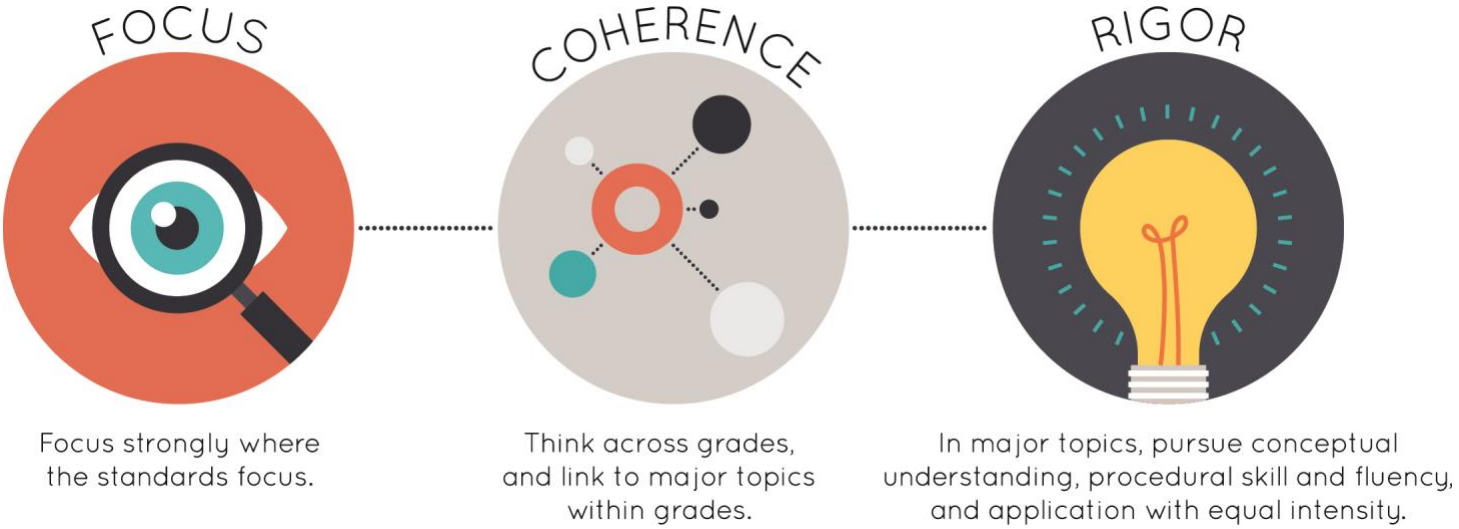
DEPARTMENT of EDUCATION
Louisiana Believes

Instructional Materials Evaluation Review for Alignment in Mathematics Grades K – 12 (IMET)

FULL CURRICULUM
Instructional Materials

Strong mathematics instruction contains the following elements:



Title: **Illustrative Mathematics Middle School Math**

Grade/Course: **6-8**

Publisher: **Open Up Resources**

Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Focus on Major Work (Non-Negotiable)	
2. Consistent, Coherent Content (Non-Negotiable)	
3. Rigor and Balance (Non-Negotiable)	
4. Focus Coh. via Practice Std (Non-Negotiable)	
5. Alignment Criteria for Stnds. for Math Content	
6. Alignment Criteria for Stnds. for Math Practice	
7. Indicators of Quality	

Each set of submitted materials was evaluated for alignment with the standards beginning with a review of the indicators for the non-negotiable criteria. If those criteria were met, a review of the other criteria ensued.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria, but at least one "No" for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Click below for complete grade-level reviews:

Grade 6 (Tier 1) Grade 7 (Tier 1) Grade 8 (Tier 1)

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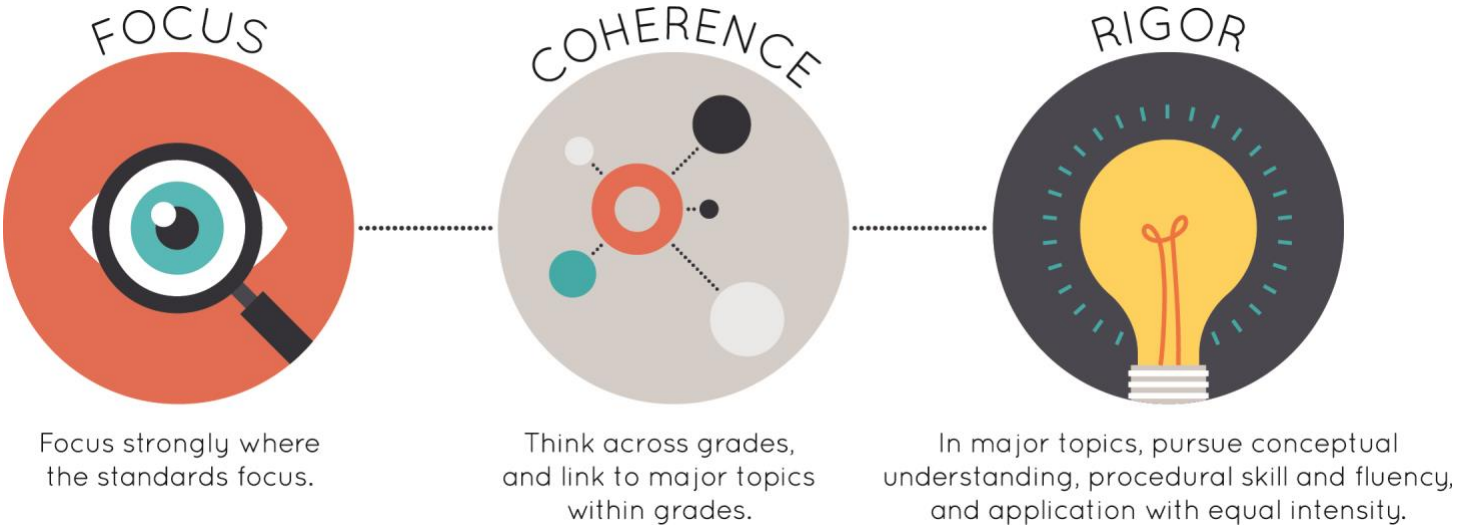

Title: **Illustrative Mathematics Middle School Math** Grade/Course: **6**

Publisher: **Open Up Resources** Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Focus on Major Work (Non-Negotiable)	
2. Consistent, Coherent Content (Non-Negotiable)	
3. Rigor and Balance (Non-Negotiable)	
4. Focus Coh. via Practice Std (Non-Negotiable)	
5. Alignment Criteria for Stnds. for Math Content	
6. Alignment Criteria for Stnds. for Math Practice	
7. Indicators of Quality	

To evaluate each set of submitted materials for alignment with the Standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria in Section I. If there is a "Yes" for all indicators in Column 2 for Section I, then the materials receive a "Yes" in Column 1. If there is a "No" for any indicator in Column 2 for Section I, then the materials receive a "No" in Column 1.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[1]:** Students and teachers using the materials as designed devote the large majority[2] of time to the major work of the grade/course. ☒ Yes ☐ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The number of lessons devoted to major work of the grade, which includes assessments and supporting work, is 88 out of 131 total (includes all lessons that are not optional and removes Unit 8, Lessons 11 & 12, Mean Absolute Deviation which are LSSM optional). This means that approximately 67.1% of the time is spent on major work of the grade. The number of days dedicated to major work, which includes assessments and supporting work, is 102 out of 153 days. This means that approximately 66.7% of the time is spent on major work of the grade.
	REQUIRED **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	Materials spend minimal time on content outside of the 6th grade mathematics curriculum. When material does not go beyond the scope of the national standards, it is noted as "optional" (ex. Unit 9). Furthermore, all activities and practice problems where students are required to perform calculations and have understanding of mean absolute deviation are optional or can be used for enrichment purposes. (Ex: Unit 8, Lessons 12 & 13 are optional/ enrichment for LSSM and Unit 8, Lesson 10 Activity 3 is optional/ enrichment for LSSM). All optional / enrichment lessons are listed in the LA- specific curriculum map.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.	**Yes**	Materials are structured in such a way to enhance focus and coherence throughout the year by connecting supporting content to major content in meaningful ways. Unit 1, Lessons 5 and 6 connect Major LSSM 6.EE.A.2c and Supporting LSSM 6.G.A.1, where students are required to evaluate expressions at specific values for variables (6.EE.A.2c) found within the formulas for calculating area of

[1] For more on the major work of the grade, see Focus by Grade Level.

[2] The materials should devote at least 65% and up to approximately 85% of class time to the major work of the grade with Grades K–2 nearer the upper end of that range, i.e., 85%.

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Standards. ☒ Yes ☐ No			geometrical figures (6.G.A.1). Unit 3, Lesson 17 connects major content (6.RP.A) to supporting content (6.G.A) as students must apply their knowledge of rates, ratios, and proportions to a real-world scenario pertaining to painting a room. Unit 4, Lesson 17 connects Major LSSM 6.NS.A.1 to Supporting LSSM 6.G.A.2 by requiring students to "use multiplication and division of fractions to reason about real world volume problems".
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important.	**Yes**	Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. Unit 1, Lesson 18 connects LSSM 6.EE.A.1, 6.EE.A.2a, and 6.G.A.4, through instruction aligned to the listed learning goals "Use units with exponents for surface area and volume. Calculate the surface area and volume of a cube given its edge length". Unit 4, Lesson 14, connects LSSM 6.NS.A.1, 6.G.A.1, and 6.G.A.2 by requiring students to "Use multiplication and division to solve problems involving fractional areas and lengths in triangles." Unit 5, Lesson 13 connects the expressions and equations domain to the number sense domain as students must fluently divide decimals (6.NS.B.3) to determine equivalent expressions (6.EE.A.4).
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials enhance development of conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards. Lessons within each unit are built in a way to address pre-requisite standards in "Building On" and "Building Towards" sections of the lesson. These are followed by lessons labeled as "Addressing" specific content standards. This is evident in Unit 3, where the materials build on LSSM 5.NF.B.3, "Interpret a fraction as division of the numerator by the denominator. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers" in Lesson 5.1. This concept is connected to the grade-level standard of focus, LSSM 6.RP.A.2 "Understand the concept of a unit rate a/b

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			associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship" in Lesson 5.2 to establish prior knowledge and build conceptual understanding of unit rates.
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	Materials enhance development of procedural skill and fluency of key mathematical concepts, especially where called for in the LSSM. Major content Standard 6.NS.B.2 states that students should "Fluently divide multi-digit numbers using the standard algorithm." Question 2 in Unit 5, Lesson 10, Activity 2 requires students to use long division to solve the given problems. Major LSSM 6.EE.A.2c is also explicitly aligned to the procedural skill and fluency component of rigor. The content materials provided address this through supplemental Unit 1 Practice Problems where students are given additional problems to enhance fluency of evaluating expressions at specific values of variables.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Materials provide students with opportunities to practice the application of key mathematical concepts, especially where explicitly called for in the standards. Unit 1, Lesson 19, "Designing a Tent," emphasizes LSSM focused on application, 6.G.A.1 and 6.G.A.4, as students determine the amount of fabric needed to create a tent by calculating the surface area of the individual shapes that form the tent. Unit 4, Lesson 17, where students work through a series of tasks that focuses on finding the most economical shipping box combination. This application task focuses on Major LSSM 6.NS.A.1 and Supporting LSSM 6.G.A.2 and requires students to find measurements, determine orientation of the box, how many jewelry boxes can fit in a shipping box, the cost of shipping, and provides further questions to reflect on student learning and extend application of the 6th grade content standards. Major content Standard 6.EE.B.7 is highlighted in the Cool Down section of Lesson 6.4. Students must create a scenario that matches the given equation, define the variable, and solve the equation.
	REQUIRED	**Yes**	The three aspects of rigor are not always treated

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	3d) ***Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.		together and are not always treated separately within the course materials. The majority of Unit 4 provides specific focus on Major LSSM 6.NS.A.1 "Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem," which is aligned to all three components of rigor. The course materials address the development of conceptual understanding by allowing students to make sense of and define the meaning of fraction division in the first nine lessons of the unit. Lessons 10 and 11 move students towards development of the standard algorithm of fraction division, followed by application of this concept through the use of multiplication and division of fractions to solve geometric problems in Lessons 12 through 15. A culminating activity is then presented to students to address the alignments of 6.NS.A.1 to all three components of rigor, as defined by the LSSM.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	Materials address the practice standards in such a way as to enrich the content standards. In the Course Information and Scope and Sequence portion of the materials, examples of the mathematical practices implemented within the units are listed. In Unit 1, students use MP.1 as they "select appropriate tools and use them strategically to solve problems." In Unit 7, students use MP.2 as they "interpret and graph solutions in contexts." Mathematical Practices are also noted in the lessons within the curriculum. Unit 1, Lesson 18 states that "students practice using exponents of 2 and 3 to express products and to write square and cubic units. Along the way, they look for and make use of structure in numerical expressions (MP.7). They also look for and express regularity in repeated reasoning (MP.8) to write the formula for the surface area of a cube." Unit 3, Lesson 16 states that students will "develop a general structure...that will work for any numbers" (MP.7).
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	Extensive work with course level material is present throughout the curriculum. Each unit includes an Overview, Lessons, Summary, Practice Problems, Assessments and Family Materials. Each lesson includes a warm-up, activity/activities, lesson synthesis, and cool-down (glossary featured when needed) to build and reinforce student learning. Prerequisite material is clearly identified to the teacher in each lesson where CCSS: Building On is noted. Specific responsibilities for teacher and students in regards to the current year expectations are clearly identified.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	Reorganization of prior knowledge from previous grades is explicitly related to course-level concepts in a manner that extends and accommodates new knowledge throughout the materials. The Pre-Unit Assessment for each unit is composed of questions from previous grade levels that assist teachers in determining gaps or misconceptions before introducing the students to new information. For example, Problem 3 of the Unit 3 Pre-Unit Assessment focuses on the accurate division of integers into decimal format (5.NBT.B.7) in preparation for the calculation of unit rates and percentages (6.RP.A.2, 6.RP.A.3C). Lessons also provide explicit alignment to mathematical standards, whether on grade level or to establish or build on prior knowledge. Evidence of this is found in the Warm-Up of Unit 1, Lesson 1, which is stated as aligned to "CCSS: Building on 3.G.A, Reason with shapes and their attributes." Unit 4, Lesson 4, states the Warm-Up is aligned to "CCSS: Building on 5.NF.B.7, Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions," and 5.NF.B.4, "Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction."
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	Learning objectives align directly to LSSM cluster headings. Within the Course Guide for teachers, each lesson includes Learning Goals, Learning Goals (Student Facing), and Learning Targets (Student

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			Facing). The Learning Goals align directly to the standard of focus for each lesson. Unit 6, Lesson 9 lists "Apply the distributive property with addition and subtraction to generate equivalent expressions," and "Represent the distributive property with side lengths and areas of rectangles and use the diagrams to write equivalent expressions" as the learning targets. This lesson directly aligns to LSSM 6.EE.A.3, "Apply the properties of operations to generate equivalent expressions,' and 6.EE.A.4, "Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them)." The third learning goal for Unit 7, Lesson 6 states the following: "Use absolute value notation to describe magnitude. Understand the absolute value of a rational number as its distance from 0 on the number line." This goal aligns to LSSM 6.NS.C.7c, "Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real world situation."
	5d) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives.	**Yes**	Materials preserve the focus, coherence, and rigor of the LSSM, even when targeting specific objectives. This is evident through the coherence of lesson objectives throughout the Overview, Lessons, Assessments, Practice Problems, Unit Downloads, and Family Materials for each unit.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach	**REQUIRED** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice Standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	Materials attend to the full meaning of each practice standard. The Course Information Scope and Sequence portion of the Course Guide provides teachers with a reference to where specific mathematical practice standards will occur within each unit. In the Unit 6 description, it is stated that students "evaluate such expressions, using properties of exponents strategically (MP5)." The mathematical practice standards are also evident in the individual lessons. For example, in Unit 3 Lesson 9, the following is stated regarding systems of equations: "Students gain fluency working with unit rates without scaffolding (MP1)."

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which are not included in the Standards. ☒ Yes ☐ No	**REQUIRED** **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.	**Yes**	Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics, especially in the problem-solving of multi-step problems. Problem 5 of the Unit 4 End-Unit Assessment requires students to analyze another student's tape diagram and solution to 3 divided by two-thirds. Then, the student must determine if they agree or disagree and explain their reasoning. Additionally, students are asked to determine a student's long division mistake then correct the error in the optional activity of Unit 5, Lesson 10. Unit 7, Lesson 9 provides multiple activities and problems where students critique other students' reasoning, such as, Question 2 of the Warm-Up, where students must use their knowledge of comparing integers to determine if multiple methods can be used to create an inequality, and Questions 2 and 3 of the Student Facing Task in Activity 9.2.
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	While the math practice standards are referenced to throughout the lessons, there are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	Materials explicitly attend to development and concentration on mathematical language. Teacher questioning practices are used alongside direct instruction techniques to guide students to decipher the meaning of specific mathematical terms. Evidence of language support is present in the Warm-Up of Unit 2, Lesson 1, as students form a formal definition of the term ratio. This is also evident in Unit 7, Lesson 16, where students develop a definition of common factor and greatest common factor.
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the	**REQUIRED** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical	**Yes**	There is variety in what students produce. Throughout the materials, there are opportunities for students to solve mathematical problems, critique arguments of others and defend their own reasoning, create models, etc. Unit 2, Lesson 2, Activity 2.3 gives students the option to represent

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tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	models, etc.		ratios as diagrams, use symbols, equivalent ratios, or verbal descriptions. The Student Facing Task in this activity provides students the opportunity to select correct answers in a multiple select type question to describe ratio relationships. The assessment provided for Unit 2 also allows for variety in what students produce by providing multiple-select, multiple choice, constructed response, and modeling questions. On the Unit 3, Lesson 6 Practice Problems worksheet, students must produce multiple answer types. Question 1 requires students to complete a table, question 2 is a short answer application problem, and Question 3 requires students to critique the given statements and defend their reasoning. Additionally, Problem 1 of the Unit 8 End-Unit Assessment requires to student to choose each correct answer in a multiple-select format.
	REQUIRED **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Yes**	There are separate teacher materials that support and reward teacher study. The Course Guide portion of the teacher materials provide teachers with various tools that are designed to prepare them for the instruction of the curriculum. The Course Information and Scope and Sequence portion features a pacing guide, detailed analysis of the content within each unit, scope and sequence, lessons and standards of the materials, glossary, and required materials needed. The focus of the About These Materials portion describes an instructional layout of each lesson. The Design Principles provide key information on how the learning should take place from the development of conceptual understanding and procedural fluency to the ability to solve apply such knowledge. Also, the Five Principles for Orchestrating Productive Mathematical Discussions are analyzed. The How to Use These Materials sections provides teachers with the sequence of a lesson from the launch to the assessments. The Supporting English Language Learners and Supporting Students with Disabilities features a variety of principles that are used to aid these students in reaching mathematical success.

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	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners and other special populations is present and provides opportunity for those groups to meet the same standards as other students. In the Course Guide portion of the teacher materials, the Supporting English Language Learners tab features the following topics to aid teachers: Promoting Language and Content Development, Theory of Action, and the Framework of the Four Design Principles for Promoting Mathematical Language Use and the Eight Mathematical Language Routines. These guiding principles and routines can also be found throughout the individual lessons to enhance instruction where recommendations are given to assist the mastery of the topic for students as needed. Each lesson with these components is clearly labeled as "ELL Enhanced."
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The Warm-Up and Activity portion of each lesson features detailed problems that provide students with guided instruction to form connections from previously learned material to the new skill. Each lesson also provides a Practice Problems document. Here, students are to apply their newly gained knowledge to complete the given exercises. For example, Unit 3, Lesson 4, Activity 1 focuses on student use of computational skills and conceptual understanding to use ratio reasoning to convert measurement (LSSM 6.RP.A.3d). Additional practice directly aligned to this concept is found within the Practice Problems section of the curriculum materials.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Each unit, from the student's view, includes scaffolded Lessons, Summary, and Practice Problems. The teacher materials provide detailed instruction to appropriately scaffold content, as well as, Family Materials to provide supplemental resources at home. Lessons, from the teacher view, includes a warm-up, activity, lesson synthesis, cool down and glossary section, where needed, to scaffold

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			instruction. Within these components, alignment to prior and on grade level LSSM, learning goals and targets, required preparation and materials, and instructional routines are included. The Cool-Down is the formative assessment portion that teachers use to determine if the students understood the daily lesson. When needed, the glossary defines key terms needed to understand the lesson. The Summary section serves as a closing to ensure objective goals were met. The Practice Problems section provides students with ample conceptual, procedural, and application problems to master the targeted LSSM. The Assessment is a summative closure to test student mastery.
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	While there are no standards that specifically address the use of technology in 6th grade, students are exposed to virtual manipulatives and digital tasks within some of the lessons. Unit 1, Lesson 12 supports instruction using an applet to build rectangular prisms using virtual cubes. This is used in order for students to visualize and explore the surface area of different sized rectangular prisms in order to conceptualize the meaning of a net of 3 dimensional figures (LSSM 6.G.A.4). Unit 5, Lesson 2 has a digital task that requires students to use an applet to model decimals using base ten blocks. Unit 7, Lesson 3 provides a digital task that requires students to use an applet to plot positive and negative rational numbers on a number line.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.

Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.

Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Focus on Major Work	**Yes**	The materials devote a majority of time to the major work of the grade, and a LA-specific curriculum map ensures teachers know the boundaries within which to teach and assess.

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	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through connections between supporting and major LSSM, as well as, the connection made between different domains and sub-claims.
	3. Rigor and Balance	**Yes**	The three aspects of rigor are not always treated together or separately within the curriculum resources provided.
	4. Focus and Coherence via Practice Standards	**Yes**	Materials use the practice standards to strengthen and enrich the focus of the content standards for the grade.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	Materials attend to focus and coherence by linking topics and by staying consistent with the progressions of the LSSM.
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	Materials attend to the full meaning of the practice standards and provide sufficient opportunities for students to construct and critique arguments as well as attend to multi-step problems. However, no teacher directed materials were found to explain the role of the practice standards in either the classroom or the curriculum.
	7. Indicators of Quality	**Yes**	Teachers and students are given sufficient tools to meet the expectations of the LSSM.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

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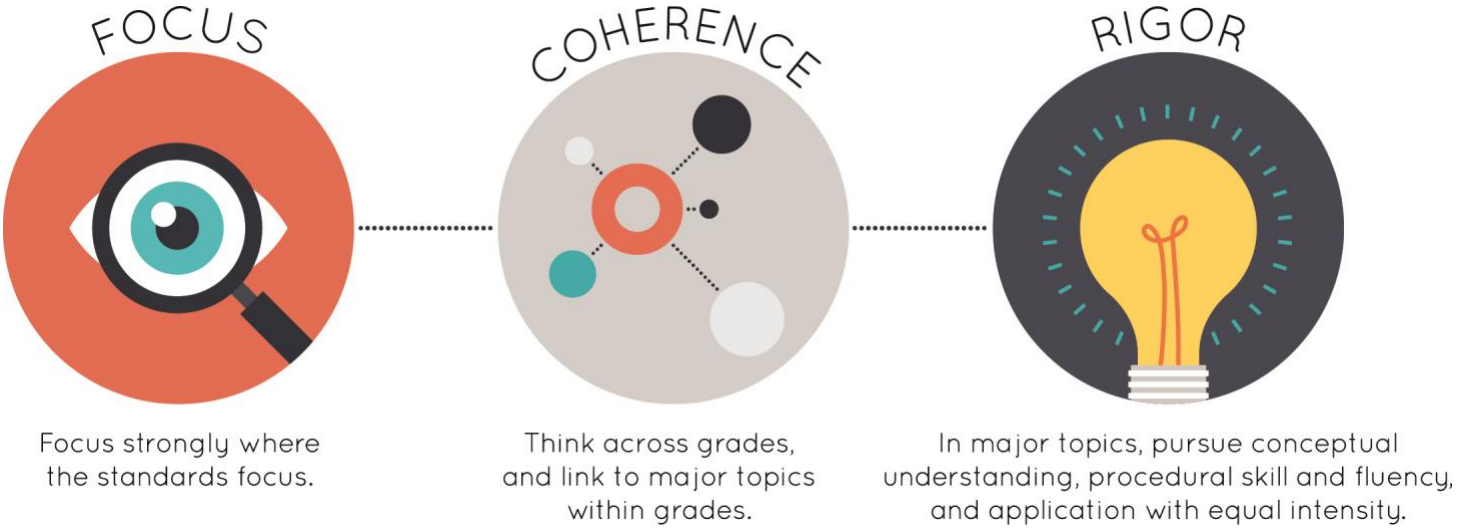

Title: **Illustrative Mathematics Middle School Math** Grade/Course: **7**

Publisher: **Open Up Resources** Copyright: **2017**

Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Focus on Major Work (Non-Negotiable)	
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7. Indicators of Quality	

To evaluate each set of submitted materials for alignment with the Standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria in Section I. If there is a "Yes" for all indicators in Column 2 for Section I, then the materials receive a "Yes" in Column 1. If there is a "No" for any indicator in Column 2 for Section I, then the materials receive a "No" in Column 1.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[3]:** Students and teachers using the materials as designed devote the large majority[4] of time to the major work of the grade/course. ☒ Yes ☐ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The number of lessons devoted to major work of the grade, which includes assessments and supporting work, is 81 out of 121 total (includes all lessons that are not optional). This means that approximately 66.9% of the time is spent on major work of the grade. The number of days dedicated to major work, which includes assessments and supporting work, is 92 out of 138 days. This means that approximately 66.7% of the time is spent on major work of the grade.
	REQUIRED **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	Instructional materials spend minimal time on content beyond the scope of the 7th grade LSSM. All assessment items focus on grade level material. Lessons are clearly noted as optional when content goes beyond the scope of the 7th grade mathematics standards. For example, it is stated in Unit 9, Lesson 5 that "this lesson begins students' transition from contexts that involve constant rates to contexts that involve average rates of change." Although average rate of change is an Algebra I Standard(A1: F-IF.B.6), the lesson is noted as optional.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.	**Yes**	Students do work in 7.8 related to 7.RP as they are studying 7.SP, which is how work on 7.SP supports major work of the grade. 7.RP, which is major work of the grade, is addressed in multiple units across the year, which is how coherence is built around major work of the grade. Specifically in Unit 8, the 7.SP work supports 7.RP in the activities in Lessons 4, 7, 16, and 20, as well as in the practice problems in Lessons 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 16, and 17. The support for 7.RP occurs when students are asked to analyze proportional relationships (populations, middle

[3] For more on the major work of the grade, see Focus by Grade Level.
[4] The materials should devote at least 65% and up to approximately 85% of class time to the major work of the grade with Grades K–2 nearer the upper end of that range, i.e., 85%.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			school data, coin data, etc). Additionally, 7.NS is also supported by the activities in Lessons 4 and 6. In Unit 7.5, 6.SP is reviewed, both to support 7.NS and to build towards 7.SP, in the practice problems in Lessons 11 and 14.
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important.	**Yes**	Course contents include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in the grade, in cases where these connections are natural and important. Unit 4, Lesson 5 focuses on converting fractions to decimals (7.NS.A.2d) to represent a proportional relationship between quantities (7.RP.A.2). Additionally, Unit 5, Lesson 12 requires students to identify proportional relationships (7.RP.A.2) and perform rational number operations (7.NS.A.3) to solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (7.EE.B.3). Unit 6, Lesson 12 provides instruction where students use variables to create equations (7.EE.B.4) to solve real world problems about percent increase and decrease using rational numbers in different forms (7.EE.B.3) to facilitate understanding that rewriting expressions can shed light on the problem and how specified quantities are related (7.EE.A.2). Unit 7, Lesson 13 requires students to perform cross sections to of a prism (7.G.A.3) to determine the area of the base and volume of the figure (7.G.B.6).
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in the LSSM. Major content Standard7.NS.A.1c is emphasized in Unit 5, Lesson 5 as students use a number line to illustrate the subtraction of rational numbers. Unit 5, Lesson 8 introduces multiplication of rational numbers (7.NS.A.2) through the context of speed and direction, followed by facilitating student reasoning about quantities to understand abstract properties of numbers in Lesson 9. Unit 6, Lesson 12 scaffolds instruction to ensure conceptual understanding of

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
application. ☒ Yes ☐ No			how to write equivalent expressions and describe how the quantities are related (7.EE.A.2) through a series of teaching strategies and questioning techniques.
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	Materials enhance development of procedural skill and fluency of key mathematical concepts, especially where called for in the LSSM. Major LSSM 7.NS.A.1 is the focus of the Launch of Unit 6 Lesson 18 as students must mentally compute the sum or difference of four expressions. In Activity 18.3 of Unit 6, Major LSSM 7.EE.A.1 is emphasized as students must use the distributive property to create an equivalent expression. In addition, Practice Problem Sets provided with each unit include problems from prior units to ensure students retain fluency of skills throughout the curriculum. Within the Unit 7-Angles, Triangles, and Prisms, Practice Problem Set, students are presented with problems that require them to determine equivalent expressions through factoring and the use of properties of operations (7.EE.A.1), to reinforce and retain fluency of skills learned in Unit 6-Expressions, Equations, and Inequalities. Additionally, Practice Problem Set aligned to Unit 3-Measuring Circles addresses concepts learned in Unit 2-Introducing Proportional Relationships, by providing additional practice with ratio relationships and determining the constant of proportionality given a coordinate (7.RP.A.2).
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are	**Yes**	Materials address modeling and application of key concepts, especially where called for in the LSSM. Unit 1, Lesson 9 requires students to create scale drawings of Utah (7.G.A.1). Unit 4, Lesson 16 requires students to use newspaper clipping to determine percent increase and/or percent decrease in a real-world setting (7.RP.A.3). Unit 7, Lesson 16 allows students to apply what they have previously learned about surface area and volume to solve real world problems (7.G.B.6) about foam play structures and a sandbox at a daycare facility. Unit 9 allows for students to apply concepts covered throughout all prior lessons to real world contexts

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	explicit.		such as, floor plans and cost analysis of restaurants, planning recipes, determining measurement errors, designing 5K courses, and building and using a trundle wheel.
	REQUIRED **3d)** ***Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together and are not always treated separately within the course materials. Unit 4 focuses on student understanding and skill using percentages in context. Lessons build on one another to establish prior knowledge and facilitate procedural skill and fluency relative to problems involving percentages (7.RP.A.3), followed by a cumulative project in Lesson 16, where students ask and answer questions about percentages found in the news. This concept is revisited in Unit 9, Lessons 1-4 and 6, where students apply learned strategies and understanding to real world contexts. Problem 7, Parts c, d, and e of the Unit 6 End-of-Unit Assessment emphasize LSSM 7.EE.B.4. Here, students must recognize the meaning of the given mathematical expression (conceptual understanding), solve an equation and inequality (procedural skill and fluency), and create an equation and inequality given a specific real-world scenario (application).
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	Materials address the practice standards in such a way as to enrich the content standards. In the Course Information and Scope and Sequence portion of the materials, examples of the mathematical practices implemented within the units are listed. In Unit 4, students use MP.3 as they "critique[s] the reasoning shown in displays from other groups." Unit 6 notes that the first part of the unit focuses on "seeing two types of structure in the situations, diagrams, and equations of the unit (MP.7)," whereas the second portion of the unit "students solve equations of the forms px+q=r and p(x+q)=r, then solve problems that can be represented by such equations (MP.2)." In Unit 7, students use MP. 5 as they "have access to their geometry toolkits so that they have an opportunity to select and use appropriate tools strategically."

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	Extensive work with course level material is present throughout the curriculum. Each unit includes an Overview, Lessons, Summary, Practice Problems, Assessments and Family Materials. Each lesson includes a warm-up, activity/activities, lesson synthesis, and cool-down (glossary featured when needed) to build and reinforce student learning. Prerequisite material is clearly identified to the teacher in each lesson where CCSS: Building On is noted. Specific responsibilities for teacher and students in regards to the current year expectations are clearly identified.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	Reorganization of prior knowledge from previous grades is explicitly related to course-level concepts in a manner that extends and accommodates new knowledge throughout the materials. The Pre-Unit Assessment for each unit is composed of questions from previous grade levels that assist teachers in determining gaps or misconceptions before introducing the students to new information. For example, Problem 1 of the Unit 6 Pre-Unit Assessment focuses on the creation and solving of equations (6.EE.B.7) before the creation and solving of more advanced equation types (7.EE.B.4a). Additionally, lessons focused on prerequisite skills are noted as "CCSS: Building On", such as Unit 4, Lesson 3, where the Warm Up establishes prior knowledge of 6.RP.A.3, where students use ratio and rate reasoning to solve real world mathematical problems by reasoning about tables of equivalent ratios. This reasoning is used to address LSSM 7.RP.A.2 "Recognize and represent proportional relationships between quantities."
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	Learning objectives align directly to LSSM cluster headings. Within the Course Guide for teachers, each lesson includes Learning Goals, Learning Goals (Student Facing), and Learning Targets (Student Facing). The Learning Goals align directly to the standard of focus for each lesson. Unit 3, Lesson 3 lists "I can describe the relationship between circumference and diameter of any circle" as a

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Student Facing learning target. This directly aligns to LSSM 7.G.B.4, "Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle." The Student Facing learning target for Unit 8 Lesson 8 states the following: "I can write out the sample space for a multi-step experiment, using a list, table, or tree diagram." This aligns to LSSM 7.SP.C.8b which states the following: "Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams."
	5d) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives.	**Yes**	Materials preserve the focus, coherence, and rigor of the LSSM, even when targeting specific objectives. This is evident through the coherence of lesson objectives throughout the Overview, Lessons, Assessments, Practice Problems, Unit Downloads, and Family Materials for each unit.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**REQUIRED** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	Materials attend to the full meaning of each practice standard. The Course Information Scope and Sequence portion of the Course Guide provides teachers with a reference to where specific mathematical practice standards will occur within each unit. In the Unit 7 description, it is stated that students "should have access to their geometry toolkits so that they have an opportunity to select and use appropriate tools strategically (MP5)." The mathematical practice standards are also evident in the individual lessons. For example, in Unit 4 Lesson 6, the following is stated regarding systems of equations: "Students use tape diagrams and their understanding of the language of percent increase and decrease to reason about different contexts (MP3)."
	REQUIRED **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in	**Yes**	Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics, especially in the problem-solving of multi-step problems. The optional activity of Unit 4, Lesson 6 states that "the purpose of this activity is to for students to evaluate claims about percentages within contexts in which common

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	the Standards that explicitly set expectations for multi-step problems.		misunderstandings occur." Problem 6 of the Unit 6 End-Unit Assessment requires students to analyze another student's simplification of an expression, find and explain the error, and correct the error. In addition to critiquing other students' reasoning, Unit 8, Lesson 14 requires students to "begin by critiquing different sampling methods for their benefits and drawbacks," and informally assesses their ability to construct an argument where a random sample is produced and reasoning of why it would be useful in a given scenario.
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	While the math practice standards are referenced to throughout the lessons, there are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	Materials explicitly attend to development and concentration on mathematical language. Teacher questioning practices are used alongside direct instruction techniques to guide students to decipher the meaning of specific mathematical terms. In Unit 7, Lesson 1, students "students gain hands-on experience composing, decomposing, and measuring angles," and use these experiences to derive definitions of adjacent angles, right angles, and straight angles. Unit 2, Lesson 2 allows students to connect previous understanding of ratio and rate relationships to develop definitions of "proportional relationships" and "constant of proportionality."
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**REQUIRED** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Throughout the materials, there are opportunities for students to solve mathematical problems, critique arguments of others and defend their own reasoning, create models, etc. On the Unit 5, Lesson 9 Practice Problems worksheet, students must produce multiple answer types. Questions 1 and 3 are procedural skill and fluency problems in which students must find an exact value. Question 2 is an application problem where students must also explain their reasoning. This is also evident in the lessons themselves. Unit 6, Lessons 2 through 5 focus on reasoning about contexts and equations by

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			using tape diagrams. In these lessons, students create tape diagrams, match equations to real world situations, solve real world situations using equations, explain reasoning, categorize equations, create tables, and create additional diagrams to represent relationships between quantities.
	REQUIRED **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Yes**	There are separate teacher materials that support and reward teacher study. The Course Guide portion of the teacher materials provide teachers with various tools that are designed to prepare them for the instruction of the curriculum. The Course Information and Scope and Sequence portion features a pacing guide, detailed analysis of the content within each unit, scope and sequence, lessons and standards of the materials, glossary, and required materials needed. The focus of the About These Materials portion describes an instructional layout of each lesson. The Design Principles provide key information on how the learning should take place from the development of conceptual understanding and procedural fluency to the ability to solve apply such knowledge. Also, the Five Principles for Orchestrating Productive Mathematical Discussions are analyzed. The How to Use These Materials sections provides teachers with the sequence of a lesson from the launch to the assessments. The Supporting English Language Learners and Supporting Students with Disabilities features a variety of principles that are used to aid these students in reaching mathematical success.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners and other special populations is present and provides opportunity for those groups to meet the same standards as other students. In the Course Guide portion of the teacher materials, the Supporting English Language Learners tab features the following topics to aid teachers: Promoting Language and Content Development, Theory of Action, and the Framework of the Four Design Principles for Promoting Mathematical Language Use and the Eight Mathematical Language Routines. These guiding principles and routines can also be found

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			throughout the individual lessons to enhance instruction where recommendations are given to assist the mastery of the topic for students as needed. Each lesson with these components is clearly labeled as "ELL Enhanced."
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The Warm-Up and Activity portion of each lesson features detailed problems that provide students with guided instruction to form connections from previously learned material to the new skill. Each lesson also provides a Practice Problems document. Here, students are to apply their newly gained knowledge to complete the given exercises. For example, Unit 5, Lesson 2 provides an activity where a Student Facing Task requires students to complete a table based on temperature change and draw a number line to represent each situation. The Practice Problem handout aligned to this lesson provides additional practice where students determine values of temperature change using different methods.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Each unit, from the student's view, includes scaffolded Lessons, Summary, and Practice Problems. The teacher materials provide detailed instruction to appropriately scaffold content, as well as, Family Materials to provide supplemental resources at home. Lessons, from the teacher view, includes a warm-up, activity, lesson synthesis, cool down and glossary section, where needed, to scaffold instruction. Within these components, alignment to prior and on grade level LSSM, learning goals and targets, required preparation and materials, and instructional routines are included. The Cool-Down is the formative assessment portion that teachers use to determine if the students understood the daily lesson. When needed, the glossary defines key terms needed to understand the lesson. The Summary section serves as a closing to ensure objective goals were met. The Practice Problems section provides students with ample conceptual,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			procedural, and application problems to master the targeted LSSM. The Assessment is a summative closure to test student mastery.
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	Materials address and support the use of technology as called for in the Standards. LSSM 7.G.A.2 states the following: "Draw (freehand, with ruler and protractor, or with technology) geometric shapes with given conditions." In the Unit 3, Lesson 2 optional Activity 4, students use a digital compass to create circles based on a specific diameter or radius. In Unit 7, Lesson 9, Activity 3, students use the digital feature to create triangles given specific side lengths and angle measurements.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.

Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.

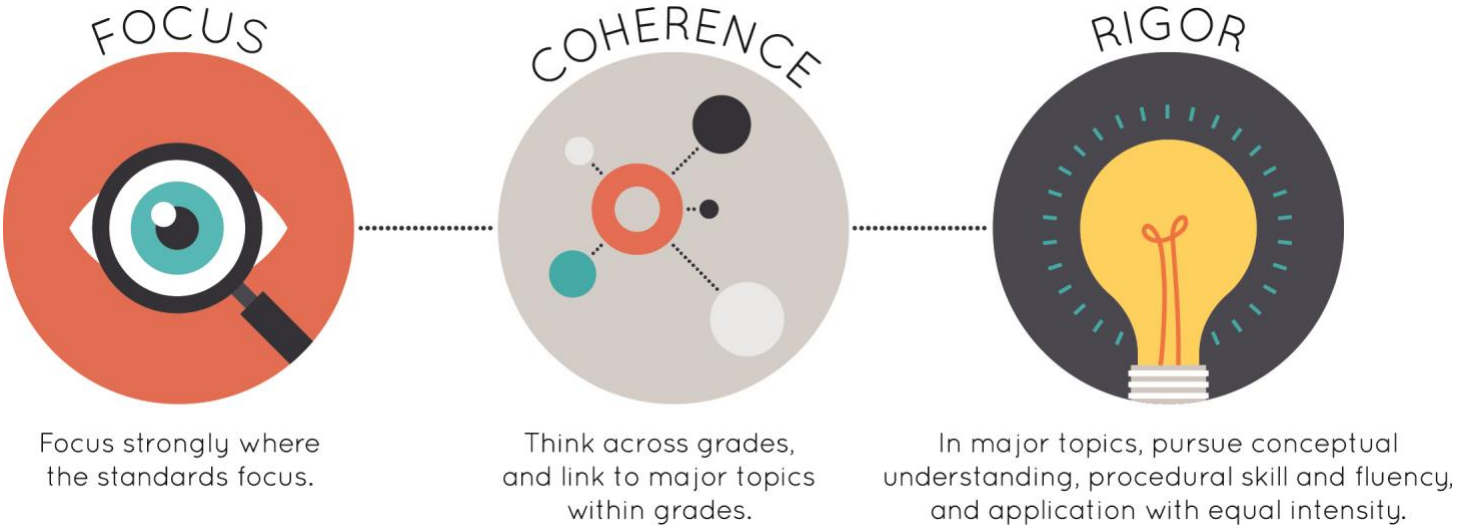
Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Focus on Major Work	**Yes**	The materials devote a majority of time to the major work of the grade, and a LA-specific curriculum map ensures teachers know the boundaries within which to teach and assess.
	2. Consistent, Coherent Content	**Yes**	Course contents include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in the grade, but are not structured to enhance focus and coherence by connecting supporting and major standards throughout the curriculum.
	3. Rigor and Balance	**Yes**	The three aspects of rigor are not always treated together or separately within the curriculum resources provided.
	4. Focus and Coherence via Practice Standards	**Yes**	Materials use the practice standards to strengthen and enrich the focus of the content standards for the grade.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	Materials attend to focus and coherence by linking topics and by staying consistent with the progressions of the LSSM.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	Materials attend to the full meaning of the practice standards and provide sufficient opportunities for students to construct and critique arguments as well as attend to multi-step problems. However, no teacher directed materials were found to explain the role of the practice standards in either the classroom or the curriculum.
	7. Indicators of Quality	**Yes**	Teachers and students are given sufficient tools to meet the expectations of the LSSM.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Strong mathematics instruction contains the following elements:



Title: **Illustrative Mathematics Middle School Math** Grade/Course: **8**

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Overall Rating: **Tier I, Exemplifies quality**

Tier I, Tier II, Tier III Elements of this review:

STRONG	WEAK
1. Focus on Major Work (Non-Negotiable)	
2. Consistent, Coherent Content (Non-Negotiable)	
3. Rigor and Balance (Non-Negotiable)	
4. Focus Coh. via Practice Std (Non-Negotiable)	
5. Alignment Criteria for Stnds. for Math Content	
6. Alignment Criteria for Stnds. for Math Practice	
7. Indicators of Quality	

To evaluate each set of submitted materials for alignment with the Standards, begin by reviewing the indicators listed in Column 2 for the non-negotiable criteria in Section I. If there is a "Yes" for all indicators in Column 2 for Section I, then the materials receive a "Yes" in Column 1. If there is a "No" for any indicator in Column 2 for Section I, then the materials receive a "No" in Column 1.

For Section II, begin by reviewing the required indicators in Column 2 for each criterion. If there is a "Yes" for all required indicators in Column 2, then the materials receive a "Yes" in Column 1. If there is a "No" for any required indicators in Column 2, then the materials receive a "No" in Column 1.

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.
Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.
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CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[5]:** Students and teachers using the materials as designed devote the large majority[6] of time to the major work of the grade/course. ☒ Yes ☐ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	According to the Course Information and Scope and Sequence found within the Teacher Materials portion of the instructional materials, 97 of the provided 126 lessons (77.78%) are aligned to the major work of the grade, as defined by the LSSM. Excluding all of the lessons noted as "optional", 92 of the 119 (77.31%) lessons focus on major content as defined by the LSSM.
	REQUIRED **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	All activities and practice problems where students are required to perform rotations around a point other than the origin are optional or can be used for enrichment purposes. (Ex: Unit 1 Lesson 5 Activity 3). Please note that in several lessons and activities there are either no grids (Unit 1 Lesson 2) or non-coordinate grids (Unit 1 Lesson 3) which are included intentionally to prepare students for work with coordinate grids and ensure deeper conceptual understanding. LSSM specifies that rotations must be about the origin and thus the absence of a grid or a non-coordinate grid allows these lessons / activities to fall within LSSM. Activities and practice problems where students are required to reflect over lines other than the x- or y-axis are optional or can be used for enrichment purposes (Unit 1 Lesson 4). Activities and practice problems where students are required to perform dilations around a point other than the origin are optional or can be used for enrichment purposes. (Ex: Unit 2 Lesson 4, Activity 2).

[5] For more on the major work of the grade, see Focus by Grade Level.
[6] The materials should devote at least 65% and up to approximately 85% of class time to the major work of the grade with Grades K–2 nearer the upper end of that range, i.e., 85%.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Note that in Unit 2 Lesson 2, a circular grid is used as a scaffold to help students understand the concept of dilation. In the same manner, Unit 2 Lesson 3 does not use a grid and permits students to think about the meaning of a dilation in terms of center, scale factor and point being dilated. Note: All optional / enrichment lessons are listed in the LA- specific curriculum map.
Non-Negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards. ☒ Yes ☐ No	**REQUIRED** **2a)** Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year.	**Yes**	Materials are structured in such a way to enhance focus and coherence throughout the year by connecting supporting content to major content in meaningful ways. Supporting LSSM 8.NS.A.2 is connected to Major LSSM 8.EE.A.2 throughout Unit 8. Lessons 4 and 5 require students to use the square root symbol to represent solutions (8.EE.A.2) and determine whether these solutions are rational or irrational (8.NS.A.2). Lesson 12 continues to enhance this connection as students must match the square or cube root to the appropriate equation and number line representation.
	REQUIRED **2b)** Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important.	**Yes**	Materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade/course, in cases where these connections are natural and important. Unit 3, Lesson 12 connects 8.EE.B to 8.EE.C as students bridge their previous knowledge of one-variable equations to two-variable equations in preparation for systems of equations. Unit 2, Lesson 11 connects 8.G.A and 8.EE.B.6 as students use the geometric principle of similarity in triangles to show that slope between two points on a line is equal.
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding,	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials enhance development of conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards. Unit 1, Lesson 14 allows students to develop conceptual understanding of angle relationships and measures in parallel lines cut by a transversal (8.G.A.5) through focusing on explicit vocabulary, allowing for processing time, facilitating instruction using specific instructional routines, and slowly building student work to include more

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
procedural skill and fluency, and application. ☒ Yes ☐ No			complex angle relationships. Problem 3 of the End-Unit Assessment for Unit 1 requires students to choose the pair of figures that have been rotated (8.G.A.1).The Warm-Up for Unit 8, Lesson 5 requires students to evaluate the given equations featuring square root and square symbols in order to determine if they are true or false (8.EE.A.2). Additionally, Unit 5, Lessons 17, 18, and 19 provide scaffolded instruction to build students towards developing the formula for the volume of a sphere (8.G.C.9).
	REQUIRED **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	Materials enhance development of procedural skill and fluency, especially where called for explicitly in the LSSM. Unit 4, Lessons 3 through 9 focus on Major LSSM 8.EE.C.7, which is specifically aligned to the procedural skill and fluency component of rigor. Students are provided ample scaffolding and practice to ensure fluency of solving linear equations in one variable. Lesson 5, Activity 2 features a fluency exercise for students to practice solving linear equations with variables on both sides (8.EE.C.7). Problem 5 of the Unit 4, End-of-Unit Assessment requires students to compute the solution of a system of equations (8.EE.C.8).
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time working with engaging applications, including ample practice with single-step and multi-step contextual problems, including non-routine problems, that develop the mathematics of the grade/course, afford opportunities for practice, and engage students in problem solving. The problems attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit.	**Yes**	Materials provide students with opportunities to practice the application of key mathematical concepts, especially where explicitly called for in the standards. Unit 4, Lesson 15 focuses on Major LSSM 8.EE.C.8c where students build systems of equations based on real world contexts through the provided activity. Unit 5, Lessons 7 and 8 focus on Major LSSM 8.F.A.2, by providing opportunities for students to make connections between multiple representations of different functions in a real-world context, including temperature, volume, speed, and area. Unit 6, Activity 6, Lesson 3 emphasizes LSSM 8.SP.A.3 as students must interpret the slope of a linear model to fit a real-world scenario.
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together and are not always treated separately within the course materials. Unit 3 focuses on Major

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			LSSM 8.EE.B.5. Lessons scaffold to allow students to understand, represent, and compare proportional relationships (conceptual understanding) in order to write equations for linear relationships and calculate slope (procedural skill and fluency). This knowledge and set of skills is then applied to real world context in Lesson 14 where students "create a graph (either with a table of values or by using two intercepts), interpret points on the graph, and interpret points not on the graph (MP.2)." To assess mastery, Problem 7 on the Unit 3, End-of-Unit Assessment emphasizes Major LSSM 8.EE.B.5. Here, students must analyze a real world scenario (application) as they interpret the monthly cell phone charge as the slope of the graph (conceptual understanding) and graph the cost of the cell phone plan over two years (procedural skill and fluency).
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	Materials address the practice standards in such a way as to enrich the content standards. In the Course Information and Scope and Sequence portion of the materials, examples of the mathematical practices implemented within the units are listed. Unit 1-Transformational Geometry, provides "students opportunities to develop their abilities to select appropriate tools and use them strategically to solve problems (MP.5)" by introducing them to the Geometry Toolkit. Unit 2 states "The unit begins by revisiting different representations of proportional relationships (graphs, tables, and equations), and the role of the constant of proportionality in each representation and how it may be interpreted in context (MP.2)". Additionally, in Unit 4, "students write and solve equations, abstracting from contexts" (MP.2), and Unit 7 requires students to use MP.7 as they "manipulate the data to look for patterns in the table."
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	Extensive work with course level material is present throughout the curriculum. Each unit includes an Overview, Lessons, Summary, Practice Problems, Assessments and Family Materials. Each lesson includes a warm-up, activity/activities, lesson synthesis, and cool-down (glossary featured when needed) to build and reinforce student learning. Prerequisite material is clearly identified to the teacher in each lesson where CCSS: Building On is noted. Specific responsibilities for teacher and students in regards to the current year expectations are clearly identified.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	Reorganization of prior knowledge from previous grades is explicitly related to course-level concepts in a manner that extends and accommodates new knowledge throughout the materials. The Pre-Unit Assessment for each unit is composed of questions from previous grade levels that assist teachers in determining gaps or misconceptions before introducing the students to new information. For example, Problem 2 of the Unit 5 Pre-Unit Assessment focuses on the understanding of proportional relationships (7.RP.A.2.a) before the emphasis of linear functions (8.F.B.4). Additionally, lessons focused on prerequisite skills are noted as "CCSS: Building On," such as the Unit 3, Lesson 2 Warm-Up, where students write equations of a given proportional relationship and graph it using a different scale for each axis. This is then connected later in the lesson to the 8th grade concept, through activities where students "graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways" (8.EE.B.5).
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	Learning objectives align directly to LSSM cluster headings. Within the Course Guide for teachers, each lesson includes Learning Goals, Learning Goals (Student Facing), and Learning Targets (Student Facing). The Learning Goals align directly to the standard of focus for each lesson. The first learning goal for Lesson 2 of Unit 5 states the following:

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			"Understand that a rule that produces exactly one output for each allowable input defines the output as a function of the input." This aligns to LSSM 8.F.A.1 which states the following: "Understand that a function is a rule that assigns to each input exactly one output." The first Student Facing learning target for Unit 2, Lesson 4 states the following: "I can apply dilations to figures on a rectangular grid." This aligns to LSSM 8.G.A.3 which states the following: "Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates."
	5d) Materials preserve the focus, coherence, and rigor of the Standards even when targeting specific objectives.	**Yes**	Materials preserve the focus, coherence, and rigor of the LSSM, even when targeting specific objectives. This is evident through the coherence of lesson objectives throughout the Overview, Lessons, Assessments, Practice Problems, Unit Downloads, and Family Materials for each unit.
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**REQUIRED** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	Materials attend to the full meaning of each practice standard. The Course Information Scope and Sequence portion of the Course Guide provides teachers with a reference to where specific mathematical practice standards will occur within each unit. In the Unit 2 description, it is stated that students "use the definition of "similar" and properties of similar figures to justify claims of similarity or non-similarity and to reason about similar figures (MP3)." The mathematical practice standards are also evident in the individual lessons. For example, in Unit 4 Lesson 15, the following is stated regarding systems of equations: "When students represent a real world problem with a system, they develop an important skill for mathematical modeling (MP4)."
	REQUIRED **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in	**Yes**	Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics, especially in the problem-solving of multi-step problems. The Cool-Down of Unit 4, Lesson 8 asks students to determine if the analysis of the solution will be true for all values of x. Problem 7 of the Unit 7 End-of-Unit Assessment

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	the Standards that explicitly set expectations for multi-step problems.		requires students to critique a student's explanation. Problem 2 from the Unit 8, Lesson 10 Practice Problems requires students to determine if another student's conjecture than an object will not fall through a particular sized opening, and explain reasoning behind their response.
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	While the math practice standards are referenced to throughout the lessons, there are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	Materials explicitly attend to development and concentration on mathematical language. Teacher questioning practices are used alongside direct instruction techniques to guide students to decipher the meaning of specific mathematical terms. In Unit 2, Lesson 1, students develop understanding of a dilation as they "arrange a set of rectangles into groups with shared diagonals and examine the scale factors relating the rectangles. Afterward, during the discussion, the word dilation is first used, in an informal way, as a way to make scaled copies". Additionally, in Unit 5, Lesson 2, students build on prior knowledge to convert height measurements between feet and inches to "develop students' understanding of the structure of a function as something that has one and only one output for each allowable input."
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**REQUIRED** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Throughout the materials, there are opportunities for students to solve mathematical problems, critique arguments of others and defend their own reasoning, create models, etc. The Mid-Unit Assessment for Unit 1 provides item types where students answer questions about rigid transformations in the form of multiple choice, multiple select, and constructed response requiring explanations, graphing transformations on a grid, and labeling parts of congruent figures. Question 1 of the Practice Problems aligned to Unit 6, Lesson 8 requires students to analyze the table of a real-world scenario, create a scatter plot, determine if

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			there are outliers and explain reasoning, explain the relationship between variables, and draw a line of best fit.
	REQUIRED **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Yes**	There are separate teacher materials that support and reward teacher study. The Course Guide portion of the teacher materials provide teachers with various tools that are designed to prepare them for the instruction of the curriculum. The Course Information and Scope and Sequence portion features a pacing guide, detailed analysis of the content within each unit, scope and sequence, lessons and standards of the materials, glossary, and required materials needed. The focus of the About These Materials portion describes an instructional layout of each lesson. The Design Principles provide key information on how the learning should take place from the development of conceptual understanding and procedural fluency to the ability to solve apply such knowledge. Also, the Five Principles for Orchestrating Productive Mathematical Discussions are analyzed. The How to Use These Materials sections provides teachers with the sequence of a lesson from the launch to the assessments. The Supporting English Language Learners and Supporting Students with Disabilities features a variety of principles that are used to aid these students in reaching mathematical success.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners and other special populations is present and provides opportunity for those groups to meet the same standards as other students. In the Course Guide portion of the teacher materials, the Supporting English Language Learners tab features the following topics to aid teachers: Promoting Language and Content Development, Theory of Action, and the Framework of the Four Design Principles for Promoting Mathematical Language Use and the Eight Mathematical Language Routines. These guiding principles and routines can also be found throughout the individual lessons to enhance instruction where recommendations are given to assist the mastery of the topic for students as

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			needed. Each lesson with these components is clearly labeled as "ELL Enhanced."
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. Units are broken into lessons, which provide instructional activities with Student Facing Tasks followed by additional practice found in the Practice Problems section of the curriculum materials. For example, Unit 8, Lesson 8 requires students to determine missing side lengths of right triangles, where in the provided activities, students work in pairs to identify parts of a right triangle and determine missing side lengths in the Student Facing Tasks. The Practice Problems aligned to this lesson provide opportunity to continue to practice calculating the exact value of missing lengths of a right triangle.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Each unit, from the student's view, includes scaffolded Lessons, Summary, and Practice Problems. The teacher materials provide detailed instruction to appropriately scaffold content, as well as, Family Materials to provide supplemental resources at home. Lessons, from the teacher view, includes a warm-up, activity, lesson synthesis, cool down and glossary section, where needed, to scaffold instruction. Within these components, alignment to prior and on grade level LSSM, learning goals and targets, required preparation and materials, and instructional routines are included. The Cool-Down is the formative assessment portion that teachers use to determine if the students understood the daily lesson. When needed, the glossary defines key terms needed to understand the lesson. The Summary section serves as a closing to ensure objective goals were met. The Practice Problems section provides students with ample conceptual, procedural, and application problems to master the targeted LSSM. The Assessment is a summative closure to test student mastery.
	7f) Materials support the uses of technology as called for in the Standards.	**No**	Materials address and support the use of technology through digital tasks using virtual manipulatives, but

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			do not provide any instruction or practice for the one standard for Grade 8 that involves technology. LSSM 8.EE.A.4 states the following: "Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology." While most of the standard is addressed within the provided materials, there are no examples, instructional resources, or practice problems that address student interpretation of scientific notation that is generated by technology.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" in Column 1 for Criteria 1 – 7.

Tier 2 ratings receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria.

Tier 3 ratings receive a "No" in Column 1 for at least one of the non-negotiable criteria.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiables	1. Focus on Major Work	**Yes**	The materials devote a majority of time to the major work of the grade, and a LA-specific curriculum map ensures teachers know the boundaries within which to teach and assess.
	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through connections between supporting and major LSSM, as well as, the connection made between different domains and sub-claims.
	3. Rigor and Balance	**Yes**	The three aspects of rigor are not always treated together or separately within the curriculum resources provided.
	4. Focus and Coherence via Practice Standards	**Yes**	Materials use the practice standards to strengthen and enrich the focus of the content standards for the grade.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	Materials attend to focus and coherence by linking topics and by staying consistent with the progressions of the LSSM.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	Materials attend to the full meaning of the practice standards and provide sufficient opportunities for students to construct and critique arguments as well as attend to multi-step problems. However, no teacher directed materials were found to explain the role of the practice standards in either the classroom or the curriculum.
	7. Indicators of Quality	**Yes**	Materials support students provide a variety of answers, solutions, arguments, diagrams, and models. In addition, teachers are provided with separate materials that reward teacher learning. However, the materials do not provide resources aligned to the grade 8 technology component as indicated in the LSSM.
FINAL DECISION FOR THIS MATERIAL **Tier I, Exemplifies quality**			

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.