, *array*, *number of groups*, *size of group*, *product*, and *area model* to describe and compare multiplication strategies. Prompts such as "How does the array help find the total?" and "What does the size of the group represent in this model?" encourage vocabulary use in both discussion and written explanations. In Mission 1, Lesson 3, prompts in Concept Exploration and Guided Practice support the use of repeated addition, unit form, and multiplication in problem-solving, with questions like "Can the total be described using repeated addition?" and "How does the unit form support writing the multiplication sentence?" In Mission 7, Lesson 5, the Math Chat and Student Discussion sections provide visuals and structured prompts to support vocabulary use in financial contexts, guiding students to apply terms such as *supply*, *demand*, *price*, and *value* when analyzing strip diagrams and real-world scenarios.

In *Math Catalyst*, the materials provide embedded teacher guidance to support vocabulary use in problem-solving and reasoning. In the unit "Compare and Order Numbers to 100,000," students use place value disks and charts to explain comparisons. Objective 1 includes Turn and Talk opportunities with prompts such as "What digit is in the largest unit of each number?" and "What is the value of the digit?", encouraging the use of terms such as *compare*, *equal to*, *greater than*, *less than*, and *unit*. In the "Multiplication of Two-Digit Numbers by One-Digit Numbers" unit, a Teacher Tip in Objective 2 instructs educators to prompt discussion about decomposing shapes by asking students to "turn and talk about how they can find the area of a shape composed of rectangles by subtracting from a larger area."

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 facilitate peer conversations using academic mathematical vocabulary. In Mission 1, Lesson 3, sentence frames such as "___ groups of ___ equals ___,"

and "I used repeated addition because . . ." support students in verbalizing repeated addition and multiplication using unit-form expressions. The Guided Practice section instructs teachers to model these frames and monitor discussions for accuracy. In Mission 1, Lesson 9, structured prompts in Multiple Means of Representation and Lesson Synthesis guide students using terms such as *array*, *row*, *product*, and *area model* to compare strategies. Questions like "How does the array show equal groups?" and "Which strategy is more efficient?" promote peer discussion and vocabulary use. In Mission 7, Lesson 5, the Math Chat routine supports structured dialogue around pricing and supply scenarios, with prompts such as, "What causes the price to change?" and "How can the strip diagram help explain this situation?" Students use terms such as *high demand*, *low supply*, and *price* to reinforce vocabulary through real-world contexts.

In *Math Catalyst*, the materials provide teacher guidance to support peer discussions using academic language. In "Compare and Order Numbers to 100,000," students engage in Turn and Talk opportunities using place value charts or disks, supported by questions such as "What is the largest unit in each number?" and "What is the next largest unit in each number?" These prompts help students hear, refine, and apply mathematical language in context. In "Fractions as Numbers: Representations of Non-Unit Fractions," teachers invite students to discuss how non-unit fractions are represented on a number line, encouraging shared use of academic vocabulary during collaborative reasoning.

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 variety of student answers, including exemplar responses to questions and tasks, as well as guidance to support or redirect inaccurate student responses. The materials provide one exemplary response to the question and tasks. The materials also include notes under Multiple Means of Engagement to support scaffolds to address misconceptions.

In *Math Catalyst*, the materials provide exemplar responses and guidance to support teachers in evaluating and advancing student thinking. For example, in the "Teacher Guide" for "Compare and Order Whole Numbers to 100,000," Objective 2 includes questions paired with sample student answers, such as:

Q: "What is the next largest unit? How do you know?"

R: "The next largest unit is thousands. 3,000 represents three thousands."

Guidance continues with prompts such as:

Q: "Next, the expanded form shows one ten. Is the tens column the next column in the place value chart?"

R: "No. The hundreds column is next."

Similarly, in the same unit, teachers are guided to ask, "What is the largest unit in this number? How do you know?" with the exemplar response, "We know the largest unit is ten thousands because the expanded form shows 60,000. The number has six ten thousands." The Concept Mini Lesson component also provides visual examples of student work, giving educators clear expectations for proficient solutions. Each lesson includes an Analyze Student Progress section with Questions to Advance Student Thinking, helping teachers interpret strategies, uncover misconceptions, and scaffold instruction. Beyond this, the Addressing Student Misconceptions section of every "Concept Guide" provides explicit teacher guidance for responding to common errors, ensuring that educators have 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 embed structured opportunities for students to engage with the TEKS process standards through recurring lesson components. Students regularly apply the RDW (Read–Draw–Write) strategy during Guided Practice and Tower of Power tasks to solve real-world multiplication problems using strip diagrams, number bonds, and written explanations. In Mission 3, Lesson 17, the Math Chat routine prompts students to model strategy selection and justify their solutions with visual representations, directly addressing process standards 3.1A–3.1G. Written prompts in Student Notes and Exit Tickets support explanation of reasoning and evaluation of strategies, particularly during lessons focused on comparing fractions.

In *Math Catalyst,* the TEKS process standards are integrated into the instructional design through application-based tasks. In "Compare and Order Numbers to 100,000," students apply process skills in the Application section using a place value chart to compare and align digits while solving problems. In Representations of Multiplication, students engage with the process standards by playing a game where they multiply two numbers and use square-inch tiles or grid paper to model and solve equations, reinforcing the connection between content and process through hands-on problem-solving.

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 the development of mathematical concepts. The Mission 1 Overview outlines how reasoning, modeling, and communication occur across the learning sequence. It highlights the progression of mathematical thinking, noting how early exploration with arrays, area models, and equal groups builds a foundation for later tasks involving multi-digit multiplication, distributive reasoning, and division strategies. In Mission 1, Lesson 6, students construct arrays using square tiles, write equations, and use academic vocabulary (e.g., *row*, *column*, *area*) to deepen their understanding of multiplication structure. Later, in Lessons 13–15 of Topic E, students apply the distributive property and engage in multistep problem-solving by decomposing shapes, labeling area models, and solving equations, engaging multiple TEKS process standards, such as modeling, explaining relationships, and justifying reasoning across visual and numerical representations.

In *Math Catalyst*, the "Implementation Guide" includes a section that explains how the TEKS process standards are implemented across the program. It describes, for example, how in "Compare and Order Numbers to 100,000," students use manipulatives, such as place value disks and charts, to support their conceptual understanding. In "Representations of Multiplication," students engage with tiles and number lines to represent multiplication. The "Alignment Guide" lists the specific process standards addressed in each unit. For instance, the multiplication pathway identifies standards 1A, 1C, 1D, 1E, 1F, and 1G, providing transparency into how each process standard is woven into instruction and connected across the strand.

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

In *Zearn Math*, the materials provide a detailed and structured mapping of the TEKS process standards to individual lessons. The grade 3 Mathematical Process Standards by Lesson per Mission chart in the "Course Guide" explicitly connects lessons to standards 3.1A–3.1G. For example, in Mission 1, process standard 3.1C is addressed in Lessons 1–12, while standards 3.1A and 3.1E occur in multiple lessons within Mission 2, including Lessons 6–10. This tagging provides a framework showing where students will engage in problem-solving, representation, justification, and evaluation throughout the curriculum.

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 by engaging with real-world contexts, models, and open-ended questions. In Mission 2, students solve ratio problems, such as comparing lap counts between runners, by identifying relationships and selecting operations to represent the situation. In Mission 3, the Concept Exploration section asks students to represent multiplication and division using models and equations, and then explain their reasoning with prompts such as "What strategy did you use to solve?" and "How do you know?" Scaffolded challenges support student perseverance. For example, in Mission 4, the Multiple Means of Representation section begins with a 2-by-2 rectangle with missing tiles and gradually increases complexity. Teachers remove visuals, encouraging students to construct representations using equal groups, arrays, and area models. In Mission 1, students revisit and revise solutions, use diagrams to determine remaining quantities, and write justifications to support peer discussions.

In *Math Catalyst*, the materials provide opportunities for students to think mathematically, persevere through solving problems, and make sense of mathematics. In the "Teacher Guide" for "Multiplication as Multiplicative Comparisons," each Concept Mini Lesson gradually increases in complexity, helping students build confidence before engaging with more challenging tasks. The lesson questions prompt mathematical reasoning, asking students to identify which factor represents the repeated unit and how to show that with cubes or use the phrase "times as many" to describe multiplication. In Multiplication: Representations of Multiplication, students are given information and images to solve multistep tasks.

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 they can use multiple approaches to solve the same problem. In Mission 7, Lesson 15, the Concept Exploration section uses the Read–Draw–Write process to solve multistep word problems and describe alternate methods. Teachers

prompt students with questions such as "What other way could we solve this?" and "What makes that strategy effective?" to support comparison of strategies. In Mission 3, students model multistep problems involving three quantities using number bonds, equations, and strip diagrams. Lesson Synthesis prompts, such as "How do strip diagrams help solve these problems?" and "What strategy could be used if you are still working on learning . . .?" support reflection on multiple approaches. In Mission 4, Lesson 6, students determine the area of composite figures using either decomposition or subtraction. Lesson scripting prompts students to justify each method and evaluate which is most efficient.

In *Math Catalyst*, the materials support students in understanding, explaining, and justifying multiple ways to solve a problem. In the "Teacher Guide" for "Round to the Nearest Ten and Hundred," the Solve a Problem activity in the Application section encourages students to share their work with a partner to compare solution paths and make connections between different representations. This collaborative reflection helps deepen conceptual understanding and highlights the value of diverse strategies. In "Multiplication of Two-Digit Numbers by One-Digit Numbers," the Read–Draw–Write Tool scaffolds problem-solving. Students record their knowledge, explain their reasoning, and justify their solution approach, supporting flexibility in mathematical thinking.

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 provide multiple opportunities for students to communicate their mathematical reasoning through discussion, written explanations, and collaborative problem-solving. In Mission 1, the Concept Exploration section prompts students to work in pairs to solve word problems, draw diagrams, and select strategies, fostering peer collaboration and refining their ideas. In Mission 4, students draw and label rectangles to calculate area and list multiplication facts that support their visual models, reinforcing the connection between representation and explanation. In Mission 2, the Read–Draw–Write process helps students organize and articulate their reasoning in written form. In Mission 3, during Guided Practice, students solve division problems using strategies like breaking apart and distributing, then explain their thinking aloud. Prompts in Lesson Synthesis, such as "How is today's strategy similar to what we used in Lesson 4?" guide structured reflection and comparison, supporting clear mathematical communication.

In *Math Catalyst*, the "Teacher Guide" for "Round to the Nearest Ten and Hundred" includes application activities that provide opportunities for students to write about and discuss math with peers. In the Solve a Problem section, students share their work and compare different solution paths, using the Read–Draw–Write tool to organize and reflect on their thinking. In "Multiplication—Relate Multiplication to Area," students are prompted to turn and talk about how they can use unit squares to find the area of a rectangle. The materials also guide students in writing about math in the Read–Draw–Write section, where they record their solutions to word problems that connect multiplication and area.

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 communicate mathematical reasoning by sharing explanations, arguments, and justifications during problem-solving. In Mission 7, the Concept Exploration uses the Read–Draw–Write process to prompt students to represent problems with models and explain strategies to a partner. Lessons include tasks such as evaluating whether 7 × 5 equals 3 × 7 + 2 × 7 and analyzing "twice as long" using paper strip models to construct and articulate justifications. In Mission 4, teacher guidance during Guided Practice and Lesson Synthesis provides prompts, such as "Which model best represents the problem?" and "How does knowing one side length help you determine another?" to support structured discourse. Students draw area models, write equations, and apply contextual reasoning to justify their responses. The materials also promote reflection on explanations and strategies through questions such as "Which idea from today's lesson did you try again? Why?" and tasks that prompt comparison of solutions, identification of errors, and clarification of mathematical thinking.

In *Math Catalyst*, the materials support educators in guiding students to share and reflect on their problem-solving approaches with explanations, arguments, and justifications. In the "Teacher Guide" for "Compare and Order Numbers to 100,000," students turn and talk to explain how comparing and ordering numbers are similar and different in Objective 3. During the Application activity for the same lesson, students play the game Three in a Row to compare numbers and justify their thinking. Students share their work and identify any mistakes when they disagree. In the Compare Fractions Application, students play a partner game where they compare fractions and write comparison statements on whiteboards. The materials encourage justification and error analysis with prompts such as, "If you disagree, share your work with each other and find the mistake."

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 3, Lesson 14, 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, "What is the value of m? So, how many marbles does Eliza have to give away? Is our work on this problem finished? Draw a model that represents how many marbles each friend gets." In Mission 3, Lesson 3, the

materials provide educator guidance in Notes on Multiple Means of Action and Expression on the variation of strip diagrams students will have and the order in which to present the strip diagrams when reviewing student work with the class. For example, the materials state, "When reviewing student solution paths, it is wise to start with the most accessible, and progress to more sophisticated solution paths, all while using the same strip diagram."

In *Math Catalyst*, the materials include prompts that help educators anticipate and address misconceptions. For example, in the "Teacher Guide" for "Fractions as Numbers: Compare Fractions with the Same Numerator or Denominator," the Addressing Student Misconceptions section includes questions such as "How many partitions do you need to make from 0 to 1 to represent each fraction?" and "What do you notice about the size of the parts on the number line?" Similarly, in Relate Multiplication to Area, the materials identify the misconception that students must fill in the entire array and provide suggestions to address this, such as using tactile movements to emphasize vocabulary and connecting these to multiplication sentences. However, the materials do not provide guidance for explanatory feedback based on actual student responses. Although Teacher Tips are included, they do not offer specific prompts or strategies to help educators respond effectively to what students say or do during instruction.