Accelerate Learning Inc.

Supplemental English Mathematics, 5

STEMscopes Texas Math Pulse–Grade 5 English

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Supplemental	**9798330804887**	**Digital**	**Static**

Rating Overview

TEKS SCORE	TEKS BREAKOUTS ATTEMPTED	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	136	0	Flags Not in Report	Flags in Report	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	23 out of 23	100%
2. Progress Monitoring	20 out of 24	83%
3. Supports for All Learners	37 out of 39	95%
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	1
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.

STEMscopes Math Pulse Grade 5 includes a "Course Rationale," which provides a comprehensive explanation of the instructional design across and within grade levels. The materials include detailed charts that map the Texas Essential Knowledge and Skills (TEKS) and topics, accompanied by a written rationale explaining the order in which topics are taught, broken down by each grade level.

Separate "Vertical Alignment Charts" for grades K–3 and grades 4–6 support easy reference to both prior and subsequent instruction. These charts include thorough descriptions and justifications for the progression of content across grade levels.

In addition, the materials include an "Alignment Guide," which outlines how the English Language Proficiency Standards (ELPS) are integrated into instruction. Within the "Scope and Sequence," the ELPS are identified under the "Included Standards" column for each topic at each grade level.

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.

Each Scope in the *STEMscopes Math Pulse Grade 5* offers built-in tools to support differentiation and student growth, including intervention and acceleration options, spiraled review, observation checklists, and skills quizzes. These features equip teachers with the resources needed to adapt instruction to meet a range of student needs.

The materials also include comprehensive program usage recommendations designed to support implementation in various instructional contexts. Strategies are provided for effective teaching in multiple settings, including just-in-time supports, advanced learning opportunities, and full-course implementation models.

A flexible "Pacing Guide" is also provided to help educators adjust instruction to their classroom needs while preserving the coherence of the content. The "Implementation Guide" features a section entitled "Various Instructional Calendar Options," which offers recommendations for calendars covering both 165 days and over 180 days. These calendars are based on a standard 180-day instructional year.

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

STEMscopes Math Pulse Grade 5 includes a "Scaffolded Instructional Guide," which helps teachers plan next steps based on student performance on the scope's assessments or diagnostic data, such as MAP Growth results. The "Scaffolded Instructional Guide" also functions as an integrated tool, directing teachers to targeted materials organized by standard and student percentile ranges, ensuring that instruction is aligned with student needs.

The curriculum includes a "TEKS Correlation Guide," which maps the standards to instructional content and includes recommended skill entry points based on diagnostic assessment results. A "Differentiation Pathways Document" is included in the lesson planning resources, offering strategic support to meet students at their current performance level and guide them toward mastery.

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

The "Curriculum Design and Implementation Guide" includes explicit protocols with corresponding guidance for unit and lesson internalization to help educators deeply understand instructional intent and sequencing.

"Content Support" sections of each lesson serve as valuable resources during PLC meetings, supporting collaborative planning and discussion of instructional strategies, background knowledge, academic vocabulary, and potential student misconceptions.

The "Lesson Internalization Section" provides a structured process for preparing to teach each lesson. It includes the following: a review of scope and individual lesson objectives, identification of essential vocabulary and success criteria, a list of required manipulatives and materials, and a link to a take-home letter to support family engagement.

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

STEMscopes Math Pulse Grade 5 includes materials to support professional development that are specifically designed for instructional leaders, including training modules and implementation guidance. These resources support leaders in gaining a deep understanding of the curriculum, enabling them to effectively coach and guide teachers in using the materials with fidelity. "Administration and Instructional Support" offers practical guidance on how leaders can establish sustainable instructional systems centered on the curriculum.

The materials offer comprehensive reports and dashboards that present actionable data on student performance. Instructional leaders are equipped with specific strategies and tools to effectively interpret and leverage this data. These tools support planning, enhance instruction, and ensure teaching practices align with the program's design and learning goals.

Each scope includes several resources, such as "Content Support," "Scaffolded Instruction Guides," and "Intervention Materials." Although these are teacher-facing materials, they are also valuable for instructional leaders who work to support data-driven decision-making, responsive instruction, and continuous teacher development.

1.2 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	All criteria for guidance met.	7/7
1.2b	This guidance is not applicable to the program.	N/A
1.2c	All criteria for guidance met.	2/2
—	**TOTAL**	9/9

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.

STEMscopes Math Pulse Grade 5 includes detailed lesson plans for each Scope Tile with clearly stated learning objectives, as well as alignment to the TEKS and ELPS. The lessons follow a 5E instructional model—Engage, Explore, Explain, Elaborate, and Evaluate—with detailed timing and lesson activities accessible through dropdown menus and embedded links within the lesson plan.

Each lesson includes a thorough list of resources for both teachers and students. These resources may include manipulatives, calculators, and printable materials. For instance, in the grade 5 scope on "Representing and Comparing Decimals," each group is expected to use a set of place-value disks or place-value blocks. The lesson also provides access to a place-value mat and printable worksheets to support learning.

Assessment resources are aligned with the TEKS and ELPS and are embedded within each topic. At the end of each lesson, "Assessment Options" provide various evaluation tools, including "Structured Conversations," "Exit Tickets," "Show What You Know," "Skills Quizzes," formal evaluations, and "Small Group Intervention Checkups."

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.

This guidance is not applicable because the program is not designed to be adaptive.

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

Each scope in the *STEMscopes Math Pulse Grade 5* includes a "Take-Home Letter," which explains what students are learning, along with examples, rationales, and vocabulary, including visual examples. Families are encouraged to discuss with their students what they are learning in class and identify examples of the math concepts they are learning in everyday life.

The "Take-Home Letter" is available in English and Spanish. The Spanish versions of the letters include the same instructional support, complete with visual representations of strategies, explanations of academic vocabulary, and home-based reinforcement activities. This dual-language approach helps ensure families are equipped to support their child's understanding and mastery of mathematical concepts outside the classroom environment.

Each "Take-Home Letter" includes specific activities for families and students to do together. For example, the grade 5 "Multiply Decimals" scope highlights key vocabulary and includes sections like "Math Outside of the Classroom," which feature activities such as card games and online research. These letters also contain visual aids, mastery guidelines, and tips for supporting student progress, ensuring families are informed and engaged in their child's learning.

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	Materials did not include text-to-speech that educators can enable or disable to support individual students. Materials did not include content and language support that educators can enable or disable to support individual students.	2/4
2.1d	All criteria for guidance met.	4/4
2.1e	All criteria for guidance met.	4/4
—	**TOTAL**	14/16

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

STEMscopes Math Pulse Grade 5 includes a list of diagnostic assessments, each accompanied by a brief definition and purpose in the "Implementation Guide." The diagnostic assessments include "Accessing Prior Knowledge," "Observation Checklist," "Benchmark Assessments," and "Growth Measurement Assessments." For instance, the "Accessing Prior Knowledge" diagnostic aims to assess students' existing knowledge before introducing the scope's content.

The materials provided include a list of formative assessments, each accompanied by a brief definition and purpose in the "Implementation Guide." The "Formative Assessments" featured are: "Exit Ticket," "Decide and Defend," "Observation Checklist," "Skills Quiz," and "Small-Group Intervention." For example, the "Observation Checklist" serves as a tool for both teachers and students to reflect on the student's progress and set goals.

The materials provided include a list of summative assessments, each accompanied by a brief definition and purpose in the "Implementation Guide." The "Summative Assessments" featured are: "Skills Quiz," "Standards-Based Assessment," "Technology-Enhanced Questions," "Benchmark Assessments," and "Growth Measurement Assessment." For instance, the "Skills Quiz" assesses a student's proficiency in efficiently and accurately solving mathematical problems.

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

STEMscopes Math Pulse Grade 5 provides clear guidance for teachers on how to accurately administer the assessments embedded in each lesson, as well as different options for assessments and a recommended time allotment for completing each assessment.

Each assessment in the individual scope tiles is accompanied by a guiding document that provides an overview of the assessment, outlines timeframes for each task, and offers step-by-step instructions for administering each component.

The materials include guidance for teachers to accurately administer formative assessments. For example, the "Multiply Decimals" scope's "Day 1 Assessment Option," titled "Structured Conversations," is allotted fifteen minutes for completion. "Procedure and Facilitation" notes include questions, prompts, and routines, featuring ten different methods for students to engage in discourse with various-sized groups to facilitate structured conversations, such as "Around the Room," "Back and Forth," "Conga Line," and "Four Corners."

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.

STEMscopes Math Pulse Grade 5 includes digital assessments that provide accommodations, including the option for educators to enable or disable calculator tools to support individual student needs. These tools include four-function, graphing, and scientific calculators.

The materials include digital assessments, such as "Skills Quizzes" and "Benchmark Assessments," which are fully formatted for seamless printing to ensure immediate accessibility for offline use.

The materials do not include text-to-speech that educators can enable or disable to support individual students.

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

TEKS-aligned tasks and questions are designed with varying levels of complexity. For example, the grade 5 "Observation Checklist Diagnostic Assessment" on "Multiplying Decimals" asks students to rate themselves on various process standards, including the following options: "I can select appropriate tools and strategies to solve problems. I can create and use representations to organize, record, and communicate mathematical ideas. I can use precise language to display, explain, and justify mathematical ideas."

The materials include diagnostic assessments that incorporate a variety of interactive item types such as multiple-choice, inline-choice, drag-and-drop, text-entry, and multi-select questions, all aligned with the TEKS.

The materials include diagnostic assessments featuring a range of interactive item types, with at least two unique question formats to engage students in diverse ways. Benchmark assessments are provided at three key points—before, during, and after each scope—with tasks that increase in difficulty to monitor and support student growth over time. Available question formats include multiple-choice, multi-select, and text-entry options.

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

STEMscopes Math Pulse Grade 5 includes formative assessment tasks and questions that vary in complexity, ranging from "Basic Recall" (Depth of Knowledge [DOK] 1) to "Extensive Thinking" (DOK 4). In grade 5, the "Balance a Budget" scope's "Skills Quiz" includes a variety of questions designed to assess different skills. Students identify income and expenses (DOK 1) by determining whether a provided description represents income or an expense. They calculate the remaining funds (DOK 2) by computing the amount of money left after accounting for monthly expenses. They demonstrate an understanding of maintaining financial records (DOK 3) by describing a process for keeping accurate records. Finally, they apply extensive thinking by balancing a budget (DOK 4), which involves reducing expenses, updating the balance column, and explaining their decision-making process.

The materials include a variety of TEKS-aligned formative assessments, such as "Exit Tickets," "Observation Checklists," "Skills Quizzes," and embedded tasks within the lesson. Each "Skills Quiz" is aligned with the TEKS and includes interactive item types, such as multiple-choice, equation editors, graphing, and number lines. However, they do not include hot spot, drag-and-drop, in-line choice, or text-entry options. For example, the "Graph in the First Quadrant" scope tile "Skills Quiz" includes graphing on a coordinate plane, open-ended tasks that require completing a grid, and text-entry.

Grade 5 formative assessments include the "Show What You Know" tasks, which feature at least two interactive item types such as fill-in-the-blank, explaining reasoning, and drawing models. The formative assessments also offer a variety of unique interactive question formats, including plotting on an interactive number line, using the keyboard to type in the names of divers in order from first to last, and choosing all that apply, all of which are aligned with the TEKS. The "Checkup" task includes at least two unique interactive questions. These include typing equations, using interactive items to draw arrays to represent expressions, typing estimates, and completing fill-in-the-blank exercises.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	Materials do not include a rationale for each correct and incorrect response.	1/3
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	This guidance is not applicable to the program.	N/A
—	**TOTAL**	6/8

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

STEMscopes Math Pulse Grade 5 includes a "Scaffolded Instruction Guide" for each scope lesson that offers guidance on interpreting student performance using data and outlines instructional next steps. It organizes support into four percentile ranges per standard: "Previous Grade Level Remediation" with small-group interventions, "Grade Level with Supports" using small-group materials, "Grade Level" with visual supports, and "Extending Grade Level" with acceleration activities.

The materials provide answer keys for assessments, but many lack detailed explanations or rationales for correct and incorrect responses. For instance, a grade 5 math problem like "9 × 14" is marked with an incorrect answer "36," but does not show the calculation steps or reasoning.

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

STEMscopes Math Pulse Grade 5 offers guidance on using tasks and activities to address student performance trends on assessments. Each "Scope Standard Lesson" includes an "Intervention" subsection with resources for small group instruction. For example, in the grade 5 "Represent and Compare Decimals" scope, the small group activity focuses on building understanding of decimals by using base-ten blocks, place value charts, decimal cards in both standard and word form, and number lines to make meaningful connections.

The materials and suggested activities are organized by student percentile ranges, with clickable links directing educators to targeted resources. In the grade 5 "Add and Subtract Decimals" scope, which addresses TEKS 5.2C and 5.3AK, each standard includes recommended activities based on performance levels. Students scoring 0 to 25 percent are directed to "Previous Grade Level Remediation," which includes links to grade 4 resources related to addition and subtraction algorithms, interactive practice, fluency builders, and a skills quiz. Scores between 25 and 50 percent fall under the category of "Grade

Level with Supports," which offers links to grade 5 small-group intervention activities. The 50–80 percent range is categorized as "Grade Level," with links to tools such as "Picture Vocabulary," "Interactive Vocabulary," and "Fluency Builder." For scores between 80 and 100 percent, the scope includes an "Extending Grade Level" activity called "Math Today."

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

STEMscopes Math Pulse Grade 5 features a visual growth tracker designed to enhance student engagement throughout their learning journey. Each scope includes an editable "Observation Checklist" progress chart, allowing students and teachers to reflect the learning that has taken place. This tool helps both students and teachers identify areas of improvement and set new learning goals. For example, in the grade 5 scope, "Balance a Budget," a key concept is the ability to balance a budget. Students can provide responses with examples of how this skill can be achieved and select from options such as "I've got it," "almost there," or "not yet."

The materials include user-friendly data trackers that help students record and visualize their progress on benchmark assessments. Each assessment features a Heat Map where students mark correct answers in green and incorrect ones in red, aligned to specific standards. Following this, students complete four reflection questions to deepen self-awareness, such as identifying which skill they felt most confident with and why.

The materials include "Student Goal Setting" print files that help students set goals for each unit based on specific objectives and track their progress toward achieving them. This feature also offers procedures and facilitation guidance for teachers to support the goal-setting process.

The materials incorporate the "Quantile Framework," which outlines over 550 math skills and assigns each a difficulty measure to facilitate comparison of concepts. This framework enables teachers to monitor student growth, identify gaps in understanding, and provide targeted support or enrichment. Students with an on-target quantile measure are ready for grade-level skills, those below target need to focus on prerequisite skills, and those above can work on more advanced, upcoming concepts.

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.

STEMscopes Math Pulse Grade 5 includes prompts in the "Procedure and Facilitation Points" sections that guide educators to pause and ask targeted questions during lessons. The "Explore 1" activity section provides a detailed plan that supports teachers in checking for understanding through DOK questioning. For example, in the grade 5 graph in the "First Quadrant" lesson plan, questions range from observational prompts like "What do you notice about the coordinate plane?" to more analytical ones,

such as "Why do you think the point on the coordinate plane is called the origin?" to promote student thinking.

The materials include printed lesson plans with prompts for teachers to pause and check for understanding at key points, such as after explaining a concept or before moving to a new activity. For example, the "Monitor and Talk" section guides teachers to ask questions like, "How are expanded notation and expanded form similar?" to assess student understanding and encourage discussion.

The materials include "Instructional Supports" and "Language Supports" that provide educators with guidance on checking understanding throughout lessons. In the "Multiply Fractions" scope under "Explore," these sections provide targeted suggestions at key points in instruction. "Instructional Supports" recommend strategies for assisting students who need help modeling a scenario, require additional support drawing a model, or require extra support in converting an improper fraction. "Language Supports" guide teachers to use visuals and ask questions to reinforce understanding and support student learning.

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

This guidance is not applicable because the program is not designed to be adaptive.

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	Digital materials do not provide accommodations for text-to-speech that educators can enable or disable to support individual students. Digital materials do not provide accommodations for content and language support that educators can enable or disable to support individual students.	1/3
3.1e	All criteria for guidance met.	2/2
—	**TOTAL**	10/12

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.

STEMscopes Math Pulse Grade 5 offers educators explicit guidance on lessons and activities that are scaffolded for students who have not yet achieved proficiency in prerequisite or grade-level concepts and skills. Each scope includes a "Scaffolded Instruction Guide," which uses data from the scope's assessments or MAP Growth assessments to direct teachers to appropriate materials based on individual student needs. Scores ranging from 0 to 25 percent indicate a need for remediation of previous grade-level content, while scores between 25 and 50 percent suggest students are approaching grade-level expectations and may benefit from additional support. The guide includes a chart with suggested activities for each performance level, complete with live links to the corresponding resources.

The materials include an "Intervention Section" that offers educators targeted guidance on lessons and activities designed for students who have not yet mastered prerequisite or grade-level concepts and skills. This section provides a comprehensive set of resources, including a list of required materials, preparation steps, detailed procedures, facilitation tips, and printable files to support effective implementation of small group intervention activities. For example, in the grade 5 scope, "Represent and Compare Decimals," the "Small Group Intervention" section focuses on helping students read and write decimals to the thousandths using expanded notation. Students use their understanding of place value to order and compare decimals. To support student learning, the materials include supplemental aids such as assorted number lines, base-ten blocks, and a decimal place value mat, which provide concrete and visual representations to reinforce the targeted skill.

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.

The *STEMscopes Math Pulse Grade 5* materials include explicit educator guidance for language supports, including embedded supports for developing academic vocabulary. Each scope contains "Picture Vocabulary," which includes teacher instructions on preparation, procedure, and facilitation points, as well as tips and tricks, along with the ability to assign vocabulary in both English and Spanish. For example, in the grade 5 "Multiply Fractions" scope, students can access relevant academic vocabulary such as *addition*, *area model*, *compare*, and *denominator*. These vocabulary terms can be downloaded and used as flashcards or assigned digitally for use as either flashcards or a slideshow.

The materials include explicit educator guidance for language development, including pre-teaching and embedded support for unfamiliar terms and references within the text. Each scope features a "Language Supports" section tailored to each "Explore" activity, providing targeted guidance to help educators support students during instruction. For example, the "Represent and Compare Decimals" scope includes three "Explore" activities, each with its own "Language Support" section tailored to the specific activity. In "Explore 1," the materials include practice pronunciation of key terms such as *tenths*, *hundredths*, and *thousandths*, while noting word endings; checking for understanding of academic vocabulary like *expression*, *fraction*, and *decimal*; using sentence stems in partner discussions; and encouraging students to verbalize responses to reflection questions with a partner before writing them down.

The materials for each "STEMscopes Standard Lesson" provide explicit educator guidance on language supports, including pre-teaching strategies to develop academic vocabulary. For example, in the grade 5 scope, "Problem Solve with the Four Operations/Estimate Solutions," the "Explore" subsection includes a "Language Supports" section that provides explicit, step-by-step guidance for educators on pre-teaching academic vocabulary. This guidance includes strategies such as having students practice key terms like *estimate*, *estimation*, *reasonable*, and *compatible*, while also incorporating hand gestures to help visualize and reinforce the meaning of each term.

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.

STEMscopes Math Pulse Grade 5 includes explicit educator guidance for extension activities for students who have demonstrated proficiency in grade-level and above-grade-level content and skills included in the "Math Today" activities. The "Math Today" activities explore connections between math and other content through interactions with real-world media provided by the Associated Press. "Math Today" activities include detailed procedures and facilitation points for educators, along with discussions using "I notice" and "I wonder" statements to explore how math is applied in the presented situation.

The materials include a "Scaffolded Instruction Guide" for each scope. This guide provides teachers with a step-by-step plan to support the enrichment of students who have demonstrated proficiency in grade-level content and skills. For example, in the "Classify Two-Dimensional Figures" scope, the "Elaborate" subsection features the interactive practice "Profile Builder." In this activity, students use different hashtags to classify a variety of two-dimensional geometric figures, allowing them to apply their understanding of geometric properties in an engaging and interactive way.

The materials include "Take-Home Letters" that provide extension activities for students to do at home with family members.

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.

The *STEMscopes Math Pulse Grade 5* materials provide calculators that educators can enable or disable to support individual students. Within each scope, educators can enable or disable a four-function calculator, a scientific calculator, or a graphing calculator for any activity that can be digitally assigned to students. For example, the "Triangle Properties" scope provides three "Show What You Know" student activities that can be assigned online, with the option to use a calculator.

Digital materials provide accommodations, such as text-to-speech and content and language supports, but educators cannot enable or disable them to support individual students. For example, the "Skills Quiz" within the "Evaluate" component of each scope offers a speaker button that allows the questions to be read aloud to the student and a dictionary button for student use. However, the teacher cannot disable those buttons at will.

By default, all students have access to enlarged text, the text-to-speech feature, text highlighting, commenting tools, and dictionary mode for assistance. The only feature that the teacher can enable and disable is the calculator.

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.

STEMscopes Math Pulse Grade 5 provides educators with guidance on supporting students in demonstrating their understanding of mathematical concepts in multiple ways, such as performing, expressing, and representing their learning. Each scope and its corresponding "Explore" activities offer suggestions for varied methods of student expression. Educators use tools such as physical and digital manipulatives, supplemental aids, and collaborative group work to support diverse learners. For example, in the "Multiply Fractions" scope, the teacher guidance recommends that students work in small groups to rotate through stations designed to support problem-solving. These stations incorporate

hands-on tools such as fraction tiles and fraction circles to reinforce conceptual understanding. The guidance also references open number lines and supplemental aids found in the "Intervention" section, as well as the use of online manipulatives and number lines to further support students in visualizing and solving fraction problems.

The materials provide guidance to educators on offering students multiple options to demonstrate their understanding of mathematical concepts. In the "Evaluate" subsection of each lesson scope, both a "Student Handout" and a "Teacher Observation Checklist" are included to guide educators in presenting varied assessment options. For example, in the scope on "Unit Conversions," the "Student Handout" has students demonstrate their understanding through modeling, drawing, application, discussion, and written explanation. The teacher handout complements this by offering strategies for evaluating student knowledge through physical and pictorial modeling, problem solving, discussion, and written responses.

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.

STEMscopes Math Pulse Grade 5 includes explicit prompts and guidance to support educators in building student knowledge. For example, in the "Adding and Subtracting Fractions" scope, the "Explore 2" activity situates learning within a real-world scenario involving a cookie food truck and social media influencers. This context provides a meaningful and familiar setting for the concept of fractions. Students use fraction tiles or fraction towers to model fractions. At the same time, teachers guide students through hands-on manipulation of the models, verbal explanations, written numerical equivalents, and analysis of mathematical relationships between denominators. This lesson follows a concrete–representational–abstract (CRA) progression, helping students build understanding through multiple means of representation. It also supports the development of key mathematical relationships by connecting visual models to numerical patterns and rules, such as "I can multiply or divide the numerator and denominator by the same number," or "12 is a multiple of both 3 and 4, so I can use it for both."

The materials include explicit prompts and guidance for educators to build student knowledge by highlighting and connecting key patterns, features, and relationships through multiple means of representation. For example, in the "Classify Two-Dimensional Figures" scope, under the "Suggested Scope Calendar" and "Content Support," a summary is provided to educators before instruction begins. This summary explains how the lesson activates prior knowledge and connects to broader mathematical concepts and skills. To anchor big ideas and support conceptual understanding, the "Explore," "Explain," and "Elaborate" tabs incorporate visual models, real-life scenarios, animations, and interactive practice that emphasize and connect critical mathematical features and relationships.

The materials provide clear prompts and guidance to help anchor key mathematical concepts. For example, as students explore multiplication and division algorithms, educators are encouraged to engage them with reflective questions, such as "How did you know that this scenario could be solved using

multiplication? How did you make this area model?" These prompts help students make connections between conceptual understanding and procedural strategies.

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

STEMscopes Math Pulse Grade 5 provides educators with guidance for effective lesson delivery and facilitation, using multiple instructional approaches, including direct instruction, guided practice, inquiry-based learning, collaborative learning, and exploratory learning. For example, in the "Numerical Expressions" scope, the "Engage," "Explore," "Explain," and "Elaborate" sections each contain multiple activities accompanied by detailed educator guidance to support the implementation of varied instructional strategies, such as task cards, structured conversations, station cards for group collaboration, and play money for hands-on experience.

The materials offer clear instructions for effective lesson delivery, featuring detailed lesson plans that include step-by-step directions, recommended pacing, and strategies for differentiation tailored to each lesson. For example, in the "Multiply Fractions" scope, students engage in collaborative group work, use visual area models on grid paper, and explore real-world scenarios involving the multiplication of fractions and whole numbers. The materials support teachers with structured questioning, modeling prompts, and discourse routines such as "Math Chats," which enable instruction through visual modeling, guided inquiry, and cooperative learning.

The materials provide guidance for implementing varied instructional approaches. These include small group instruction in the "Intervention" section and the "Scaffolded Instruction Guide," which offers teacher facilitation points for game-based activities and collaborative, project-based station activities designed for student groups. For example, in the "Represent and Compare Decimals" scope, the teacher is guided to instruct students to use base-ten blocks to represent a given number on the place value work mat and record the number in both numeral and word form on the mat.

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

STEMscopes Math Pulse Grade 5 includes multi-tiered intervention methods to support various types of practice. For example, the "Represent and Interpret Data" scope incorporates guided, independent, and collaborative intervention methods across different subsections. The "Explore" subsection features guided and collaborative practice, while the "Explain" and "Show What You Know" subsections provide independent practice. The "Evaluate" subsection assesses skill reinforcement.

The grade 5 materials include educator guidance to support the effective implementation of multi-tiered intervention methods. Each scope includes a "Scaffolded Instruction Guide" with a detailed chart to help educators identify students who need intervention based on their assessment score percentiles. The guide offers explicit guidance for interpreting assessment data and selecting targeted instructional

materials aligned to each TEKS. For example, students who score between 0 and 25 percent on TEKS 5.2A are directed to previous grade level remediation and relate decimals to fractions with denominators of 10 and 100 by using base ten models from grade 4, and take a grade 4 skills quiz to assess mastery.

The materials offer multi-tiered interventions to support students through various practice models. For instance, teacher-led activities during "Small Group Interventions" lessons provide targeted support for students. Peer collaboration is encouraged as students work together to solve problems in numerous "Engage" subsection activities. "Fluency Builders" foster self-paced mastery by helping students enhance their fact fluency independently. In addition, interactive platforms facilitate adaptive learning through engaging exercises, instant feedback, and opportunities for students to progress through different levels of practice through games and other interactive activities.

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

STEMscopes Math Pulse Grade 5 provides educators with guidance on effectively implementing enrichment and extension activities. Each scope features an "Elaborate" section designed to allow students to apply their newly acquired knowledge and skills in various contexts, thereby deepening their understanding. In addition, each scope includes an "Accelerate" section that offers students opportunities to explore connections and applications of math alongside other subjects through interactions with authentic, real-world media and various other methods.

The materials include guidance to help educators effectively implement enrichment and extension methods, with detailed support outlining procedures and facilitation points for acceleration activities provided within each scope. For example, the "Represent and Interpret Data" scope includes a "Math Today—African Penguins" acceleration activity, which provides educators with detailed guidance to easily implement the activity. Procedure and facilitation points include having the teacher show a video to the students, discussing what they notice and what they wonder, and completing a student page independently or with a partner.

The materials include scopes with enrichment and extension methods that support multiple forms of engagement through collaborative problem-solving, individual reflection, and multimodal tools. For example, in the "Unit Conversion" scope, students use hands-on tools such as digital scales, balances, and physical weights to explore relationships between units (e.g., 16 ounces in a pound, 1,000 grams in a kilogram), supporting both tactile and visual learning. During group work with "Task Cards," students solve multi-step conversion problems and discuss strategies, such as whether to convert units before or after performing operations. Individual engagement is fostered through "Student Journals" and "Exit Tickets," while verbal and reflective engagement is encouraged through class "Math Chats" with questions like "What patterns have you noticed when converting metric units? What connections did you make during this Explore?"

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

STEMscopes Math Pulse Grade 5 includes prompts and guidance to support educators in providing timely feedback during lesson delivery. For example, in the grade 5 "Represent and Interpret Data" scope, the "Explore" subsection mini-lesson on "Frequency Table and Bar Graphs" includes scripted prompts guiding teachers to ask DOK 1 and DOK 2 questions to support student understanding, monitor student thinking, and engage students during activities. Additionally, the lesson contains formative assessment tools such as "Exit Tickets," "Student Journals," "Math Chats," "Spiral Reviews," and "Observation Checklists."

The materials include prompts and guidance to support educators in providing timely feedback during lesson delivery. For example, in the "Explore 1—Coordinate Plane" activity, questions are provided to guide teachers on checking for understanding, addressing misconceptions, and deepening student reasoning throughout the lesson, such as, "Why is the order of the coordinates important? How far from the y-axis is this point?"

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	This guidance is not applicable to the program.	N/A
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**	13/13

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.

STEMscopes Math Pulse Grade 5 includes educator guidance on providing and incorporating linguistic accommodations for all levels of language proficiency as defined by the ELPS, with a focus on helping students develop increasingly academic language. Each "Explore" activity includes a "Language Supports" document tailored to that specific task, offering strategies for differentiating instruction across at least two levels of language proficiency. For example, in the "Divide Decimals" scope, the "Explore" tab features two activities, each accompanied by a "Language Supports" document. These guides suggest various accommodations, such as restating information, using oral explanations of mathematical representations before written responses, and incorporating sentence stems, all of which support emergent bilingual students in building academic vocabulary. For example, a sentence stem provided is "The quotient is greater than or less than the dividend because _____."

The materials include comprehensive guidance for linguistic accommodations aligned with the ELPS. The "Linguistic Diversity" tab offers suggested sentence stems, word activities, and question prompts designed to support student progression from intermediate to advanced proficiency, helping them engage in mathematical discourse using increasingly academic language. For example, a sentence structure provided is: "Multiplication and repeated addition are similar because _____." Additionally, the "Multilingual" tab offers differentiated strategies across at least three levels of language proficiency: beginning, intermediate, and advanced. These supports include leveled activities and sentence frames that are tailored to each stage, effectively scaffolding students toward more complex academic language and deeper mathematical understanding. Some example sentence frames include: "____ (unit 1) is

_____ (larger/smaller) than _____ (unit 2). There are _____ (quantity) _____ (smaller unit) in each _____ (larger unit)."

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.

This guidance is not applicable to the program because it is not designed to be adaptive.

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

STEMscopes Math Pulse Grade 5 includes implementation guidance to support educators in effectively using the materials within state-approved bilingual and ESL programs. The "Implementation Guide" includes a section on multilingual language support, outlining how to address the needs of emergent bilingual students. Within the "Resources and Tools" section, there are seventeen integrated resources, each described with an explanation of its purpose and how it supports language development. These include "Proficiency Levels by Domain," which helps teachers identify a student's English proficiency; "Sentence Stems and Frames," which enable students to practice engaging in purposeful conversation; and "Language Supports," which can be applied during lessons to assist students at any proficiency level.

The "Implementation Guide" provides visuals, such as anchor charts and suggested linguistic scaffolds, to help teachers meet the needs of multilingual learners. For example, translations of "Math Stories" from English to Spanish provide educators in dual-language immersion programs with explicit ways to plan language bridging with an additional lens of positive and negative transfer between grammar and phonics.

The materials include clear implementation guidance for use in state-approved bilingual and ESL programs. The "Multilingual Learners" tab in the "Teacher Toolbox" provides ELPS-aligned strategies, "Proficiency Levels by Domain," "Sentence Stems," "Working on Words," and guidance on how to use these tools.

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.

STEMscopes Math Pulse Grade 5 includes comprehensive support for facilitating oral and written discourse among emergent bilingual students. In the "Multilingual Learners" section, discussion protocols guide teachers in promoting oral discourse to improve comprehension of math concepts, with strategies that help students make language connections between English and Spanish to support language transfer.

For example, the "Teacher Notes" provide scaffolds such as background knowledge builders, visual supports, and vocabulary pre-teaching to help connect new content to prior knowledge through written discourse. Additionally, materials guide teachers in developing students' academic vocabulary by encouraging cross-linguistic connections (e.g., connecting the English term *area* to the Spanish term *perímetro*) and supporting students in orally rehearsing and revising their written responses in the student journal.

The materials include "Picture Vocabulary," which provides support for emergent bilingual students in building their academic vocabulary. Teachers are prompted to read and define the vocabulary for each lesson with students, engage in discussions, and practice during suggested activities that promote academic vocabulary development through oral discourse.

The materials emphasize strategies that support teachers in helping students monitor their comprehension and make adjustments when they struggle to understand. Both the "Implementation Guide" and the "Multilingual Learners" section provide a range of integrated, research-based strategies and tools to support educators in promoting language development. Two key strategies include "Structured Conversation Routines," where students engage in guided discussions around specific questions or prompts, and "Sentence Stems and Frames" to help students participate in meaningful discussions and practice academic writing, promoting both comprehension and communication skills. For example, in the "Perimeter, Area, Volume" scope, in the "Language Support" section, the teacher facilitates a structured conversation for students to use during group work. The teacher provides sentence structures to support students in explaining the steps they took to solve a given problem and receive feedback from a peer. "We find the perimeter by _____. I agree with ____ because ____."

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.

STEMscopes Math Pulse Grade 5 includes instructional assessments throughout the learning pathways that require students to demonstrate a deep understanding aligned to the TEKS. For example, students are evaluated on their understanding of budgeting through instructional assessments that build both conceptual knowledge and real-world application. Students begin by determining whether a given description refers to income or an expense, and move on to questions that require them to demonstrate a deeper understanding, such as balancing a provided budget by reducing expenses, updating the balance column, and justifying their approach.

The materials provide numerous practice opportunities for students to demonstrate depth of understanding and mastery of the TEKS. Each scope lesson includes a variety of engaging activities aligned with the standards. In the "Divide Decimals" scope, students engage in activities that progressively build in depth and complexity. Initially, students represent and generate models of decimal division using pictures based on real-world scenarios, where they must analyze the relationship between the value of the dividend and the quotient. They then create array or area model representations to deepen conceptual understanding before applying the standard algorithm. These tasks guide students through DOK levels 1–3, promoting both conceptual development and procedural fluency.

The materials provide opportunities that require students to demonstrate depth of understanding aligned with the TEKS throughout the learning pathways. This is evidenced through activities such as exploring multiplication of decimals by solving problems using written expressions, number lines, and visual models. These approaches allow students to visualize their thinking before justifying their solutions through written and verbal explanations. Students also engage in collaborative learning by working with task cards in groups to solve real-world problems involving the conversion of units of weight and mass, further reinforcing conceptual understanding and application.

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.

STEMscopes Math Pulse Grade 5 includes questions and tasks that are intentionally designed to increase in rigor and complexity, guiding students toward grade-level proficiency in the mathematics TEKS. Lessons are scaffolded to build conceptual understanding and support student progression toward mastery. In grade 5, students begin by learning to convert units of length, then advance to converting units of weight and mass, and finally move on to converting units of capacity. Once a solid understanding of each concept is developed, students engage in mixed practice tasks and formative assessments that incorporate all types of unit conversions, reinforcing their learning through cumulative application.

Each scope lesson includes enrichment and extension materials that deepen learning and make real-world connections, further engaging students in the learning process. For example, in the "Accelerate" section of the "Perimeter, Area, and Volume" scope lesson, the activity "Math Today – What Will You Build?" offers students the opportunity to explore how these mathematical concepts apply in practical, real-life scenarios. These types of activities encourage students to think critically and apply their understanding beyond routine practice. The "Acceleration" subsection also offers opportunities for cross-curricular connections and advanced exploration, enabling students to deepen their knowledge beyond grade-level expectations.

The materials include tasks and questions that increase in rigor and complexity, leading to grade-level proficiency and above. Students use fraction manipulatives and models to determine common denominators in order to add and subtract fractions with unlike denominators. Then, they progress to fluently adding and subtracting fractions with uncommon denominators in multistep, real-world problems. As part of the learning process, students are prompted to reflect on their reasoning by answering questions such as: "How did you determine the common denominator? Is there another common denominator you could have used? Why is it important to find equivalent fractions when adding or subtracting?" These reflective questions deepen conceptual understanding and promote mathematical reasoning.

4.2 Coherence of Key Concepts

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

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

STEMscopes Math Pulse Grade 5 includes a "Content Support Overview" that explains how students develop an understanding of fraction division. Learning begins with students applying their understanding that fractions represent equal parts of a whole and that division involves splitting into equal parts. They explore how to divide unit fractions by whole numbers and whole numbers by unit fractions. To deepen their understanding, students use manipulatives and visual models such as illustrations, number lines, and area models to solve fraction division problems.

The materials include a "Course Rationale" that outlines how *STEMscopes Math* is intentionally designed to build on prior knowledge, ensuring smooth transitions between topics. The guide explains the overall structure and connections between patterns, big ideas, and relationships. For example, it begins with the "Represent and Compare Decimals" scope, which deepens students' understanding of place value by emphasizing the relationship between adjacent place values and representing multi-digit numbers in various forms.

The "Scope Lessons" demonstrate horizontal coherence by exploring how concepts are interconnected and build toward solving real-world problems. For example, the grade 5 "Represent and Interpret Data" scope guides students in exploring similarities and differences among various data representations, such as bar graphs, stem-and-leaf plots, and frequency tables. Students use these tools to solve one- and two-step problems, gradually building up to graphing ordered pairs from input-output tables in the first quadrant of the coordinate plane.

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

STEMscopes Math Pulse Grade 5 includes a "Content Support" document that outlines the background knowledge students have developed from grade 1 through grade 4 in relation to converting units. For instance, by the time students reach grade 1, they have measured objects using units of different lengths and described how those units differ. The document also features a "Coming Attractions" section, which

explains how students will build on this foundational understanding by applying their knowledge of converting within a measurement system to eventually convert between different measurement systems.

The materials include "Vertical Alignment Charts" that span from grade K through Algebra II, illustrating how concepts build and connect across grade levels. These charts use color coding to make each strand easy to follow—for example, "Process Skills" are consistently marked in red across all grades. Each strand includes detailed listings of the TEKS covered, helping educators clearly see the progression of skills and standards over time.

In the "Dividing Decimals" scope, the "Background Knowledge" section outlines the progression of the concept beginning in grade K, where students begin developing a foundation in the base-ten number system. By grade 4, students extend their understanding of division from grade 3 to include whole number quotients and remainders, using strategies based on place value. This progression prepares them for dividing decimals in grade 5 by building on their conceptual understanding of numbers and operations.

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.

STEMscopes Math Pulse Grade 5 demonstrates coherence across lessons by connecting students' prior knowledge of concepts to new mathematical concepts. In the "Estimate Solutions: Explore" section of the "Problem Solve with Four Operations" scope, the "Procedure and Facilitation Points" include guiding questions such as "What do you remember about estimating solutions? Do your parents ever say things like 'about this much' or 'about this many hours'? What kind of quantities should you estimate?" These questions serve as a bridge to the upcoming activity by activating prior knowledge and encouraging real-world connections. They help set the stage for exploring current concepts and procedures, using the accompanying print materials as tools for learning and practice.

The materials demonstrate coherence across lessons by connecting students' prior knowledge to future grade-level concepts through the "Content Support" and "Explore" tabs. For example, in the "Classify Two-Dimensional Figures" scope, students build foundational skills such as classifying polygons, quadrilaterals, and triangles. These concepts lay the groundwork for learning in grades 6 and 7, where students use the coordinate plane to plot polygons, analyze their attributes, identify bases and heights of triangles, and apply shape composition and decomposition to derive and understand formulas for area and volume.

Students participate in an introductory lesson centered on classifying two-dimensional figures. The teacher facilitates the learning process by offering discussion prompts and extension tasks that connect these new concepts to students' prior knowledge. During the lesson, students explore questions such as "What do you notice about the shapes in the artwork? How are the shapes similar, and how are they

different?" The materials include an "Educator's Content Support" tool with a "Coming Attractions" section that outlines how current student mastery connects to future grade-level concepts. For example, in grade 5, it notes that students will build on their understanding of unit conversions within a single measurement system by applying this knowledge to convert between units in different measurement systems in later grades.

The materials demonstrate coherence by linking students' prior knowledge to current mathematical procedures through the "Scope Standard Lessons." These lessons provide step-by-step methods or algorithms, starting with foundational operations such as addition, subtraction, multiplication, and division, and gradually progressing to more complex concepts, including problem-solving with all four operations and simplifying numerical expressions with rational numbers. For example, in the grade 5 "Problem Solve with Four Operations" scope, the "Explore" section mini-lesson begins with estimation—a previously learned concept—and then guides students in selecting the appropriate operation(s) and using accurate computation strategies to solve for the actual answer.

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.

The *STEMscopes Math Pulse Grade 5* materials offer spaced retrieval opportunities by revisiting previously learned concepts across different learning pathways. Multiplication and division algorithms, introduced early in the year, are consistently used to solve problems. For example, in the "Multiplication Models Algorithms" scope, students apply multiplication facts to solve multiplication problems. They continue to retrieve and use this strategy in other pathways, such as the Multiplying Decimals Scope, and in Spiral Reviews, reinforcing their understanding over time.

The materials include "Fact Fluency" for addition, subtraction, multiplication, and division, providing strategic fluency support across various learning pathways. These activities promote spaced retrieval of essential skills, helping students build and maintain mastery in solving problems involving the four basic operations.

The materials include a "Spiraled Review" in the "Elaborate" subsection that offers students opportunities to review and retrieve essential content from previous or current grade levels, reinforcing critical learning areas. For example, in the grade 5 "Problem Solve with the Four Operations" scope, students review and apply previously learned skills and concepts such as understanding place value relationships, interpreting stem-and-leaf plots, calculating elapsed time, and working with fractions.

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

The *STEMscopes Math Pulse Grade 5* materials offer interleaved practice by integrating previously learned concepts across learning pathways, especially in the areas of addition and subtraction. Students are taught multiple strategies to solve problems involving fractions and mixed numbers, and then extend those strategies to work with decimals. This approach reinforces connections between concepts and supports deeper understanding through repeated, varied practice.

The materials include assessments that encourage students to apply previously learned strategies to solve multiplication and division problems. For example, students may be asked to choose a strategy to solve a problem and then solve the same problem again using a different strategy. This approach

reinforces flexibility in thinking and deepens conceptual understanding by prompting students not to rely on the same method consecutively.

The materials include interleaved practice, which is evident in the "Spiraled Review" section of the "STEMscopes Standard Lesson: Elaborate" subsection and its corresponding print files. For example, the "Spiraled Review" activity titled "A New Start for Franco" offers interleaved practice across multiple learning pathways, including multiplication of money, rounding, calculating total time, and more. This approach helps reinforce previously taught concepts by integrating them into a variety of problem types within a single activity, promoting retention and flexible problem-solving skills.

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.

The *STEMscopes Math Pulse Grade 5* materials include questions and tasks that require students to evaluate models and representations of mathematical concepts and real-world situations. In the "Multiplying Decimals" scope, the "Hook" activity prompts students to evaluate models and representations of mathematical concepts through a real-life scenario. Students use area models to represent the multiplication of decimals as they investigate a scenario involving painting a mural on a wall.

The materials include an "Explore" section in the lesson scope that includes questions and tasks that provide opportunities for students to interpret models and representations of mathematical concepts. For example, in the "Perimeter, Area, Volume" scope, the "Explore 4: Volume of Rectangular Prisms" subsection, students interpret the relationship between area, perimeter, and volume using visuals and hands-on manipulatives. Students build their own models to solve problems related to these concepts, supported by virtual manipulatives, such as color tiles and linking cubes.

Students analyze and evaluate two-dimensional figures by categorizing them into groups and subgroups using a series of engaging verbal prompts. Questions guide students in examining attributes and relationships among shapes, such as "What do you notice about the shapes in the art? How are the shapes similar? How are the shapes different?" Students work through these prompts collaboratively, discussing their observations and promoting mathematical reasoning and geometric understanding through dialogue and reflection.

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

STEMscopes Math Pulse Grade 5 includes questions and tasks that provide multiple and varied opportunities for students to create concrete models to represent mathematical situations. For example, in the "Multiplication Models and Strategies" scope, the "Explore 2: Arrays and Area Models" subsection

includes activities that engage students in building array and area models using base-ten blocks to solve real-world mathematical problems.

The materials include questions and tasks that require students to create pictorial representations of mathematical situations to support conceptual understanding. For example, in the "Add and Subtract Fractions" scope, under the "Explore" tab, students are required to create pictorial models when solving problems to model common denominators in the "Student Journal" and "Exit Ticket." In the "Student Journal," students draw models of both the original and equivalent fractions using pictures that represent fraction tiles. They then create equations and solutions for six mathematical scenarios and complete a similar task on an "Exit Ticket."

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

The *STEMscopes Math Pulse Grade 5* materials include questions and tasks that provide opportunities for students to apply their conceptual understanding to new problem situations and real-world contexts. In the lesson, "Problem Solve with the Four Operations," the "Explain: Show What You Know" subsection has students demonstrate their conceptual understanding of the four basic operations by solving real-world word problems. Students engage with situational problems centered around a family of farmers and their crops, applying their knowledge of addition, subtraction, multiplication, and division to make sense of and solve multistep scenarios.

Students extend their understanding of adding and subtracting fractions by applying these skills to real-life contexts. For example, students solve a real-life problem: "Mia's mom tells her that when she first gets her driver's license, she will only be allowed to drive distances less than 10 miles until she gains more experience. Mia learns that her school is a certain number of miles from her house, and her best friend's house is 2 miles farther than her school. Will Mia be allowed to drive from her house to her best friend's house? Explain." This type of problem provides students opportunities to apply fraction operations in meaningful, everyday situations, reinforcing both conceptual understanding and critical thinking.

The materials include questions and tasks that provide opportunities for students to apply their conceptual understanding to new problem situations and real-world contexts. For example, in the "Add and Subtract Fractions" scope's "Spiraled Review," students are presented with a real-world scenario involving a family building a doghouse. They are then asked to apply their conceptual understanding to solve a series of related problems. These include calculating the amount of wood and trim needed, determining the cost of individual shingles, and estimating the total cost of paint. Students are encouraged to choose their own method for modeling and calculating solutions, promoting critical thinking, problem-solving, and the application of fraction operations in meaningful contexts.

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.

STEMscopes Math Pulse Grade 5 provides tasks designed to build students' fluency in performing math operations. For example, in the grade 5 "STEMscopes Teacher Resource Fact Fluency," the materials offer strategies and practice opportunities that support students in developing fluency with addition, subtraction, multiplication, and division. These include a variety of engaging methods, such as station-based activities and games, which help students recall math facts quickly and accurately. For example, students can play a matching game that pairs rounded decimals with their corresponding values in the tenths and hundredths places. This interactive activity supports the development of fluency in adding and subtracting decimals by reinforcing understanding of place value and number sense.

The materials include lessons, such as the "Explore 3: Represent and Solve Multi-Step Problems" lesson, that provide tasks designed to build student automaticity necessary to complete grade-level mathematical tasks. This example provides tasks that build students' automaticity with grade-level mathematical skills by engaging them in repeated, structured practice with multi-step problems involving all four operations and variable equations. Through activities such as matching, modeling, rewriting, and creating equations, students develop fluency in representing and solving problems.

The materials include interactive tasks designed to build the fluency necessary to complete grade-level mathematical tasks. Topics include sums of 5 through 20, using doubles, and multiplication factors from 0 to 10.

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

STEMscopes Math Pulse Grade 5 provides opportunities for students to practice applying efficient and accurate mathematical procedures through structured learning pathways. For example, in the "Multiplication and Division Algorithms" scope, the "Explain: Show What You Know" subsection provides students with opportunities to practice efficient and accurate division procedures using a variety of strategies, including area models, the partial quotient strategy, and the standard algorithm.

The materials provide consistent opportunities for students to practice applying accurate mathematical procedures across structured learning pathways. Each scope includes a progression of skills that allows students to build and reinforce their understanding through multiple practice opportunities. For example, in the "Dividing Decimals" scope, students learn decimal place value through a structured progression, starting with the use of base-10 blocks and grid models to represent decimals. Next, they apply the skill by drawing base-10 and grid models to solve problems, followed by practice through an interactive game. Finally, students consolidate their learning by completing a skills quiz that requires them to apply their understanding by drawing models to represent equations and solutions. This progression supports the development of procedural accuracy and fluency through varied and scaffolded practice.

The materials include an introductory task on dividing decimals, where the teacher models an efficient procedure for solving these problems. Additionally, the teacher discusses flexible strategies such as equal groups, arrays, area models, and equations. The materials recommend extending the activity by stating, "Invite students to solve the same problem using more than one model or strategy and explain the relationships between them." This extension promotes fluency and deepens students' understanding of decimal division.

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

The *STEMscopes Math Pulse Grade 5* materials enable students to assess the accuracy of mathematical representations, models, strategies, and solutions throughout their learning pathways. Under each scope's "Explore" tab, students engage in various activities and then reflect on their learning by evaluating their work. For example, in the "Multiplication and Division Algorithms: Explore" activity, students evaluate various strategies using area models and the standard algorithm for multiplication, as well as area models, partial quotients, and the standard algorithm for division.

The materials include subsections, such as "Show What You Know—Part 1: Keep Financial Records," that provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for flexibility and accuracy throughout learning pathways. This task supports students in applying accurate mathematical procedures to track income and expenses, while also providing flexibility in calculating and recording changes in a financial balance. By organizing transactions in a table and reflecting on the purpose of financial records, students evaluate budgeting strategies and build a foundational understanding of personal finance concepts within real-world contexts.

The materials include opportunities for students to evaluate the efficiency and flexibility of different mathematical strategies and representations. For example, in the "Multiply Decimals" scope, the "Explore: Arrays and Area Models" activity guides students to model decimal multiplication using arrays, area models, and equations. After engaging with the models, students evaluate and reflect on their

learning through guided questions, such as "How is this process similar to or different from multiplying whole numbers? How are area models similar to arrays?"

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

STEMscopes Math Pulse Grade 5 contains guidance to support students in selecting increasingly efficient approaches to solve mathematical problems. The "Content Support" section of each scope introduces strategies to students that promote more effective problem solving. For example, in the grade 5 scope "Multiplication and Division Algorithms," the "Content Support" guides suggest using area models and other visual models to help students divide 4-digit numbers by 2-digit numbers to solve problems. These strategies foster conceptual understanding and guide students toward more efficient and flexible problem-solving methods.

The materials guide students in selecting increasingly efficient strategies for solving mathematical problems. For example, in the "Explore 1: Order Matters" activity, students discover and apply the order of operations while actively comparing efficient and inefficient methods for solving multistep problems. Through hands-on modeling, structured practice, and collaborative reflection, students learn to accurately and efficiently write, simplify, and evaluate expressions, building mathematical problem-solving fluency.

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.

The *STEMscopes Math Pulse Grade 5* materials clearly explain how the conceptual and procedural emphasis of the TEKS is addressed within the "Content Support" section of each scope. For example, in the "Perimeter, Area, and Volume" scope, the materials outline the progression of concepts with specific examples and detailed explanations for each skill on volume. Students first explore the concept of volume conceptually by physically filling rectangular prisms with unit cubes, allowing them to build a foundational understanding of volume as a measurable attribute. This hands-on experience supports their transition to using the volume formula to solve problems, aligning with both the conceptual development and procedural fluency required by the TEKS.

The materials explicitly state how the conceptual emphasis of the TEKS is addressed by including a detailed progression in each scope that highlights prior knowledge, common misconceptions, and current learning goals. In the scope on classifying figures by attributes, the materials guide students in recognizing that shapes can belong to multiple categories within a hierarchy. Visual models are used to support this understanding, and key misconceptions are directly addressed. Students are encouraged to justify their classifications and use tools, such as Venn diagrams and hierarchy trees, to deepen their understanding of geometric relationships and internalize how figures are related based on their properties.

The materials include a "Content Support" section and a "Teacher Facilitation" script within each scope that directly address the conceptual emphasis of the TEKS. In the "Classify Two-Dimensional Figures" scope, for instance, in the "Explore" section, students use physical shapes and classify them based on their attributes. This helps students visualize the attributes of shapes when given a pictorial representation or verbal description. This structure supports a clear and coherent development of conceptual understanding as outlined in the TEKS.

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

The *STEMscopes Math Pulse Grade 5* materials include virtual manipulatives and a variety of print-based activities that offer students multiple opportunities to engage with concrete models. For instance, in the

"Represent and Interpret Data" scope, the "Explore" section allows students to graph ordered pairs using a virtual XY coordinate board. In the "Perimeter, Area, and Volume" scope, students begin with concrete models or diagrams of geometric figures and then apply abstract formulas to calculate area, volume, and perimeter. These tasks align with the TEKS by reinforcing both conceptual understanding and procedural fluency through the use of concrete, pictorial, and abstract models.

The materials include questions and tasks that align with the TEKS by providing opportunities for students to use abstract models. In the "Divide Decimals" scope, the "Explain" section guides students in transitioning from using concrete models during the "Explore" activities to applying abstract models, such as dividing decimals using the standard algorithm. This progression supports a deeper conceptual understanding and aligns with the expectations of the TEKS.

The materials include tasks that align with the TEKS by requiring students to use both pictorial representations and abstract models. In the "Triangle Classification" lesson, students engage with printed triangle shapes, graphic organizers, and visual models to sort and classify triangles based on angles and side lengths. They apply definitions and geometric rules to generate logical statements and justify their classifications, eventually moving beyond visual support. The lesson also includes abstract reasoning prompts, such as always/sometimes/never statements, encouraging students to deepen their understanding and apply critical thinking to geometric concepts.

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.

The *STEMscopes Math Pulse Grade 5* materials provide comprehensive support for students in connecting, creating, defining, and explaining concrete and representational models as they transition to abstract concepts, aligning with the TEKS. In the "Add and Subtract Decimals" scope, students engage in a structured progression that begins with a real-world connection through a video in the "Engage" tab. This is followed by a series of three activities in the "Explore" and "Explain" tabs, which progress from concrete models, such as real items and place value disks, to representational models like place value charts, and finally to abstract algorithms. The "Elaborate" tab provides additional opportunities for students to apply their understanding across these levels by playing a card game where they have to match the pictures, numbers, and words, and the "Acceleration" tab challenges them to transfer their learning to real-world problem-solving scenarios by reading an article, "Math Today—The Largest Asteroids," and solving this problem posed in the article: "In January 2014, an asteroid named 2014 AA, measuring between 2 and 4 meters, struck Earth. If 2014 AA had a width of 3.23 meters and 2018 LA had a width of 1.42 meters, how much larger was 2014 AA?" Students must also respond to the following question: "How is math used in this situation?"

The materials support students in connecting, creating, and explaining transitions between models and abstract concepts, as required by the TEKS. In the "Triangle Classification" lesson, students cut out and

sort triangle figures into categories based on side lengths and angles, then use a hierarchical graphic organizer to represent the abstract rules behind their classifications. They are prompted to explain how their visual groupings—such as scalene, isosceles, right, and acute—align with formal geometric definitions and to justify why some triangles can belong to more than one category. These activities help students make connections between visual models and abstract concepts, reinforcing their understanding of geometric properties and supporting the development of mathematical generalizations.

The materials provide strong support for students in connecting concrete models to abstract concepts, aligning with the TEKS. Many tasks begin with hands-on or visual representations and guide students toward expressing ideas in symbolic, numerical, or algorithmic forms. For example, in grade 5, students use rulers and meter sticks to explore the relationship between feet and inches, as well as to understand centimeters. These hands-on tools support students in solving problems involving unit conversions. The materials provide structured guidance through questions like, "How did you convert meters to centimeters?" and "Do you observe a pattern when converting a measurement unit to the next smallest unit?" These prompts encourage conceptual understanding and pattern recognition, enabling students to transition from concrete exploration to the abstract—converting units using standard algorithms.

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.

The *STEMscopes Math Pulse Grade 5* materials provide consistent opportunities for students to develop academic mathematical language through the use of visuals, manipulatives, and structured language development strategies. For example, in the "Represent and Compare Decimals" scope, students explore expanded notation by engaging with base-ten blocks, place value disks, and place value charts to represent the value of digits in a decimal number using expanded notation. Teacher prompts and scaffolded discussions guide students in articulating their thinking using academic mathematical language, such as *digit*, *value*, *place*, and *expanded notation*, supporting the development of academic language.

The materials provide opportunities for students to develop and enhance their academic mathematical language through the use of visuals, manipulatives, and various language development strategies. In grade 5, students use rulers and meter sticks to explore unit conversions related to length. To demonstrate their understanding, students answer questions, such as "What is the relationship between 1 foot and inches?" and "What is another term for 100 centimeters?" Teachers are encouraged to check for understanding through guided questions, such as "How did you convert yards to inches?" This instructional approach fosters meaningful mathematical discussions and supports students in applying and reinforcing academic vocabulary.

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.

The *STEMscopes Math Pulse Grade 5* materials include embedded educator guidance that supports and extends students' use of academic vocabulary in context during peer and teacher interactions. For example, in the "Income, Taxes, and Payment Methods" scope, the "Explore 1" activity provides structured opportunities for students to collaborate as they define and identify examples of sales tax, income tax, payroll tax, and property tax in the real world. Students are presented with scenarios that require discussion and problem-solving, and they engage with "Math Chat" questions designed to

promote the use of mathematical vocabulary and support academic discourse. An example question students might encounter is, "How are sales taxes, property taxes, income taxes, and payroll taxes alike?"

The materials feature "Explore" sections that include embedded guidance for educators, designed to scaffold and support students in using academic vocabulary. Each "Explore" section is accompanied by a "Language Supports" section, which can help extend the use of academic vocabulary in context while communicating with peers and educators.

For instance, in grade 5, teachers are encouraged to use visual cues to introduce key vocabulary such as *unit*, *length*, and *area*. Educators are provided with sentence stems to support student discussions and deepen their understanding of solutions when working with partners. For example, one included sentence stem is, "Area models and arrays are similar because . . ." These supports promote the use of precise mathematical language and structured academic dialogue.

The "STEMscopes Lesson Script" provides teachers with explicit strategies and prompts for vocabulary development, beginning with foundational concepts and gradually progressing to more complex terminology. This includes using sentence stems aligned with the lesson standard and guidance for facilitating discourse between peers and educators, using newly acquired academic language. For example, the teacher provides sentence structures to support students in asking and answering questions, such as: "Partner A: How did you model the problem? Partner B: I modeled the problem by . . ."

Additionally, each scope's "Explain" subsection includes a "Picture Vocabulary" feature, which supports student understanding by pairing academic terms with visual representations. This scaffolding helps students make meaningful connections between words and concepts, promoting accurate and confident use of vocabulary in both spoken and written communication.

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

The *STEMscopes Math Pulse Grade 5* materials include embedded guidance to support students in applying appropriate mathematical language and academic vocabulary during discourse. In the "Classify Two-Dimensional Figures" scope, under the "Engage" tab, educators are provided with guiding questions designed to prompt students to justify their reasoning using precise mathematical vocabulary. These prompts help students classify two-dimensional figures into categories and subcategories based on their attributes and properties. Example questions include the following: "What do you notice about the shapes in the art? Is it a quadrilateral? What categories does a square belong to? What are the similarities and differences between a rectangle and a rhombus?"

The materials include "Math Chat" prompts, structured conversation routines, and sentence stems to support students in using appropriate mathematical language and vocabulary during discourse. For example, in the "Explore" section of the "Perimeter, Area, and Volume" scope, students explain and

compare measurements using terms such as *perimeter*, *area*, *volume*, *length*, *width*, and *height*. The materials encourage students to reference their area and perimeter vocabulary cards to accurately match each term with its corresponding definition and formula. Educators read the words and definitions aloud with students and facilitate conversations around unfamiliar terms. Students are also prompted to reflect using questions, such as "How can you connect this word to your work in Explore? How would you rephrase the definition in your own words? What images come to mind when you hear this word?"

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

The *STEMscopes Math Pulse Grade 5* materials include embedded guidance to facilitate mathematical conversations by encouraging students to engage in structured reflection prompts, partner-based task activities, and "Math Chat" routines in the "Explore" section of the "Connecting Area Models and the Standard Algorithm" lesson. Students are asked to compare multiplication strategies using academic vocabulary such as *partial products*, *area model*, *factors*, *product*, *regroup*, and *place value*. These supports promote meaningful discourse and reinforce students' understanding of mathematical concepts through the use of precise language. For example, one question posed is "How is an area model different from the standard algorithm?" A possible student response might be: "In the standard algorithm, you do not see the rectangles that break the area or product into parts. You have to really pay attention to place value so you do not regroup numbers into the wrong place."

The materials include embedded guidance to facilitate mathematical conversations, allowing students to refine and use mathematical language with their peers. In the "Classify Two-Dimensional Figures" scope, students work in groups of three to four to classify polygons based on the number of sides, angle sizes, and the presence of parallel sides. Embedded guidance supports the development of mathematical conversations by encouraging students to refine and use precise mathematical language. During the lesson, materials prompt educators to ask the following questions: "What types of shapes do you see? How can we organize the shapes? How many sides do polygons have? What patterns do you notice in the names of the polygons?"

The materials offer embedded dialogues and lesson scripts to facilitate mathematical conversations in the "Engage" section of all scopes. These sections support teachers in guiding students to refine and use mathematical language during peer interactions. They include DOK questions along with sample student responses, providing a model for effective discourse. Additionally, the mini-lesson scripts located in the "Explore" subsection of each scope provide educators with targeted guidance on encouraging student-to-student dialogue. These supports ensure that students have repeated opportunities to hear, practice, and apply academic math language in meaningful contexts.

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.

The *STEMscopes Math Pulse Grade 5* materials include embedded guidance to help educators anticipate a variety of student responses, including exemplar answers. For example, in the "Explore" section of the "Represent and Compare Decimals" scope, multiple guiding questions are posed, such as "How can we use the model to determine an expression for each place?" along with exemplar student responses like "We needed 2 flats in the tenths place, 8 rods in the hundredths place, and 3 units in the thousandths place." These supports help students articulate their mathematical thinking using precise place value vocabulary and visual representations.

The materials include common inaccurate student responses for each lesson, helping teachers anticipate and address areas of difficulty. For example, in the grade 5 "Unit Conversions" scope, students may struggle to remember conversions when a table is not provided. To support teachers in addressing inaccurate responses, the materials include prompts that help teachers monitor student understanding and facilitate discussion through embedded guiding questions accompanied by sample responses. For example, a prompt encourages students to explain their reasoning using appropriate mathematical language and conversion strategies, "How can you convert meters to centimeters? If converting from meters to centimeters, the conversion will use the operation of multiplication because each meter is a group of 100 centimeters."

The materials include embedded guidance to support and redirect inaccurate student responses through the "Content Support" guide, which is provided in each scope. For instance, in the "Divide Fractions" scope, the "Misconceptions and Obstacles" section highlights common misunderstandings, such as students' misconceptions that the greater number is always the dividend. The materials emphasize the importance of considering the context of a scenario to help students accurately determine which amount is being divided. In the "Explore 1: Divide a Whole Number by a Unit Fraction" activity, guiding questions are provided to help teachers respond to student errors. Examples include "What is the dividend? (The dividend is 4.) What is the dividend's role? (Its role is to be divided.) What is the quotient? (The quotient is 12.) What is the quotient's role? (It answers a division problem.) Did anyone notice anything strange about them? (They are each greater than 4, which was our dividend.) Is that normal for division? (Explain. We usually have quotients that are less than the dividend, but when we divide by a fraction, the quotient is greater than the dividend.)"

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.

The *STEMscopes Math Pulse Grade 5* materials appropriately integrate the TEKS process standards throughout instruction. Each scope includes a "Content Support" section that lists all relevant TEKS process standards addressed, along with explanations of how each is applied. For example, in the "Represent and Interpret Data" scope, the "Content Support" section identifies TEKS 5.1A–5.1G as being covered. Specifically, TEKS 5.1G emphasizes that students should work collaboratively to collect, organize, and interpret data, using appropriate mathematical vocabulary and ideas to communicate their thinking. Students are also expected to explain their reasoning and respond to the reasoning of others.

In the "Explore: Dividing Unit Fractions by Whole Numbers" activity, students use pictorial models to represent division scenarios and justify their solution pathways through guided questioning. The lesson incorporates a "Student Explanation Frame" to support students in constructing mathematical arguments. The TEKS process standards are appropriately integrated into the materials through tasks that require students to select and use appropriate tools and representations, as well as justify and explain their reasoning using mathematical language, aligning with TEKS 5.1C, 5.1D, and 5.1G.

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

The *STEMscopes Math Pulse Grade 5* materials include a clear description of how the TEKS process standards are incorporated throughout the learning pathways. STEMscopes provides a "Process Standards Guide" that offers an overview of each standard and illustrates how it progresses across grade levels from grade K through Algebra I. This guide also explains how each process standard is addressed within the grade-level pathways, or scopes. For example, the section titled "Process Standards—Analyze Relationships to Communicate Ideas" identifies that this standard is addressed in the grade 5 scopes for "Ordered Pairs," "Round Decimals," and "Prime and Composite Numbers." Each scope includes a detailed breakdown of how the process standard is applied within the instructional sequence.

The materials include a "Process Standards" tab that describes how the TEKS process standards are connected throughout the learning pathways. This section includes an explanation of each process standard, guidance for teachers on effective implementation, practical examples demonstrating application at each grade level, and a summary that encapsulates the key concepts.

The process standards are integrated throughout the learning pathways by guiding students to apply mathematics to real-world problems and communicate their reasoning effectively. For example, in the scope on decimal operations, students engage in a task where they use estimation strategies to determine the reasonableness of their answers. The materials include opportunities for students to explain their thinking and share solutions in both written and oral formats, ensuring alignment with the process standard TEKS 5.1G, which focuses on mathematical communication and justification of solutions.

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

The *STEMscopes Math Pulse Grade 5* materials include an overview of the TEKS process standards embedded within each lesson, specifically highlighted in each "Explore" activity. For example, in the "Represent and Compare Decimals" scope, the "Explore 1: Place value to the Thousandths Place" activity features a dedicated section titled "Mathematical Process Standards" that lists the relevant standards, TEKS 5.1A, 5.1C, 5.1D, 5.1F, and 5.1G, along with descriptions of how each is addressed within the lesson.

An overview of the TEKS process standards is incorporated into each lesson by providing explicit references to the standards within the lesson objectives. For instance, in the scope on decimal operations, the process standards related to mathematical reasoning and communication, TEKS 5.1D and 5.1G, are highlighted in the lesson overview. Students are prompted to explain their reasoning, justify their answers, and use multiple representations to solve decimal problems using both models and number lines. This ensures alignment with the TEKS standards for communication and reasoning.

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.

The *STEMscopes Math Pulse Grade 5* materials include a lesson in the "Multiplying Fractions" scope that asks questions to guide students toward thinking mathematically, including, "What information do we have? What does the fraction 2/6 represent? What are some models and strategies we learned that could help us find 2/6 of 48?" The lesson includes a prompt for teachers to monitor and talk with students as needed to check for understanding using the following guiding questions: "How did you use counters to model this scenario? How did you use a diagram to model this scenario? Did you notice a relationship among the numbers in each group, the number of groups selected, and the solution?" This interaction provides students with opportunities to persevere through problem-solving.

The materials include opportunities for students to think mathematically, persevere through solving problems, and make sense of mathematics. In the "Perimeter, Area, and Volume" scope's "Explore 5" activity, students represent and solve problems related to perimeter, area, and volume. Students must analyze the configurations of shipping containers and use reasoning to determine and explain which option is most efficient. To extend and challenge their thinking, students consider an additional scenario: the moving truck still has available space, and they must determine whether a bookshelf of a specific size will fit in the remaining space. Finally, students present a solution and justify their reasoning. A sample student question and response is "How can you find out which container will best fit 20 notebooks? (We can compare the area and perimeter of the notebook covers with the area and perimeter of the base of the box to make sure a notebook can be laid in the box.)"

In the grade 5 lesson on "Grouping Symbols" in the "Numerical Expressions" scope, students engage in the problem-solving process to make sense of the math being taught. The process involves representing scenarios using manipulatives (e.g., play money, centimeter cubes, linking cubes) and writing, simplifying, and evaluating expressions. The teacher script intentionally provides opportunities for students to think mathematically by responding to guiding questions, such as "What do you think it means to simplify

something? How could we simplify this expression? What value did you get initially? Why is that value different from the value I just got?"

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

The *STEMscopes Math Pulse Grade 5* materials provide support for students to understand and justify that there are multiple ways to solve problems and complete tasks. The teacher lesson scripts prompt educators to encourage students to explore various problem-solving strategies. Students have opportunities to use a variety of tools and methods, including virtual and concrete manipulatives, graphic organizers, diagrams, and other visual aids, to employ different approaches in finding solutions and justifying their work. For example, in the "Problem Solve with the Four Operations" scope, educators facilitate a problem-solving process that begins with estimation and guides students to use different methods, such as mental math, virtual and concrete manipulatives, and number lines. Students are then prompted to explain how they reached their solution by creating diagrams and writing equations. A sample question and response includes the following: "Can you describe what you used to model the scenario and how it represents the problem? (We created a diagram by cutting the sentence strip in half to create a top and bottom strip. We separated the bottom strip into 3 sections and used sticky notes to label each type of ticket sales. We used another sticky note to label the top strip with the total tickets sold.)"

The materials support students in understanding, explaining, and justifying that there are multiple ways to solve problems and complete tasks. For example, in the "Multiply Fractions" scope, the "Explore 2: Fractions of a Group" activity prompts students to recognize that finding a fraction of a group involves multiplication. Students justify their reasoning using concrete and pictorial models. They are provided with six "Scenario Cards." For example, "William loves to go fishing. He loves finding and collecting rare fishing lures even more. He has 12 lures, and 2/3 of his 12 lures are spinners. How many spinners does William have?" Students solve each scenario in multiple ways using concrete models (counters) or pictorial models (strip diagrams) to determine a solution and explain their reasoning. They must justify their answers by describing the process they used to reach their solution and, in many instances, compare how the models and solutions are similar and different. A sample question and solution is "How did you and your group know how many items to place in each group? (The denominator told us how many groups to create. We placed an equal number of items in each group.)"

The materials support students in explaining and justifying that there are multiple ways to solve problems and complete tasks by providing visual models and equations to represent fraction division, as well as prompting students to compare different strategies for clarity and efficiency. Students are challenged to represent the division of fractions using visual models, equations, and real-world scenarios, and to justify whether their chosen method is more efficient or provides greater clarity. Teacher facilitation includes guiding questions, such as "How can we determine the quotient using a model? How can we determine the quotient without using a model? How can you represent the scenario using

fraction tiles to justify your solution? What equation do you think this model could represent? What other equations match this model?"

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.

The *STEMscopes Math Pulse Grade 5* materials include teacher scripts in the mini-lessons under the "Explore" subsections for activities that not only support individual work but also partner and group work. These scripts prompt the teacher to actively participate in the lesson process, model mathematical thinking with students, support students with their math, and discuss the math. For example, in the grade 5 lesson on problem-solving, students collaborate with a partner to solve a scenario involving a family road trip. Teacher prompts include "What are the different ways to represent a problem? How does estimating your solution help you check your work?"

The materials offer multiple opportunities for students to make sense of mathematics by engaging in discussions with peers and educators. For example, in the "Angles" scope under the "Explore" tab, students are prompted to share their observations and learning with peers through four "Math Chat" questions, such as "How can a triangle be named after two different classifications? What combinations of triangle classifications would be impossible? Why?"

The materials incorporate group-based modeling tasks, structured mathematical discussions using sentence stems, and written reflections in the "Student Journal," "Exit Tickets," and "Interactive Notebook." For example, students engage in collaborative exploration of fraction division scenarios in groups of three to four. "Math Chat" prompts require students to explain and justify how they represented the problem using multiple models (tiles, circles, number lines). Structured conversation routines such as "I heard you say . . . I agree because . . ., or I disagree because . . ." are explicitly used to foster peer-to-peer mathematical discourse.

The materials engage students in hands-on experiences with their peers. In the "Classify Two-Dimensional Figures" scope, students classify shapes using their own chosen criteria and then share their reasoning with the teacher by responding to prompts, such as "What are some ways you have learned to classify shapes in the past? How can we classify these shapes? Is there more than one way to classify these shapes? Explain." Using their "Student Journal," students document and explain how they classify the shapes based on attributes such as the number of sides, angle sizes, and pairs of parallel sides.

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.

The *STEMscopes Math Pulse Grade 5* materials provide educators with clear guidance to help students share and justify their problem-solving thinking and approaches. For example, in a lesson on problem-solving, teachers are consistently supported in encouraging student explanations and justifications, including writing a solution statement.

In the "Teacher Script" of the "Mini Lessons" under the "Explore" subsections, educators are prompted to use guiding questions, such as "What information do you know? What is unknown? Can you describe what you used to model the scenario and how it represents the problem?"

The materials support educators in guiding students to reflect on their problem-solving approaches through multiple formats. For example, "Student Journals" include prompts that encourage students to draw, explain, and record their thought processes. In the activity on dividing fractions, students are asked reflective questions, such as "Predict what will happen to the size of each piece and the number of pieces when you split the 4 pizzas into eighths? Who is correct: Freddy or Morgan? Explain your reasoning."

The materials support educators in guiding students to share and reflect on their problem-solving approaches through open-ended tasks that allow multiple strategies and solutions. Students justify their reasoning through peer discussions and written reflections. For example, in the "Perimeter, Area, and Volume" scope, students work in groups to design fences for various rectangular figures and solve perimeter and area problems. Educators are provided with guiding and open-ended questions to facilitate discussions, including "Math Chat" prompts, such as "If you were given the area and length of a rectangle, what other information could you determine? How are each of the four operations used when calculating the area and perimeter of rectangles? How are the area and perimeter of rectangles similar? How are they different?"

Students also collaborate in their "Student Journals," responding to questions like "If you were given the area of a square, how could you find the side length? Explain using an example." These prompts require students to reflect, share, and justify their problem-solving approaches both verbally and in writing.

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

The *STEMscopes Math Pulse Grade 5* materials include prompts and guidance to support educators in delivering explanatory feedback that is aligned with anticipated misconceptions. For example, in the lesson on dividing unit fractions and whole numbers, educators are prompted to clarify confusing language by connecting one-quarter to real-world contexts, such as coins (e.g., "Review how four quarters make one dollar.") Guidance is also included for addressing common errors, such as reversing the dividend and divisor by using targeted questions like "What is the dividend, or starting total, in this scenario?" Educators are further supported in addressing model misinterpretation by explaining inverse operations and leveraging incorrect reasoning as a teaching opportunity. When students struggle with processing word problems, materials recommend chunking information and modeling metacognitive strategies such as thinking aloud while solving. These supports are embedded in facilitation notes and the "Anticipated Student Misconceptions" sections across lessons. In the "Monitor and Talk" section of the "Problem Solve with Four Operations" scope, questions to help provide real-time feedback include: "What do you notice about the scenarios? How can you rephrase the question to write a solution statement? What information do you know? What is unknown? Can you describe what you used to model the scenario and how it represents the problem? How can you determine the operations needed to solve?"

The materials include guidance to help educators provide explanatory feedback based on student responses and anticipated misconceptions. Each scope includes a "Content Support" document with a "Misconceptions and Obstacles" guide outlining possible student errors. For example, in the "Divide Decimals" scope, one misconception is that students may not align numbers correctly in the algorithm, resulting in the quotient being in the incorrect place value. Suggestions for addressing misconceptions include revisiting prerequisite skills, such as multiplying and dividing decimals. Educators are encouraged to use strategies such as area models or arrays and, if necessary, allow students to work with whole-number conversions until they are confident with the process.

The materials provide possible student answers for all unit conversion problems and include suggested feedback prompts to guide or extend student thinking. For example, a guiding question and response might be "How did you convert ounces to pounds? (I divided the number of ounces by 16 to find the number of pounds.)"

Within the "Explore 4" section of "The Standard Algorithm" lesson, educators receive step-by-step guidance for providing feedback to student responses in the "Procedure and Facilitation Points." For instance, Step 5 prompts educators to review the steps of the division standard algorithm as needed and remind students to keep the digits organized as they complete each step. Step 9 instructs educators to monitor and talk with students as needed to check for understanding, using guiding questions with possible answers: "What is important to remember when using the division standard algorithm? (It is

important to keep my numbers organized and neat.)" These prompts provide clear strategies for identifying misunderstandings and offering corrective feedback in real time.