

Kiddom, Inc.

English Mathematics, 8

Kiddom Texas Math: Grade 8

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Full-Subject, Tier-1	9798894309040	Both Print and Digital	Static

Rating Overview

TEKS SCORE	ELPS SCORE	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	100%	1	Flags Addressed	Flags in Report	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	22 out of 28	79%
2. Progress Monitoring	24 out of 26	92%
3. Supports for All Learners	23 out of 27	85%
4. Depth and Coherence of Key Concepts	16 out of 19	84%
5. Balance of Conceptual and Procedural Understanding	37 out of 41	90%
6. Productive Struggle	22 out of 22	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	2	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)	1	0	0

SUITABILITY EXCELLENCE FLAGS BY CATEGORY	IMRA REVIEWERS
Category 2: Alignment with Public Education's Constitutional Goal	4
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.	4/4
1.1b	Materials do not include suggested pacing (pacing guide/calendar) for various instructional calendars (e.g., varying numbers of instructional days—165, 180, 210).	1/2
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	11/12

1.1a – Materials include a scope and sequence outlining the TEKS, ELPS, and concepts taught in the course.

The materials include a grade 8 scope and sequence" that includes 12 units that outline the alignment of the grade 8 Texas Essential Knowledge and Skills (TEKS) with correlating concepts taught in each unit through the title of the lesson and the learning targets for each lesson. Each of the 12 units has specified English Language Proficiency Standards (ELPS) within the scope and sequence.

1.1b – Materials include suggested pacing (pacing guide/calendar) to support effective implementation for various instructional calendars (e.g., varying numbers of instructional days – 165, 180, 210).

The "Texas 6–8 Pacing Guide" in the "Course Overview" outlines unit numbers and titles that match the scope and sequence.

The materials include only one pacing timeline of 32 weeks.

1.1c – Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.

The "Course Narrative" includes the unit order and how concepts are connected throughout the course. A short description of each unit title shows what concepts are being introduced and points out connections to previously introduced concepts; for example, "With a strong foundation in

transformations, students explore Line and Angle Relationships, applying their understanding of rigid motions and similarity."

The "Course Narrative" includes a rationale for the unit order, describing how each unit is connected to previous unit learning and leads to the next unit learning.

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

Materials include protocols with corresponding guidance for unit and lesson internalization in the *Curriculum Study for Educators*. "Internalization protocols provide a structured way for teachers to study a unit or lesson before instruction, focusing on the 'why' behind the content".

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

The materials include resources and guidance for instructional leaders to support teachers with implementing the materials as designed within the *Administration Implementation Guide*.

"The most effective types of support that administrators can provide to improve teacher confidence and curriculum fidelity are rooted in creating a culture of collaborative professionalism and intentional, protected structures for curriculum study—especially through Professional Learning Communities (PLCs). Included are the key supports administrators should implement, each connected to research-backed strategies and tied to the PLC framework."

1.2 Unit-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	Materials do not include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to teach the concepts in the unit effectively.	0/2
1.2b	All criteria for guidance met.	2/2
—	TOTAL	2/4

1.2a – Materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit.

While the "Unit Narrative" includes comprehensive unit overviews stating what concepts are taught in each unit, the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit are not included.

1.2b – Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student.

Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student. "Unit 2: Family Support Materials," titled "Content FAQs," are available in English and include a section, "What Can I Do to Support My Student at Home?"

In Unit 2 there is an audio recording within "Family Support Materials" that includes tips to support students.

1.3 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.3a	Materials do not include comprehensive, structured, detailed lesson plans required to meet language standards of the lesson (aligned to the ELPS).	7/8
1.3b	Materials do not include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson.	1/3
1.3c	All criteria for guidance met.	1/1
—	TOTAL	9/12

1.3a – Materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson (aligned with the TEKS and the ELPS).

The materials include comprehensive, structured, detailed lesson plans that include daily objectives. For example, the "Unit 6, Lesson 4: Fitting a Line to Data" lesson plans are aligned to the TEKS and include daily objectives (called learning goals) aligned to those TEKS.

The "Activity Synthesis" sections of the lesson plans include teacher questions to check for understanding. Each activity includes tasks that promote the mastery of each objective, as well as a list of necessary materials and an instructional assessment.

The lesson plans include supports for English Language Learners, such as "Speaking: MLR8 Discussion Supports," stating "Use this routine to clarify the meaning of 'width' and 'length' in the context of the task."

Alignment to ELPS is not addressed in lesson plans.

1.3b – Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson, and the suggested timing for each lesson component.

The "Lesson Overview" includes required materials; however, the materials do not specify either teacher or student.

The "Lesson Overview" includes a presentation with the suggested timing for each lesson component; however, the timing is not listed directly in the unit overview.

1.3c – Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

In the *Middle School Course Guide for Teachers*, the section on practice problems states, "Each lesson includes an associated set of practice problems. Assign practice problems for homework or for extra practice in class."

The materials do not include guidance to specify practice as homework, extension, or enrichment.

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	Materials do not include a variety of instructional assessments at the unit level (including diagnostic and summative) that vary in type of task.	7/9
2.1b	All criteria for guidance met.	2/2
2.1c	All criteria for guidance met.	2/2
2.1d	All criteria for guidance met.	6/6
2.1e	All criteria for guidance met.	2/2
—	TOTAL	19/21

2.1a – Materials include a variety of instructional assessments at the unit and lesson level (including diagnostic, formative, and summative) that vary in types of tasks and questions.

Materials include a variety of instructional assessments at the unit level (including diagnostic, formative, and summative). Each unit includes one or more diagnostic "Check Your Readiness" and summative "End of Unit Assessment" with varying types of questions including multiple-choice, open-ended, and written responses.

Diagnostic and summative assessments at the unit level, which vary in types of tasks, were not found.

Materials include a variety of instructional assessments at the lesson level that vary in types of tasks and questions. For example, in grade 8, Unit 9, Lesson 5, Activity 4 Cooldown, there are short-answer questions, along with students filling out a graphic organizer as a task.

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

The materials include the definition for the types of instructional assessments. In the *Middle School Course Guide for Teachers*, an "Assessment Guidance" section of the document defines each type of assessment. For diagnostic assessments, the document states, "Use these problems to identify students with particular below-grade needs, or topics to carefully address during the unit." In a section about cooldown activities, the document states, "Use this as a formative assessment to provide feedback or to plan further instruction." For summative assessments, the document states, "These assessments gauge students' understanding of the key concepts of the unit while also preparing students for new-generation standardized exams."

The materials include the intended purpose for the types of instructional assessments included. For diagnostic assessments, the materials state, "Use these to pace or tune instruction. In rare cases, they may signal the opportunity to move more quickly through a topic to optimize instructional time." For formative assessments, the materials state, "Each lesson ends with a cool-down to formatively assess students' thinking in relation to an important math concept from the day's learning. Each cool-down is accompanied by guidance on how to continue teaching grade-level content, with appropriate and aligned practice and support for students."

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

Materials include teacher guidance to ensure accurate administration of instructional assessments, as they have learning goals that are referred to multiple times in the *Middle School Course Guide for Teachers* and within each lesson.

Materials include teacher guidance to ensure consistent administration of instructional assessments. Materials, such as a teacher script or teacher directions for assessments, were found in the "Assessment Guidance."

2.1d – Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.

Diagnostic assessments included are aligned to the TEKS of the course and the objectives of the Unit. For example, in unit 6, question three of the "Grade 8.6 Check Your Readiness (A)" diagnostic assessment is aligned to TEKS 8.4C and an objective of the unit found in the "Section Level Planning Guide" that states, "Construct and evaluate linear models to make predictions and interpret relationships between variables using contextual reasoning."

Formative assessments included are aligned to the TEKS of the course and the objectives of the lesson. For example, in Unit 6, Lesson 6, the formative assessment activity "6.5: Coolown—Trends in the Price of Used Cars" is aligned to TEKS 8.5D and the lesson objective "Interpret the slope of a line fit to data in context" found in the first section of the lesson.

Summative assessments included are aligned to the TEKS of the course and the objectives of the unit. In the "Grade 8.6 End of Unit Assessment (A)" summative assessment, questions are aligned to TEKS 8.4C, 8.5D, and 8.11A; these questions are also aligned to the unit objectives found in the "Section Level Planning Guide."

2.1e – Instructional assessments include TEKS-aligned items at varying levels of complexity.

Instructional assessments include TEKS-aligned items at varying levels of complexity. For example, in the "Grade 8.2 End of Unit Assessment (A)," summative assessment Questions 4, 5, and 6 are all asked at different levels of complexity.

Instructional assessments include TEKS-aligned items at varying levels of complexity. For example, within "Grade 8.1 End Of Unit Assessment (B)" there are varying levels of complexity between Questions 1, 3, and 7.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	All criteria for guidance met.	2/2
2.2b	All criteria for guidance met.	1/1
2.2c	All criteria for guidance met.	2/2
—	TOTAL	5/5

2.2a – Instructional assessments and scoring information provide guidance for interpreting student performance.

Instructional assessments and scoring information provide guidance for interpreting student performance. In the "Grade 8.9 End Of Unit Assessment(A)," notes for evaluating responses, seen throughout the assessment, give the teacher guidance on why students may have answered questions in certain ways and what to look for on student work pages to ensure skill mastery for different types of questions.

Another example of guidance for interpreting student performance is found within the questions. For example, questions in "2.3: The Sides and Areas of Tilted Squares" include point values for scoring information, and each formative assessment item has a "Note for Evaluating Responses."

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

Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments by providing a list of strategies a teacher could use if "a large number of students" cannot complete the same pre-unit assessment problem.

Another example of guidance for using included tasks and activities to respond to student trends in performance on assessments is found in pre-assessments. For example, Question 1, Part B within "Grade 8.11 Check Your Readiness (A)" includes teacher guidance: "If most students struggle with this item, consider using the Launch of Lesson 7 to revisit the relationship between the diameter and radius of a sphere."

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

Materials include tools for teachers to track student progress and growth, and tools for students to track their own progress and growth. Teachers and students have a "Class Standard Mastery" report, and students can check their progress weekly or monthly.

Additional information regarding tracking student progress and growth can be found on the Support Site. The article, "What Insights Do My Reports Offer?" describes tools given to teachers and states, "The Reports help monitor student progress over time, track growth by mastery level, and analyze both class and student performance on individual standards." For students, the article "What Do My Reports Mean?" states, "The Reports feature . . . allows you to track your performance in each class based on standards and assignments."

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 marked with a (T) refers to teacher-facing components. Guidance with an (S) refers to student-facing components.

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.1a	All criteria for guidance met.	3/3
3.1b	All criteria for guidance met.	2/2
3.1c	All criteria for guidance met.	2/2
—	TOTAL	7/7

3.1a – Materials include teacher guidance for differentiated instruction, activities, and paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills.

Materials include teacher guidance for differentiated instruction, activities, and/or paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills. For example, instructions and activities can be found below Question 2 within "Grade 8.9 Check Your Readiness (A)," which states, "If most students struggle with this item, plan to spend time in Activity 3 on the placement of rational numbers on the number line in the Activity Synthesis."

In the grade 8, Unit 2, "4.3: Using Side Quotients to Find Side Lengths of Similar Triangles" the "Advancing Student Thinking" section instructs teachers on how to respond to students who are not proficient throughout the activity. "If students have trouble locating corresponding sides, suggest that they use tracing paper so they can rotate and/or translate them. Another technique is to color corresponding side lengths the same color."

3.1b – Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). (T/S)

Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). The *Middle School Course Guide for Teachers* states, "Visual aids, such as images, diagrams, vocabulary anchor charts, color coding, or physical demonstrations, are suggested throughout the materials to support conceptual processing and language development."

In grade 8, Unit 9, vocabulary support is embedded throughout Lesson 3.4. The "Support for Students with Disabilities" section states, "Display or provide charts with symbols and meanings. For example, display the term 'rational number' with its definition and examples."

3.1c – Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skill.

Materials include teacher guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level content and skill. For example, some activities include problems titled "Are You Ready for More?" The *Middle School Course Guide for Teachers* references these problems and states, "These problems go deeper into grade-level mathematics, and often make connections between the topic at hand and other concepts."

The *Teacher Resource Guide* includes a section explaining the contents of a math lesson, including the sections "Instructional Activities" and "Instructional Routines," where descriptions of what teachers are guided to do for students on-level, below-level, and above-level.

3.2 Instructional Methods

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.2a	All criteria for guidance met.	4/4
3.2b	All criteria for guidance met.	2/2
3.2c	All criteria for guidance met.	3/3
—	TOTAL	9/9

3.2a – Materials include explicit (direct) prompts and guidance to support the teacher in modeling and explaining the concept(s) to be learned.

Materials include explicit (direct) prompts and guidance to support the teacher in modeling and explaining the concept(s) to be learned. For example, Instructional Routines are outlined in the *Middle School Course Guide for Teachers* to engage students in mathematical conversations. The information included ranges from "How to Prepare for and Conduct the Modeling Lesson or Project" to "Ideas for Setting Up an Environment Conducive to Modeling," and tools that could be useful to make available for students. Question prompts are also given in the guide to assist in engaging students with the process, such as "What pictures, diagrams, graphs, or equations might help people understand the relationship between the quantities?"

Another example of explicit (direct) prompts and guidance to support the teacher in modeling and explaining the concepts(s) to be learned can be found within the lessons. In grade 8, Unit 6, Lesson 4, "4.2: Shine Bright," the launch section gives teachers guidance on what to say to students when starting the lesson. For example, the following launch is given in a lesson over the line of best fit: "Tell students, 'You will look at some data for the prices of diamonds of different sizes. You have used mathematics to analyze real-world situations, identifying variables in a situation and describing their relationships mathematically. This process is called modeling, and the mathematical description is called a model. Sometimes you made assumptions about the situation or ignored some features so that the model would be simpler.'"

3.2b – Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.

Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches. In the *Middle School Course Guide for Teachers*, guidance for effective lesson delivery and facilitation using a variety of instructional approaches is provided. For example, in a section on student work time, the guide states, "The launch of an activity frequently includes suggestions for grouping students. At different times, students are given opportunities to work individually, with a partner, and in small groups."

In grade 8, Unit 10, "Lesson 7: Estimating the Cost of College," teachers are given guidance and recommendations for effective lesson delivery of each part of the lesson, which includes a warm-up, an analysis task, partner share, share out, two short activities including individual, partnered, and whole-group discussions, a lesson synthesis, a cooldown exit ticket, and a practice problem set for extra practice or homework. Throughout these lesson components, guidance for effective lesson delivery and facilitation can be found, such as how to group students for lesson components, the timing that each component should take, and guided questions that could be asked.

3.2c – Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.

Materials support multiple types of practice (e.g., guided, independent, collaborative,) and include support for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation. The *Middle School Course Guide for Teachers* mentions the launch for supporting teachers and giving suggestions on whether an activity should be individual or grouped. For example, in a section on student work time, the guide states, "The launch of an activity frequently includes suggestions for grouping students. At different times, students are given opportunities to work individually, with a partner, and in small groups."

Materials include instructional routines with clear headings and descriptions to help the teacher effectively implement recommended structures. For example, in grade 8, Unit 8, Lesson 8, Activity 2, the provided support states, "Arrange students in groups of three. Distribute 10 pre-cut slips from the blackline master to each group. After groups have solved and sorted their equations, consider having groups switch to examine another group's categories. Leave three–four minutes for a whole-class discussion." Later in the same lesson, students have the opportunity to practice more on their own in the "Cumulative Pp Set".

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	Materials do not include teacher guidance on providing linguistic accommodations for various levels of language proficiency as defined by the ELPS, which are designed to engage students in using increasingly academic language.	0/2
3.3b	All criteria for guidance met.	1/1
3.3c	Materials do not include making cross-linguistic connections through oral and written discourse.	6/8
3.3d	This guidance is not applicable to the program.	N/A
—	TOTAL	7/11

3.3a – Materials include teacher guidance on providing linguistic accommodations for various 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.

Materials do not include teacher guidance on providing linguistic accommodations for various levels of proficiency as defined by the ELPS, which are designed to engage students in using increasingly more academic language. The various levels of proficiency (Pre-production, Beginning, Intermediate, High intermediate, and Advanced) are not identified or used throughout the materials.

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

The materials include implementation guidance for teachers in using the materials in a state-approved English as a Second Language (ESL) program. The "Course Overview" includes "Eight Mathematical Language Routines."

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

Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, and building background knowledge through oral and written discourse. The *Middle School Course Guide for Teachers* includes Mathematical Language Routines (MLRs), which "are instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language." The MLRs included in this curriculum were selected because they simultaneously support students' learning of mathematical practices, content, and language. They are particularly well-suited to meet the needs of linguistically and culturally diverse students who are learning mathematics while concurrently acquiring English. The resource guide also states, "Use the optional, suggested MLRs to support access and language development for English Learners, based on the language demands students will encounter." They are described in the Activity Narrative, under the heading 'Access for English Learners.' "Use the suggested MLRs and language strategies, as appropriate, to provide students with access to an activity, without reducing the mathematical demands of the task."

Grade 8, Unit 2, Lesson 1 "Activity 1.4: Methods for Translations and Dilations" guides teachers in supporting the development of academic vocabulary and the building of background knowledge through oral and written discourse with the language routine "Reading, Writing, Speaking: MLR3 Clarify, Critique, Correct."

The materials do not include embedded guidance for teachers to support emergent bilingual students in making cross-linguistic connections through oral and written discourse.

3.3d – 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.	1/1
—	TOTAL	3/3

4.1a – Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

Practice opportunities over the course of a lesson require students to demonstrate depth of understanding aligned to the TEKS. The resource cites that the lesson-level Cumulative Pp Sets are for practice or homework. In the "Grade 8.2.3 Cumulative Pp Set for Dilations on a Square Grid" document, questions are aligned to the depth of understanding of TEKS 8.3B.

Instructional assessments over the course of a unit require students to demonstrate depth of understanding aligned to the TEKS. For example, the "Grade 8.6 End of Unit Assessment (A)" is aligned to TEKS 8.4C, 8.5D, and 8.11A and includes a variety of questions that cover the range of the TEKS.

4.1b – Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics TEKS.

Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics TEKS. The level of rigor and complexity found in warm-ups, cooldowns, activities, and cumulative practice problems within a lesson asks students to apply their knowledge in a situation later in the lesson rather than at the beginning of the lesson.

The *Middle School Course Guide for Teachers* gives examples of different tasks that can be seen at the lesson level. The document also explains the progressive increase in rigor and complexity, stating, "The initial lesson in a unit activates prior knowledge and provides an easy entry point to new concepts, so that students at different levels of both mathematical and English language proficiency engage productively in the work. As the unit progresses, students are systematically introduced to representations, contexts, concepts, language, and notation. As their learning progresses, they make connections between different representations and strategies, consolidating their conceptual understanding, and see and understand more efficient methods of solving problems, supporting the shift toward procedural fluency."

4.2 Coherence of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.2a	All criteria for guidance met.	1/1
4.2b	Materials do not demonstrate coherence across units by connecting the content and language learned in previous courses and grade levels and what will be learned in future courses and grade levels to the content to be learned in the current course and grade level.	0/3
4.2c	All criteria for guidance met.	4/4
—	TOTAL	5/8

4.2a – Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts.

Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts. In the "Course Narrative," one section states, "With a strong foundation in transformations, students explore Line and Angle Relationships, applying their understanding of rigid motions and similarity to justify relationships in parallel lines, triangles, and other geometric figures," showing coherence across multiple units such as "Rigid Motion Transformations," "Similarity," and "Line and Angle Relationships."

In the grade 8 scope and sequence, Unit 2 references "the scale factor between similar triangles." This extends to "all slope triangles on one line are similar" and "represent proportional relationships . . . appropriate scale and axes." Proportional relationships then extend to non-proportional relationships with a slope and y-intercept. This relationship then connects to functions in Unit 5 and the line of best fit of a scatter plot.

4.2b – Materials demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level.

Evidence not found. Materials do not demonstrate coherence across units by connecting the content and language learned in previous courses and grade levels and what will be learned in future courses and grade levels to the content to be learned in the current course and grade level.

4.2c – Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to new mathematical knowledge and skills.

Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current to new mathematical knowledge and skills. Unit 6, Lesson 8,

the "Lesson Narrative" states, "In previous units, students solved problems about moving objects, using the fact that the product of the (positive) speed and the (positive) travel time gives the (positive) distance traveled."

Additional evidence of lesson-level coherence, connecting students' prior knowledge of concepts and procedures from previous grade levels to new mathematical knowledge and skills can be found in the *Middle School Course Guide for Teachers* which states, "As their learning progresses, students make connections between different representations and the concepts and procedures they show," after giving specific examples of content and procedures from prior knowledge.

4.3 Coherence and Variety of Practice

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.3a	All criteria for guidance met.	4/4
4.3b	All criteria for guidance met.	4/4
—	TOTAL	8/8

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

Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units. For example, the "Activity Synthesis" section of Unit 5, "Lesson 4 - 4.2: Matching Graphs To Systems" includes the question, "How does solving systems of equations compare to solving equations with variables on both sides like we did in earlier lessons?" This demonstrates a spaced retrieval opportunity with a previously learned concept across lessons.

Materials also provide spaced retrieval opportunities with previously learned skills and concepts across units within the questioning of the "Check your Readiness" diagnostic at the beginning of each unit. For example, the statement "The content assessed in this problem is first introduced in Lesson 7: The Volume of a Sphere" is in grade 8, unit 11.

Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons within the lesson narrative section inside each lesson. For example, Unit 9, Lesson 3 states, "In previous lessons, students learned that square root notation is used to write the side length of a square given the area of the square."

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

Materials provide interleaved practice opportunities with previously learned skills and concepts across learning pathways. The set of practice problems associated with each lesson includes a few questions about the contents of that lesson, plus additional problems that review material from earlier in the unit and previous units.

Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units. The Cumulative Pp Sets integrate the lesson-specific content with previously learned skills and concepts. For example, in the "Grade 8.9.3 Cumulative Pp Set for Rational and Irrational Numbers," the practice problem set includes questions from Lesson 1 of the same Unit—areas of squares and their side lengths, as well as from Unit 8 and Unit 6, and determining rational or irrational numbers.

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.	1/1
5.1c	All criteria for guidance met.	1/1
—	TOTAL	5/5

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

Questions and tasks require students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations. For example, a question in the "Grade 8.8.3 Cumulative Pp Set for Balanced Moves" has a hanger model that students interpret to write an equation and evaluate its variables.

In addition, there is guidance on questions and tasks that require students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations in the *Middle School Course Guide for Teachers*.

The *Middle School Course Guide for Teachers* also provides information related to Mathematical Modeling Prompts for teachers to use when students are engaged in interpreting, analyzing, and evaluating models and representations for mathematical concepts and situations.

5.1b – Questions and tasks require students to create models to represent mathematical situations.

Questions and tasks require students to create models to represent mathematical situations. For example, in "Activity 8.3: Proportional vs Non-proportional Scenarios," students create tables and graphs to represent situations.

Questions and tasks require students to create models to represent mathematical situations. For example, in the "Grade 8.4.11 Cumulative Pp Set for Representation of Linear Relationships," students create a graph to model linear relationships.

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

Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts. The *Middle School Course Guide for Teachers* states, "Access to new mathematics and problems prompts students to apply their conceptual understanding and procedural fluency to novel situations," and "As their learning progresses, they make connections between different representations and strategies, consolidating their conceptual understanding, and see and understand more efficient methods of solving problems, supporting the shift toward procedural fluency."

Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts. In grade 8, Unit 6, "4.2: Shine Bright," an activity over the line of best fit, students analyze a table and graph of data points that have a line of best fit to answer questions about the data. After the activity is completed, the teacher asks questions such as, "What does a point in the scatter plot represent? What does the line represent?" and "How can you use the graph to predict the price of a diamond that weighs 1.1 carats? How can you use the equation?" These questions connect the idea of a line of best fit to making predictions about a set of data.

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 tasks.

Materials provide tasks designed to build student automaticity and fluency necessary to complete grade-level tasks. For example, the *Middle School Course Guide for Teachers*, explains the contents of a math lesson by stating, "The first event in every lesson is a Warm-up. A Warm-up designed to strengthen number sense or procedural fluency asks students to do mental arithmetic or reason numerically or algebraically."

Materials provide tasks designed to build the automaticity and fluency necessary to complete grade-level tasks. Automaticity is focused on in the warm-up part of lessons, as seen in grade 8, Unit 9, Lesson 18 Warm-up "18.1: Warm-up—Number Talk: Multiplying by Powers of 10." This activity has students mentally calculating products of different expressions multiplied to a power of 10, given a time limit of 30 seconds per problem.

A focus on fluency is often found in the Cumulative Pp Set in a lesson. One example can be found in "Grade 8.9.18 Cumulative Pp Set for Definition of Scientific Notation." Throughout the problem set, there are questions based on converting to scientific notation and other operations involving scientific notation. Some questions in the set require students to make connections and use strategies of exponent operations to get answers efficiently.

5.2b – Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit.

Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit. For example, opportunities for efficiency and accuracy are found within Section B of the "Section Level Planning Guide" for Unit 9, which states that "They convert between fractions, decimals, and percentages, recognizing patterns, distinguishing rational from irrational numbers. Graphic organizers and visual representations support their understanding."

Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and throughout a unit. For example, in grade 8, Unit 2, Lesson 3, "Activity 3: Card Sort: Matching Dilations on a Coordinate Grid," the "Advancing Students Thinking" section has opportunities for teachers to provide efficient mathematical procedures such as "If students are having trouble finding accurate matches, suggest that they identify the center of dilation and consider if the dilation will result in a smaller or larger sized image."

5.2c – Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit.

Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit. For example, in Section C within the "Section Level Planning Guide," it states, "In this section, students explore linear equations in one variable by examining their structural features and solution types," and solutions when "Students categorize equations based on their characteristics and solution types."

In grade 8, Unit 11, Lesson 4, "4.3: Calculate That Cone," the teacher instructions for a clarify, critique, and correct activity state, "Present an incorrect response to the first question that reflects a possible misunderstanding from the class. For example, 'The volume is 400π because $\pi \times 4 \times 102$.'" Prompt students to critique the reasoning (e.g., ask, "Do you agree with the author's reasoning? Why or why not?") and then write feedback to the author that identifies the misconception and how to improve on his or her work. Listen for students who tie their feedback to the difference between the radius and diameter and use the academic vocabulary (e.g., height, radius, diameter, cylinder, cone, volume, etc.). This will help students evaluate and improve on the written mathematical arguments of others and highlight the distinction between and the importance of radii when calculating the volume of cylinders and cones."

5.2d – Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches. The *Middle School Course Guide for Teachers* reinforces this, stating, "Across lessons and units, students are systematically introduced to representations and encouraged to use those that make sense to them. As their learning progresses, students make connections between different representations and the concepts and procedures they show. Over time, they see and understand more efficient methods of representing and solving problems, which supports the development of procedural fluency."

The materials contain embedded supports for teachers to guide students toward increasingly efficient approaches in almost every lesson in the section called "Advancing Student Thinking." This section provides materials for teachers to guide students' thinking toward the most efficient way to understand the content if the student is struggling.

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.

Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed in the grade 8, Unit 3, "Section Level Planning Guide." This planning guide ties the conceptual understanding of similar triangles to triangle properties. For example, in "Section B: Similar Triangles," the materials state, "As they gain confidence, students develop a generalized process for proving triangle similarity, recognizing that two pairs of congruent corresponding angles are sufficient. They explain why this is true using their understanding of triangle properties, solving complex problems, and constructing valid mathematical arguments that demonstrate their comprehensive understanding of triangle similarity through angle relationships and transformations."

"Lesson Narratives" explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. For example, the "Lesson Narrative" in grade 8, Unit 9, Lesson 12 states, "In the warm-up of this lesson, students study a diagram they will use to prove the Pythagorean Theorem. In the first activity, they prove the Pythagorean Theorem using the diagram. Then, they apply the Pythagorean Theorem in the next activity."

5.3b – Questions and tasks include the use of concrete models and manipulatives, pictorial representations (figures/drawings), and abstract representations, as required by the TEKS.

Questions and tasks include the use of concrete models and manipulatives, pictorial representations (figures/drawings), and abstract representations, as required by the TEKS. In grade 8, Unit 1, Lesson 6, "6.2: Rotating Shapes: Algebraic Transformations," the materials task students to use tracing paper to model rotations of shapes and describe rotations algebraically. The Activity Narrative states, "The purpose of this activity is to familiarize students with the effects of rotating two-dimensional shapes 90° on a coordinate plane, using algebraic representations. Through hands-on practice, students develop their ability to describe and record rotations algebraically, and identify patterns in the coordinates of rotated points."

Questions and tasks include the use of pictorial representations (figures/drawings) and abstract representations, as required by the TEKS. In grade 8, Unit 8, Lesson 2, "2.2: Hanging Blocks," questions

and tasks include pictorial representations of equations using a hanger. The "Student Facing Task Statement" gives a picture of a balanced hanger and states, "This picture represents a hanger that is balanced because the weight on each side is the same." The materials task students to use this pictorial representation to answer questions.

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.

Materials include supports for students in connecting, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts, as required by the TEKS. In grade 8, Unit 8, Lesson 2, "2.2: Hanging Blocks," the materials include supports for students in connecting, defining, and explaining representational models to the abstract concept of equations. For example, the Activity Synthesis states, "The outcome of this discussion should be that it is okay to add or remove terms of the same 'size' from both sides of an equation, and the sides will still be equal. This can be thought of in terms of shapes hanging on hangers, where you can remove one square from both sides or add two triangles to both sides, and the hanger will stay in balance. Equations are a more abstract representation of this, but the same concept holds: you can remove one x from both sides or add two $3s$ to both sides, and the equation is still true with the left side equal to the right side."

Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts, as required by the TEKS. In grade 8, Unit 1, Lesson 6, "6.2: Rotating Shapes: Algebraic Transformations," the materials include supports for students in connecting and creating the concrete models using tracing paper to the abstract concept of the algebraic representation of rotations. The "Activity Narrative" states, "The purpose of this activity is to familiarize students with the effects of rotating two-dimensional shapes 90° on a coordinate plane, using algebraic representations. Through hands-on practice, students develop their ability to describe and record rotations algebraically and identify patterns in the coordinates of rotated points."

5.4 Development of Academic Mathematical Language

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.4a	All criteria for guidance met.	3/3
5.4b	All criteria for guidance met.	1/1
5.4c	All criteria for guidance met.	6/6
—	TOTAL	10/10

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

Materials provide opportunities for students to develop their academic mathematical language using manipulatives and other language development strategies. In grade 8, Unit 4, Lesson 1, "1.2 Similar Triangles on the Same Line," students use an online manipulative to develop their academic language while matching triangles. The activity specifically states to "remind students to use words associated with transformations, like translate and scale factor."

In grade 8, Unit 1, Lesson 8, "8.3: Let's Do Some 180's," the materials provide opportunities for students to develop academic mathematical language through the use of manipulatives, visuals, and class discussions. For example, students use tracing paper as a manipulative to compare side lengths and angles and visualize transformations. The materials state some possible discussion questions, such as, "What relationships between lengths did we find after performing transformations? What relationships between angle measures did we find after performing transformations?" and "What does this transformation informally prove?"

Other support included in the materials has students compare and connect the language in the lesson to previous lessons. The materials state, "Use this routine when students share what they noticed about the relationships between the angle measures. Ask students to consider what changes and what stays the same when rigid transformations are applied to lines and segments. Draw students' attention to the associations between the rigid transformation, lengths of segments, and angle measures. These exchanges strengthen students' mathematical language use and reasoning based on rigid transformations of lines and will lead to the informal argument of the vertical angle theorem."

5.4b – Materials include embedded teacher guidance to scaffold and support students' development and use of academic mathematical vocabulary in context.

Materials include embedded teacher guidance to scaffold and support students' development and use of academic mathematical vocabulary in context. The materials define conversations as a scaffold for the development and use of academic mathematical vocabulary in the *Middle School Course Guide for Teachers*. The guide states, "Conversations act as scaffolds for students developing mathematical

language because they offer opportunities to simultaneously make meaning, communicate that meaning, and refine the way content understandings are communicated."

In grade 8, Unit 9, Lesson 3, "3.3: Looking For A Solution," the materials include teacher guidance in the "Support for English Language Learners" section of the activity, which states, "After students have had time to think about whether the numbers are solutions to the equation $x^2=2$, ask them to write a brief explanation. Invite students to meet with two–three other students for feedback. Display prompts for feedback that will help students strengthen their ideas and clarify their language. For example, 'What does it mean for a number to be a solution to an equation?' and 'How do you know this number is or is not a solution to the equation?' Students can borrow ideas and language from each partner to refine and clarify their original explanation. This will help students revise both their ideas and their verbal and written output."

5.4c – Materials include embedded teacher guidance to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time as well as guide teachers to support student responses using exemplar responses to questions and tasks.

Materials include embedded teacher guidance to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time, as well as guide teachers to support student responses using exemplar responses to questions and tasks. The *Middle School Course Guide for Teachers*, provides guidance on using MLRs to support academic language The materials state, ". . .MLRs are instructional routines that provide structured but adaptable formats for amplifying, assessing, and developing students' language. The MLRs included in this curriculum were selected because they simultaneously support students' learning of mathematical practices, content, and language." In another section of the guide, the materials continue with "MLRs, included in select activities of each unit, offer all students explicit opportunities to develop mathematical and academic language proficiency. These "embedded" MLRs are described in the *Teacher Guide* for the lessons in which they appear." The use of discourse during these routines is also stated within the materials as "Using these supports can help maintain students' engagement in mathematical discourse and ensure that the struggle remains productive."

"MLR4 Information Gap" within grade 8, Unit 1, Lesson 3, Activity 2 includes embedded teacher guidance to support the application of appropriate mathematical language, vocabulary, syntax, and discourse to support mathematical conversations through the use of sentence stems that provide opportunities for students to hear, refine, and use math language with peers. "Display questions or question starters for

students who need a starting point such as: "Can you tell me . . . (specific piece of information)," and "Why do you need to know . . . (that piece of information)?"

5.5 Process Standards Connection

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.5a	All criteria for guidance met.	1/1
5.5b	Materials do not include a description of how the TEKS process standards are incorporated and connected throughout the course.	0/2
5.5c	Materials do not include a description for each unit of how the TEKS process standards are incorporated and connected throughout the unit.	0/2
5.5d	All criteria for guidance met.	1/1
—	TOTAL	2/6

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

TEKS process standards are integrated appropriately into the materials. The grade 8 scope and sequence document identifies which of the TEKS, including process standards, are included in each lesson.

At the lesson level, process standards that are focused on in the lesson are listed with the TEKS on the cover page of that lesson. For example, grade 8, Unit 5, Lesson 12 cites the process standard 8.1A: Apply mathematics to problems arising in everyday life, society, and the workplace. In the lesson, the materials include tasks and questions that integrate this process standard, such as questions about candles burning, recycling garbage, and a company selling a board game.

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

Materials do not include a description of how TEKS process standards are incorporated and connected throughout the course.

5.5c – Materials include a description for each unit of how TEKS process standards are incorporated and connected throughout the unit.

Materials do not include a description for each unit of how TEKS process standards are incorporated and connected throughout the unit.

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

The TEKS process standards are coded at the top of each lesson, and an overview involving the standards can be seen in the "Lesson Narrative." For example, in grade 8, Unit 5 "Lesson 3: Systems of Equations," all of the TEKS, including a process standard, are shown at the top of the lesson page. The "Learning Targets" section of the page provides an overview of how these standards are being addressed in the lesson. The "Learning Targets" section states, "I can explain the solution to a system of equations in a

real-world context," and "I can explain what a system of equations is," showing how the process standard should be seen in the lesson.

Materials include an overview of the TEKS process standards incorporated into each lesson. For example, the "Lesson Narrative" within grade 8, Unit 7, Lesson 1 uses language that implies process standard 1D to "Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate" by stating, "In this lesson, they focus on communicating precisely the information needed to apply a sequence of transformations to a polygon on the coordinate grid."

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.	6/6
6.1c	All criteria for guidance met.	3/3
—	TOTAL	12/12

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

The grade 8 "Course Narrative" states, "Throughout the course, students develop critical thinking and problem-solving skills, engaging in reasoning, modeling, and communication to prepare for high school mathematics and beyond." This summarizes the focus of the materials on helping students think mathematically, persevere through solving problems, and make sense of the mathematics involved.

The materials in grade 8, Unit 3, Lesson 2, Activity 1 provide opportunities for students to think mathematically and to make sense of mathematics by asking the students, "Do you agree or disagree? Why?" "Who can restate ___'s reasoning in a different way?" and "Does anyone want to add on to ___'s reasoning?"

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

Materials support students in understanding, explaining, and justifying that there can be multiple ways to represent and solve problems and complete tasks. In the grade 8, Unit 2 "Section Level Planning Guide," the materials provide learning targets for the unit. In "Section A: Understanding Similarity And Transformations," the materials state, "As they gain confidence, students justify similarity relationships using multiple approaches, combining transformations with knowledge of angles and proportions." This section-level summary of the unit shows intent for the materials to support students in understanding and justifying that there can be multiple ways to represent and solve problems and complete tasks.

Materials support students in understanding, explaining, and justifying that there can be multiple ways to represent and solve problems and complete tasks. For example, the "Lesson Narrative" within grade 8, Unit 5, Lesson 8 states, "By matching contexts and graphs and reading information about functions from graphs and tables, students become familiar with the different representations and draw connections between them."

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 teachers.

In the *Middle School Course Guide for Teachers*, the materials describe the "MLR7 Compare and Connect" routine used in the instructional materials and state, "In this routine, students make sense of mathematical strategies other than their own by relating and connecting other approaches to their own. Prompt students to reflect on, and verbally respond to, these comparisons (for example, by exploring why or when to approach, represent, or say a mathematical problem a certain way, or by identifying and explaining correspondences between different mathematical representations or methods)." This routine, when implemented, is designed to require students to make sense of mathematics through multiple opportunities for students to do, write about, and discuss math with their peers and teacher.

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 teachers. For example, in grade 8, Unit 9, Lesson 16, "16.4: Finding the Right Distance," the materials state, "To begin the whole-class discussion, use this routine to give students a structured opportunity to revise and refine their response to the first question. Before the whole-class discussion, give students time to meet with 2–3 partners to share and get feedback on their first draft response to the second question 'In your own words, write an explanation to another student of how to find the distance between any two coordinate pairs.' Invite listeners to ask questions and give feedback that will help their partner clarify and strengthen their ideas and writing. Give students 3–5 minutes to revise their first draft based on the feedback they receive."

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 teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.

In the *Middle School Course Guide for Teachers*, the instructional routine "MLR7 Compare and Connect" supports teachers in guiding students to decide on a problem-solving approach, solve problems, share their solutions and reasoning on a display, and then, finally, observe other students' work and reflect on their own and other students' problem-solving approaches. The materials state, "In this routine, students make sense of mathematical strategies other than their own by relating and connecting other approaches to their own. Prompt students to reflect on, and verbally respond to, these comparisons (for example, by exploring why or when to approach, represent, or say a mathematical problem a certain way, or by identifying and explaining correspondences between different mathematical representations or methods)."

Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. For example, the "Lesson Synthesis" within grade 8, Unit 4, Lesson 1 provides a set of discussion questions asking students to share justifications and reflect on arguments.

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

In the materials, some activities include a section titled "Anticipated Misconceptions." This section often gives possible student misconceptions and gives guidance and prompts to the teacher on how to address them. For example, in grade 8, Unit 4, Lesson 4, "4.2: Moving Through Representations," the materials state, "Students might confuse pace with speed and interpret a steeper line as meaning the ladybug is moving faster. Monitor students to ensure that they attend to the time and distance on the tick mark diagrams and plot points as (distance, time) with time on the y-axis and distance on the x-axis. Reinforce language of how many seconds per a given interval of distance. Make explicit that twice as fast means half the pace."

Materials offer prompts and guidance to support teachers in providing explanatory feedback based on student responses and anticipated misconceptions. In the *Middle School Course Guide for Teachers*, the materials cite the cooldown piece of the lesson as a vital area for providing feedback. The materials state,

"Give each student brief, written feedback on a Cool-down that nudges them to re-examine their work. Ask students to revise and resubmit."