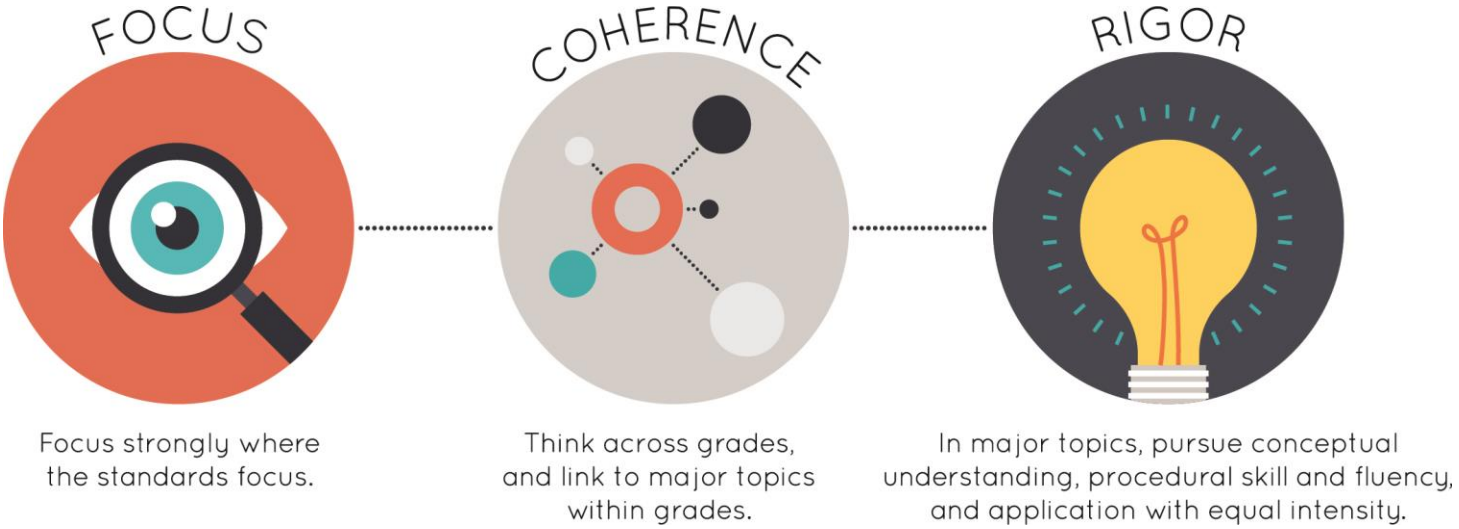
DEPARTMENT of EDUCATION
Louisiana Believes

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**

Grade/Course: **Algebra I, Geometry, and Algebra II**

Publisher: **Imagine Learning (formerly LearnZillion)**

Copyright: **2019**

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 and Coherence via Practice Standards (Non-negotiable)	
5. Alignment Criteria for Standards for Mathematical Content	
6. Alignment Criteria for Standards for Mathematical 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 9 (Tier 1) Grade 10 (Tier 1) Grade 11 (Tier 1)

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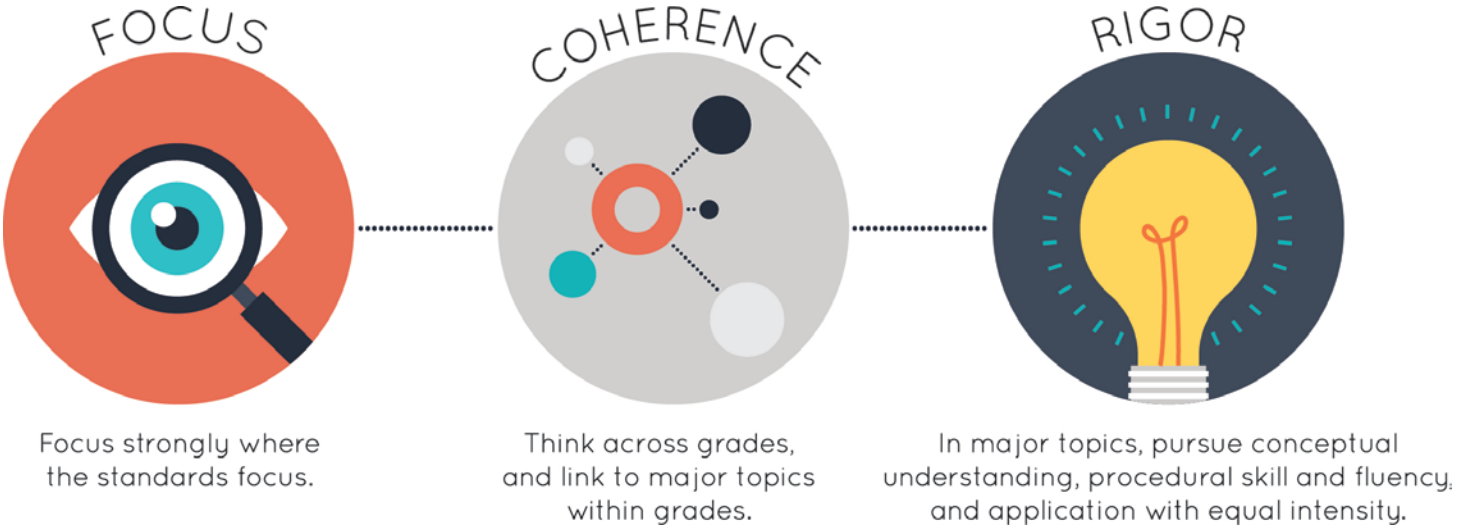

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7. Indicators of Quality	

To evaluate instructional materials for alignment with the standards and determine tiered rating, begin with **Section I: Non-negotiable Criteria**.

- Review the **required**[1] Indicators of Superior Quality for each **Non-negotiable** criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, materials receive a "Yes" for that **Non-negotiable** Criterion.
- If there is a "No" for any of the **required** Indicators of Superior Quality, materials receive a "No" for that **Non-negotiable** Criterion.
- Materials must meet **Non-negotiable** Criterion 1 and 2 for the review to continue to **Non-negotiable** Criteria 3 and 4. Materials must meet all of the **Non-negotiable** Criteria 1-4 in order for the review to continue to Section II.
- If materials receive a "No" for any **Non-negotiable** Criterion, a rating of Tier 3 is assigned, and the review does not continue.

If all Non-negotiable Criteria are met, then continue to **Section II: Additional Criteria of Superior Quality.**

- Review the **required** Indicators of Superior Quality for each criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, then the materials receive a "Yes" for the additional criteria.
- If there is a "No" for any **required** Indicator of Superior Quality, then the materials receive a "No" for the additional criteria.

Tier 1 ratings receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a "No" for at least one of the Non-negotiable Criteria.

[1] **Required Indicators of Superior Quality** are labeled "**Required**" and shaded yellow. Remaining indicators that are shaded white are included to provide additional information to aid in material selection and do not affect tiered rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Section I: Non-negotiable Criteria of Superior Quality: Materials must meet Non-negotiable Criteria 1 and 2 for the review to continue to Non-negotiable Criteria 3 and 4. Materials must meet all of the Non-negotiable Criteria 1-4 in order for the review to continue to Section II.			
Non-negotiable **1. FOCUS ON MAJOR WORK[2]:** Students and teachers using the materials as designed devote the large majority[3] of time to the major work of the grade/course. ☒ Yes ☐ No	**Required** **1a)** Materials devote the **majority** of class time to the major work of each grade/course.	**Yes**	Materials devote a majority of time to the major work of the grade. When including the lessons noted by the publisher as optional, 73% of the 132 lessons are devoted to major work of the grade. Of the 132 lessons, 28% focus on major standards alone and 45% utilize focus on a combination of major and supporting/additional standards.
	Required **1b)** Instructional materials, including assessments, spend minimal time on content outside of the appropriate grade/course **during core math instruction**. Content beyond grade/course-level should be clearly labeled as optional.	**Yes**	Materials spend the appropriate amount of time on course-level work, while assessing course-level standards. There are no chapter tests, unit tests, or other assessments that make students or teachers responsible for any topics before the course in which they are introduced. A minimum amount of previous content is used to scaffold instruction. Mid- and end-of-unit assessments for each unit assess major standards addressed in lessons within those units. For example, Unit 2, End-of-Unit Assessment, questions 3, 4, and 5 align to major LSSM A.REI.D.12 which is addressed in Unit 2, Lessons 22, 23, 24, 25, and 26. In the End-of-Unit Assessment for Unit 5, questions 1, 2, 3, and 5 assess major LSSM A.SSE.A.1, which

[2] For more on the major work of the grade, see Focus by Grade Level.
[3] 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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			is addressed in Unit 5, Lessons 4, 7, 17, and 18. Lessons including standards from previous grades to scaffold to course-level standards are clearly marked. For example, the warm up problem for Unit 2, Lesson 19, builds on the Grade 7 LSSM 7.EE.B.4b while the remaining problems address major work of the grade (LSSM A.REI.B.3 and A.CED.A.1). There are instances where students work outside the scope of the grade on prior content. These lessons are listed as optional and are not distracting to the major work of the grade. In Unit 1, Lesson 5, finding median and/or mean and interquartile range (LSSM 6.SP.B.5) is reviewed to address comparing measures of central tendencies of different data sets (LSSM S.ID.A.2).
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 connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Multiple lessons introduce supporting content within the context of major content using appropriate connections. For example, in Unit 3, Lesson 4, students determine the line of best fit for data in context (supporting LSSM S.ID.B.6) and interpret the slope and y-intercept (major LSSM S.ID.C.7). In Unit 4, Lesson 12, students graph piecewise functions in Activity 12.3

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			(supporting LSSM F.IF.C.7b) and, in Activity 12.4, students graph from key features (supporting LSSM F.IF.C.7). This supporting content is taught after Activity 12.2 which addresses the major content of relating the domain of a function to its graph (major LSSM F.IF.B.5). In Unit 5, Lesson 4, Activity 4.3, standards are interwoven creating direct connections. Students engage in the work of supporting standards by writing functions (LSSM F.BF.A.1) and interpreting parameters (LSSM F.LE.B.5) leading to the major work of creating equations in two variables (LSSM A.CED.A.2). In Unit 6, Lesson 14, students interpret statements that use function notation in terms of a context, interpret key features of a function, and graph functions, connecting supporting LSSM F.IF.C.7 to major LSSM F.IF.A.2 and F.IF.B.4.
	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 connect two or more clusters in a domain and/or two or more domains in the course level where these connections are natural and important. Materials are coherent and consistent with multiple opportunities for students to engage in problems and activities involving two or more clusters in a domain, or two or more domains in a course. For example, in Unit 2, Lesson 26, students work within the

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			context of trail mix to represent constraints (LSSM A.CED.A.3), describe quantities for descriptive purposes (LSSM N.Q.A.3), and graph inequalities (LSSM A.REI.D.12). In Unit 6, Lesson 7, students relate the domain of a quadratic function to its graph (LSSM F.IF.B.5), write a function that describes a relationship from a table (LSSM F.BF.A.1), and graph quadratic functions (LSSM F.IF.C.7). In Unit 5, Lesson 21, Activity 21.2, clusters and domains are connected. In the lesson, students determine what type of model could be used (LSSM F.LE.A.1), write functions (LSSM F.LE.A.2), and use a model to predict population (LSSM S.ID.B.6a). These connections are continued in the discussion for Activity 21.3 which includes millions being an appropriate measure for population (LSSM N.Q.A.3). In Unit 6, Lesson 17, Activity 17.2 and Activity 17.5, students write quadratic functions (LSSM F.BF.A) and analyze the effects on the equation of the graph being altered (LSSM F.BF.B).
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	**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 featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials develop conceptual understanding of key mathematical concepts. Throughout the materials, standards written at a conceptual level of rigor are addressed in a manner that builds conceptual understanding. For example, in Unit 2, Lesson 13, Activity

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develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No			13.1, students determine which system could match a graphical representation and explain how they know (LSSM A.REI.D.10). The explaining portions in both of these examples ensure students understand mathematical topics and address the standards conceptually as in accordance with the rigor document. In Unit 3, Lesson 8, conceptual LSSM S.ID.C.7, S.ID.C.8, and S.ID.C.9 are addressed in a conceptual manner as students interpret lines of best fit and correlation coefficients within the context of problems. In Unit 5, Lesson 7, Activity 7.4, students interpret parts of an equation in relation to the amount of medicine ingested by a person (LSSM A.SSE.A.1a). Lessons have built in activities that develop conceptual understanding through discussion prompts and scaffolding questions. For example, in Unit 7, Lessons 21, Activities 21.2 and 21.3 students experiment with adding and multiplying rational and irrational numbers to determine if sums and products are rational or irrational. These cases are then analyzed using variables and ,given an explanation of what makes a sum or product rational or irrational, students are asked to explain how they know if the sum or product is rational or irrational (LSSM N.RN.B.3).

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	Required **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students **attain the fluencies and procedural skills** required by the content 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 are designed so that students attain the fluencies and procedural skills required by the standards. Sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra. For example, in Unit 2, Lesson 8, Practice #1, students solve an equation for a certain variable and then substitute values into the equations. In Unit 2, Lesson 8, Practice #2, students solve an equation for x and then solve the same equation for y (LSSM A.CED.A.4). In Unit 3, Lesson 7, students compute the correlation coefficient (LSSM S.ID.C.8). Procedural skill and fluency for LSSM A.CED.A.4 is also addressed in Unit 4, Lesson 16. In Unit 5, Lesson 18, Practice #1, students determine the associated growth factor for 7 given growth rates, procedurally practicing transforming expressions for exponential functions (LSSM A.SSE.B.3c). In Unit 7, Lesson 4, students solve various types of equations including using the Zero Product Property to solve quadratics (LSSM A.REI.B.3).
	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	**Yes**	Materials are designed so that students spend sufficient time working with engaging applications. For standards that require application as a type of rigor, activities addressing those standards include contextual problems. In Unit 2,

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	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.		Lesson 22, Activity 22.4, students represent constraints, solve, graph, and apply linear inequalities to real world situations such as purchasing concert tickets and opening banking accounts (LSSM A.CED.A.3, A.REI.D.10, and A.REI.D.12). In Unit 3, Lesson 4, Activity 4.2, students create a data set from a given video of a real life situation, graph the data set, determine a line of best fit for the data set, and use the line of best fit to predict information from the model (LSSM S.ID.B.6a). In Unit 4, Lesson 18, students complete multi-step problems relating knowledge and concepts of functions to cell phone battery life (LSSM S.ID.B.6, F.IF.B.6, F.BF.A.1, and S.ID.B.6a). In Unit 7, Lesson 17, Activity 17.3, students are given an equation and picture and must explain how the equation represents the picture. Students are then given a written situation and then write an equation from the context (LSSM A.CED.A.1).
	Required **3d)** ***Balance:*** The three aspects of **rigor** are not always treated together and are not always treated separately.	**Yes**	It is evident in the materials that the three aspects of rigor are not always treated together and are not always treated separately. Lessons contain problems utilizing combinations of different components of rigor, in addition to problems solely focusing on one component of rigor at a time. Most

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			lessons in the materials provide opportunities for students to demonstrate procedural fluency and conceptual understanding in the context of application to real world situations. For example, in Unit 2, Lesson 3, Activity 3.2, students describe relationships in tables and then conceptually match the table to its equation (LSSM A.CED.A.2). In Unit 3, Lesson 2, Activity 2.2, students interpret (conceptual understanding) relative frequencies in terms of the types of people who have cats and dogs (application) while calculating various percentages (procedural) (LSSM S.ID.B.5). In Unit 3, Lesson 7, Activity 7.3, students conceptually compare correlation coefficients and procedurally use technology to determine the line of best fit (LSSM S.ID.B.6). In Unit 5, Lesson 16, students use conceptual understanding to estimate the solution to exponential equations (LSSM F.BF.A.1). In Unit 7, Lesson 1, tasks 1.2 and 1.3, students apply conceptual understanding and procedural skill and fluency to a context of creating a picture frame of various proportions to address LSSM A.CED.A.3 and A.CED.A.1.
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:**	**Required** **4a)** Materials attend to the **full meaning of the practice standards**. Each practice standard is connected to grade/course-level content in a meaningful way and is	**Yes**	Materials attend to the full meaning of each practice standard. Math practice standards are aligned to standards and are present in various forms to develop

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Aligned materials make meaningful and purposeful connections that promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. Materials address the practice standards in a way to enrich and strengthen the focus of the content standards instead of detracting from them. ☒ Yes ☐ No	present throughout the year in assignments, activities, and/or problems.		habits of mind described in the practice standards. Practice standards are explicitly pointed out in teacher materials. For example, in Unit 1, Lesson 3, LSSM S.ID.A.1 and S.ID.A.2 are addressed, and it is noted in the teacher notes "When students create and interpret a data display, they are reasoning abstractly and quantitatively (MP.2) because they are creating a display and interpreting the meaning of the quantities in the display. Additionally, students make use of structure (MP.7) to notice differences in distributions with the same shape, but different centers." In Unit 2, Lesson 1, students plan a pizza party, determine variables and constraints, and determine an estimated cost utilizing MP.4 (Model with Mathematics) by applying math to solve an everyday problem. In Unit 3, Lesson 4, "Students reason abstractly by making sense of slope and intercept in context (MP.2)" while addressing LSSM S.ID.B.6 and S.ID.C.7. In Unit 4, Lesson 16, students examine the structure of equations to isolate specific variables to determine the inverse (LSSM A.CED.A.4). Material guidance for Activity 16.2 clarifies, "To do so, students need to analyze the structure of one equation, use it to reverse the process that defines the function, and see if the reversal leads to

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			the other equation (MP.7)." In Unit 7, Lesson 3, students solve quadratic equations (LSSM A.REI.B.4) using any method. Material guidance for Activity 3.2 states, "Students' approaches likely vary in efficiency and effectiveness" and "Students who use technology to solve the equations engage in choosing tools strategically (MP.5)."
	Required **4b)** Materials provide sufficient opportunities for students to **construct viable arguments and critique the arguments of others** concerning key grade/course-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 course-level mathematics that is detailed in the content standards. Throughout the course, students critique the reasoning of other students. Students often construct viable arguments to explain their reasoning. For example, in Unit 2, Lesson 7, Activity 7.2, students must explain "acceptable moves" to their partner used in solving equations and what makes them acceptable. The partner must listen to and critique their partner's explanation of their moves. In Unit 3, Lesson 7, Activity 7.3, students work with correlation coefficients (LSSM S.ID.C.8) to critique the reasoning of others. Materials state, "Tell students that for each scatter plot, one partner finds the associated correlation coefficient and explains why they think it goes with that scatter plot.

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			The other partner's job is to listen and make sure they agree. If they don't agree, the partners discuss until they come to an agreement." In Unit 5, Lesson 6, students explain their reasoning and critique their peers to complete a card sort to match descriptions to graphs (LSSM F.IF.B.4). In Unit 6, Lesson 7, Activity 7.1, students in groups determine which graph does not belong. There is not one right answer, but students must defend why they chose a certain graph for being different than the others.
	Required **4c)** Materials explicitly attend to the **specialized language** of mathematics.	**Yes**	Materials explicitly attend to the specialized language of mathematics. Materials use accurate mathematical terminology and point out vocabulary throughout the material. For example, in Unit 1, Lesson 4, students complete Activity 1 by determining which distribution set does not belong. Students explain their choice within small groups and then to the entire class. The teacher then refines their informal vocabulary by introducing precise math vocabulary, which is continuously used throughout discussion portions of the lesson. In Unit 1, Lesson 12, the About this Lesson tab provides a definition for standard deviation and shows glossary entries. This definition is reinforced throughout the activities of the lesson and provided once

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			again in the student lesson summary. Also, in Unit 4, Lesson 1, Activities 2 and 3, students describe relationships using the language of function, independent variable, and dependent variable. In Unit 4, Lesson 4, 4.1 Warm-up, materials instruct teachers to help students attend to precision by using precise language. "When students articulate what they notice and wonder, they have an opportunity to attend to precision in the language they use to describe what they see (M.6). They might first use less formal or imprecise language, and then restate their observation with more precise language in order to communicate more clearly." In Unit 6, Lesson 2, the activity synthesis for activity 2.3 defines the terms quadratic, quadratic relationship, and quadratic expression and explains the difference between a quadratic relationship and a linear relationship.
	4d) There are teacher-directed materials that **explain the role of the practice standards** in the classroom and in students' mathematical development.	**No**	Materials do not include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. The materials do not provide the teacher a full explanation of the purpose and intent of the practice standards, but rather a brief explanation of the math practices for each lesson. The practice standards are identified within the

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			material alongside a brief description of where and how the math practice is addressed within the material. The brief explanations do not provide enough information for the teacher to fully understand the purpose and intent of the standards and how they are developed throughout the course. For example, in Unit 2 Lesson 13, "Students practice looking for and making use of structure as they identify the variables or expressions to substitute and ways to perform substitutions efficiently (MP.7)." In Unit 3, Lesson 1, About this Lesson, it states "In the Information Gap activity, students must make sense of problems and persevere in solving them (MP.1) and attend to the precision of their language (MP.6) to ask appropriate questions of their peers." In Unit 5 Lesson 7, Activity 7.2 Activity Narrative, it states, "Making graphing technology available gives students an opportunity to choose appropriate tools strategically (MP.5)." In the About this Lesson of Unit 6, Lesson 13, it is stated, "Students also practice writing expressions that produce particular graphs. To do so, students make use of the structure in quadratic expressions (MP.7) and what they learned about the connections between expressions and graphs."

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Section II: Additional Alignment Criteria and Indicators of Superior Quality			
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 grade/course-level problems.	**Yes**	Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified, and lessons which only address previous grade level standards are identified as optional. Each lesson includes 4-5 activities that give students rich tasks and various stimuli to engage with through discussion prompts and related questions to answer. Each lesson then includes 4-10 practice problems (some problems have multiple parts within them), some directly pertaining to the lesson and others being spiral review. In Unit 2, Lesson 20, students write and solve inequalities while working with the major work LSSM A.CED.A.1, A.CED.A.3, and A.REI.B.3. After the lesson, students apply their learning as they complete 10 single and multi-part practice problems. In Unit 3, Lesson 4, Activity 4.1, students review constructing scatter plots (LSSM 8.SP.A.1) to later address not only constructing the scatter plot, determining a negative or positive association, and if the function is linear or nonlinear, but in addition, finding a line of best fit (S.ID.B.6). This is stated in the teacher materials as, “The purpose of this warm-up is to help students recall information about scatter plots, which

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			will be useful when students expand their understanding in a later activity."
	Required **5b)** Materials **relate grade/course-level concepts explicitly to prior knowledge** from earlier grades and courses. The materials are designed so that prior knowledge is extended to accommodate the new knowledge, building to core instruction, on grade/course-level work. Lessons are appropriately **structured and scaffolded** to support student mastery.	**Yes**	Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Materials connect prior knowledge from earlier grades in a purposeful manner. The curriculum weaves prior knowledge students should have from previous courses into lessons for this course so that connections can be made and knowledge gained in earlier courses can be extended upon. The teacher guide provides the standards that each lesson builds upon, the standard that each lesson is addressing, as well as standards the lesson is building towards. At times, the warm up activities are used to activate prior knowledge in order to access current course-level content. For example, in Unit 1, Lesson 5, students calculate mean absolute deviation, interquartile range, mean, and median for a set of data by building on LSSM 6.SP.B.5.c to address LSSM S.ID.A.2. In Unit 2, Lesson 2, Activity 2.1 builds on LSSM 6.RP.A.3.c while the rest of the activities in that lesson address major LSSM A.CED.A.2 and A.CED.A.3. It is stated in the teacher materials, "The strategies elicited here will be helpful later in the lesson when students calculate prices that

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			involve a percent increase and write an equation to generalize the calculation," which occurs in Activity 2.4. In Unit 4, Lesson 1, students' knowledge of functions having exactly one output for every input is "reactivated" (LSSM 8.F.A.1). Students are reminded of this knowledge to use in later portions of the unit (LSSM F.IF.A.1), as stated in the teacher materials, "The goal of this opening activity is to activate, through a familiar context, what students know about functions from middle school." In Unit 6, Lesson 4, students explain using graphs, tables, or calculations that exponential functions eventually grow faster than quadratic functions by building on LSSM 6.EE.A.1 to address LSSM F.BF.A.1.a, F.IF.C, and F.LE.A.3.
	Required **5c)** There is **variety** in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade/course-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	In the materials, students are asked to produce answers in a variety of ways. Students produce answers, solutions, arguments, explanations, diagrams, and various mathematical models. For example, in Unit 2, Lesson 5, Activity 5.3 students produce values, interpolated data points, an equation, a graph, and extrapolated data points, all in accordance with one task. Also, in Unit 2, Lesson 18, Activity 18.2, students translate inequalities written in words into mathematical expressions. Then in

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			Activity 18.3, students trade their responses and explain to each other what they think their partner's statements mean while making adjustments based on the critiques their partner gives them. In Unit 4, Lesson 18, Activity 18.2, students share predictions and explanations of a cell phone battery life table and also compare their strategies with strategies of other students. In Unit 4, Lesson 10, students solve a card sort, tables, graphs, and problems related to domain and range. In Unit 7, Lesson 2, students solve quadratic equations using a variety of methods.
	5d) Support for **English Language Learners and other special populations** is provided. The language in which problems are posed is not an obstacle to understanding the content, and if it is, additional supports (suggestions for modifications, "vocabulary to preview", etc.,) are included.	**Yes**	Materials include support for English Language Learners and other special populations that is thoughtful and helps those students meet the same standards as all other students. Materials often provide support for English Language Learners and other special populations within the lesson materials; however, these supports are not provided for every lesson. An example of support includes Unit 1, Lesson 4, Activity 4.2 Synthesis, support for English Language Learners, "Speaking, Listening: MLR 7 Compare and Connect. Ask students to prepare a visual display of their sorted cards. As students investigate each other's work, ask students to share what worked well in a

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			particular approach. Listen for and amplify any comments about the use of the words symmetric, skewed, bimodal, bell-shaped, and uniform to compare the two different displays." In Unit 3, Lesson 5, Activity 5.2 includes a "support for English Language Learners" and "support for Students with Disabilities" box which provides the teacher with ways to adjust the activity for those groups. In Unit 6, Lesson 8, Activity 8.2, support for Students with Disabilities states, "Representation: Internalize Comprehension. Activate or supply background knowledge. Some students may benefit from additional support to learn how to draw appropriate diagrams. Consider providing access to some blank, or partially completed diagrams to start with." In Unit 6, Lesson 14, there are supports for English Language Learners for Activities 14.2, 14.3, and 14.4 and supports for Students with Disabilities for activities 14.2 and 14.4. In Unit 7, Lesson 1, Activity 2, a routine is explained for a teacher to allow an ELL student to see other groups' "frames" to compare. Guidance suggests to give the student quiet time to think, having them vocalize comparisons and contrasts.
6. QUALITY OF ASSESSMENTS:	**Required**	**Yes**	Multiple assessment opportunities are embedded into content materials and

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Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed grade-specific Louisiana Student Standards for Mathematics. ☒ Yes ☐ No	**6a)** Multiple **assessment opportunities** are embedded into content materials and measure student mastery of standards that reflect the balance of the standards as presented in materials.		measure student mastery of standards that reflect the balance of the standards as presented in the materials. For each unit, students complete a pre-unit diagnostic and end-of-unit assessment. These assessments are formal, summative assessments that include a balance of standards from the lesson. Of the 7 units, 5 units have a mid-unit assessment. For example, in Unit 7 End-of-Unit Assessment, Question 2 asks students to "select all equations that are equivalent to x^2+6x=16" which assesses LSSM A.SSE.A2 and A.REI.B.4a. In the Mid-Unit Assessment for Unit 4, students are asked to "Select all statements that are true about the graph and the situation it represents." which assesses LSSM A.REI.D.11 and F.IF.B4. Throughout all lessons, materials include opportunities for teachers to gauge student understanding using formative assessments. For example, in Unit 7, Lesson 2, students are given a movie theater model for revenue and asked, "According to this model, how high would the ticket price have to be for the theater to make $0 in revenue? Explain your reasoning." (LSSM A.REI.B.4).
	Required **6b)** Assessment items include a **combination of tasks** that require students to demonstrate conceptual	**Yes**	Assessment items include a combination of tasks that require students to demonstrate conceptual understanding,

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	understanding, demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a grade/course-appropriate way.		demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. For example, the Unit 5 End-of-Unit Assessment includes the question, "When a child is born, her grandfather decides to put $100 in an account that earns interest. He plans to make no other deposits or withdrawals for 18 years. When the child turns 18 years old, the money in the account will be a birthday gift. The grandfather is choosing between two options: Option 1: An account that grows by 10.5% each year. Option 2: An account that grows by $20 each year. Which option will result in a better 18th birthday gift? Explain your reasoning." (LSSM F.LE.A.3) In the Unit 7 Mid-Unit Assessment, students are asked, "Select all expressions that could be equivalent to x^2 +bx - 36 where b is negative" (LSSM A.SSE.A.2). Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a course-appropriate way. For example, in the End-of-Unit Assessment for Unit 2: Linear Equations, Inequalities and Systems, students answer a multiple choice item about as solution to an inequality, select all that apply that include equations and inequalities that could describe the given situation, choose

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			a graph that represents the solution to a system of inequalities, provide a short answer about a given graph, and answer two open-ended questions about an inequality in a real-world context.
	6c) Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction.	**Yes**	Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction. For example, the Unit 6 End-of-Unit Assessment summary includes a table which states for Problem 6 manual scoring, "Each part of this item is worth 1 point. 1 point for a correct vertex in part a. No partial credit will be awarded by coordinate in part a. 0.5 points for each correct response within part b." Unit 4 Check Your Readiness Assessment Scoring guidance for Problem 3 states, "If most students struggle with this item, plan to make the connection between input-output pairs and points on the graph in the discussion of Lesson 4 Activity 3. Circle a specific input-output pair in the table, write the coordinate pair on the graph, and write down how the output was computed using the equation representing the function." However, the Modeling Rubric found with the Modeling Prompts is not

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			standards-based and contains unmeasurable criteria such as, "the model's implications are clearly stated."
	6d) Materials provide 2-3 **comprehensive assessments** (interims/benchmarks) that measure student learning up to the point of administration.	**No**	Materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration. All seven units include an End-of-Unit Assessment which assesses student mastery of the standards which are taught within the unit.
7. ADDITIONAL INDICATORS OF QUALITY: Materials are well organized and provide teacher guidance for units and lessons. Materials provide timely supports to target specific skills/concepts to address students' unfinished learning in order to access grade-level work. ☒ Yes ☐ No	**Required** **7a)** The content can be **reasonably completed** within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take.	**Yes**	The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take. The Algebra I Unit Sequence and Pacing chart includes the number of required lessons, optional lessons, and assessments for each unit. For example, the Sequence and Pacing Chart states Unit 4 has 17 required lessons, 1 optional lesson, and 3 assessments. Materials also denote the amount of time segments of the lessons should take. For example, in Unit 5, Lesson 4, the materials state "Pacing: 5 minutes for warm-up activity and synthesis" and Activity 4.2 should should take "15 minutes for entire activity and synthesis."

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	Required **7b)** The materials are **easy to use and well organized** for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning and instructional delivery, lesson flow, questions to help prompt student thinking, and expected student outcomes.	**Yes**	The materials are easy to use and well organized for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning, instructional delivery, lesson flow, questions to help prompt student thinking, and expected student outcomes. Each lesson includes tabs for the Lesson Plan, Additional Materials, and About this Lesson. The About this Lesson tab includes the lesson overview, learning goals, learning targets, required materials, and standards. Each Lesson Plan tab contains cards which feature a sidebar with teaching notes. The teaching notes include pacing, activity narrative, support for special populations, student responses, and anticipated misconceptions. Teachers also have access to all materials in printable format. The teaching notes also provide hyperlinks to any needed materials or instructional routines. For example, Unit 4, Lesson 10, Card 7 includes links to a card sort and blackline master of the pre-printed cards. The teaching notes on Card 7 also include a link to Discussion Supports for the teacher. The Unit 7 Unit at-a-glance includes directions for the teacher to use the modeling prompt "Planning a Concert" after Lesson 2 and

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			the Mid-unit assessment to be given after Lesson 10.
	Required **7c)** Materials include unit and lesson **study tools for teachers**, including, but not limited to, an explanation of the mathematics of each unit and mathematical point of each lesson as it relates to the organizing concepts of the unit and discussion on student ways of thinking and anticipating a variety of student responses.	**Yes**	Materials include unit and lesson study tools for teachers. Materials provide an overview of the mathematics in each unit and how it relates to prior and future units in the Unit Overview provided in the teacher materials. The scope and sequence details how long each unit and lesson should take and also provides a chart on unit dependency. Instructional routines used throughout the material are described in the Curriculum Guide. In each lesson, the About this Lesson tab provides teachers an overview of the lesson, Learning Goals, Learning Targets, Glossary Entries, and Standards. Each Lesson contains instructions for each activity, student responses, activity synthesis, and anticipated misconceptions. The activity synthesis provides guiding questions that prompt student thinking and discussion of desired mathematical behaviors. In the Course Guide, teachers can read a narrative explaining the organization of units and where connections should occur. Other guiding documents include teacher support for Design Principles, What is a "Problem-based Curriculum," A Typical IM Lesson, How to Use the Materials, Mathematical Modeling

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			Prompts, Information for Families, Supporting English-Language Learners, Supporting Students with Disabilities, Diagnostic Assessments, Cool Downs, Summative Assessments, and Screencast Tutorials. Prompts are provided throughout the lessons to guide teachers in instruction. For example, in Unit 3, Lesson 4, the student misconceptions are "Students may struggle with estimating a slope when the scale on the x and y axes are different. Ask students to find the coordinates for a couple of points on or near the line and find the slope between those points." In Unit 5, Lesson 2, teachers can access lesson notes that give directions, explanations, and discussion prompts for every activity, such as guiding discussion questions for students comparing and contrasting tables in Activity 2. In Unit 5, Lesson 14, directions are provided for the teacher to guide the activity, "Select previously identified students to share their expressions for each problem, in the same sequence as shown in the Activity Narrative. Help students make the connections between the different forms, clarifying them in terms of properties of operations."
	7d) Materials **identify prerequisite skills and concepts** for the major work of the grade/course, connected to the current on-grade/course-level work.	**Yes**	Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-

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			course-level work. Each unit includes a Check Your Readiness Assessment which assesses targeted pre-requisite skills prior to beginning on-level coursework. The Check Your Readiness Assessment Planning Table for each unit includes the problem number, the pre-requisite standard addressed in the problem, the lesson in which the standard would first be needed, and suggestions for what to do if students struggle. For example, Unit 3 Planning Table describes how Question 3 assesses LSSM 8.SP.A.1 which is first encountered in Lesson 4. In the Unit 5 Planning Table, Question 9 addresses LSSM F.IF.A.2 which is first encountered in Lesson 9 of the unit. A suggestion is provided if students struggle with Question 9 which states, "Plan to use Lesson 9 Activity 2 to show that f(9) represents an output and since this is a function of time f(t), then t is the input. It is important to help students interpret correctly that t is time since 1977, very similar to this item (time since 8 a.m.)."
	7e) Materials provide guidance to help teachers **identify students** who need prerequisite work to engage successfully in core instruction, on-grade/course-level work.	**Yes**	Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. Each unit includes a Check Your Readiness assessment which includes pre-requisite standards which should have been

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			mastered prior to engaging with the on-level content. For example, students graph two equations on a coordinate plane (LSSM 8.EE.B) which is a precursor to LSSM A.REI.C.6 in Card 5 of the Unit 2 Check Your Readiness assessment. Students complete the input-output table for the function machine (LSSM 8.F.A.1) which leads to LSSM F.IF.A.1 in Unit 4 Check Your Readiness Assessment Question 2. The scoring guidance for Question 2 also states, "If most students struggle with this item, plan to make the connection to function machines in the discussion of Lesson 1 Activity 1. Draw a function machine that has 'number of bagels' as input, 'find the best price' as the rule for the function, and 'best price' as the output."
	7f) Materials provide **targeted, aligned, prerequisite work** for the major work of the grade/course, directly connected to specific lessons and units in the curriculum.	**Yes**	Materials provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. The materials include Algebra I Supports material which provide targeted and aligned prerequisite work for each lesson in the Algebra I curriculum. The materials are designed to support success in the lesson when encountered prior to the on-course-level lesson. The integration of the Supports for Algebra I "give students the opportunity to access grade-level

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			mathematics in age-appropriate contexts." Each lesson is associated with a lesson in the Algebra I course with the "intention that students experience each Extra Support lesson before its associated Algebra I lesson. The Extra support lesson helps students learn or remember a skill or concept that is needed to access and find success with the associated Algebra I lesson." For example, Unit 1, Extra Support Lesson 1 states that "the mathematical purpose of this lesson is for students to remember how to create a box plot, and how to interpret data from an already constructed box plot. The work of this lesson connects to previous work done in Grade 6, when students learned how to construct and interpret box plots. In the associated lesson, students collect data that will be displayed in a box plot." The lesson builds upon LSSM 6.SP.B.4, while also addressing LSSM 2.NBT.B.5, and builds towards LSSM S.ID.A.1. Additionally, each unit includes a tab titled "Support for Distance and Unfinished Learning" which includes Adaptation packs for unfinished learning. Adaptation packs include links to pre-requisite lessons and suggestions on lessons to add and lessons to remove or modify. For example, the Adaptation Pack for Unit 3 includes three lessons to add as

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			well as 4 lessons to remove or modify depending on student need based off of the Algebra I Unit 3 Check Your Readiness Assessment.
	7g) Materials provide **clear guidance and support** for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.	**Yes**	Materials provide clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work. The Adaptation Packs include clear guidance for teachers for modifying or adapting lessons in order to address unfinished learning. Initial guidance for teachers is provided that includes essential prior concepts to engage with for the unit and a brief narrative approach. The Adaptation Pack guidance includes a table that lists Lessons to Add and Lessons to Remove or Modify. A modified plan for the unit is also provided which includes specific adjustments for each lesson. For example, the Adaptation Pack for Unit 2 includes "Check Your Readiness modified plan - Use the A1.2 Check Your Readiness Assessment to determine student needs for incorporating prior content. This modified unit plan is provided to show how the recommended lesson additions could be blended into the unit to provide review as it is needed." Unit 4 Adaptation pack states "Combine 8.4.3 and 4, particularly Activity 3 in Lesson 3 and

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			Activities 2 and 3 in Lesson 4. Focus on the idea of using the same operation with the expressions on each side of an equation or changing the form of one of the expressions through combining like terms, applying the distributive property, and similar operations." Although the materials provide the Algebra I Supports material, there is no connection between the Check Your Readiness Assessments (which assess the pre-requisite standards needed to access the on-course level content for the lesson) and the Algebra I Supports materials. The Check Your Readiness Teacher's Guide provides suggestions within the lesson "if most students struggle" with the items, but does not provide guidance on when to use the Algebra I Supports material.

FINAL EVALUATION

Tier 1 ratings receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a "No" 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-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of the time to the major work of the grade. Materials spend the appropriate amount

[4] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier I or Tier II rating.

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			of time on course-level work, while assessing course-level standards.
	2. Consistent, Coherent Content	**Yes**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. The problems and activities connect two or more clusters in a domain and/or two or more domains in the course level where these connections are natural and important.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the standards and help students meet all of the standards' rigorous expectations. In addition, the materials are designed so that students attain the fluencies and procedural skills required and spend sufficient time working with conceptual understanding and engaging applications.
	4. Focus and Coherence via Practice Standards	**Yes**	The materials address the practice standards in ways that enrich the content standards of the course. Materials attend to the full meaning of each practice standard. Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key course-level mathematics that is detailed in the content standards. Materials explicitly attend to the specialized language of mathematics. However, materials do not include teacher-directed materials that explain the role of the

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			practice standards in the classroom and in students' mathematical development.
II: Additional Alignment Criteria and Indicators of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics across domains and clusters and across grades/courses, staying consistent with the progressions within the standards. Materials provide all students extensive work with course-level problems. Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. In the materials, students are asked to produce answers in a variety of ways. Materials include support for English Language Learners and other special populations that is thoughtful and helps those students meet the same standards as all other students.
	6. Quality of Assessments	**Yes**	Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed grade-specific Louisiana Student Standards for Mathematics. However, materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration.

[5] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier I rating.

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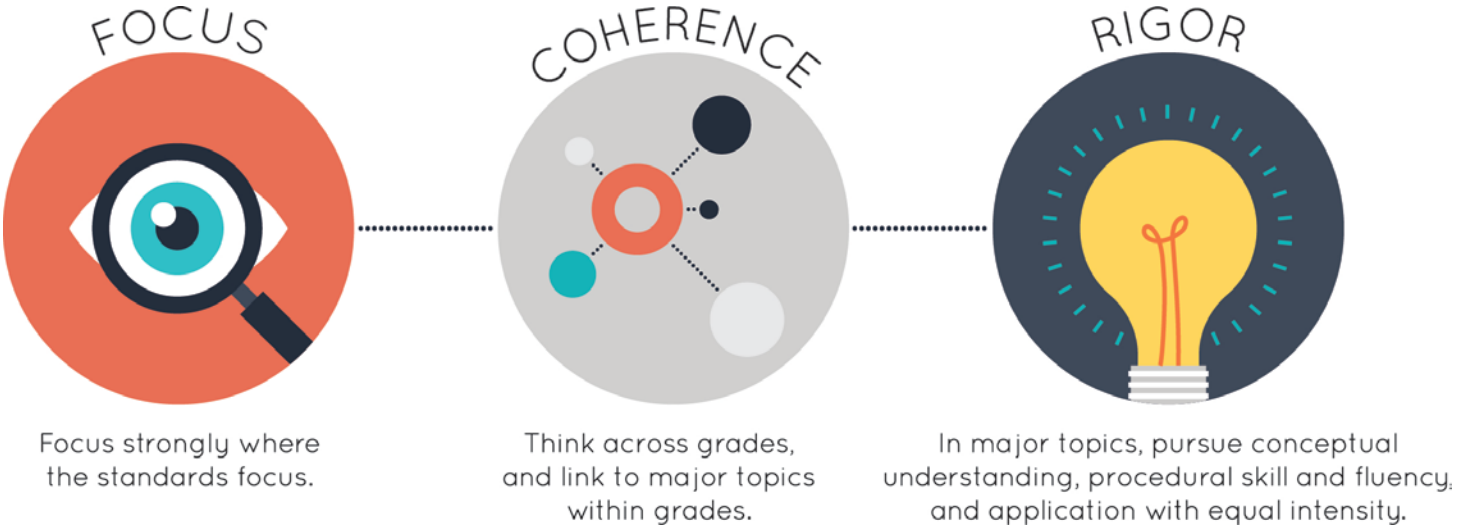
	7. Additional Indicators of Quality	**Yes**	Materials are well organized and provide teacher guidance for units and lessons. The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials are easy to use and well organized for students and teachers. Materials include unit and lesson study tools for teachers. Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-course-level work. Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. Materials provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. Materials provide clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Strong mathematics instruction contains the following elements:



Title: **Illustrative Mathematics**

Grade/Course: **Geometry**

Publisher: **Imagine Learning (formerly LearnZillion)**

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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 and Coherence via Practice Standards (Non-negotiable)	
5. Alignment Criteria for Standards for Mathematical Content	
6. Alignment Criteria for Standards for Mathematical Practice	
7. Indicators of Quality	

To evaluate instructional materials for alignment with the standards and determine tiered rating, begin with **Section I: Non-negotiable Criteria**.

- Review the **required**[1] Indicators of Superior Quality for each **Non-negotiable** criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, materials receive a "Yes" for that **Non-negotiable** Criterion.
- If there is a "No" for any of the **required** Indicators of Superior Quality, materials receive a "No" for that **Non-negotiable** Criterion.
- Materials must meet **Non-negotiable** Criterion 1 and 2 for the review to continue to **Non-negotiable** Criteria 3 and 4. Materials must meet all of the **Non-negotiable** Criteria 1-4 in order for the review to continue to Section II.
- If materials receive a "No" for any **Non-negotiable** Criterion, a rating of Tier 3 is assigned, and the review does not continue.

If all Non-negotiable Criteria are met, then continue to **Section II: Additional Criteria of Superior Quality.**

- Review the **required** Indicators of Superior Quality for each criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, then the materials receive a "Yes" for the additional criteria.
- If there is a "No" for any **required** Indicator of Superior Quality, then the materials receive a "No" for the additional criteria.

Tier 1 ratings receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a "No" for at least one of the Non-negotiable Criteria.

[1] **Required Indicators of Superior Quality** are labeled "**Required**" and shaded yellow. Remaining indicators that are shaded white are included to provide additional information to aid in material selection and do not affect tiered rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Section I: Non-negotiable Criteria of Superior Quality: Materials must meet Non-negotiable Criteria 1 and 2 for the review to continue to Non-negotiable Criteria 3 and 4. Materials must meet all of the Non-negotiable Criteria 1-4 in order for the review to continue to Section II.			
Non-negotiable **1. FOCUS ON MAJOR WORK[2]:** Students and teachers using the materials as designed devote the large majority[3] of time to the major work of the grade/course. ☒ Yes ☐ No	**Required** **1a)** Materials devote the **majority** of class time to the major work of each grade/course.	**Yes**	Materials devote a majority of time to the major work of the grade. When including the lessons noted by the publisher as optional and the eight modeling prompts that address the major work of the grade, 65% of the 124 lessons are devoted to major work of the grade. Specifically, 45% of the lessons focus on major standards alone, 20% of the lessons focus on a combination of major and supporting/additional standards, and 35% of the lessons focus on additional and/or supporting standards.
	Required **1b)** Instructional materials, including assessments, spend minimal time on content outside of the appropriate grade/course **during core math instruction**. Content beyond grade/course-level should be clearly labeled as optional.	**Yes**	Materials spend the appropriate amount of time on course-level work, while assessing course-level standards. There are no chapter tests, unit tests, or other assessments that make students or teachers responsible for any topics before the course in which they are introduced. A minimum amount of previous content is used to scaffold instruction. Mid- and end-of-unit assessments align to appropriate on-level standards and assess standards taught within the lessons unit. For example, Unit 2, End-of-Unit Assessment, Items 1 and 6 align to major LSSM G-CO.C.11. This standard is addressed in

[2] For more on the major work of the grade, see Focus by Grade Level.
[3] 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
			Unit 2, Lessons 4, 6, 7, and 9. In addition, lessons including standards from previous grades to scaffold to course-level standards are clearly marked. For example, in Unit 1, Lesson 9, Activity 9.2, students analyze a model to determine which store is most responsible for a delivery location using perpendicular bisectors (LSSM G.CO.D.13). In the questions accompanying the activity, students are asked to analyze the accuracy of a model connecting previously learned Algebra I skills (LSSM N.Q.A.3). Also, in Unit 5, Lesson 4, Activity 4.2, students complete a table analyzing expressions and factors used (LSSM A.SSE.A.1.a) to develop a pattern relating scale factor and area (LSSM G.SRT.A.1.b).
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 connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Multiple lessons introduce supporting content within the context of major content using appropriate connections. Materials are coherent and consistent with the standards. For example, in Unit 3, Lesson 3, Activity 3.3, groups of students are given different scale factors to dilate a quadrilateral (supporting LSSM G.CO.A.2). Students then fill in a table to analyze side lengths of the pre-image versus image of the dilation (major LSSM G.SRT.A.1.b). Also, in Unit 6, Lesson 4, Activity 4.2, students analyze a given graph of a circle

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			to determine if certain points are on the circle. Students must understand the definition of a point and circle (supporting LSSM G.CO.A.1) and understand how to verify if a point is on the circle algebraically (major LSSM G.GPE.B.4).
	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 connect two or more clusters in a domain and/or two or more domains in the grade level where these connections are natural and important. Materials are coherent and consistent with multiple opportunities for students to engage in problems and activities involving two or more clusters in a domain, or two or more domains in a course. For example, in Unit 5, Lesson 14, students calculate volumes of pyramids and cones and draw and label a pyramid for an ice sculpture. These two tasks address and connect LSSM G.MG.3 and G.GMD.3 of the Geometric Measurement and Dimension (G-GMD) and Modeling with Geometry (G-GM) domains. Also, in Unit 4, Lesson 10, Activity 10.2 students make informal arguments relating the perimeter of an inscribed polygon to the circumference of the circle it is inscribed in (LSSM G.GMD.A.1). In order to do so, students must use trigonometric ratios to solve for missing side lengths of the triangle inside the polygons (cluster G.SRT.C). The activity connects the Geometric Measurement and Dimensions (G-GMD) and the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Similarity, Right Triangles, and Trigonometric (G-SRT) domains.
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 featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials develop conceptual understanding of key mathematical concepts. Throughout the materials, standards written at a conceptual level of rigor are addressed in a manner that builds conceptual understanding. Lessons have built in activities that develop conceptual understanding through discussion prompts and scaffolding questions to build students' understanding. Several lessons require students to explain how they arrived at a solution or their rationale for using a certain method. For example, in Unit 3, Lesson 8, Activity 8.3, students prove a variety of statements including, "All circles are similar" (LSSM G.C.A.1). In Unit 7, Lesson 2, Activity 2.2, students use an applet to "Make a conjecture about the relationship between an inscribed angle and the central angle that defines the same arc." (LSSM G.C.A.2) In Unit 8, Lesson 8, Activity 8.2, students answer questions such as "If Event A is 'the card is black' and Event B is 'the card is a king,' does the equation hold? Explain or show your reasoning. If Event A is 'the card is a face card' and Event B is 'the card is a spade,' does the equation hold? Explain or show your reasoning." (LSSM S.CP.A.3).
	Required	**Yes**	Materials are designed so that students attain the fluencies and procedural skills

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	3b) ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students **attain the fluencies and procedural skills** required by the content 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.		required by the standards. The materials provide sufficient practice for standards which are written at a procedural level. For example, in Unit 1, Lesson 4, Activity 4.3, students "Use straightedge and compass moves to construct at least 2 equilateral triangles of different sizes" (LSSM G.CO.D.13). In Unit 6, Lesson 10, Activity 10.3, students graph lines on a coordinate plane and prove that those lines form a parallelogram (LSSM G.GPE.B.4). In Unit 6, Lesson 6, Activity 6.2, the teacher guide states, "In this activity, students are introduced to completing the square for an equation of a circle. They look at a pre-written version of the first few steps, analyzing what was done and why. Then, they finish the process using skills from previous activities and determine the center and radius of the circle" (LSSM G.GPE.A.1).
	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 are designed so that students spend sufficient time working with engaging applications. For standards that require application as a type of rigor, activities addressing those standards include contextual problems. For example, in Unit 4, Lesson 10, Activity 10.3, students use right triangles to answer "An airplane travels 150 miles horizontally during a decrease of 35,000 feet vertically. What is the angle of descent? How long is the plane's path?" (LSSM G.SRT.C.8) In Unit 5, Lesson 17, Activity 17.2, students answer "The feathers in a pillow have a

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			total mass of 59 grams. The pillow is in the shape of a rectangular prism measuring 51 cm by 66 cm by 7 cm. What is the density of feathers in kilograms per cubic meter?" (LSSM G.MG.A.2) In Unit 4, Lesson 7, Activity 7.3, students use trigonometric ratios to find and compare the heights of buildings (LSSM G.SRT.8).
	Required **3d)** ***Balance:*** The three aspects of **rigor** are not always treated together and are not always treated separately.	**Yes**	It is evident in the materials that the three aspects of rigor are not always treated together and are not always treated separately. Most lessons in the materials provide opportunities for students to demonstrate procedural fluency and conceptual understanding in the context of application to real world situations. The levels of rigor are intertwined throughout the materials. For example, in Unit 4, Lesson 9, Activity 9.3, students calculate the angles (procedural) of a leaning ladder using trigonometry and determine if it is possible to adjust the ladder to a safe angle using specific criteria for a safe angle (application) and explain their thinking (conceptual) (LSSM G.MG.A.3, G.SRT.C.8). In Unit 8, Lesson 9, Activity 9.2, students use two-way frequency tables to calculate probabilities (procedural) for a pharmaceutical company's new medicine (application) and determine if the new medicine has an impact on symptoms (conceptual) (LSSM S.CP.A.4). In Unit 2, Lesson 1, Activity 1.3, students procedurally draw a triangle, find the midpoint, and rotate the triangle, and

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			then conceptually make conjectures and justify them (LSSM G.CO.A.5).
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Aligned materials make meaningful and purposeful connections that promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. Materials address the practice standards in a way to enrich and strengthen the focus of the content standards instead of detracting from them. ☒ Yes ☐ No	**Required** **4a)** Materials attend to the **full meaning of the practice standards**. Each practice standard is connected to grade/course-level content in a meaningful way and is present throughout the year in assignments, activities, and/or problems.	**Yes**	Materials attend to the full meaning of each practice standard. Math practice standards are aligned to standards and are present in various forms to develop habits of mind described in the practice standards. Practice standards are explicitly pointed out in teacher materials. For example, in Unit 1, Lesson 15, students describe the reflections that take a figure onto itself (LSSM G.CO.A.3). The About this Lesson states, "Students make use of structure when they discuss which lines of symmetry apply to a type of shape generally, rather than limiting their thinking to a given example" (MP.7). In Unit 3, Lesson 15, students engage in an Info Gap routine. The structure of this routine requires students to make sense of problems (MP.1) by determining what information is necessary and then ask for information needed to solve it. Students then explain how they are using the information to solve the problem, and then both students solve the problem independently before coming together to discuss the problem. For example, in Activity 15.2, one problem card states, "Find the lengths of sides XY, PR, and QR. Do not round." The Data Card provides different pieces of data that may or may not be used to solve the problem (LSSM G.SRT.B.5). In Unit 6, Lesson 4, students repeatedly test whether points are on a

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			circle by finding the distance between the points and the circle's center (LSSM G.CO.A.1). The About this Lesson states, "As students carry out their testing, they look for and express regularity in repeated reasoning (MP.8), eventually writing a generalized equation for a circle." In Unit 7, Lesson 3, students use the relationship between tangent lines and radii to calculate angle measures and prove geometric theorems. The About this Lesson states, "Students use these findings to show that an angle circumscribed about a circle is supplementary to the central angle defined by the points where the angle is tangent to the circle. As students write an explanation of this property, they are reasoning abstractly and quantitatively (MP.2)."
	Required **4b)** Materials provide sufficient opportunities for students to **construct viable arguments and critique the arguments of others** concerning key grade/course-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 course-level mathematics that is detailed in the content standards. Throughout the course, students critique the reasoning of other students. Students often construct viable arguments to explain their reasoning. For example, in Unit 6, Lesson 11, students prove that the slopes of perpendicular lines are opposite reciprocals and use slopes of perpendicular lines to solve problems. During the lesson, students construct a viable argument by proving their

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			conjecture is true for all lines (LSSM G.GPE.B.5). Specifically, in Activity 11.3, it states "Students use transformation arguments to prove that the slopes of perpendicular lines that pass through the origin are opposite reciprocals. The proof is extended to all pairs of non-vertical and non-horizontal perpendicular lines in the whole class synthesis." In Unit 8, Lesson 6, students use the addition rule to find probabilities (LSSM S.CP.B.7). In the warm up activity, a table is displayed that includes information about people at a neighborhood park. The first portion of the problem states, "Andre says the number of people wearing sneakers or wearing a hat is 21, because there are a total of 10 people wearing a hat and a total of 11 people wearing sneakers. Is Andre correct? Explain your reasoning." Students respond by identifying the error and constructing a viable argument as they explain the correct reasoning.
	Required **4c)** Materials explicitly attend to the **specialized language** of mathematics.	**Yes**	Materials explicitly attend to the specialized language of mathematics. Materials use accurate mathematical terminology and point out vocabulary throughout the material. For example, in Unit 3, Lesson 1, students dilate a figure given a scale factor and a center. The About this Lesson states, "When students are drawing a dilation they must both measure precisely and pay attention to which of the labelled points is being used as the center" (LSSM G.SRT.A.1). The

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			lesson begins with the definition of scale factor learned in previous grades, as well as important concepts about scale drawings including, “the ratio distance between two points in the original figure to the distance between two corresponding points in the scaled figure is constant” and “the corresponding angles are congruent,” emphasizing the importance of attending to the specialized language of mathematics. In Unit 1, Lesson 2, students follow instructions to create a construction and use precise mathematical language to describe a construction. The About this Lesson states, “The purpose of this lesson is to give students practice writing and following precise instructions with straightedge and compass moves as they create interesting designs… students attend to precision when they refer to figures in their construction using mathematical terms and labeled points.” At the start of the lesson, students engage in a Math Talk routine. Students are shown one problem, then are given a few minutes to think about an answer and strategy. The teacher selects students to share different strategies, recording the various explanations for all students to see. This routine is followed by a whole class discussion. In the first problem, students are shown two circles, followed by four statements. Students explain how each statement is true.

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	4d) There are teacher-directed materials that **explain the role of the practice standards** in the classroom and in students' mathematical development.	**No**	Materials do not include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. The materials do not provide the teacher a full explanation of the purpose and intent of the practice standards, but rather a brief explanation of the math practices for each lesson. The practice standards are identified within the material alongside a brief description of where and how the math practice is addressed within the material. The brief explanations do not provide enough information for the teacher to fully understand the purpose and intent of the standards and how they are developed throughout the course. For example, in Unit 4, Lesson 11, About this Lesson states, "Students should work with their groups to determine what information they need, how they calculated this information in the specific cases, and how they can express those repeated procedures in a generalized formula (MP.8)." In Unit 5, Lesson 10, Activity 10.3 states, "Students have the opportunity to look for and make use of structure (MP.7) as they identify fundamental characteristics of these solids regardless of their obliqueness or cross-sectional shape." In Unit 5, Lesson 16, Activity 16.2 states, "Students analyze the relationship between the dimensions and the surface area of a solid with fixed volume. As students identify patterns in

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			the results of their classmates' calculations, they are making sense of the problem and persevering to solve it (MP.1)."
Section II: Additional Alignment Criteria and Indicators of Superior Quality			
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 grade/course-level problems.	**Yes**	Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified, and lessons which only address previous grade level standards are identified as optional. Each lesson includes 4-5 activities that give students rich tasks and various stimuli to engage with thorough discussion prompts and related questions to answer. Each lesson then includes 4-10 practice problems (some problems have multiple parts within them), some directly pertaining to the lesson and others being spiral review. For example, in Unit 2, Lesson 6, students apply the Side-Angle-Side Triangle Congruence Theorem to prove the base angles of an isosceles triangle are congruent (LSSM G.CO.B.8, G.CO.C.10). After completing the lesson, students complete the Practice portion of the lesson that includes 6 single and multi-part problems. Students read the proof and find the mistake. In Unit 5, Lesson 9, students use informal arguments to compare the volume of a cylinder to the volume of a prism that has an equal height and area of its base. Students apply cylinder volume calculations to a solid of

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			rotation (LSSM GDM.A.1, A.3, & B.4). After completing the lesson, students complete the practice portion of the lesson that includes 7 problems. Students solve various problems addressing these course-level standards.
	Required **5b)** Materials **relate grade/course-level concepts explicitly to prior knowledge** from earlier grades and courses. The materials are designed so that prior knowledge is extended to accommodate the new knowledge, building to core instruction, on grade/course-level work. Lessons are appropriately **structured and scaffolded** to support student mastery.	**Yes**	Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Materials connect prior knowledge from earlier grades in a purposeful manner. The curriculum weaves prior knowledge students should have from previous courses into lessons for this course so that connections can be made and knowledge gained in earlier courses can be extended upon. The teacher guide provides the standards that each lesson builds upon, the standard that each lesson is addressing, as well as standards the lesson is building towards. At times, the warm up activities are used to activate prior knowledge in order to access current course-level content. For example, in Unit 1, Lesson 19, students create conjectures about angle relationships and prove them using what they know about rigid transformations. Students begin the lesson with a warm-up activity that involves determining the angle measures in pairs of intersecting lines and for pairs of angles that make a straight angle (LSSM 7.G.B.5). The teacher guide states that “These understandings help students develop fluency and will be helpful later in this lesson when students

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			will need to be able to explain why vertical angles are congruent" (LSSM G.CO.C.9). In Unit 3, students use dilations and rigid transformations to justify triangle similarity theorems. Students build on previously learned concepts of congruence and rigid motions. In Lesson 1, students "review the definition of scale factor by comparing an example and a non-example of a scaled image" (building on LSSM 7.G.A.1, 8.G.A.3), followed by activities in which students practice dilating points and figures (addressing LSSM G.CO.A.2, G.SRT.A.1). The warm up activity is used to remind students how measurements in a scaled copy of a figure relate to measurements in the original figure. In the remaining activities, students practice dilating points and figures.
	Required **5c)** There is **variety** in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade/course-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	In the materials, students are asked to produce answers in a variety of ways. Students produce answers, solutions, arguments, explanations, diagrams, and various mathematical models. For example, in Unit 1, Lesson 12, Practice, students draw a translated quadrilateral in Problem 2, give two possible locations of a point based on certain criteria in Problem 5, and provide a numerical response as they find the measure of an angle in Problem 7. In Unit 3, Lesson 11, Activity 11.2, students answer the following question: "Does a line parallel to one side of a triangle always create similar

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			triangles?" In their response, students first create several examples, then find any additional information and label it on the diagram, and then write an argument to support their conjecture. In Unit 6, Lesson 15, Activity 15.2, students find points on a line, calculate solutions using a given formula, answer a constructed response question, and then write an expression.
	5d) Support for **English Language Learners and other special populations** is provided. The language in which problems are posed is not an obstacle to understanding the content, and if it is, additional supports (suggestions for modifications, "vocabulary to preview", etc.,) are included.	**Yes**	Materials include support for English Language Learners and other special populations that is thoughtful and helps those students meet the same standards as all other students. Materials often provide support for English Language Learners and other special populations within the lesson materials; however, these supports are not provided for every lesson. For example, in Unit 6, Lesson 13, Activity 13.2, students "solve a system consisting of a linear equation and a quadratic equation in 2 variables by estimating the solutions on a graph, and then verifying the solutions algebraically." Support for Students with Disabilities is provided which states, "Speaking: MLR8 Discussion Supports. Use this routine to support whole-class discussion. As students share their strategies for verifying that the points are on both the line and the circle, ask students to restate what they heard using precise mathematical language. Consider providing students time to restate what they hear to a partner before selecting

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			one or two students to share with the class. Ask the original speaker if their peer was accurately able to restate their thinking. Call students' attention to any words or phrases that helped to clarify the original explanation, such as, 'each point is exactly five units away from the center (3,2).' This provides more students with an opportunity to produce language as they interpret the reasoning of others. Design Principle(s): Support sense-making." In Unit 8, Lesson 8, Activity 8.1, "the mathematical purpose of this activity is to explore, formally define, and begin to develop an understanding of conditional probability." Support for Students with Disabilities is provided which states, "Representation: Internalize Comprehension. Use virtual or concrete manipulatives to connect symbols to concrete objects or values. Provide students with a standard deck of cards to see the different suits and the cards that are red and black. Allow groups of students to manipulate the cards to illustrate the probabilities in the problems. Supports accessibility for: Visual-spatial processing; Conceptual processing."
6. QUALITY OF ASSESSMENTS: Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can	**Required** **6a)** Multiple **assessment opportunities** are embedded into content materials and measure student mastery of standards that reflect the balance of the standards as presented in materials.	**Yes**	Multiple assessment opportunities are embedded into content materials and measure student mastery of standards that reflect the balance of the standards as presented in materials. For each unit, students complete a pre-unit diagnostic

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independently demonstrate the assessed grade-specific Louisiana Student Standards for Mathematics. ☒ Yes ☐ No			and end-of-unit assessment. These assessments are formal, summative assessments that include a balance of standards from the lesson. For example, in Unit 6, students work with transformations in the coordinate plane with cluster G.CO.A. The associated End-of-Unit Assessment contains problems assigned to the same cluster. Throughout the lessons, materials offer multiple informal, formative assessments for teachers to determine student understanding and reasoning. For example, in Unit 3, Lesson 4, Activity 4.2, teachers are directed to ask students questions such as "What happens if the line goes through the center of the dilation? How can the definition of dilation help you answer the questions?" to determine their level of understanding of dilations of lines (LSSM G.SRT.A.1).
	Required **6b)** Assessment items include a **combination of tasks** that require students to demonstrate conceptual understanding, demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a grade/course-appropriate way.	**Yes**	Assessment items include a combination of tasks that require students to demonstrate conceptual understanding, demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. For example, in the End-of-Unit Assessment for Unit 4, Problem 4, students use procedural skill to determine the side length of a right triangle using a trigonometric function (LSSM G.SRT.C.8). In the End-of-Unit Assessment for Unit 6, Problem 3, students use procedural skill to determine if certain points lie on a circle

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			(LSSM G.GPE.B.4). In the End-of-Unit Assessment for Unit 8, Problem 4, students "find the probability that the selected student in the science class is an English major" in real world context (LSSM S.CP.A.1). Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a course-appropriate way. For example, in the End-of-Unit Assessment for Unit 1: Constructions and Rigid Transformations, students select all figures that match a description, select the correct constructions, determine the image of a segment, create equations, describe a sequence, and explain the reasoning for a proof.
	6c) Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction.	**Yes**	Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction. The "View scoring guidance" link in the Teaching notes for each assessment item provides an item analysis (often with sample responses) and instructional guidance if most students perform poorly on an item. For example, in Unit 5, Pre-Unit Diagnostic "Check Your Readiness" Assessment Scoring Guidance for 2, states, "In previous grades, students worked with area formulas for circles, triangles, and quadrilaterals. Calculating areas of such

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			figures is a prerequisite skill for finding volumes of geometric solids. If most students struggle with this item, plan to review this problem during the synthesis of the Lesson 9 warm-up." However, the Modeling Rubric found with the Modeling Prompts is not standards-based and contains unmeasurable criteria such as, "the reader can easily understand the reasoning leading to the solution."
	6d) Materials provide 2-3 **comprehensive assessments** (interims/benchmarks) that measure student learning up to the point of administration.	**No**	Materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration. Each unit features a "Check Your Readiness" and End-Of-Unit Assessment. These assessments only include content from the unit in which they are given and are not comprehensive.
7. ADDITIONAL INDICATORS OF QUALITY: Materials are well organized and provide teacher guidance for units and lessons. Materials provide timely supports to target specific skills/concepts to address students' unfinished learning in order to access grade-level work. ☒ Yes ☐ No	**Required** **7a)** The content can be **reasonably completed** within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take.	**Yes**	The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take. The Geometry Pacing Guide includes the number of required lessons, optional lessons, and assessments for each unit. Each lesson provides an estimated number of minutes for each task in the teaching notes. For example, the Unit 2, Lesson 2, Warm-Up states, "Pacing: 5 minutes for warm-up activity and synthesis." Unit 6, Lesson 10, Activity 10.3

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			states, “Pacing: 15 minutes for entire activity and synthesis.”
	Required **7b)** The materials are **easy to use and well organized** for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning and instructional delivery, lesson flow, questions to help prompt student thinking, and expected student outcomes.	**Yes**	The materials are easy to use and well organized for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning and instructional delivery, lesson flow, questions to help prompt student thinking, and expected student outcomes. Each lesson includes tabs for the Lesson Plan, Additional Materials, and About this Lesson. The About this Lesson tab includes the lesson overview, learning goals, learning targets, required materials, and standards. Each Lesson Plan tab contains cards which feature a sidebar with teaching notes. The teaching notes include pacing, activity narrative, support for special populations, student responses, and anticipated misconceptions. Teachers also have access to all materials in printable format. The teaching notes also provide hyperlinks to any needed materials or instructional routines. For example, in Unit 7, Lesson 9, Activity 9.2, the Activity Synthesis provides the following questions and anticipated responses: “Here are some questions for discussion: ‘What fraction of the circle is the sector?’ (It is 18 of the circle.) ‘What if the radius of the circle were increased from 16 inches to 25 inches, but the central angle of the sector stayed the same. How would this fraction

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			change?' (It would not change. The sector would still be 18 of the circle)."
	Required **7c)** Materials include unit and lesson **study tools for teachers**, including, but not limited to, an explanation of the mathematics of each unit and mathematical point of each lesson as it relates to the organizing concepts of the unit and discussion on student ways of thinking and anticipating a variety of student responses.	**Yes**	Materials include unit and lesson study tools for teachers. Materials provide an overview of the mathematics in each Unit and how it relates to prior and future units in the Unit Overview provided in the teacher materials. The scope and sequence details how long each unit and lesson should take and also provides a chart on unit dependency. Instructional routines used throughout the material are described in the Curriculum Guide. In each lesson, the About this Lesson tab provides teachers an overview of the lesson, Learning Goals, Learning Targets, Glossary Entries, and Standards. Each Lesson contains instructions for each activity, student responses, activity synthesis, and anticipated misconceptions. The activity synthesis provides guiding questions that prompt student thinking and discussion of desired mathematical behaviors. In the Course Guide, teachers can read a narrative explaining the organization of units and where connections should occur. Other guiding documents include teacher support for Design Principles, What is a "Problem-based Curriculum," A Typical IM Lesson, How to Use the Materials, Mathematical Modeling Prompts, Information for Families, Supporting English-Language Learners, Supporting Students with Disabilities, Diagnostic Assessments, Cool Downs,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Summative Assessments, and Screencast Tutorials. Prompts are provided throughout the lessons to guide teachers in instruction. For example, in Unit 4, Lesson 5, Activity 5.2 provides Anticipated Misconceptions which states, "If students are struggling to make reasonable estimates for angle measures, refer them to their right triangle table." In Activity 5.3, teachers are provided guidance that states, "Monitor for students who: use the information from the right triangle table as constants of proportionality and work with y=kx relationships; use the information from the right triangle table as ratios and find a scale factor that scales them up to the size of the given triangle; use the information from the right triangle table as values, and guess and check to find a side length that results in the right value."
	7d) Materials **identify prerequisite skills and concepts** for the major work of the grade/course, connected to the current on-grade/course-level work.	**Yes**	Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-course-level work. Each unit includes a Check Your Readiness Assessment which assesses targeted pre-requisite skills prior to beginning on-level coursework. The Check Your Readiness Assessment Planning Table for each unit includes the problem number, the pre-requisite standard addressed in the problem, the lesson in which the standard would first be needed, and suggestions for what to do if students struggle. For example, the Unit 7 Check

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Your Readiness Assessment Planning Table shows that Problem 1 addresses LSSM 7.G.B.4 first addressed in Lesson 8: Arcs and Sectors and that if students struggle, "Plan to review circumference and area calculations prior to Lesson 8." The Unit 4 Check Your Readiness Assessment Planning Table shows that Problem 3 addresses LSSM 8.EE.B.5 first addressed in Lesson 4: Ratios in Right Triangles and that if students struggle, "Plan to make clear the connection between the ratio of side lengths students measure and the value recorded in the right triangle table."
	7e) Materials provide guidance to help teachers **identify students** who need prerequisite work to engage successfully in core instruction, on-grade/course-level work.	**Yes**	Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. Each unit includes a Pre-Unit Diagnostic Assessment, also known as a Check Your Readiness Assessment. The Check Your Readiness Assessment Planning Table often describes to teachers what to do if the majority of students do poorly on an assessment item. For example, in the Unit 5, Check Your Readiness Teacher's Guide, teachers are provided the following instructions for Question 2: "If most students struggle with this item…Plan to spend extra time on the Lesson 9 warm-up discussing strategies for calculating cylinder volumes." In Unit 3, Check Your Readiness Teacher's Guide, teachers are provided the following instructions for

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Question 5: "If most students struggle with this item…Plan to encourage them to write a variety of conjectures rather than focusing on the one with which they are already familiar."
	7f) Materials provide **targeted, aligned, prerequisite work** for the major work of the grade/course, directly connected to specific lessons and units in the curriculum.	**No**	Materials do not provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. Although each unit features a tab titled "Support for Distance and Unfinished Learning" which includes Adaptation packs for unfinished learning, many of the units do not include specific prerequisite lessons for teachers to utilize in order to support students in accessing on-course-level content. For example, the Adaptation Pack for Unit 1, guidance states, "For this unit, there are no lessons that need to be added, because most students have completed the prerequisite lessons in Grade 8 Unit 1. However, some of these lessons might make a nice reference to activate prior knowledge." Similar guidance is provided for Unit 2, 5, 7, and 8. While specific prerequisite lessons are identified in Unit 3 and 6, this guidance is not provided across the majority of the materials.
	7g) Materials provide **clear guidance and support** for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.	**No**	Materials do not provide clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work. Because targeted, aligned, prerequisite work for

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the major work of the course, directly connected to specific lessons and units in the curriculum, was not evidenced in the majority of the materials, clear guidance and support to appropriately address the unfinished learning was not found.
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality. ***Tier 2 ratings*** receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality. ***Tier 3 ratings*** receive a "No" 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-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of the time to the major work of the grade. Materials spend the appropriate amount of time on course-level work, while assessing course-level standards.
	2. Consistent, Coherent Content	**Yes**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. The problems and activities connect two or more clusters in a domain and/or two or more domains in the course level where these connections are natural and important.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the standards and help students meet all of the standards' rigorous expectations. In addition, the materials are designed so that students attain the fluencies and procedural skills required and spend

[4] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier I or Tier II rating.

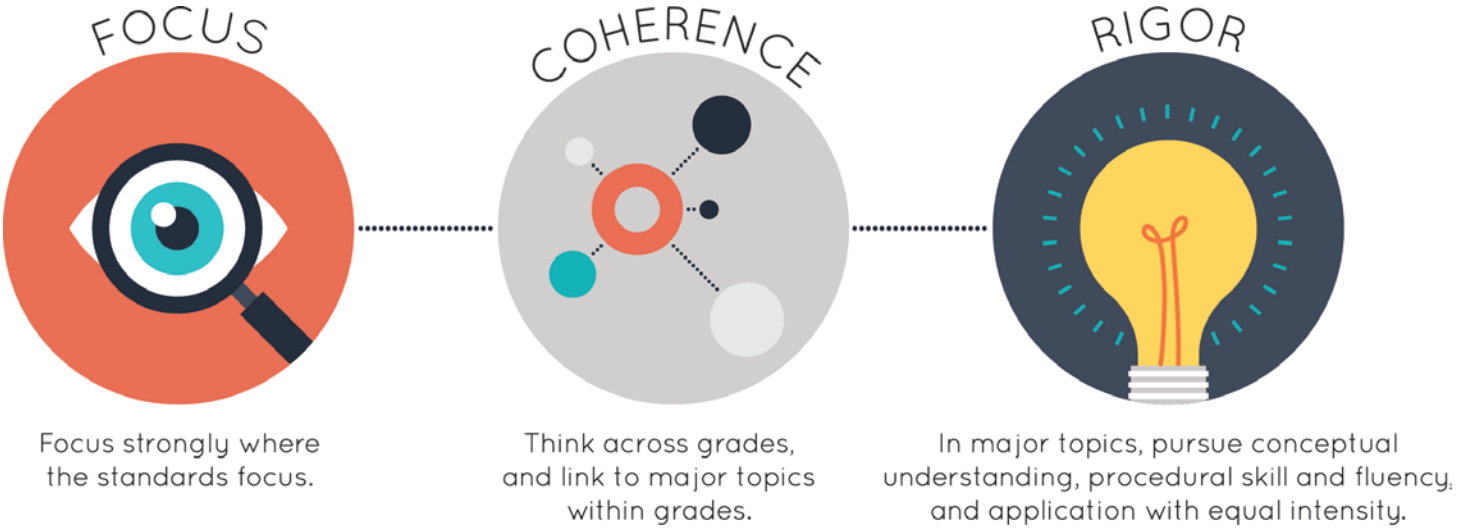
CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			sufficient time working with conceptual understanding and engaging applications.
	4. Focus and Coherence via Practice Standards	**Yes**	The materials address the practice standards in ways that enrich the content standards of the course. Materials attend to the full meaning of each practice standard. Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key course-level mathematics that is detailed in the content standards. Materials explicitly attend to the specialized language of mathematics. However, materials do not include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.
II: Additional Alignment Criteria and Indicators of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics across domains and clusters and across grades/courses, staying consistent with the progressions within the standards. Materials provide all students extensive work with course-level problems. Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. In the materials, students are asked to produce answers in a variety of ways. Materials include support for English Language Learners and other special populations that is thoughtful and helps those

[5] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier I rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students meet the same standards as all other students.
	6. Quality of Assessments	**Yes**	Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed grade-specific Louisiana Student Standards for Mathematics. However, materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration.
	7. Additional Indicators of Quality	**Yes**	Materials are well organized and provide teacher guidance for units and lessons. The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials are easy to use and well organized for students and teachers. Materials include unit and lesson study tools for teachers. Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-course-level work. Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. However, materials do not provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. Materials do not provide

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Strong mathematics instruction contains the following elements:



Title: **Illustrative Mathematics**

Grade/Course: **Algebra II**

Publisher: **Imagine Learning (formerly LearnZillion)**

Copyright: **2019**

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 and Coherence via Practice Standards (Non-negotiable)	
5. Alignment Criteria for Standards for Mathematical Content	
6. Alignment Criteria for Standards for Mathematical Practice	
7. Indicators of Quality	

To evaluate instructional materials for alignment with the standards and determine tiered rating, begin with **Section I: Non-negotiable Criteria**.

- Review the **required**[1] Indicators of Superior Quality for each **Non-negotiable** criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, materials receive a "Yes" for that **Non-negotiable** Criterion.
- If there is a "No" for any of the **required** Indicators of Superior Quality, materials receive a "No" for that **Non-negotiable** Criterion.
- Materials must meet **Non-negotiable** Criterion 1 and 2 for the review to continue to **Non-negotiable** Criteria 3 and 4. Materials must meet all of the **Non-negotiable** Criteria 1-4 in order for the review to continue to Section II.
- If materials receive a "No" for any **Non-negotiable** Criterion, a rating of Tier 3 is assigned, and the review does not continue.

If all Non-negotiable Criteria are met, then continue to **Section II: Additional Criteria of Superior Quality.**

- Review the **required** Indicators of Superior Quality for each criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, then the materials receive a "Yes" for the additional criteria.
- If there is a "No" for any **required** Indicator of Superior Quality, then the materials receive a "No" for the additional criteria.

Tier 1 ratings receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a "No" for at least one of the Non-negotiable Criteria.

[1] **Required Indicators of Superior Quality** are labeled "**Required**" and shaded yellow. Remaining indicators that are shaded white are included to provide additional information to aid in material selection and do not affect tiered rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Section I: Non-negotiable Criteria of Superior Quality: Materials must meet Non-negotiable Criteria 1 and 2 for the review to continue to Non-negotiable Criteria 3 and 4. Materials must meet all of the Non-negotiable Criteria 1-4 in order for the review to continue to Section II.			
Non-negotiable **1. FOCUS ON MAJOR WORK[2]:** Students and teachers using the materials as designed devote the large majority[3] of time to the major work of the grade/course. ☒ Yes ☐ No	**Required** **1a)** Materials devote the **majority** of class time to the major work of each grade/course.	**Yes**	Materials devote a majority of time to the major work of the grade. When including the lessons noted by the publisher as optional, 67% of the 118 lessons are devoted to the major work of the grade. When omitting the lessons marked optional or outside the scope of the LSSM, 66% of the lessons are devoted to major standards of the grade. There are two supporting standards that are not addressed in the curriculum: LSSM F.IF.C.7b and F.IF.C.9.
	Required **1b)** Instructional materials, including assessments, spend minimal time on content outside of the appropriate grade/course **during core math instruction**. Content beyond grade/course-level should be clearly labeled as optional.	**Yes**	Materials spend the appropriate amount of time on course-level work, while assessing course-level standards. There are no chapter tests, unit tests, or other assessments that make students or teachers responsible for any topics before the course in which they are introduced. A minimum amount of previous content is used to scaffold instruction. Mid- and end-of-unit assessments for each unit assess major standards addressed in lessons within those units. For example, in Unit 1, End-of-Unit Assessment, Question 7, students are provided sequence A in a table and sequence B on a coordinate plane. Students write definitions for the

[2] For more on the major work of the grade, see Focus by Grade Level.
[3] 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
			nth term of the sequence (LSSM F.BF.A.2, F.IF.C.9). In Unit 4, End-of-Unit Assessment, Question 5, students solve equations such as $7 \times 10^{n} = 700$ (F.LE.A.4) which is taught in Unit 4, Lesson 14. There are instances where students work outside the scope of the grade on prior content. These lessons are listed as optional and are not distracting to the major work of the grade. For example, in Unit 2, Lesson 4, students add, subtract, and multiply polynomials (LSSM A.APR.A.1). In Unit 2, Lessons 16, students investigate surface area of cylinders (LSSM A.CED.A.4). A minimum amount of previous content is used to scaffold instruction. For example, in Unit 3, Lesson 1, the About this Lesson in the teacher materials states, "This lesson is optional because it revisits below grade-level content. If the pre-unit diagnostic assessment indicates that your students know this material, this lesson may be safely skipped." This lesson reactivates students' prior knowledge needed later in the unit to address rational exponents (LSSM N.RN.A.1).
Non-negotiable **2. CONSISTENT, COHERENT CONTENT** Each course's instructional materials are coherent and consistent with the content in the Standards.	**Required** **2a)** Materials connect **supporting content to major content** in meaningful ways so that focus and coherence are enhanced throughout the year.	**Yes**	Materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Multiple lessons introduce supporting content within the context of major content using appropriate connections. In Unit 2, Lesson 19, students explore the end behavior of rational functions (supporting LSSM S.ID.B.6) by

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
☒ Yes ☐ No			writing functions in two variables which describe a relationship between two quantities (major LSSM F.BF.A.1). In Unit 4, Lesson 3, students determine the value of exponential functions at non-integer number inputs (supporting LSSM F.LE.A.2) using properties of integer exponents (major LSSM N.RN.A.1). Unit 6, Lesson 8, Activity 8.3, states "The purpose of this activity is for students to compare different function types with a focus on periodic and non-periodic functions. The card sort allows students to compare a variety of graphs, helping students to construct their understanding of what the graphs of periodic functions can look like in preparation for future lessons that focus on the graphs of cosine and sine." This lesson connects supporting cluster F.IF.C to major cluster F.IF.B.4.
	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 connect two or more clusters in a domain and/or two or more domains in the grade level where these connections are natural and important. Materials are coherent and consistent with multiple opportunities for students to engage in problems and activities involving two or more clusters in a domain, or two or more domains in a course. For example, Unit 6 Lesson 5, connects two clusters, A. Extend the domain of trigonometric functions using the unit circle, and C. Prove and apply trigonometric identities, within the same domain, Functions: Trigonometric

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Functions (F.TF). In the lesson, students explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers (LSSM F.TF.A.2) and prove the Pythagorean Identity (LSSM F.TF.C.8). Unit 1, Lesson 8 connects the Linear, Quadratic, and Exponential Models (LE) and Building Functions (BF) domains. In the lesson, students construct exponential and linear functions (LSSM F.LE.A.2) to write arithmetic and geometric sequences (LSSM F.BF.A.2). In Unit 7, Lesson 3, Activity 7.2, students identify if a given situation represents an experimental study or an observational study and explain their reasoning (LSSM S.IC.B.3). Discussion questions within the activity lead students to conclude the importance of a random sample (LSSM S.IC.A.1), connecting clusters B (Make inferences and justifying conclusions from sample surveys, experiments, and observational studies) and A (Understand and evaluate the random processes underlying statistical experiments) within the same domain, Statistics and Probability: Making Inferences and Justifying Conclusions (S-IC).
Non-negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous	**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 featuring high-quality conceptual problems and discussion questions.	**Yes**	Materials develop conceptual understanding of key mathematical concepts. Throughout the curriculum, standards written at a conceptual level of rigor are addressed in a manner that builds conceptual understanding. Several lessons

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No			require students to explain how they arrived at a solution or to provide rationale for using a certain method. For example, in Unit 2, Lesson 20, Activity 20.3, students are given instructions to "Revise your equation and then calculate how many of his next consecutive at bats need to be base hits to raise his batting average to .300. Be prepared to explain how you revised your equation and each of your solving steps." (LSSM A.REI.A.1). In Unit 7, Lesson 3, Activity 3.3, students analyze designs for power systems offered by a company for the population and answer questions such as "Which method do you think is best for estimating the mean area for the entire population? Explain your reasoning." (LSSM S.ID.A.4). In Unit 3, Lesson 10, students represent and understand -1 and its multiples (LSSM N.CN.A.1). In Unit 5, Lesson 11, Practice, students sketch functions and show key features (LSSM F.IF.B.4). In Unit 6, Lesson 12, Activity 12.2, Question 1, students are asked to "Complete the table. For each positive angle in the table, add the corresponding point and the segment between it and the origin to the unit circle," and then students answer questions analyzing the table representing trigonometric functions as seen on the unit circle (LSSM F.TF.B.5).
	Required **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students **attain the**	**Yes**	Materials are designed so that students attain the fluencies and procedural skills required by the standards. The materials

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	fluencies and procedural skills required by the content 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.		provide sufficient practice for standards which are written at a procedural level. For example, in Unit 2, Lesson 11, students find intersections of graphs of quadratic and linear functions (LSSM A.REI.C.7). In Unit 3, Lesson 17, Activity 17.3, students solve quadratic equations such as $x^2 - 8x + 13 = 0$ which have complex solutions (LSSM N.CN.C.7). In Unit 2, Lesson 8, students graph polynomial functions (LSSM F.IF.C.7c). In Unit 3, Lesson 18, Activity 18.3, students are given a table with two columns labeled partner A and B, with each row having the same quadratic equation in different forms. Students are told, "For each row, you and your partner will each solve a quadratic equation. You should each get the same answer. If you disagree, work to reach an agreement" LSSM (N.CN.C.7).
	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 are designed so that students spend sufficient time working with engaging applications. For standards that require application as a type of rigor, activities addressing those standards include contextual problems. In Unit 4, Lesson 4, Activity 4.3, students write exponential functions to represent the amount of caffeine left in a body after so many hours and analyze the graphs of those functions (LSSM F.LE.A.2). In Unit 7, Lesson 10, Activity 10.3, students estimate the proportion of flies with genetic mutations in a group after being presented with a scenario that a biologist selects 40

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			flies to sequence at random and finds that 9 of them have the genetic mutation (LSSM S.IC.B.4). In Unit 2, Lesson 20, Activity 20.2, students create an equation to represent the average cost per T-shirt if T-shirts are printed by a particular business (LSSM A.CED.1). In Unit 5, Lesson 8, Activity 8.3, students write a function that describes the relationship between the amount of food and a dog's weight (LSSM F.BF.A.1a). In Unit 6, Lesson 7, Activity 7.2, given a clock face on an unmarked grid, students are asked, "The length of the minute hand on a clock is 5 inches and the center of the clock is at (0,0) on a coordinate plane. Determine the coordinates of the end of the minute hand at the following times. Explain or show your reasoning." (LSSM F.TF.B.5).
	Required **3d)** ***Balance:*** The three aspects of **rigor** are not always treated together and are not always treated separately.	**Yes**	It is evident in the materials that the three aspects of rigor are not always treated together and are not always treated separately. Most lessons in the materials provide opportunities for students to demonstrate procedural fluency and conceptual understanding in the context of application to real world situations. The levels of rigor are intertwined throughout the materials. In Unit 5, Lesson 3, Activity 3.3, students use technology to graph two exponential functions on the same coordinate plane (procedural), analyze Jada and Noah's graphs (conceptual), and explain which graph best fits the data, (LSSM F.BF.A.1 and S.ID.B.6a). In Unit 6,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Lesson 6, Activity 6.2, students analyze (conceptual) Andre's work with the Pythagorean Identity and answer the question "Do you agree with Andre? Explain or show your reasoning." (LSSM F.TF.C.8.) In Unit 4, Lesson 1, Activity 1.2, students reason (conceptual) how to scale a passport image in a photo editor (application) while calculating the scale factor (procedural) (LSSM F.LE.A.2). In Unit 4, Lesson 2, Activity 2.2, students are given the following situation: "The tuition at a college was $30,000 in 2012, $31,200 in 2013, and $32,448 in 2014. The tuition has been increasing by the same percentage since the year 2000." Then students interpret (conceptual) the meaning of 30,000 and 1.04 in a given function (LSSM F.LE.B.5).
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Aligned materials make meaningful and purposeful connections that promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. Materials address the practice standards in a way to enrich and strengthen the focus of the content standards instead of detracting from them. ☒ Yes ☐ No	**Required** **4a)** Materials attend to the **full meaning of the practice standards**. Each practice standard is connected to grade/course-level content in a meaningful way and is present throughout the year in assignments, activities, and/or problems.	**Yes**	Materials attend to the full meaning of each practice standard. Math practice standards are aligned to standards and are present in various forms to develop habits of mind described in the practice standards. Practice standards are explicitly pointed out in teacher materials. For example, Unit 4, Lesson 10, Activity 10.2 states, "This activity extends students' understanding of logarithms to include logarithms in another base. Students analyze patterns in a base 2 logarithm table and notice that it can be interpreted the same way as the base 10 table, except that this time the values in the right column are the exponents in expressions

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			with base 2 (MP.7).” (LSSM F.LE.A.4). The Unit 7, Lesson 2, Warmup states, “This warm-up prompts students to compare four questions. It gives students a reason to use language precisely (MP.6) and provides the opportunity to talk about characteristics of the items in comparison to one another.” (LSSM S.IC.B.3). In Unit 3, Lesson 11, Warm Up, “students have an opportunity to look for repeated reasoning when squaring expressions that involve square roots (MP.8).” (LSSM N.CN.A.1). In Unit 6, Lesson 11, Activity 11.4, students identify intersections of cosine and sine graphs (LSSM F.TF.A.2). Material guidance states that “Students should be encouraged to use their displays of the graphs for these functions and the unit circle and transition between these ways of thinking about trigonometric functions as needed to make sense of the problems (MP.7).” In Unit 5, Lesson 5, Activity 5.2, students participate in a card sort by noticing differences of the graphs of even and odd functions (LSSM F.BF.B3). The teacher is encouraged to ensure student groups are utilizing precise language in their descriptions (MP.6).
	Required **4b)** Materials provide sufficient opportunities for students to **construct viable arguments and critique the arguments of others** concerning key grade/course-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 course-level mathematics that is detailed in the content standards. Throughout the course, students critique the reasoning of other students. Students

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	the standards that explicitly set expectations for multi-step problems.		often construct viable arguments to explain their reasoning. For example, in Unit 2, Lesson 5, Activity 5.3 states, "In this partner activity, students take turns using the structure of equations to match them to either a graph or a description of a graph, building their fluency identifying the horizontal intercepts of a graph of a polynomial from the equation of the polynomial written in factored form. As students trade roles explaining their thinking and listening, they have opportunities to explain their reasoning and critique the reasoning of others (MP.3)." In Unit 1, Lesson 3, Activity 3.2, students answer the question "Elena says that it's not possible to have a sequence of numbers that is *both* arithmetic and geometric. Do you agree with Elena? Explain your reasoning." In Unit 3, Lesson 6, Activity 6.2, students work with square roots (LSSM A.REI.A.2) to critique the reasoning of others. Materials provide Clare's formulated response and state, "How would you answer Clare's question? Give reasons that support your answer." In Unit 7, Lesson 6, Activity 6.1, students examine the area under a normal curve (LSSM S.ID.A.4). Materials instruct teachers to ask questions similar to "Andre said he drew the vertical line x=3.5 and found the area to the left of the line and then doubled it. Will Andre's method work? Explain your reasoning." In Unit 5, Lesson 11, Activity 11.2 students make

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			models to fit data and must explain if the model they produce is a good fit for the model and why or why not (LSSM F.BF.A.1.b).
	Required **4c)** Materials explicitly attend to the **specialized language** of mathematics.	**Yes**	Materials explicitly attend to the specialized language of mathematics. Materials use accurate mathematical terminology and point out vocabulary throughout the material. For example, Unit 2, Lesson 5, About this Lesson states, "This lesson also offers opportunity for students to use mathematical language about the zeros of a function and the intercepts of graphs." In Unit 3, Lesson 11, Activity 11.4, students begin to understand the idea of complex numbers as introduced in the lesson as "When we add a real number and an imaginary number, we get a complex number." In Unit 1, Lesson 6, the About this Lesson provides a definition for arithmetic and geometric sequences. This definition is reinforced throughout the activities of the lesson. In Unit 4, Lesson 14, materials instruct teachers to help students attend to precision by using language related to parameters. In the About this Lesson students are instructed to attend "carefully to the parameters of the equations (MP.6)." In Unit 2, Lesson 10, Activity 10.1, the Notice and Wonder protocol is summarized with the teacher being told, "Tell students that this is an example of multiplicity. The multiplicity of a factor is the number of times the factor

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			occurs when a polynomial is written in factored form."
	4d) There are teacher-directed materials that **explain the role of the practice standards** in the classroom and in students' mathematical development.	**No**	Materials do not include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. The materials do not provide the teacher a full explanation of the purpose and intent of the practice standards, but rather a brief explanation of the math practices for each lesson. The practice standards are identified within the material alongside a brief description of where and how the math practice is addressed within the material. The brief explanations do not provide enough information for the teacher to fully understand the purpose and intent of the standards and how they are developed throughout the course. For example, the Unit 4, Lesson 3, About this Lesson states, "Students construct exponential functions to model the growth of a population and the decay of the amount of medicine in the body. In both cases, they solve problems by interpreting functions (represented both graphically and with expressions) in context, working across different representations of the situations (MP.2)." Unit 5, Lesson 8, Activity 8.1 states "By engaging with the image of the arch to first become familiar with a context and the mathematics that might be involved, students are making sense of problems (MP.1)." In Unit 2, Lesson 23, About this Lesson, the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			sequence of the lesson includes "Then students explore several cases of an identity where application of the distribution property leads to an expression with fewer terms than might be expected (MP.8)."
Section II: Additional Alignment Criteria and Indicators of Superior Quality			
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 grade/course-level problems.	**Yes**	Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified, and lessons which only address previous grade level standards are identified as optional. Each lesson includes 4-5 activities that give students rich tasks and various stimuli to engage with through discussion prompts and related questions to answer. Each lesson then includes 4-10 practice problems (some problems have multiple parts within them), some directly pertaining to the lesson and others being spiral review. In Unit 2, Lesson 12, students divide polynomials while working with the major work LSSM A.APR.B.2 and A.APR.B.3. After the lesson, students apply their learning as they complete 7 single and multi-part practice problems. In Unit 1, Lesson 3, Activity 3.1, the teacher guide states, "The purpose of this warm-up is to informally assess strategies and understandings students currently have for interpreting function notation which they learned about in an earlier course. Students will use function notation when

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			they define sequences with equations in later lessons, so this warm-up is an opportunity for practice" (LSS F.IF.A.2).
	Required **5b)** Materials **relate grade/course-level concepts explicitly to prior knowledge** from earlier grades and courses. The materials are designed so that prior knowledge is extended to accommodate the new knowledge, building to core instruction, on grade/course-level work. Lessons are appropriately **structured and scaffolded** to support student mastery.	**Yes**	Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Materials connect prior knowledge from earlier grades in a purposeful manner. The curriculum weaves prior knowledge students should have from previous courses into lessons for this course so that connections can be made and knowledge gained in earlier courses can be extended upon. The teacher guide provides the standards that each lesson builds upon, the standard that each lesson is addressing, as well as standards the lesson is building towards. At times, the warm up activities are used to activate prior knowledge in order to access current course-level content. For example, Unit 6, Lesson 2, About this Lesson states "The purpose of this lesson is for students to recall how to determine the value of the cosine, sine, and tangent of an angle for a right triangle. This lesson builds on the work in the previous lesson and incorporates the right triangle trigonometric ratios students encountered in a previous course" (building on LSSM G.SRT.C and building toward LSSM F.TF.A.2). Unit 3, Lesson 17, About this Lesson states, "In earlier courses, students developed strategies for solving quadratic equations. Earlier in this unit, students

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			developed the concept of complex numbers. In this lesson, students connect these ideas by solving quadratic equations whose solutions are non-real complex numbers. Students complete the square to analyze the conditions that lead quadratic equations with real coefficients to have 1 real solution, 2 real solutions, or 2 non-real solutions" (LSSM N.CN.C.7). In Unit 7, Lesson 5, students describe different distributions as previously completed in Algebra 1 for LSSM S.ID.A.1 and S.ID.A.2. Students build on this work in the same lesson by applying concepts of mean and standard deviation to data for LSSM S.ID.A.4. In Unit 5, Lesson 4, Activity 4.1, the teacher guide states, "Students should be familiar with the properties of reflections from a previous course," when eliciting the idea that functions can be reflected horizontally or vertically in the warm-up (LSSM F.BF.B.3).
	Required **5c)** There is **variety** in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade/course-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	In the materials, students are asked to produce answers in a variety of ways. Students produce answers, solutions, arguments, explanations, diagrams, and various mathematical models. For example, in Unit 6, Lesson 16, Practice, students explain the meaning of numbers given in a trigonometric function and identify the period and sketch a graph of a cosine function. In Unit 4, Lesson 5, Activity 5.2, students complete a table or use a spreadsheet to solve application problems related to exponential

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			equations. In Unit 6, Lesson 6, Activity 6.3, students complete a card sort where "One set of cards shows the value of sine, cosine, or tangent of an unknown angle. The other set of cards shows a quadrant number on the unit circle. Students then select one of their possible matches and calculate the values of the two other trigonometric ratios." In Unit 2, Lesson 2, Activity 2.3, the teacher guide states, "The purpose of this activity is for students to write a polynomial to model a simple investment situation. Students have the opportunity to decide to use a table, equation, graph, or a combination of the three to make sense of and reason about the situation (MP5)." Also, in Unit 5, Lesson 10, Activity 10.2, students analyze a given table, and then plot a graph, answer a question about a given value and provide an explanation for their answer, and complete a table and graph given a new function.
	5d) Support for **English Language Learners and other special populations** is provided. The language in which problems are posed is not an obstacle to understanding the content, and if it is, additional supports (suggestions for modifications, "vocabulary to preview", etc.,) are included.	**Yes**	Materials include support for English Language Learners and other special populations that is thoughtful and helps those students meet the same standards as all other students. Materials often provide support for English Language Learners and other special populations within the lesson materials; however, these supports are not provided for every lesson. For example, Unit 7, Lesson 5, Activity 5.2, in the teacher's lesson has Support for Students with Disabilities and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			states, “Read the directions for taking the measurements aloud. Demonstrate measuring your own hand and how to estimate the measurement to the nearest tenth of a centimeter. Students who both listen to and read the information will benefit from extra processing time.” In Unit 4, Lesson 9, Activity 9.1, Support for English Language Learners states, “Display sentence frames to support students when they explain their strategy. For example, ‘First, I _____ because . . .’ or ‘I noticed _____ so I . . .’ Some students may benefit from the opportunity to rehearse what they will say with a partner before they share with the whole class.” In Unit 2, Lesson 2, Activity 2.2, support for English Language Learners states “Reading, Writing, Speaking: MLR3 Clarify, Critique, Correct. Before students share their explanations for the last question, present an ambiguous response. For example, ‘I can use base powers and replace the numbers with variables to find the answer.’ Ask students to identify the error, critique the reasoning, and write a correct explanation. As students discuss with a partner, listen for students who identify and clarify the ambiguous language in the statement. Invite students to share their critiques and corrected explanations with the class. Listen for and amplify the language students use to explain the process of using powers of 10 to rewrite an equation. This helps students evaluate,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			and improve on, the written mathematical arguments of others, as they understand the relationship of polynomial expressions and powers of 10."
6. QUALITY OF ASSESSMENTS: Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed grade-specific Louisiana Student Standards for Mathematics. ☒ Yes ☐ No	**Required** **6a)** Multiple **assessment opportunities** are embedded into content materials and measure student mastery of standards that reflect the balance of the standards as presented in materials.	**Yes**	Multiple assessment opportunities are embedded into content materials and measure student mastery of standards that reflect the balance of the standards as presented in materials. For each unit, students complete a pre-unit diagnostic and end-of-unit assessment. These assessments are formal, summative assessments that include a balance of standards from the lesson. All seven units have an End-of-Unit Assessment, six units have a Check Your Readiness Assessment, and five units have a Mid-Unit Assessment. The first half of Unit 2 focuses on finding the zeros of polynomials, end behavior, polynomial division, and the remainder theorem addressing cluster A2.APR.B cluster and LSSM A2.IF.C.7 respectively. The Mid-Unit Assessment features questions assessing these clusters. Throughout all lessons, materials include opportunities for teachers to gauge student understanding using formative assessments. For example, in Unit 3, Lesson 9, 9.4 Cool-down students solve two radical equations and are then asked to, "Write an equation with a radical in it that has no solution." (LSSM A.REI.A.2).
	Required	**Yes**	Assessment items include a combination of tasks that require students to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	6b) Assessment items include a **combination of tasks** that require students to demonstrate conceptual understanding, demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a grade/course-appropriate way.		demonstrate conceptual understanding, demonstrate procedural skill and fluency, and apply mathematical reasoning and modeling in real world context. For example, on the Unit 5 End-of-Unit Assessment, Problem 7 gives students the prompt, "The water from an outdoor fountain follows a path that is shaped like a parabola. The arch created by the water is 32 inches wide and 27 inches high." Students must then procedurally label points on the graph, write a function to model the water's height, and explain how the function would change if the arch were the same width but a different height (LSSM F.BF.B.3). Also, in the Unit 7 End-of-Unit Assessment, Problem 4, students are given the procedural question of, "A student measures the wingspans of 40 local dragonfly specimens selected at random. The sample mean is 6.8 centimeters with a margin of error of 0.9 centimeters. Based on this information, what are plausible values for the mean wingspans of the population of local dragonflies?" (LSSM S.IC.B.4). Assessment items require students to produce answers and solutions, arguments, explanations, and models, in a course-appropriate way. The summative assessments include a variety of questions including numeric, drop down fill-in-the-blank, graphing, multiple choice, select all that apply, and constructed response. For example, on the Unit 4 Mid-Unit Assessment, students are

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			given a function that models the population of a colony of insects and must select all of the statements that would be true in the context of the situation (LSSM F.LE.B.5). Also, on the Unit 3 End-of-Unit Assessment, students are given an expression for p and q and asked to write multiple combinations of these expressions in the form a+bi (LSSM N.CN.A.1, N.CN.A.2).
	6c) Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction.	**Yes**	Scoring guidelines and rubrics align to standards, incorporate criteria that are specific, observable, and measurable, and provide sufficient guidance for interpreting student performance, misconceptions, and targeted support to engage in core instruction. The "View scoring guidance" link in the Teaching notes for each assessment item provides an item analysis (often with sample responses) and instructional guidance if most students perform poorly on an item. For example, in Unit 4, the "Check Your Readiness" Assessment Scoring Guidance for #6 states, "This item assesses facility interpreting and graphing exponential equations as well as expressing the rate of change using percent. If most students do well with this item, it may be possible to skip Lesson 2, which is an optional practice lesson." However, the Modeling Rubric found with the Modeling Prompts is not standards-based and contains unmeasurable criteria such as, "the limitations of the model and solution are

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			addressed but lacking in depth or ignoring key components."
	6d) Materials provide 2-3 **comprehensive assessments** (interims/benchmarks) that measure student learning up to the point of administration.	**No**	Materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration. Six of the seven units feature a "Check Your Readiness" Assessment, five of the seven units feature a Mid-Unit Assessment, and all seven units feature End-Of-Unit Assessments. These assessments only include content from the unit in which they are given and are not comprehensive.
7. ADDITIONAL INDICATORS OF QUALITY: Materials are well organized and provide teacher guidance for units and lessons. Materials provide timely supports to target specific skills/concepts to address students' unfinished learning in order to access grade-level work. ☒ Yes ☐ No	**Required** **7a)** The content can be **reasonably completed** within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take.	**Yes**	The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials provide guidance about the amount of time a task might reasonably take. The provided Pacing Guide indicates there are 120 lessons, 18 assessments, and 12 optional lessons. Most lessons also feature an optional activity. For example, the Unit 4, Lesson 3, Activity 3.1, Warm up is listed as taking five minutes for the activity and synthesis. In addition, in Unit 6, Lesson 16, Activity 16.3 "Are you ready for more?" is listed as an optional portion of the lesson.
	Required **7b)** The materials are **easy to use and well organized** for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning and instructional delivery, lesson flow,	**Yes**	The materials are easy to use and well organized for students and teachers. Teacher editions are concise and easy to manage with clear connections between teacher resources. Guidance is provided for lesson planning and instructional

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	questions to help prompt student thinking, and expected student outcomes.		delivery, lesson flow, questions to help prompt student thinking, and expected student outcomes. Each lesson includes tabs for the Lesson Plan, Additional Materials, and About this Lesson. The About this Lesson tab includes the lesson overview, learning goals, learning targets, required materials, and standards. Each Lesson Plan tab contains cards which feature a sidebar with teaching notes. The teaching notes include pacing, activity narrative, support for special populations, student responses, and anticipated misconceptions. Teachers also have access to all materials in printable format. The teaching notes also provide hyperlinks to any needed materials or instructional routines. For example, in Unit 4, Lesson 1, the teaching notes for 1.3 Activity prep (card 15) link to the MLR1: Stronger and Clearer Each Time. Also, in the Unit 7, Lesson 5, 5.1 Activity synthesis (card 7), the teaching notes state, “After all responses have been recorded without commentary or editing, ask students to discuss: ‘What are some of the properties of a normal distribution?’ (It is a distribution that is bell-shaped, symmetric, and never is greater than 1.)”
	Required **7c)** Materials include unit and lesson **study tools for teachers**, including, but not limited to, an explanation of the mathematics of each unit and mathematical point of each lesson as it relates to the organizing concepts of	**Yes**	Materials include unit and lesson study tools for teachers. Materials provide an overview of the mathematics in each Unit and how it relates to prior and future units in the Unit Overview provided in the teacher materials. The scope and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	the unit and discussion on student ways of thinking and anticipating a variety of student responses.		sequence details how long each unit and lesson should take and also provides a chart on unit dependency. Instructional routines used throughout the material are described in the Curriculum Guide. In each lesson, the About this Lesson tab provides teachers an overview of the lesson, Learning Goals, Learning Targets, Glossary Entries, and Standards. Each Lesson contains instructions for each activity, student responses, activity synthesis, and anticipated misconceptions. The activity synthesis provides guiding questions that prompt student thinking and discussion of desired mathematical behaviors. Other guiding documents include teacher support for Design Principles, What is a "Problem-based Curriculum," A Typical IM Lesson, How to Use the Materials, Mathematical Modeling Prompts, Information for Families, Supporting English-Language Learners, Supporting Students with Disabilities, Diagnostic Assessments, Cool Downs, Summative Assessments, and Screencast Tutorials. Prompts are provided throughout the lessons to guide teachers in instruction. For example, in Unit 3, Lesson 4, Activity 4.2, the student misconceptions are "If students have trouble writing the expressions using radicals, help them make connections to their previous understanding of relationships between cubes and cube roots." In Unit 5, Lesson 4, Activity 4.3,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			directions are provided for the teacher to guide the activity: "Arrange students in groups of 2. Display the graph of function and the prompt…. Make a prediction about what the graph will look like. Allow students 1 minute of quiet think time, then invite students to briefly discuss their predictions with their partner. Tell students that they will confirm their prediction in the activity." In the Course Guide, teachers can read a narrative explaining the organization of units and where connections should occur. In Unit 3, Lesson 3, teachers can access lesson notes that give directions, explanations, and discussion prompts for every activity such as guiding discussion questions for students finding square and cube roots by hand in Activity 3.1.
	7d) Materials **identify prerequisite skills and concepts** for the major work of the grade/course, connected to the current on-grade/course-level work.	**Yes**	Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-course-level work. Each unit includes a Check Your Readiness Assessment which assesses targeted pre-requisite skills prior to beginning on-level coursework. The Check Your Readiness Assessment Planning Table for each unit includes the problem number, the pre-requisite standard addressed in the problem, the lesson in which the standard would first be needed, and suggestions for what to do if students. For example, the Unit 3 Check Your Readiness Assessment lists the standards: LSSM 4.NF.B, 8.EE.A.1, 8.EE.A.2, HSA-

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			APR.A.1, HSA-REI.A.2, and HSA-REI.B.4. Also, with the Unit 5 Check Your Readiness Assessment, Problem 6, the scoring guidance narrative states, "If most students struggle with this item, plan to incorporate a review of function notation and interpreting functions during Lesson 1 Activity 2" (LSSM F.IF.B.4).
	7e) Materials provide guidance to help teachers **identify students** who need prerequisite work to engage successfully in core instruction, on-grade/course-level work.	**Yes**	Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. Each unit includes a Check Your Readiness Assessment. Each question lists which prerequisite standard it connects to and a narrative explaining when a student should have covered this standard. For example, on the Unit 2 Check Your Readiness Assessment, Question 1, the Narrative states, "Students begin their study of rational functions by rearranging and combining familiar formulas from geometry, which the work in this problem is a simpler precursor to" (LSSM A.CED.A.4). Also, each unit has a Check Your Readiness Planning Table, which tells teachers, for each question, what they should focus on in prerequisite skills for the students who struggled. For the Unit 6 Check Your Readiness Question 5, if students missed the question, teachers are advised to, "Plan to spend additional time discussing the solution to question 2 of Activity 2 in Lesson 2" (LSSM G.SRT.C.7).

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	7f) Materials provide **targeted, aligned, prerequisite work** for the major work of the grade/course, directly connected to specific lessons and units in the curriculum.	**Yes**	Materials provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. Each unit has a tab titled "Support for Distance and Unfinished Learning" which includes Adaptation packs for unfinished learning. Adaptation packs include links to pre-requisite lessons and suggestions on lessons to add and lessons to remove or modify. For example, the Unit 1 Adaptation Pack suggests adding Algebra 1, Unit 4, Lesson 2.2, Algebra I, Unit 4, Lesson 4, Algebra I, Unit, Activity 3.1, and removing Algebra II, Unit 1, Lesson 4 and Algebra II, Unit 1, Lesson 7. Additionally, the Unit 2 Adaptation pack states, "This unit builds on the previous unit as well as the foundation students established in Algebra 1. In order to successfully investigate whether polynomials are closed under addition, subtraction, and multiplication, students need to be familiar with those three operations for polynomials." This content is listed as being from Algebra I, Unit 6, Lesson 8, which is then featured in the Adaptation Pack student supplement.
	7g) Materials provide **clear guidance and support** for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.	**Yes**	Materials provide clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work. The Adaptation Packs include clear guidance for teachers for modifying or adapting lessons in order to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			address unfinished learning. Initial guidance for teachers is provided that includes essential prior concepts to engage with for the unit and a brief narrative approach. The Adaptation Pack guidance includes a table that lists Lessons to Add and Lessons to Remove or Modify. A modified plan for the unit is also provided which includes specific adjustments for each lesson. For example, the Unit 3 Adaptation Pack suggests including optional Lessons 1 and 2 if students demonstrate a need on the Check Your Readiness assessment. Also, the Unit 1 Adaptation pack guidance for Lesson 8 states, "If the initial assessment shows that students are not familiar with exponent rules, consider replacing the warm-up from Lesson 8 with the warm-up from Algebra 1, Unit 5, Lesson 3 paying particular attention to the launch." In the Unit 6 Adaptation Pack, several lessons are suggested to either add or remove from the unit. Specific guidance is provided on whether or not to add or remove the lessons and activities. For example, after Lesson 1 is complete, guidance suggests, "If the initial assessment and Lesson 1 show that students are not familiar with the Pythagorean Theorem, include Geometry, Unit 4, Lesson 1, Activity 2 before continuing with grade-level content."

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" for all Non-negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality. ***Tier 2 ratings*** receive a "Yes" for all Non-negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality. ***Tier 3 ratings*** receive a "No" 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-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of the time to the major work of the grade. Materials spend the appropriate amount of time on course-level work, while assessing course-level standards.
	2. Consistent, Coherent Content	**Yes**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. The problems and activities connect two or more clusters in a domain and/or two or more domains in the course level where these connections are natural and important.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the standards and help students meet all of the standards' rigorous expectations. In addition, the materials are designed so that students attain the fluencies and procedural skills required and spend sufficient time working with conceptual understanding and engaging applications.
	4. Focus and Coherence via Practice Standards	**Yes**	The materials address the practice standards in ways that enrich the content standards of the course. Materials attend to the full meaning of each practice standard. Materials provide sufficient

[4] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier I or Tier II rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			opportunities for students to construct viable arguments and critique the arguments of others concerning key course-level mathematics that is detailed in the content standards. Materials explicitly attend to the specialized language of mathematics. However, materials do not include teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.
II: Additional Alignment Criteria and Indicators of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics across domains and clusters and across grades/courses, staying consistent with the progressions within the standards. Materials provide all students extensive work with course-level problems. Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. In the materials, students are asked to produce answers in a variety of ways. Materials include support for English Language Learners and other special populations that is thoughtful and helps those students meet the same standards as all other students.
	6. Quality of Assessments	**Yes**	Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed grade-specific Louisiana Student Standards for

[5] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier I rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Mathematics. However, materials do not provide 2-3 comprehensive assessments (interims/benchmarks) that measure student learning up to the point of administration.
	7. Additional Indicators of Quality	**Yes**	Materials are well organized and provide teacher guidance for units and lessons. The content can be reasonably completed within a regular school year and the pacing of content allows for maximum student understanding. The materials are easy to use and well organized for students and teachers. Materials include unit and lesson study tools for teachers. Materials identify prerequisite skills and concepts for the major work of the course, connected to the current on-course-level work. Materials provide guidance to help teachers identify students who need prerequisite work to engage successfully in core instruction, on-course-level work. Materials provide targeted, aligned, prerequisite work for the major work of the course, directly connected to specific lessons and units in the curriculum. Materials provide clear guidance and support for teachers about the structures that allow students to appropriately address unfinished learning using prerequisite work.
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**			

Instructional materials are one of the most important tools educators use in the classroom to enhance student learning. It is critical that they fully align to state standards—what students are expected to learn and be able to do at the end of each grade level or course—and are high quality if they are to provide meaningful instructional support.

The Louisiana Department of Education is committed to ensuring that every student has access to high-quality instructional materials. In Louisiana all districts are able to purchase instructional materials that are best for their local communities since those closest to students are best positioned to decide which instructional materials are appropriate for their district and classrooms. To support local school districts in making their own local, high-quality decisions, the Louisiana Department of Education leads online reviews of instructional materials.

Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their robust knowledge of teaching and learning to review instructional materials.

The 2020-2021 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Acadia, Ascension, Beauregard, Bossier, Caddo, Calcasieu, City of Monroe, Claiborne, Diocese of Alexandria, East Baton Rouge, Evangeline, Firstline Schools, Iberia, Iberville, Jefferson, Jefferson Davis, Jefferson Parish Charter, KIPP, Lafayette, Lafourche, Lincoln, Livingston, Louisiana Tech University, Louisiana Virtual Charter Academy, Lusher Charter School, Natchitoches, Orleans, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, Special School District, St. Charles, St. Landry, St. Tammany, Tangipahoa, Tensas, Vermillion, Vernon, West Feliciana, and Zachary Community. This review represents the work of current classroom teachers with experience in grades 6-12.

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.