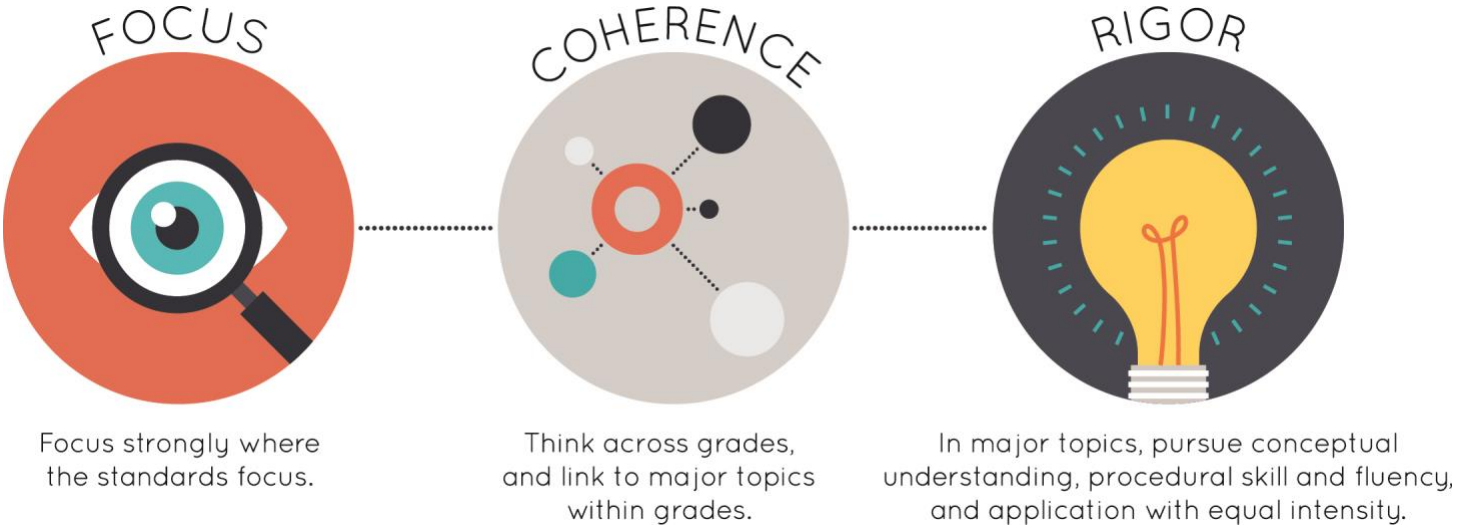
Original Posting Date: 1/17/2020
Updated On: 5/15/2020
Updated On: 6/5/2020

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: **High School Math Solution - Algebra I, Geometry, Algebra II**

Grade/Course: **9-11**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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

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

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

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

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

Click below for complete grade-level reviews:

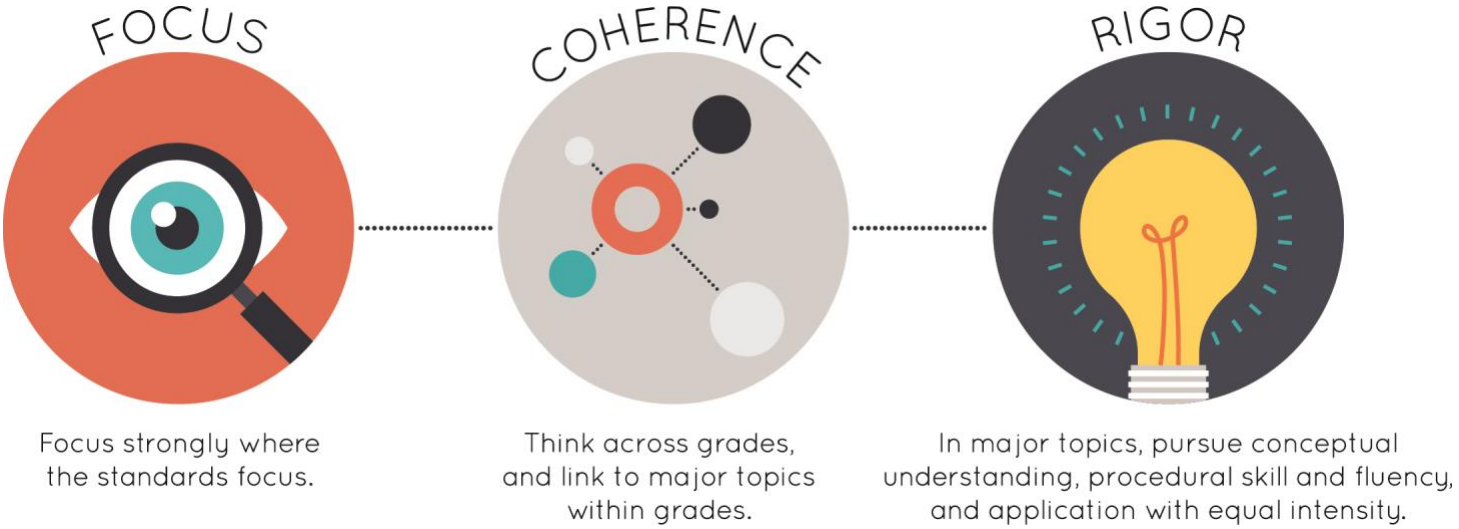
Grade 9 (Tier 1) Grade 10 (Tier 1) Grade 11 (Tier1)

DEPARTMENT of EDUCATION
Louisiana Believes

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

FULL CURRICULUM
Instructional Materials

Strong mathematics instruction contains the following elements:



Title: **High School Math Solution - Algebra I**

Grade/Course: **Algebra I**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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

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

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

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

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

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

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.			
Non-Negotiable **1. FOCUS ON MAJOR WORK[1]:** Students and teachers using the materials as designed devote the large majority[2] of time to the major work of the grade/course. ☒ Yes ☐ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The instructional materials devote the majority of class time to the major work of the course. The percentage of lessons that address the major work for Algebra I is 65%.
	REQUIRED **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the course. Although 13 of the 57 instructional lessons include standards that are outside of Algebra I, implementation suggestions for Louisiana teachers are provided for each lesson. For example, in Module 5, Topic 3, Lesson 2, the implementation suggestion states, "In addition to LSSM A1 standards, this lesson includes standard A2: A-REI.C.7. Skip this lesson and its corresponding assignment. Students have multiple opportunities to address the remaining standards in this lesson throughout the Algebra I course." The implementation suggestion for Module 3, Topic 2, Lesson 2 states, "In addition to LSSM A1 standards, this lesson includes standard A2: F-IF.C.8b. Complete only Getting Started and Activity 2.1 of this lesson. In the Assignment, eliminate Practice Question 2 and Review Question 1." Assessment notes provide teachers with guidance on which

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

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			assessment items are appropriate for Louisiana students. For example, in Module 3, the Assessment Guidance states, "Select assessment items from these suggestions: Pre-/Post Test: Q1 and 5 - 8, End of Topic Test: Q1 - 3, 6 - 8, and 11, and Standardized Test: Q1 - 4, 6 - 8, 10 - 15, 17, 19, and 20. Students should not be held accountable for combining functions or recognizing exponential growth or decay from an exponential function." Teachers are given the option of using additional assessment questions made available through Edulastic.
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. This is seen in Module 5, Topic 1, Lesson 2, which connects supporting standards A1:A-SSE.B.3 and A1:A-APR.B.3 to major standard A1:F-IF.B.4. Students produce equivalent expressions to find key characteristics of quadratic functions (e.g., absolute minimum, absolute maximum, and zeros). Module 2, Topic 1, Lesson 2 connects supporting standards A1:F-LE.A.2 to the major standard A1:A-CED.A.1. Students build equations to correctly model the scenario as they are building an understanding of linear functions. Additionally, supporting standard A1:A-SSE.B.3 is connected to major standard A-REI.B.4 in Module 5, Topic 2, Lessons 2 and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			4. In Lesson 2, "Solutions, More or Less," students make connections between determining solutions using a graph, through prior knowledge of square roots, and using the Zero Product Property to identify solutions from the product of linear factors. In Example 3 of Activity 2.1 (page M5-131) students are instructed to "Use the graphs to identify the solutions to each equation. Then determine the solutions algebraically and write the solutions in terms of their respective distances from the axis of symmetry" (LSSM A1:A-REI.B.4). Activity 2.2 bridges this concept on how finding the binomial factors of a quadratic can lead to determining zeros of a given function (LSSM A1:A-SSE.B.3a) through examples such as Example 1 (page M5-134), where students are instructed to "Determine the zeros of the function z(x) = x2 - 16. Then, write the function in factored form."
	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**	The materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a course, in cases where these connections are natural and important. The materials connect the Creating Equations (CED) and Reasoning with Equations and Inequalities (REI) domains in Module 2, Topic 3, Lesson 2. In the lesson, students create a system of equations and use linear combination to solve for the two variables. The lesson also includes questions such as, "In the worked

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			example, only one equation needs to be rewritten to solve using the linear combinations method. Why?" Students focus on providing justification for using a particular method to solve the system. This connection between these two domains is natural and important. Additionally, the materials connect clusters within the Functions - Interpreting Functions domain. Module 1, Topic 1, Lesson 3 connects the cluster "Understand the concept of a function and use function notation" with cluster "Interpret functions that arise in applications in terms of the context" as students are first introduced to the terms function and function notation, then connect equations written in function form to its graph, identify the function family to which the function belongs, and interpret key features of the graphs for the remainder of the lesson.
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**REQUIRED** **3a) *Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where explicitly called for in the content standards. This is evident in Module 2, Topic 2, Lesson 1, "Solving Linear Equations," aligned with LSSM A1:A-REI.A.1, where students should be able to describe the steps needed to justify the solution to a linear equation. The Lesson Activity provides effective questioning that helps students develop the type of thinking needed to provide justification for each property used. For example, students complete the following

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			practice problem: “Sara and Ethan both created new equations starting from the solution statement x = 2. 1) Verify that both equations are equivalent to x = 2 using the given strategy. a. Substitution [and] b. Properties of Equality.” Section 4 of the Skill Practice worksheet for the topic also provides practice for this concept. Module 2, Topic 2, Lesson 3 provides guided instruction where students initially build understanding of features of linear functions in context before building equations. In Example 1, students use a graph to compare t-shirt prices based on key features (LSSM F-IF.B.4). In Example 2-4 students determine the mathematical and contextual meaning of equivalent expressions created by two different students (LSSM A-CED.A.1). Students demonstrate conceptual understanding of these concepts in the “Stretch” problem on page M2-40 as evident in the following practice problem: “A pretzel manufacturer has two production lines. Line A produces a variety of pretzel that is sold for $2.40 per bag. Line A typically produces 3 bags per day that do not meet company standards and cannot be sold. Line B produces a variety of pretzel that is sold for $3.60 per bag. Line B typically produces 4 bags per day that do not meet company standards and cannot be sold. Line A produces 3 times as many bags as Line B each day. Write a linear function that represents the total number of bags the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			lines can produce combined." In Module 4, Lesson 2, students are given several scenarios to determine which measure of center would be best to analyze the data and how to analyze the spread when outliers are present. This work provides the necessary scaffolding so that students are able to use data to make appropriate interpretations or predictions. For example, Question 2 of Lesson Activity 2.4 asks students to determine the standard deviation for two sets of data and interpret how the information could help them make decisions. The materials help students meet the rigor necessary to master LSSM A1:S-ID.A.2.
	REQUIRED **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	The materials are designed so that students attain the fluencies and procedural skills required by the standards. For example, students are expected to gain fluency in Algebra I in evaluating functions for given domain values as stated by Major LSSM F-IF.A.2. This standard is addressed in Module 2, Topic 1, Lesson 2 and Module 2, Topic 3, Lesson 6. In addition to the lesson problems to be completed during guided instruction in the module materials, students are provided with optional Skills Practice to enhance procedural skills. Questions 1 through 6 of Part I: Arithmetic Sequences as Linear Functions, asks students to write arithmetic sequences as linear functions and graph the function for all values of n, where n is any value from 1 to 10. Questions 1 through 12 of Part III:

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Evaluating Linear Functions provides three input values for students to evaluate for each of the 12 functions given. This skill is further addressed in the MATHia platform where students can view a step-by-step example or work through sample problems on their own. The materials provide sufficient practice with algebraic operations to prepare students for later work in algebra. Module 2, Topic 2, Lesson 2, "Literal Equations" provides the practice needed to attain procedural skills in LSSM A1: A-CED.A.4, rearrange formulas to highlight a quantity of interest. Students practice the skills through Student Lesson Practice and the optional skills practice worksheets. The MATHia platform also provides students the opportunity to practice solving for specific variables by choosing the appropriate equality property. In Module 5, Topic 2, Lesson 4, "Factoring and Completing the Square," students prepare to fluently solve quadratic equations in one variable by completing the square, factoring trinomials, and taking the square roots (LSSM A1:A-REI.B.4). The materials provide multiple opportunities for students to engage in this practice through the Lesson Activity and Practice, the Skill Practice worksheet, and MATHia platform activities.
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time	**Yes**	The materials are designed to spend sufficient time working with engaging, non-routine real-world application tasks

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	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.		that require multi-step solutions. Students are given ample opportunity to apply learned skills through Topic Performance Tasks, assessment questions aligned directly to the application component of rigor, as well as, practice problems embedded throughout the instructional materials. For example, in the Topic Performance Task for Module 1, Topic 2, students apply understanding of sequences to real-world context analyzing the growth of trees from two different gardens. In addition, Topic 2, Lesson 4 fully focuses on the application of sequences to real world situations. In Module 1, Topic 3, Lesson 4, students engage in real-world problems involving two variables and model the relationship on a scatter-plot. Additionally, in Module 2, Topic 2, Lesson 3, students solve problems aligned with LSSM A1:A-CED.A. For example, a practice problem from the lesson materials states, “Chang-Ho is on his way to visit his friends at camp. Halfway to his destination, he realizes there is a slow leak in one of the tires. He checks the pressure and it is at 26 psi. It appears to be losing 0.1 psi per minute. a. Write a function to represent the tire’s pressure as a function of time in minutes. b. Chang-Ho knows that if the pressure in a tire goes below 22 psi it may cause a tire blowout. What is the greatest amount of time that he can drive before the tire pressure hits 22 psi? Show your work and graph the solution.” This

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			question directly targets the application level of rigor due to the expectation that it requires multiple steps to solve, and students will have to understand whether solutions to the equations will be viable or not.
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in application after solidifying conceptual understanding and plenty of opportunity to gain procedural fluency where called for in the LSSM for Algebra I. Topics effectively build conceptual understanding and provide students the opportunity to demonstrate understanding through end of lesson practice problems and stretch problems. Students are given sufficient practice in regards to procedural skills and fluency where called for in the content standards, as well as targeted coursework where skills and understanding are used to solve multi-step real world problems.
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	Materials address the practice standards in such a way as to enrich the content standards of Algebra I. This is evident in both the teacher materials and the student materials. The practice standards are present throughout the materials. In the teacher facilitation notes, the materials include suggested questions to help guide students toward using the math practice standard that is presented in each lesson. For example, In Activity 1.1 for Module 2, Topic 2, the materials suggest that

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			teachers use questions to elicit thinking related to MP.2 and MP.3, reason abstractly and critique the thinking of others. The suggested questions provided to help teachers support students in these practices were “explain your strategy to solve the equation” and “which solution path did you prefer, why and why not.” The Teacher Implementation Guide, Volume 1 lists the Habits of Mind and their connection to the Mathematical Practice Standards. The materials state, “Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding.” Teachers are given instruction to incorporate these habits into their daily instructional practice in the classroom. Opportunity for utilization of these skills can be seen in Activity 1.1 of Module 3 where students look for and make use of structure (MP.7) of given functions in Example 1 where they are required to sort functions into two groups of increasing or decreasing functions. In Example 6, students construct viable arguments and critique the reasoning (MP.3) of another student by responding to the following, “Chloe says that given any increasing linear function and any exponential growth function, the output of the exponential function will eventually be greater than the output of the linear function. Is Chloe correct? Use examples to justify your thinking.” In Activity 1.2 of Module 3, students are

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			asked to "Compare and explain the meaning of the expressions $(1 - 0.015)^t$ and $(1 + 0.018)^t$ in terms of this problem situation," thus requiring students to reason abstractly and quantitatively (MP.2).
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY			
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide all students extensive work with course-level problems. Although present, review of material from previous grades is minimal. During the Develop section of the materials, students engage in a variety of tasks and problem solving to develop mathematical knowledge through discourse and collaboration. In the Demonstrate section of the materials, students demonstrate what they have learned and also engage in a self-assessment to monitor their own progress towards mastering learning goals. Students then complete an assignment where they practice skills and concepts learned. The materials also include MATHia, software that creates a personalized learning path with ongoing formative assessment adapted for each student. Students are provided with some review work related to prior material, although, when present, it is not always identified as review material. For example, in MATHia, Searching for patterns, Function Overview, Identifying Quantities, students interpret a

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			graph by answering questions. Students are shown a video that provides scaffolding and possible solutions. However, these questions are aligned with 6.EE.C.9 as students represent and analyze quantitative relationships between dependent and independent variables. This material is not labeled as review, but does provide support and connects to course-level work. The Getting Started section serves to activate student thinking. Some of the problems may include content from previous grades, but it is used to activate prior knowledge while creating potential connections to on-course-level concepts as students move through the lesson. This is noted in the Teacher's Implementation Guide. For example, Module 1, Topic 3, Lesson 1, students construct a scatter plot and informally find a line of best fit using a piece of spaghetti and answer questions 1-4 on Activity 1.1, which aligns with standard 8.SP.A.1 and 8.SP.A.2. The course-level problems begin with #5 where a line of best fit is generated using a graphing calculator in accordance with standard A1.S.ID.B.6.
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview for each topic and in the Teacher Implementation Guide, as well as in the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			student materials. Prior knowledge is pointed out to students and families within the Family Guide for each topic. For example, in the Teacher Implementation Guide, Front Matter Volume 1, the Module Overview includes "connections to prior learning" and "connections to future learning" for each Module. Another example is seen in Module 2, Topic 4, Topic Overview, the "Entry Point" and "How does a student demonstrate understanding?" sections which explains that, in middle school, students have written and transformed linear equations and should be able to do so with absolute value equations by the end of this topic. In the student materials for Module 1, Topic 3, Lesson 2, the first page includes a question, "You have learned how to write a line of best fit using the Least Squares Method. How do you know if that line actually produces valid, useable results? Is there a way to measure the strength of the relationship between the variables?" This question serves to connect the lesson outcomes to prior knowledge of writing a line of best fit (S.ID.B.6b). In Module 3, Topic 1, Family Guide, the materials state, "In middle school, students learned the rules of exponents and used those rules to rewrite expressions in equivalent forms. They transformed geometric objects in the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			coordinate plane and noted the effect of each transformation on the ordered pairs of the image. This topic begins where students left with geometric sequences in a previous topic."
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards. The learning goals listed at the beginning of each lesson use similar language to that of the standards. For example, in Module 5, Topic 1, Lesson 2, the last learning goal, "Use key characteristics of the graph of a quadratic function to write an equation in factored form," is worded similarly as the standard A1.A.SSE.A.2, "Use the structure of an expression to identify ways to rewrite it." Both the learning goal and standard involve rewriting an expression in different forms. Another example, in Module 4, Topic 2, Lesson 3, states, "Construct and interpret conditional relative frequency distributions displayed in two-way tables for categorical data," as a student outcome, which is visibly shaped by standard S.ID.B.5, "Summarize categorical data for two categories in two-way frequency tables."

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**REQUIRED** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	Materials attend to the full meaning of each practice standard. Materials define the mathematical practices as "Habits of Mind." This overview is provided on pages FM-34 and FM-35 in the Teacher Implementation Guide Volume 1. The "Habits of Mind" are identified throughout the materials using symbols. For example, in Module 2, Topic 2, Lesson 2, Activity 2.1 utilizes MP.7, depicted with a three-dimensional box, as students use structure to determine characteristics (slope, y-intercept, x-intercepts) of various forms of linear functions. In Module 2, Topic 4, Lesson 3, Activity 3.2 includes a symbol of a hand holding a wrench. In this activity, students model with mathematics (MP.4) by writing "a scenario and a piecewise function to model a piecewise graph about cell phone battery life over time." In Module 5, Topic 2, Lesson 3, Activity 3.3 includes a symbol of a target. In this activity, students attend to precision, MP.6, by using reference points to graph quadratic functions. Additionally, in Module 5, Topic 2, Lesson 1, Activity 1.2 utilizes MP.2 as students model reaction time to visual and auditory stimuli in relation to their age.
	REQUIRED **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving	**Yes**	Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others. Students are routinely asked to critique the reasoning of other students by examining student work within the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.		material. Some of these opportunities are denoted by "Thumbs Up/Thumbs Down" protocol. For example, in Module 1, Lesson 2, Activity 2.1, students critique Ashley and Duane's reasoning for grouping graphs the way they did. In Module 2, Topic 3, Lesson 5, Activity 5.3, students explain why Heather's system of linear inequalities is incorrect. In Module 3, Topic 2, Lesson 2, students examine work completed by Lucy and Michael to determine whether each student's method will always work to solve an equation. In Module 4, Topic 2, Lesson 4, students are asked " Do you think the results might be the same or different if Andres conducted another random survey at Rawlings High School? Explain your reasoning."
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Although the practice standards are presented as "Habits of Mind" at the beginning of the materials, and the symbols that will be used to denote which practice(s) each activity uses are identified, the facilitation notes in the teacher materials do not explain how the practice standards should be used or help develop understanding within the activity. For example, Module 1, Topic 3, Lesson 4, Activity 4.2 includes a target symbol, which indicates that students should attend to precision. The facilitation notes state, "In

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			this activity, students sketch a given cubic function onto a scatter plot from the previous activity and use this nonlinear function to make predictions. These predictions are then compared to predictions made using the linear regression equation, and students conclude the cubic function is quite effective when used to interpolate but very ineffective when used to extrapolate." It is not evident from this facilitation note how or when students are to attend to precision. Module 4, Topic 1, Lesson 1, Activity 1.2 includes a symbol of a puzzle inside a human head, which indicates that students should reason abstractly and quantitatively and critique the reasoning of others. The facilitation notes state, "In this activity, the term box-and-whisker plot in conjunction with the term five-number summary is introduced. A worked example connects the five-number summary to a box-and-whisker plot. Students compare two data sets, represented by their five-number summaries, by constructing two box-and-whisker plots on the same number line. They analyze both plots and write a summary of their comparison." It is not evident from the facilitation notes how or when students should reason abstractly or quantitatively or critique the reasoning of others.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	Materials explicitly attend to the specialized language of mathematics. At

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the beginning of the student workbook (p. FM-20-21), the "Academic Glossary" defines words such as "analyze" and "represent." The section also provides students with questions they should ask themselves when seeing these words in a prompt, along with key phrases to look for that relate to these terms. In addition, each lesson includes a list of key terms in the introduction and definitions of those key terms in context as the lesson progresses. For example, in Module 1, Topic 1, Lesson 3, there is a vocabulary list of terms associated with functions, and in Activity 3.1, the definition of discrete and continuous functions are given in the margin next to the statement, "The Vertical Line Test applies for both discrete and continuous graphs." Not only are these terms listed, defined, and explained, but they are also used throughout the lessons to support students in building academic vocabulary, engaging in mathematical discourse, and explaining solutions. Thinking bubbles are also used to help students problem solve that use precise language. For example, in Module 1, Topic 1, Lesson 3, one Think about bubble states, "So all functions are relations, but only some relations are functions." Students use this thinking bubble when analyzing relations.
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the	**REQUIRED** **7a)** There is variety in what students produce. For example, students are asked to produce answers and	**Yes**	There is variety in what students produce. Students not only produce answers and solutions but also explain, represent

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.		answers in diagrams, and use mathematical models. For example, in Module 3, Topic 1, Lesson 1, Activity 1.3, question 2, students verify if a relationship is exponential, determine a value from the relationship, complete a table, and prove algebraically that the relationship has a constant ratio. In Module 3, Topic 1, Lesson 3, Activity 3.1, students write functions, provide explanations, sketch and label graphs, make comparisons, complete tables, and make generalizations about transformations of graphs. In Module 4, Topic 1, Lesson 2, "Assignment" Practice portion #2, students create a box-and-whisker plot, describe the distribution in terms of the context of the situation, determine and explain the outliers, and explain their answer to a reasoning question. Additionally, in Module 5, Topic 1, Lesson 4, Activity 4.1, in question 1 students "compare the two functions" and then show their work and explain their reasoning. In question 2, students "complete the table to compare the average rate of change of the two functions on the given intervals" and then show their work. In question 3, students provide an explanation.
	REQUIRED **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student	**Yes**	There are separate teacher materials that support and reward teacher study. Each module includes topic overviews in addition to detailed notes for every lesson. Each lesson provides the teacher with a lesson overview, standards, essential

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.		ideas, lesson structure and pacing, facilitation notes, differentiation strategies, look fors, misconceptions, and questions to ask during activities. For example, in Module 1, Topic 1, Lesson 3, the Look Fors in the Getting Started section states, “As students work, look for - Identification of different graphs as not belonging with the others. - Use of math terminology related to the characteristics of the graphs.” In Module 2, Topic 1, Lesson 1, the materials explain that students often have a misconception that the negative sign is part of the d-term so have students connect pieces of the formula for arithmetic sequences with substituted values. Also, a differentiation strategy in this activity suggests that students make a table to organize their thoughts with common meanings. In Module 4, Topic 1, Lesson 3, Activity 3.1 provides questions to ask, including “What does a small (or large) standard deviation mean in this context?” and “What is preferred a smaller or larger standard deviation? Why?” Misconception notes in Module 4, Topic 2, Lesson 2, Activity 2.1 explains, “Students may write ratios based upon the totals for each column or row, rather than the total for the entire data set. Discuss that the percent total for the entire data set should be 100%.” In Module 5, Topic 1, the Topic Overview includes sections which address entry

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			points for students and a list of look fors for the teacher to determine student understanding. Additionally, in Module 5, Topic 3, Lesson 3, the teacher lesson plan includes facilitation notes which provide the teacher a list of questions to ask throughout the lesson with guidance on where to ask each question.
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners and other special populations is thoughtful and present in the materials. The teacher materials include "boxed" ELL tips to ensure students fully understand languages used. For example, in Module 2, Topic 4, Lesson 1, Getting Started Portion #3, students are asked to provide counterexamples. An ELL tip suggests to explain the prefix counter as meaning opposite and provide counterexamples in other contexts, so students can understand the term. In addition, in Module 2, Topic 1, Lesson 4, Activity 4.1, the ELL tip states, "The term recycling center is used in the problem for this activity. Discuss how the prefix re- means to repeat. Provide other examples such as retype and retrace. In this case, recycle means to cycle back and reuse rather than to discard." Suggestions for struggling students is also provided. For example, in Module 1, Topic 3, Lesson 1, the teacher lesson plan includes "Differentiation strategies to support students who struggle: Discuss a

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			method for entering the data for the independent variable into the graphing technology. If needed, suggest they represent the start year in the data set, 2010, as 0 on their data list." Additionally, in Module 4, Topic 2, Lesson 1, Activity 1.2, Facilitation Notes, Differentiation, teachers are provided with the following note, "To support students who struggle, suggest strategies to avoid errors such as having one partner read and the other record, crossing off data once they are read, or highlighting all grade 9 data and recording them first."
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The material is divided into modules, which are then broken into topics and further broken down into lessons. Every lesson has a warm up, Getting Started portion, and multiple activities. Through the activities, students complete tasks along with explorative questions aiding them in learning the new mathematics. Students then have the opportunity to apply the newly learned math in the Assignment portion of the lesson. For example, Module 5, Topic 1, Lesson 4 contains four activities that provide students with the opportunity to compare functions using key characteristics and average rate of change. Also, Module 2, Topic 2, Lesson 1 the student lesson assignment includes a Write, Remember, Practice, Stretch, and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Review problems which are indicated by headings. In addition, the materials include MATHia review software that includes videos to coach students through every topic and give them access to more practice exercises. Students also have the opportunity to practice and apply newly learned math content from each topic on the skills practice worksheets.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Every lesson starts with a warm up activity which then leads to a Getting Started set of problems opening the lesson to the multiple activities. The activities increase in complexity as students progress through the lesson. After the activities, the assignment consists of a writing portion, practice, and a review. In addition, for higher level students, the assignment has a Stretch portion that presents more challenging questions. For example in Module 4, Topic 1, Lesson 3, students complete three activities to compare data sets and end the lesson with a “Talk the Talk” that compares data on a box and whisker plot. Also, in Module 5 Topic 1 Lesson 2, “Students revisit the four scenarios from the previous lesson. The equation, graph, and a table of values is given for each situation and students use these multiple representations to identify key characteristics of quadratics.” The lesson also includes scaffolds for different types of learners, including struggling

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students and students who need an extension activity.
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	Materials support the uses of technology as called for in the standards. For example, in Module 1, Topic 3, Lesson 2, Activity 2.1, question 2, students use technology to compute the correlation coefficient as called for by standard A1.S.ID.C.8. In Module 5, Topic 3, Lesson 3, Activity 3.1, students "Use technology to calculate the regression equation that best models the data in the previous activity. Sketch the graph of the regression equation on the coordinate plane on which you created your scatter plot" (IF.C.7). In MATHia, Properties of Quadratic Functions, Sketching Quadratic Functions, students graph quadratic functions using a graphing applet (F.IF.C.7).

FINAL EVALUATION

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

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

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

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

Section	Criteria	Yes/No	
I: Non-Negotiables	1. Focus on Major Work	**Yes**	The materials devote 65% of class time to major work of the grade and spend minimal time on content outside of the grade level. Although some of the instructional lessons and assignments include standards outside of Algebra I, implementation suggestions are provided for Louisiana teachers for each of these lessons and assessments.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through the connections between supporting and major LSSM, as well as through the connection made between different clusters and domains.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards rigorous expectations by helping students develop conceptual understanding, procedural skill and fluency, and application.
	4. Focus and Coherence via Practice Standards	**Yes**	Materials use the practice standards to strengthen and enrich the focus of content standards for Algebra I.
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	Materials create coherence by linking topics from domains and clusters and through the progression of standards through grades/courses. Although minimal review work is utilized, not all work from previous courses is explicitly stated as review material.
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.
	7. Indicators of Quality	**Yes**	The materials give teachers and students the tools they need to meet the expectation of the standards.
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.

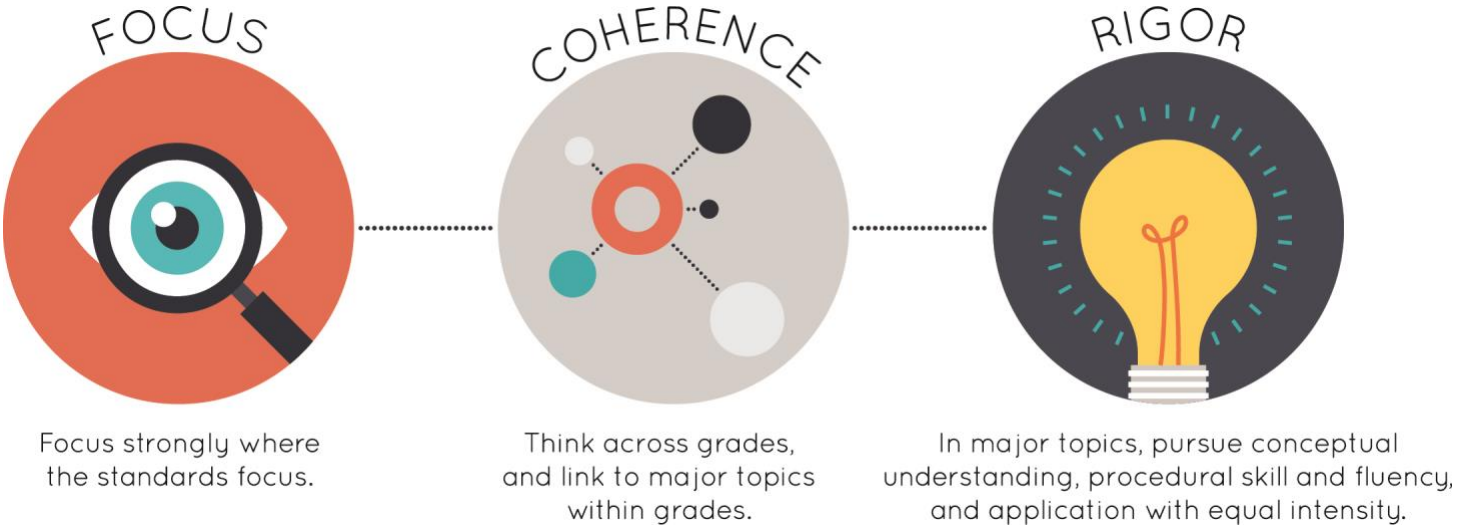
Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their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

The 2019-2020 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Beauregard, Bossier, Caddo, Calcasieu, Caldwell, City of Monroe, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, Jefferson, Jefferson Davis, KIPP New Orleans, Lafayette, Lafourche, Lincoln, Livingston, LSU Lab School, Orleans, Orleans/Lusher Charter School, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, RSD Choice Foundation, St. John the Baptist, St. Charles, St. James, St. Landry, St. Mary, St. Tammany, Tangipahoa, Vermillion, Vernon, West Baton Rouge, West Feliciana, and Zachary. This review represents the work of current classroom teachers with experience in grades 9-12.

Appendix I.

Publisher Response

Strong mathematics instruction contains the following elements:



Title: **High School Math Solution - Algebra I**

Grade/Course: **Algebra I**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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

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

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

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

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

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

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
SECTION I: NON-NEGOTIABLE CRITERIA: Submissions must meet all of the non-negotiable criteria in order for the review to continue.				
Non-Negotiable **1. FOCUS ON MAJOR WORK[1]:** Students and teachers using the materials as designed devote the large majority[2] of time to the major work of the grade/course. ☒ Yes ☐ No	**REQUIRED** **1a)** Materials should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The instructional materials devote the majority of class time to the major work of the course. The percentage of lessons that address the major work for Algebra I is 65%.	
	REQUIRED **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the course. Although 13 of the 57 instructional lessons include standards that are outside of Algebra I, implementation suggestions for Louisiana teachers are provided for each lesson. For example, in Module 5, Topic 3, Lesson 2, the implementation suggestion states, "In addition to LSSM A1 standards, this lesson includes standard A2: A-REI.C.7. Skip this lesson and its corresponding assignment. Students have multiple opportunities to address the remaining standards in this lesson throughout the Algebra I course." The implementation suggestion for Module 3, Topic 2, Lesson 2 states, "In addition to LSSM A1 standards, this lesson includes standard A2: F-IF.C.8b. Complete only Getting Started and Activity 2.1 of this lesson. In the Assignment, eliminate Practice Question 2 and Review Question 1." Assessment notes provide teachers with guidance on which	

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

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			assessment items are appropriate for Louisiana students. For example, in Module 3, the Assessment Guidance states, "Select assessment items from these suggestions: Pre-/Post Test: Q1 and 5 - 8, End of Topic Test: Q1 - 3, 6 - 8, and 11, and Standardized Test: Q1 - 4, 6 - 8, 10 - 15, 17, 19, and 20. Students should not be held accountable for combining functions or recognizing exponential growth or decay from an exponential function." Teachers are given the option of using additional assessment questions made available through Edulastic.	
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. This is seen in Module 5, Topic 1, Lesson 2, which connects supporting standards A1:A-SSE.B.3 and A1:A-APR.B.3 to major standard A1:F-IF.B.4. Students produce equivalent expressions to find key characteristics of quadratic functions (e.g., absolute minimum, absolute maximum, and zeros). Module 2, Topic 1, Lesson 2 connects supporting standards A1:F-LE.A.2 to the major standard A1:A-CED.A.1. Students build equations to correctly model the scenario as they are building an understanding of linear functions. Additionally, supporting standard A1:A-SSE.B.3 is connected to major standard A-REI.B.4 in Module 5, Topic 2, Lessons 2 and	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			4. In Lesson 2, "Solutions, More or Less," students make connections between determining solutions using a graph, through prior knowledge of square roots, and using the Zero Product Property to identify solutions from the product of linear factors. In Example 3 of Activity 2.1 (page M5-131) students are instructed to "Use the graphs to identify the solutions to each equation. Then determine the solutions algebraically and write the solutions in terms of their respective distances from the axis of symmetry" (LSSM A1:A-REI.B.4). Activity 2.2 bridges this concept on how finding the binomial factors of a quadratic can lead to determining zeros of a given function (LSSM A1:A-SSE.B.3a) through examples such as Example 1 (page M5-134), where students are instructed to "Determine the zeros of the function z(x) = x2 - 16. Then, write the function in factored form."	
	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**	The materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a course, in cases where these connections are natural and important. The materials connect the Creating Equations (CED) and Reasoning with Equations and Inequalities (REI) domains in Module 2, Topic 3, Lesson 2. In the lesson, students create a system of equations and use linear combination to solve for the two variables. The lesson also includes questions such as, "In the worked	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			example, only one equation needs to be rewritten to solve using the linear combinations method. Why?" Students focus on providing justification for using a particular method to solve the system. This connection between these two domains is natural and important. Additionally, the materials connect clusters within the Functions - Interpreting Functions domain. Module 1, Topic 1, Lesson 3 connects the cluster "Understand the concept of a function and use function notation" with cluster "Interpret functions that arise in applications in terms of the context" as students are first introduced to the terms function and function notation, then connect equations written in function form to its graph, identify the function family to which the function belongs, and interpret key features of the graphs for the remainder of the lesson.	
Non-Negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**REQUIRED** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where explicitly called for in the content standards. This is evident in Module 2, Topic 2, Lesson 1, "Solving Linear Equations," aligned with LSSM A1:A-REI.A.1, where students should be able to describe the steps needed to justify the solution to a linear equation. The Lesson Activity provides effective questioning that helps students develop the type of thinking needed to provide justification for each property used. For example, students complete the following	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			practice problem: “Sara and Ethan both created new equations starting from the solution statement x = 2. 1) Verify that both equations are equivalent to x = 2 using the given strategy. a. Substitution [and] b. Properties of Equality.” Section 4 of the Skill Practice worksheet for the topic also provides practice for this concept. Module 2, Topic 2, Lesson 3 provides guided instruction where students initially build understanding of features of linear functions in context before building equations. In Example 1, students use a graph to compare t-shirt prices based on key features (LSSM F-IF.B.4). In Example 2-4 students determine the mathematical and contextual meaning of equivalent expressions created by two different students (LSSM A-CED.A.1). Students demonstrate conceptual understanding of these concepts in the “Stretch” problem on page M2-40 as evident in the following practice problem: “A pretzel manufacturer has two production lines. Line A produces a variety of pretzel that is sold for $2.40 per bag. Line A typically produces 3 bags per day that do not meet company standards and cannot be sold. Line B produces a variety of pretzel that is sold for $3.60 per bag. Line B typically produces 4 bags per day that do not meet company standards and cannot be sold. Line A produces 3 times as many bags as Line B each day. Write a linear function that represents the total number of bags the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			lines can produce combined." In Module 4, Lesson 2, students are given several scenarios to determine which measure of center would be best to analyze the data and how to analyze the spread when outliers are present. This work provides the necessary scaffolding so that students are able to use data to make appropriate interpretations or predictions. For example, Question 2 of Lesson Activity 2.4 asks students to determine the standard deviation for two sets of data and interpret how the information could help them make decisions. The materials help students meet the rigor necessary to master LSSM A1:S-ID.A.2.	
	REQUIRED **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	The materials are designed so that students attain the fluencies and procedural skills required by the standards. For example, students are expected to gain fluency in Algebra I in evaluating functions for given domain values as stated by Major LSSM F-IF.A.2. This standard is addressed in Module 2, Topic 1, Lesson 2 and Module 2, Topic 3, Lesson 6. In addition to the lesson problems to be completed during guided instruction in the module materials, students are provided with optional Skills Practice to enhance procedural skills. Questions 1 through 6 of Part I: Arithmetic Sequences as Linear Functions, asks students to write arithmetic sequences as linear functions and graph the function for all values of n, where n is any value from 1 to 10. Questions 1 through 12 of Part III:	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			Evaluating Linear Functions provides three input values for students to evaluate for each of the 12 functions given. This skill is further addressed in the MATHia platform where students can view a step-by-step example or work through sample problems on their own. The materials provide sufficient practice with algebraic operations to prepare students for later work in algebra. Module 2, Topic 2, Lesson 2, "Literal Equations" provides the practice needed to attain procedural skills in LSSM A1: A-CED.A.4, rearrange formulas to highlight a quantity of interest. Students practice the skills through Student Lesson Practice and the optional skills practice worksheets. The MATHia platform also provides students the opportunity to practice solving for specific variables by choosing the appropriate equality property. In Module 5, Topic 2, Lesson 4, "Factoring and Completing the Square," students prepare to fluently solve quadratic equations in one variable by completing the square, factoring trinomials, and taking the square roots (LSSM A1:A-REI.B.4). The materials provide multiple opportunities for students to engage in this practice through the Lesson Activity and Practice, the Skill Practice worksheet, and MATHia platform activities.	
	REQUIRED **3c) *Attention to Applications:*** Materials are designed so that teachers and students spend sufficient time	**Yes**	The materials are designed to spend sufficient time working with engaging, non-routine real-world application tasks	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	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.		that require multi-step solutions. Students are given ample opportunity to apply learned skills through Topic Performance Tasks, assessment questions aligned directly to the application component of rigor, as well as, practice problems embedded throughout the instructional materials. For example, in the Topic Performance Task for Module 1, Topic 2, students apply understanding of sequences to real-world context analyzing the growth of trees from two different gardens. In addition, Topic 2, Lesson 4 fully focuses on the application of sequences to real world situations. In Module 1, Topic 3, Lesson 4, students engage in real-world problems involving two variables and model the relationship on a scatter-plot. Additionally, in Module 2, Topic 2, Lesson 3, students solve problems aligned with LSSM A1:A-CED.A. For example, a practice problem from the lesson materials states, “Chang-Ho is on his way to visit his friends at camp. Halfway to his destination, he realizes there is a slow leak in one of the tires. He checks the pressure and it is at 26 psi. It appears to be losing 0.1 psi per minute. a. Write a function to represent the tire’s pressure as a function of time in minutes. b. Chang-Ho knows that if the pressure in a tire goes below 22 psi it may cause a tire blowout. What is the greatest amount of time that he can drive before the tire pressure hits 22 psi? Show your work and graph the solution.” This	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			question directly targets the application level of rigor due to the expectation that it requires multiple steps to solve, and students will have to understand whether solutions to the equations will be viable or not.	
	REQUIRED **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in application after solidifying conceptual understanding and plenty of opportunity to gain procedural fluency where called for in the LSSM for Algebra I. Topics effectively build conceptual understanding and provide students the opportunity to demonstrate understanding through end of lesson practice problems and stretch problems. Students are given sufficient practice in regards to procedural skills and fluency where called for in the content standards, as well as targeted coursework where skills and understanding are used to solve multi-step real world problems.	
Non-Negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**REQUIRED** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	Materials address the practice standards in such a way as to enrich the content standards of Algebra I. This is evident in both the teacher materials and the student materials. The practice standards are present throughout the materials. In the teacher facilitation notes, the materials include suggested questions to help guide students toward using the math practice standard that is presented in each lesson. For example, In Activity 1.1 for Module 2, Topic 2, the materials suggest that	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			teachers use questions to elicit thinking related to MP.2 and MP.3, reason abstractly and critique the thinking of others. The suggested questions provided to help teachers support students in these practices were “explain your strategy to solve the equation” and “which solution path did you prefer, why and why not.” The Teacher Implementation Guide, Volume 1 lists the Habits of Mind and their connection to the Mathematical Practice Standards. The materials state, “Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding.” Teachers are given instruction to incorporate these habits into their daily instructional practice in the classroom. Opportunity for utilization of these skills can be seen in Activity 1.1 of Module 3 where students look for and make use of structure (MP.7) of given functions in Example 1 where they are required to sort functions into two groups of increasing or decreasing functions. In Example 6, students construct viable arguments and critique the reasoning (MP.3) of another student by responding to the following, “Chloe says that given any increasing linear function and any exponential growth function, the output of the exponential function will eventually be greater than the output of the linear function. Is Chloe correct? Use examples to justify your thinking.” In Activity 1.2 of Module 3, students are	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			asked to "Compare and explain the meaning of the expressions $(1 - 0.015)^t$ and $(1 + 0.018)^t$ in terms of this problem situation," thus requiring students to reason abstractly and quantitatively (MP.2).	
SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY				
Additional Criterion **5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT:** Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**REQUIRED** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide all students extensive work with course-level problems. Although present, review of material from previous grades is minimal. During the Develop section of the materials, students engage in a variety of tasks and problem solving to develop mathematical knowledge through discourse and collaboration. In the Demonstrate section of the materials, students demonstrate what they have learned and also engage in a self-assessment to monitor their own progress towards mastering learning goals. Students then complete an assignment where they practice skills and concepts learned. The materials also include MATHia, software that creates a personalized learning path with ongoing formative assessment adapted for each student. Students are provided with some review work related to prior material, although, when present, it is not always identified as review material. For example, in MATHia, Searching for patterns, Function Overview, Identifying Quantities, students interpret a	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			graph by answering questions. Students are shown a video that provides scaffolding and possible solutions. However, these questions are aligned with 6.EE.C.9 as students represent and analyze quantitative relationships between dependent and independent variables. This material is not labeled as review, but does provide support and connects to course-level work. The Getting Started section serves to activate student thinking. Some of the problems may include content from previous grades, but it is used to activate prior knowledge while creating potential connections to on-course-level concepts as students move through the lesson. This is noted in the Teacher's Implementation Guide. For example, Module 1, Topic 3, Lesson 1, students construct a scatter plot and informally find a line of best fit using a piece of spaghetti and answer questions 1-4 on Activity 1.1, which aligns with standard 8.SP.A.1 and 8.SP.A.2. The course-level problems begin with #5 where a line of best fit is generated using a graphing calculator in accordance with standard A1.S.ID.B.6.	
	REQUIRED **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview for each topic and in the Teacher Implementation Guide, as well as in the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			student materials. Prior knowledge is pointed out to students and families within the Family Guide for each topic. For example, in the Teacher Implementation Guide, Front Matter Volume 1, the Module Overview includes "connections to prior learning" and "connections to future learning" for each Module. Another example is seen in Module 2, Topic 4, Topic Overview, the "Entry Point" and "How does a student demonstrate understanding?" sections which explains that, in middle school, students have written and transformed linear equations and should be able to do so with absolute value equations by the end of this topic. In the student materials for Module 1, Topic 3, Lesson 2, the first page includes a question, "You have learned how to write a line of best fit using the Least Squares Method. How do you know if that line actually produces valid, useable results? Is there a way to measure the strength of the relationship between the variables?" This question serves to connect the lesson outcomes to prior knowledge of writing a line of best fit (S.ID.B.6b). In Module 3, Topic 1, Family Guide, the materials state, "In middle school, students learned the rules of exponents and used those rules to rewrite expressions in equivalent forms. They transformed geometric objects in the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			coordinate plane and noted the effect of each transformation on the ordered pairs of the image. This topic begins where students left with geometric sequences in a previous topic."	
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards. The learning goals listed at the beginning of each lesson use similar language to that of the standards. For example, in Module 5, Topic 1, Lesson 2, the last learning goal, "Use key characteristics of the graph of a quadratic function to write an equation in factored form," is worded similarly as the standard A1.A.SSE.A.2, "Use the structure of an expression to identify ways to rewrite it." Both the learning goal and standard involve rewriting an expression in different forms. Another example, in Module 4, Topic 2, Lesson 3, states, "Construct and interpret conditional relative frequency distributions displayed in two-way tables for categorical data," as a student outcome, which is visibly shaped by standard S.ID.B.5, "Summarize categorical data for two categories in two-way frequency tables."	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Additional Criterion **6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE:** Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**REQUIRED** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	Materials attend to the full meaning of each practice standard. Materials define the mathematical practices as "Habits of Mind." This overview is provided on pages FM-34 and FM-35 in the Teacher Implementation Guide Volume 1. The "Habits of Mind" are identified throughout the materials using symbols. For example, in Module 2, Topic 2, Lesson 2, Activity 2.1 utilizes MP.7, depicted with a three-dimensional box, as students use structure to determine characteristics (slope, y-intercept, x-intercepts) of various forms of linear functions. In Module 2, Topic 4, Lesson 3, Activity 3.2 includes a symbol of a hand holding a wrench. In this activity, students model with mathematics (MP.4) by writing "a scenario and a piecewise function to model a piecewise graph about cell phone battery life over time." In Module 5, Topic 2, Lesson 3, Activity 3.3 includes a symbol of a target. In this activity, students attend to precision, MP.6, by using reference points to graph quadratic functions. Additionally, in Module 5, Topic 2, Lesson 1, Activity 1.2 utilizes MP.2 as students model reaction time to visual and auditory stimuli in relation to their age.	
	REQUIRED **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving	**Yes**	Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others. Students are routinely asked to critique the reasoning of other students by examining student work within the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.		material. Some of these opportunities are denoted by "Thumbs Up/Thumbs Down" protocol. For example, in Module 1, Lesson 2, Activity 2.1, students critique Ashley and Duane's reasoning for grouping graphs the way they did. In Module 2, Topic 3, Lesson 5, Activity 5.3, students explain why Heather's system of linear inequalities is incorrect. In Module 3, Topic 2, Lesson 2, students examine work completed by Lucy and Michael to determine whether each student's method will always work to solve an equation. In Module 4, Topic 2, Lesson 4, students are asked " Do you think the results might be the same or different if Andres conducted another random survey at Rawlings High School? Explain your reasoning."	
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. Although the practice standards are presented as "Habits of Mind" at the beginning of the materials, and the symbols that will be used to denote which practice(s) each activity uses are identified, the facilitation notes in the teacher materials do not explain how the practice standards should be used or help develop understanding within the activity. For example, Module 1, Topic 3, Lesson 4, Activity 4.2 includes a target symbol, which indicates that students should attend to precision. The facilitation notes state, "In	Carnegie Learning's High School Math Solution explicitly connects content standards and practice standards. Materials address the practice standards in such a way as to enrich the major work of the grade -- strengthening the focus rather than detracting from it. Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. Each activity denotes the habit of mind highlighted with an icon that represents the mathematical practice or pair of practices intentionally being developed. In the front matter of the Student Edition (FM-18) and the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			this activity, students sketch a given cubic function onto a scatter plot from the previous activity and use this nonlinear function to make predictions. These predictions are then compared to predictions made using the linear regression equation, and students conclude the cubic function is quite effective when used to interpolate but very ineffective when used to extrapolate." It is not evident from this facilitation note how or when students are to attend to precision. Module 4, Topic 1, Lesson 1, Activity 1.2 includes a symbol of a puzzle inside a human head, which indicates that students should reason abstractly and quantitatively and critique the reasoning of others. The facilitation notes state, "In this activity, the term box-and-whisker plot in conjunction with the term five-number summary is introduced. A worked example connects the five-number summary to a box-and-whisker plot. Students compare two data sets, represented by their five-number summaries, by constructing two box-and-whisker plots on the same number line. They analyze both plots and write a summary of their comparison." It is not evident from the facilitation notes how or when students should reason abstractly or quantitatively or critique the reasoning of others.	Teacher's Implementation Guide (FM-34), we explain the practices with their corresponding icon. There are four icons: one represents a single practice, while the other three represent pairs of practices. No icon is used for Math Practice 1 (Make sense of problems and persevere in solving them.) because this practice is evident every day in every lesson. Teacher-directed materials that explain the role of the practice standards: • In the TIG front matter, we explain how to integrate the practices into daily instruction. For example, "When you are facilitating each lesson, listen carefully and value diversity of thought, redirect students' questions with guiding questions, provide additional support with those struggling with a task, and hold students accountable for an end product. When students share their work, make your expectations clear, require that students defend and talk about their solutions, and monitor student progress by checking for understanding. Consider having students create "I can" statements for each practice or pair of practices. This strategy can help

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				students become reflective about their work. • The Topic Overview in the Teacher's Implementation Guide identify how students develop proficiency in the habits of mind in that Topic. For example in Topic 1, Quantities and Relationships, "How do the activities in Quantities and Relationships promote student expertise in the mathematical practice standards? All Carnegie Learning topics are written with the goal of creating mathematical thinkers who are active participants in class discourse, so elements of habits of mind should be evident in all lessons. Students are expected to make sense of problems and work towards solutions, reason using concrete and abstract ideas, and communicate their thinking while providing a critical ear to the thinking of others. Throughout Quantities and Relationships, students search for patterns in tables, equations, and scenarios. They examine the structure of these function representations to identify common characteristics of function types. They should

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				notice that the equations of graphs in the same family all take the same general form. • The icon also appears within each lesson's facilitation notes with questions listed to facilitate the learning where they occur. The Facilitation Notes provide teachers with resources for supporting students as they develop proficiencies in the habits of mind. • In the example provided, Module 1, Topic 3, Lesson 4, Activity 4.2 Nonlinear Regression, students develop proficiency in the precision practice, as denoted by the target icon. In addition to the questions in the Student Edition that require students to make predictions and compare predictions from two different equations, the **Questions to ask** in the TIG support teachers as they interact with students developing proficiency in precision. For example, "Do the predictions based on the cubic model seem reasonable to you? Why or why not? Comparing the linear model to the cubic model, are any of the matching predictions relatively close to each other? Comparing the linear

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				model to the cubic model, are any of the matching predictions considerably different? Which model do you think makes more accurate predictions? Why?" • In the second example provided, Module 4, Topic 1, Lesson 1, Activity 1.2 Box-and-Whisker Plots, students are working on reasoning abstractly and quantitatively and critiquing the reasoning of others. The SE provides questions requiring students to compare data sets and to write an analysis of their findings. Again, the **Questions to ask** in the Teacher's Implementation Guide provide teachers with the tools to foreground this practice in their instruction. For example, Is the median equidistant from the minimum and maximum values? One half of the data is what percent of the data? If the data are divided into four equal parts, what percent of the whole is each part? What estimate could you make regarding the percent of sites in Greenville that are above the 15 ppb threshold? What factors could play a role in the differences in the data sets? What information is visible from

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				a box-and-whisker plot that is not visible from a dot plot or a histogram? Does the EPA need to take further action to reduce the levels of lead in either of these cities? How can you tell from the box-and-whisker plots? Does your answer for Greenville make sense according to your histogram? Explain." • Going beyond merely explaining the role of each practice, the High School Math Solution provides teachers and students with the resources that they need at point of use.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	Materials explicitly attend to the specialized language of mathematics. At the beginning of the student workbook (p. FM-20-21), the "Academic Glossary" defines words such as "analyze" and "represent." The section also provides students with questions they should ask themselves when seeing these words in a prompt, along with key phrases to look for that relate to these terms. In addition, each lesson includes a list of key terms in the introduction and definitions of those key terms in context as the lesson progresses. For example, in Module 1, Topic 1, Lesson 3, there is a vocabulary list of terms associated with functions, and in Activity 3.1, the definition of discrete and	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			continuous functions are given in the margin next to the statement, "The Vertical Line Test applies for both discrete and continuous graphs." Not only are these terms listed, defined, and explained, but they are also used throughout the lessons to support students in building academic vocabulary, engaging in mathematical discourse, and explaining solutions. Thinking bubbles are also used to help students problem solve that use precise language. For example, in Module 1, Topic 1, Lesson 3, one Think about bubble states, "So all functions are relations, but only some relations are functions." Students use this thinking bubble when analyzing relations.	
Additional Criterion **7. INDICATORS OF QUALITY:** Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**REQUIRED** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Students not only produce answers and solutions but also explain, represent answers in diagrams, and use mathematical models. For example, in Module 3, Topic 1, Lesson 1, Activity 1.3, question 2, students verify if a relationship is exponential, determine a value from the relationship, complete a table, and prove algebraically that the relationship has a constant ratio. In Module 3, Topic 1, Lesson 3, Activity 3.1, students write functions, provide explanations, sketch and label graphs, make comparisons, complete tables, and make generalizations about transformations of graphs. In Module 4, Topic 1, Lesson 2, "Assignment" Practice portion #2, students create a box-	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			and-whisker plot, describe the distribution in terms of the context of the situation, determine and explain the outliers, and explain their answer to a reasoning question. Additionally, in Module 5, Topic 1, Lesson 4, Activity 4.1, in question 1 students "compare the two functions" and then show their work and explain their reasoning. In question 2, students "complete the table to compare the average rate of change of the two functions on the given intervals" and then show their work. In question 3, students provide an explanation.	
	REQUIRED **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Yes**	There are separate teacher materials that support and reward teacher study. Each module includes topic overviews in addition to detailed notes for every lesson. Each lesson provides the teacher with a lesson overview, standards, essential ideas, lesson structure and pacing, facilitation notes, differentiation strategies, look fors, misconceptions, and questions to ask during activities. For example, in Module 1, Topic 1, Lesson 3, the Look Fors in the Getting Started section states, "As students work, look for - Identification of different graphs as not belonging with the others. - Use of math terminology related to the characteristics of the graphs." In Module 2, Topic 1, Lesson 1, the materials explain that students often have a misconception that the negative sign is part of the d-term so	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			have students connect pieces of the formula for arithmetic sequences with substituted values. Also, a differentiation strategy in this activity suggests that students make a table to organize their thoughts with common meanings. In Module 4, Topic 1, Lesson 3, Activity 3.1 provides questions to ask, including "What does a small (or large) standard deviation mean in this context?" and "What is preferred a smaller or larger standard deviation? Why?" Misconception notes in Module 4, Topic 2, Lesson 2, Activity 2.1 explains, "Students may write ratios based upon the totals for each column or row, rather than the total for the entire data set. Discuss that the percent total for the entire data set should be 100%." In Module 5, Topic 1, the Topic Overview includes sections which address entry points for students and a list of look fors for the teacher to determine student understanding. Additionally, in Module 5, Topic 3, Lesson 3, the teacher lesson plan includes facilitation notes which provide the teacher a list of questions to ask throughout the lesson with guidance on where to ask each question.	
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners and other special populations is thoughtful and present in the materials. The teacher materials include "boxed" ELL tips to ensure students fully understand languages used. For example, in Module 2, Topic 4, Lesson 1, Getting Started Portion	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			#3, students are asked to provide counterexamples. An ELL tip suggests to explain the prefix counter as meaning opposite and provide counterexamples in other contexts, so students can understand the term. In addition, in Module 2, Topic 1, Lesson 4, Activity 4.1, the ELL tip states, “The term recycling center is used in the problem for this activity. Discuss how the prefix re- means to repeat. Provide other examples such as retype and retrace. In this case, recycle means to cycle back and reuse rather than to discard.” Suggestions for struggling students is also provided. For example, in Module 1, Topic 3, Lesson 1, the teacher lesson plan includes “Differentiation strategies to support students who struggle: Discuss a method for entering the data for the independent variable into the graphing technology. If needed, suggest they represent the start year in the data set, 2010, as 0 on their data list.” Additionally, in Module 4, Topic 2, Lesson 1, Activity 1.2, Facilitation Notes, Differentiation, teachers are provided with the following note, “To support students who struggle, suggest strategies to avoid errors such as having one partner read and the other record, crossing off data once they are read, or highlighting all grade 9 data and recording them first.”	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The material is divided into modules, which are then broken into topics and further broken down into lessons. Every lesson has a warm up, Getting Started portion, and multiple activities. Through the activities, students complete tasks along with explorative questions aiding them in learning the new mathematics. Students then have the opportunity to apply the newly learned math in the Assignment portion of the lesson. For example, Module 5, Topic 1, Lesson 4 contains four activities that provide students with the opportunity to compare functions using key characteristics and average rate of change. Also, Module 2, Topic 2, Lesson 1 the student lesson assignment includes a Write, Remember, Practice, Stretch, and Review problems which are indicated by headings. In addition, the materials include MATHia review software that includes videos to coach students through every topic and give them access to more practice exercises. Students also have the opportunity to practice and apply newly learned math content from each topic on the skills practice worksheets.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Every lesson starts with a warm up activity which then leads to a Getting Started set of problems opening the lesson to the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			multiple activities. The activities increase in complexity as students progress through the lesson. After the activities, the assignment consists of a writing portion, practice, and a review. In addition, for higher level students, the assignment has a Stretch portion that presents more challenging questions. For example in Module 4, Topic 1, Lesson 3, students complete three activities to compare data sets and end the lesson with a "Talk the Talk" that compares data on a box and whisker plot. Also, in Module 5 Topic 1 Lesson 2, "Students revisit the four scenarios from the previous lesson. The equation, graph, and a table of values is given for each situation and students use these multiple representations to identify key characteristics of quadratics." The lesson also includes scaffolds for different types of learners, including struggling students and students who need an extension activity.	
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	Materials support the uses of technology as called for in the standards. For example, in Module 1, Topic 3, Lesson 2, Activity 2.1, question 2, students use technology to compute the correlation coefficient as called for by standard A1.S.ID.C.8. In Module 5, Topic 3, Lesson 3, Activity 3.1, students "Use technology to calculate the regression equation that best models the data in the previous activity. Sketch the graph of the regression equation on the coordinate plane on which you created	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			your scatter plot" (IF.C.7). In MATHia, Properties of Quadratic Functions, Sketching Quadratic Functions, students graph quadratic functions using a graphing applet (F.IF.C.7).	
FINAL EVALUATION ***Tier 1 ratings*** receive a "Yes" in Column 1 for Criteria 1 – 7. ***Tier 2 ratings*** receive a "Yes" in Column 1 for all non-negotiable criteria (Criteria 1 – 4), but at least one "No" in Column 1 for the remaining criteria. ***Tier 3 ratings*** receive a "No" in Column 1 for at least one of the non-negotiable criteria.				
Compile the results for Sections I and II to make a final decision for the material under review.				
Section	**Criteria**	**Yes/No**		
I: Non-Negotiables	1. Focus on Major Work	**Yes**	The materials devote 65% of class time to major work of the grade and spend minimal time on content outside of the grade level. Although some of the instructional lessons and assignments include standards outside of Algebra I, implementation suggestions are provided for Louisiana teachers for each of these lessons and assessments.	
	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through the connections between supporting and major LSSM, as well as through the connection made between different clusters and domains.	
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards rigorous expectations by helping students develop conceptual understanding, procedural skill and fluency, and application.	
	4. Focus and Coherence via Practice Standards	**Yes**	Materials use the practice standards to strengthen and enrich the focus of content standards for Algebra I.	

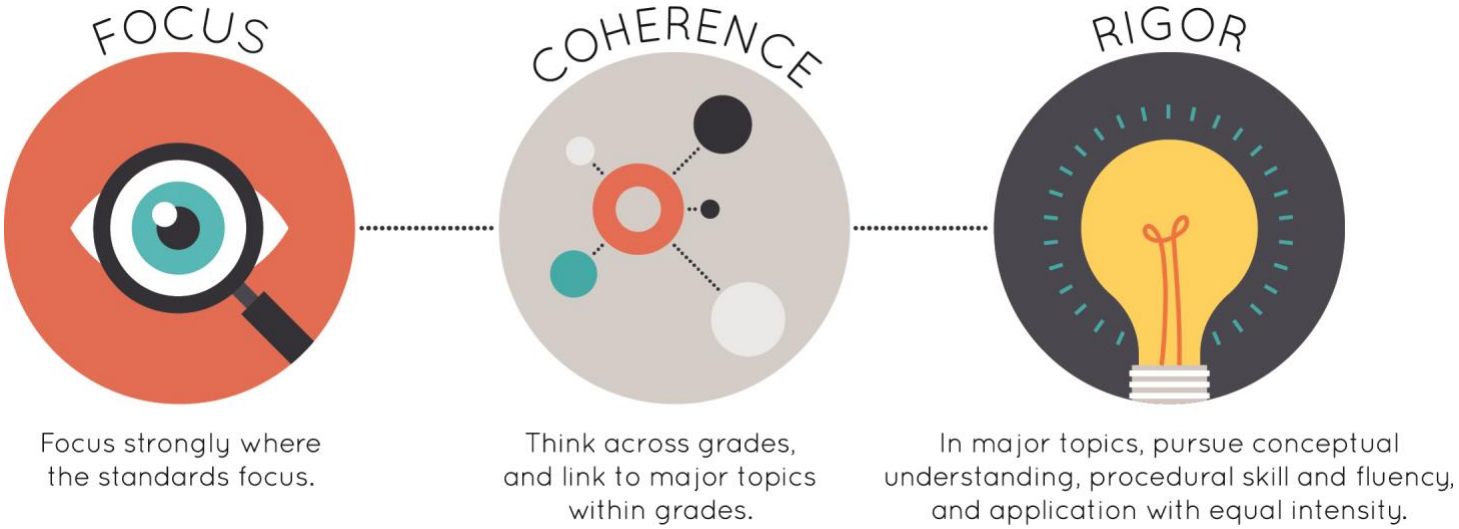
CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
II: Additional Alignment Criteria and Indicators of Quality	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	Materials create coherence by linking topics from domains and clusters and through the progression of standards through grades/courses. Although minimal review work is utilized, not all work from previous courses is explicitly stated as review material.	
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.	
	7. Indicators of Quality	**Yes**	The materials give teachers and students the tools they need to meet the expectation of the standards.	
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**				

DEPARTMENT of EDUCATION
Louisiana Believes

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

FULL CURRICULUM
Instructional Materials

Strong mathematics instruction contains the following elements:



Title: **High School Math Learning Solutions - Geometry**

Grade/Course: **Geometry**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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 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 should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of class time to the major work of the grade. Of 138 instructional days, 92 (67%), including time spent on instructional lessons and the MATHia Software/Skills Practice, are spent on major work of the grade. 71 (52%) instructional days address only major standards, 21 (15%) address a combination of major and supporting/additional standards, and 46 (33%) address supporting and/or additional standards.
	Required **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the appropriate course. While 13 of the total 58 instructional lessons include standards that are outside of Geometry, implementation suggestions are provided for Louisiana teachers. The Carnegie Louisiana Scope and Sequence guide suggests skipping 7 of these lessons and adjusting the other 6 lessons. For example, students connect the Pythagorean Theorem to the Pythagorean Identity (LSSM A2: F.TF.C.8) in Module 4, Topic 2, Lesson 4, but the Louisiana Scope and Sequence document states, “Skip this lesson and its corresponding assignment.

[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
			Removing this lesson will not have any impact on future lessons in the textbook." For Module 5, Topic 1, Lesson 4, the Louisiana Scope and Sequence document suggests that teachers complete the Getting Started, Activity 1, 2, and 3 portions of the lesson which involve understanding independent events and applying the addition rule (LSSM S.CP.B.2, S.CP.B.7) and that teachers eliminate Practice Question 2 and Review Question 2, which involves finding the probability of compound events (CCSS S.CP.B.9). In Module 5, Topic 2, Lesson 5, teacher directions state, "In addition to providing opportunities for students to use geometric probability, this lesson includes standards [CCSS] S.MD.B6 and S.MD.B7. Complete Activity 1: Geometric Probability only." In Module 4, Topic 2, Lesson 5, teacher directions state, "This lesson addresses standard [CCSS] G-GPE.A2. Skip this lesson and its corresponding assignment. Removing this lesson will not have any impact on future lessons in the textbook." Assessments make students and teachers responsible for topics that have been introduced prior to assessment; however, teachers are instructed to skip lessons and corresponding assessment questions in the Carnegie Louisiana Scope and Sequence. For example, the End of Topic Assessment for Module 2, Topic 1 assesses standards

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			G.CO.7, G.CO.8, and G.CO.9 as students apply theorems about angles. Assessment notes provided for teachers includes guidance on which assessment items are appropriate for Louisiana students. In Module 4, Topic 2, teachers are directed, "Select assessment questions from these suggestions: Pre-/Post Test: Q1 - 5 End of Topic Test: Q1 - 9 Standardized Test: Q3, 8, 9, 11, 12, 13, 16, and 19. Students should not be held accountable for determining the value of a trigonometric function in a given quadrant and writing the equation of a parabola (given a focus and directrix), an ellipse, and a hyperbola. Additional assessment questions are available through Edulastic." Also found in Module 4, Topic 2, End of Topic Assessment, students identify trigonometric ratios using the Pythagorean identity of sin2 + cos2 = 1 (LSSM F.TF.C.8) which is an Algebra II standard.
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Lessons use activities that allow students to use supporting content to master the major content. For example, in Module 1, Topic 1, Lesson 2, students make formal geometry constructions (Supporting LSSM G.CO.D.12) to prove the slope criteria for parallel and perpendicular lines (Major LSSM G.GPE.B.5). In Module 1, Topic 1, Lesson 3 students construct parallel lines

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			in Activity 1 in accordance with supporting work (LSSM G.CO.D.12) and then use this to prove the slope criteria for parallel and perpendicular lines on a coordinate plane in Activity 2 in accordance with major work (LSSM G.GP.B.5). In Module 1, Topic 3, Lesson 1, students are reminded of the definitions of lines, line segments, and angles in Activity 1 (Supporting LSSM G.CO.A.1) and then use these terms to develop definitions of rigid motions in the "Talk the Talk" portion of the lesson, both in accordance with supporting work. Later in the lesson, students use descriptions to predict the effects rigid motions have on a given figure, which directly aligns with major work (LSSM G.CO.B.6).
	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**	The 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. Several lessons include standards from different clusters and domains. For example, Module 1, Topic 1, Lesson 5 addresses major LSSM G.GPE.B.5, G.GPE.B.7 and G.MG.A2 as students consider real-world situations requiring them to calculate the perimeter and area of polygons, connecting the Expressing Geometric Properties with Equations (GPE) and the Modeling with Geometry (MG) domains. Module 3, Topic 1, Lesson 3 addresses major LSSM G.CO.C.10, G.SRT.A.1a, and G.SRT.B.4 as students use paragraphs and two-column proofs to prove various theorems.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Additionally, students verify properties of dilations (LSSM G.SRT.A.1a) in Activity 1, prove the angle bisector and proportional side theorem in Activity 2, then apply these theorems in Activity 3 (LSSM G.SRT.B.4). This lesson connects the Congruence(CO) and Similarity, Right Triangles, and Trigonometry (SRT) domains, as well as the clusters A, Understand similarity in terms of similarity transformation, and B, Prove theorems involving similarity within the SRT domain. In Module 4, Topic 2, Lesson 1, students use the measures and properties of geometric shapes (LSSM G.MG.A.1) to identify the shapes of two-dimensional cross-sections of three-dimensional objects (LSSM G.GMD.B.4) connecting the Modeling with Geometry (MG) and Geometric Measure and Dimension (GMD) domains. In Module 3, Topic 1, Lesson 4 students use the properties of similarity transformations to establish the AA criterion (LSSM G.SRT.A.3) and prove theorems about triangles (LSSM G.SRT.B.4), connecting clusters A, Understand similarity in terms of similarity transformation, and B, Prove theorems involving similarity within the same domain. Also, in Module 4, Topic 1, Lesson 1, students prove that all circles are similar in Activity 1 (LSSM G.C.A.1) and give an informal argument for the circumference of a circle formula in the “Worked Example” portion of Activity 1 and follow

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			up questions (LSSM G.GMD.A.1) which connects the Circles (C) and (GMD) 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 amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where indicated by standards that explicitly call for conceptual understanding. Students complete exploratory activities and answer follow up questions to develop their conceptual understanding. For example, in Module 2, Topic 1, Lesson 2, Activity 2.2, students are asked, "If 3 corresponding sides of two triangles are congruent, can the triangles always be mapped onto each other by a series of reflections?" which allows them to conceptually develop the notion of triangle congruence using rigid transformations (LSSM G.CO.B.8). In Module 3, Topic 2, Lesson 1, Activity 1.1, students "create a pair of similar triangles, justify that they are similar, and determine side length ratios as they did in the Getting Started, but begin with a 45°-45°-90° triangle" and use questions such as, "In the 45°-45°-90° triangle, why are the ratios formed by the opposite side length to the hypotenuse side length and the adjacent side length to the hypotenuse side length always the same ratio?" which uses similarity concepts to develop ratios for special right triangles (LSSM G.SRT.C.6). In Module 1, Topic 3, Lesson 3, Activity 3.1, students examine reflections to develop

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			definitions based on the length of different line segments and their orientation. In this activity, students are expected to justify their reasoning about the relationships among different line segments to conceptualize their thinking about reflections (LSSM G.CO.A.4).
	Required **3b) *Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	The materials are designed so that students attain the fluency and procedural skills required by the Standards and give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. For example, in Module 1, Topic 2, Lesson 3, Activity 3.1, facilitation notes state, “In this activity, students duplicate an angle and construct an angle that is twice the measure of a given angle. Students also revisit the construction from the Getting Started activity to construct a regular hexagon inscribed in a circle by duplicating 60° angles to create six equilateral triangles sharing the center of the circle as a vertex. They compare the processes used to duplicate an angle and duplicate a line segment.”(LSSM G.CO.D.12 and G.CO.D.13). In Module 4, Topic 2, Lesson 3, Activity 3.1, “students are given a circle with a center point at the origin and the length of the radius. They use the Pythagorean Theorem to determine the coordinates of points that lie on the circumference of a circle.” (LSSM G.GPE.A.1 and G.GPE.B.4). In Module 1, Topic 1, Lesson 4, students use coordinates

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			alongside the Pythagorean Theorem and slope to determine the most precise name for a given quadrilateral or triangle (LSSM G.GPE.B.4). In Module 4, Topic 2, Lesson 2, students complete the square in multiple problems to determine the center and radius of a circle (LSSM G.GPE.A.1). In Module 3, Topic 1, Lesson 6, Activity 2, students find the point that is ½, ¼, and ⅓ along the directed line segment in problem 2, parts a, b, and c, respectively (LSSM G.GPE.B.6).
	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**	The 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. For example, in Module 4, Topic 1, Lesson 4, Activity 3, students are given a situation with 2 different cylinders made from the same size sheet of paper, each with their own constraint for height. Students are then asked to construct an argument explaining which cylinder (if either) would have a greater volume, determine the radius and height of each cylinder, and calculate the volume of each cylinder. Students are then asked to explain if the height or radius has a greater impact on a cylinder's volume and to determine a radius given height and volume (LSSM G.MG.A.3). Also, in Module 5, Topic 2, Lesson 1, Activity 3, students are given a partially complete two-way frequency table. Students are asked to find relative

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			frequencies of certain events, to determine a probability for certain events and explain how it was reached, and to explain if being a male is independent of liking to listen to music after school (LSSM G.CP.A.4). In Module 3, Topic 2, Lesson 3, students use sine and sine inverse to determine lengths and angles in real-world problems involving triangles (LSSM G.SRT.C.8). In Module 4, Topic 1, Lesson 4, Activity 4.6, students use volume and surface area of three-dimensional shapes to solve real-world problems (LSSM G.GMD.A.3, G.MG.A.3). In Module 5, Topic 1, Lesson 3, Activity 3.2, students apply the Addition Rule for Probability to answer questions such as "A new holiday—Probability Day—is going to be celebrated at your school. It may be celebrated on any of the first 3 days of any month. The problem now is to choose which day it will fall on. Of course, the day will be selected at random. First, the month will be selected and then the day." (LSSM S.CP.B.7)
	Required **3d)** ***Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in application after solidifying conceptual understanding with ample opportunity to gain procedural fluency as called for in the LSSM for Geometry. Topics effectively build conceptual understanding and provide students the opportunity to demonstrate understanding through the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			end of lesson practice problems and stretch problems. Students are given ample practice in procedural skill and fluency as well as targeted coursework where skills and understanding are used to solve multi-step real-world problems. For example, in Module 3, Topic 1, Lesson 1, Getting Started, students conceptualize and answer questions related to dilations. In Activity 1.1 of the same lesson, students apply concepts of dilations to real-world problems addressing the application expectation of the standard. In Activity 1.3 of the same lesson, students use geometric theorems to determine similarity addressing the procedural skill expectation of the standard (LSSM G.SRT.A.1, G.SRT.A.2, and G.SRT.B.5). In Module 1, Topic 1, Lesson 5, students answer conceptual/procedural questions such as “Carter has an irregular backyard because it backs onto the foothill of a mountain and is very rocky. The composite figure graphed on the coordinate plane represents the flat area of Carter’s backyard. Each interval of the coordinate plane represents two yards. 1. Carter will install fencing all around the flat area of his backyard. Determine the amount of fencing he needs to the nearest whole yard. 2. Carter wants to lay grass sod in the flat area of his backyard. Determine the total area of sod he needs.” (LSSM G.GPE.7) In Module 1, Topic 2, Lesson 3,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Activity 4 students use procedural skill and fluency to bisect an angle using patty paper in the first worked example, are shown how to bisect an angle using a compass and straightedge in the second worked example, and then bisect an angle on their own in problem 2 (LSSM G.CO.D.12). In addition, in Module 3, Topic 2, Lesson 2, Activity 1, students are given a description of a ramp. In problem 1, students must draw a diagram and find the length of a ramp, in problem 2, students do the same with a second ramp, in problem 3, students compare the two ramps and explain if they are similar, in problem 4 students explain what the ratio of rise to run of the ramp means, and in problem 5 students compare the angles of inclination of the ramps, incorporating conceptual, procedural skill and fluency, and application in one activity (LSSM G.SRT.C.8).
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**Required** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	The materials address the practice standards in such a way as to enrich the content standards of the grade/course. The practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials. Each lesson has questions which correlate to the math practice standards which are noted through symbols in the lesson. For example, in Module 4, Topic 1, Lesson 4, students answer “Use centimeter cubes to construct these pyramids. (Pyramids are given in an

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			image.) Then answer the questions and explain your reasoning. a. Describe the two-dimensional shape of the top surface of each layer of cubes. b. Explain why the two-dimensional surfaces of the cube layers represent similar figures. c. What is the volume of each pyramid? d. For each of the two pyramids, determine the volume of a prism that has the same base." This activity addresses MP.4 (Modeling with mathematics). In Module 2, Topic 1, Lesson 3, Activity 3.1, students use MP.3 (Construct viable arguments and critique the arguments of others) and MP.2 (Reason abstractly and quantitatively) to answer questions such as "Suppose AD bisects ∠A, and AD ⊥ BC. Are there congruent triangles in this diagram? Explain your reasoning." and "Simone says that since △ ABC and △DCB have two pairs of congruent corresponding sides and congruent corresponding angles, then the triangles are congruent by SAS. Is Simone correct? Explain your reasoning." In Module 2, Topic 2, Lesson 2, Activity 2.4, students write a proof plan to explain their reasoning (MP.3). In Module 5, Topic 1, Lesson 1, Activity 1.1, students use tree diagrams to list sample spaces (MP.5). In Module 1, Topic 3, Lesson 2, Activity 1, students analyze a diagram of translated triangles and determine how each image point moved in relation to its pre-image. Students must answer questions such as question 1c, "Measure the lengths of the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			two line segments used in the translation. What do you notice?" This is denoted in the teacher materials as having a three-dimensional cube symbol which represents use of MP.7 or MP.8.
Section II: Additional Criteria 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 course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide extensive student work with course-level problems. For example, Module 1, Topic 2, Lesson 2 addresses LSSM G.CO.C.11 through problems such as, "Nichole observed the relationship between the interior angles of the isosceles trapezoid. She conjectured that trapezoids have two pairs of congruent angles that are adjacent to each other. Do you think Nichole's conjecture is correct? Draw examples to justify your answer." In Module 2, Topic 3, Lesson 5, "Talk the Talk" problem 2 states, "Consider the rotational symmetries of an equilateral triangle, square, and regular hexagon. a. What relationship exists between the rotational symmetries of each figure and its interior angle measures? b. Test the pattern you noticed on a regular pentagon and regular hexagon. What do you notice?" (LSSM G.CO.A.3) In Module 4, Topic 2, Lesson 3, Activity 3.1, problem 2 states, "Use the Pythagorean Theorem to determine whether point B (4, 3) lies on circle A, and then explain your reasoning." (LSSM G.GPE.A.1). In Module 3, Topic 2, Lesson 1, students are to "Determine all of the side length ratios and corresponding

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			angle measures for the two triangles. Explain how you know that △ABC is similar to △ADE" and "Given a leg length x, determine the lengths of the other sides of the 45°-45°-90° triangle. Label the triangle." (LSSM G.SRT.C.6) Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year. Each lesson begins with a Getting Started section to activate prior knowledge, either from earlier grades/courses, or previous lessons within the course. This section allows students to make connections from previously learned content to the course level content within the lesson.
	Required **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview sections and in the Teacher's Implementation Guide. Prior knowledge is also pointed out to students and families within the Family Guide for each Topic. For example, Module 1, Topic 3, Lesson 2, the Getting Started portion of the lesson has students graph the equation of g(x) when given f(x), where g(x) has been horizontally or vertically translated (LSSM A1: F.BF.B.3). The materials explain that students should already know how to represent vertical and horizontal translations of functions and how they will next learn how to

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			represent geometric translations of figures. Within the lesson through pieces of Activity 1, it is explained to students that a translation can be represented by a directed line segment (LSSM G.CO.A.2). In Module 2, Topic 3, Topic Overview, What is the Entry Point for Students, the materials state, "In elementary school, students learned to classify quadrilaterals. In middle school, they were reminded of these classifications when they composed and decomposed figures to derive the area formulas for shapes. This lesson builds upon their intuitive understanding from earlier grades and the conjectures they made in Composing and Decomposing Shapes."
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	The materials include learning objectives that are visibly shaped by the LSSM Cluster headings. While cluster headings are not explicitly used, the objectives are modeled after cluster headings and standards. For example, Module 2, Topic 3, Overview, How Does a Student Demonstrate Understanding? states, "Prove properties about sides, diagonals, and angles of parallelograms, rhombi, rectangles, squares, trapezoids, and kites." This objective is modeled after the Congruence Cluster (G.CO.C) "Prove Geometric Theorems." In Module 5, Topic 1, Lesson 2, the first outcome, "Determine the probability of two or more independent events," directly relates to the language and intent of LSSM cluster heading for

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			S.CP.A "Understand independence and conditional probability and use them to interpret data." Another example is standard G.CO.B.6 (given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent) which directly aligns with the first outcome from Module 2, Topic 1, Lesson 2, "Use the definition of congruence in terms of rigid motions to show that two triangles are congruent." Module 3, Topic 1, Lesson 2 learning goals are "Establish the Angle-Angle (AA) Similarity criterion for two triangles to be similar. Establish the Side-Side-Side (SSS) Similarity criterion for two triangles to be similar. [and] Establish the Side-Angle-Side (SAS) Similarity criterion for two triangles to be similar." These objectives are aligned to the SRT Cluster (Similarity, Right Triangles, and Trigonometry) of the LSSM.
6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE: Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**Required** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	The materials attend to the full meaning of each practice standard. Throughout the materials, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind as described in the practice standard. In addition, alignments to practice standards are accurate. The materials define the mathematical practices as Habits of Mind. An overview of the Habits of Mind is provided in the Teacher's Implementation Guide Volume 1. The Habits of Mind are

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			also identified throughout the materials using symbols. For example, in Module 2, Topic 2, Lesson 2, Activity 2.1, students translate an angle along a transversal to create parallel lines and congruent corresponding angles. They write a paragraph proof (which requires abstract reasoning) for the Corresponding Angles Theorem and show how to use translations to prove the Corresponding Angles Converse Theorem which corresponds to MP.2 (Reason abstractly and quantitatively). In Module 1, Topic 1, Lesson 5, Activity 5.2, "students calculate the area of a triangle with no horizontal or vertical sides" which requires attention to precision (MP 6). In Module 5, Topic 1, Lesson 1, Activity 1.1 students analyze different tree diagrams to determine whether the sample space for pizza toppings is the same, utilizing MP.5 (Using appropriate tools strategically). Another example is found in Module 4, Topic 1, Lesson 4, Activity 4.5 where students utilize MP.6 by attending to precision when finding the volume of a sphere given a radius (LSSM G.GMD.A.3).
	Required **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-	**Yes**	The materials provide sufficient opportunities for students to construct viable arguments and critique the reasoning of others (MP.3). Students are routinely asked to critique the reasoning of other students by examining student work within the material. For example, in Module 1, Topic 2, Lesson 2, Activity 2.3,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	step problems.		students are provided a conjecture by a fictional student and asked to determine if the conjecture is correct by drawing examples to justify their response. In Module 3, Topic 1, Lesson 3, Activity 3.4, students are provided with a fictional student's response. Students are asked to test the conjecture and explain their reasoning. In Module 5, Topic 2, Lesson 1, problem 10, students are asked, "How do the results of the survey compare with the estimate that almost 90% of athletes are right-handed?" Three student sample answers are given. Students are told who is correct and told to explain why, along with explaining why the other two sample answers are wrong. In Module 2, Topic 2, Lesson 2, problem 1 students are given two students' proof plans explaining how they would prove alternate interior angles are congruent given two parallel lines and a transversal. Students must explain whose plan is correct and justify their answer. In Module 1, Topic 3, Lesson 4, students "Draw an example to explain why Tori is correct. Tori: If two points Q and Q' are equidistant from the center, then the perpendicular bisector of QQ' passes through the center." In Module 3, Topic 2, Lesson 5, Talk the Talk, students complete the following problem, "Felix made the given statement. Give a counterexample to explain why Felix is incorrect. Felix: You need to know any two measures of a right triangle to determine all the unknown

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			measures of the triangle."
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of practice standards in the classroom or in students' mathematical development. Although the practice standards are presented as Habits of Mind and as symbols that will be used to denote which practice(s) each activity uses, the facilitation notes in the teacher materials do not explain how the practice standards should be used or help develop understanding within the activity. The Teacher Implementation Guide includes a section entitled Habits of Mind which states, "Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. However, it is your responsibility as a teacher to recognize these opportunities and incorporate these practices into your daily rituals." In Module 2, Topic 1, Lesson 2, Activity 2.1, the target indicates that students should be using practice standard 6. However, there is no statement in the teacher facilitation notes that explains how attending to precision should be utilized in this activity in connection to students' mathematical development. In Module 4, Topic 2, Lesson 1, Activity 1.2, there is a three-dimensional cube that indicates practice standards 7 and 8, but no explanation in the teacher facilitation notes of how students analyzing cross sections of a tree trunk

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			incorporates these practice standards. Module 3, Topic 2, Lesson 2, Activity 2.4 has a target symbol indicating the use of MP.6. In addition, the facilitation notes state, "In this activity, the inverse tangent, or the arctangent is defined. Students use calculators to solve for the measure of either acute angles in a right triangle when the length of the adjacent side and the length of the opposite side are known. Ask a student to read the introduction and definition aloud. Analyze the worked example as a class. Have students work with a partner or in a group to complete Questions 1 and 2. Share responses as a class." However, it is not evident from the facilitation note how or when students are to attend to precision.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	The materials explicitly attend to the specialized language of mathematics. For example, in Module 3, Topic 2, Lesson 1, the Differentiation strategies for Activity 1.1 state "To support students who struggle, Review the naming convention for the angles and sides of a triangle. The side opposite an angle is the lowercase version of the same letter as the capital letter representing the angle." This also serves as a preview of what is meant by opposite side in the paragraph following problem 2. In Module 2, Topic 3, Lesson 2, Activity 2.2 the facilitation notes suggest, "As students work, look for the correct use of the definition of a rectangle in the proof. They should not justify a specific

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			property of parallelograms using the definition of a rectangle. The justification should be the specific property of the parallelogram that is used." In Module 5, Topic 2, Lesson 2, Activity 2.2, Differentiation Strategies, teachers are directed to support students who struggle by having them, "take notes within the worked example for understanding and reference. Discuss the meaning of each expression in general terms, and have students note that information on the left of each expression. Have students insert an example with values on the right of each expression." Vocabulary is explicitly defined in activities. In Module 2, Topic 3, Lesson 2, the definitions for various quadrilaterals are provided. At the beginning of the student workbook, there is an academic glossary that defines words such as "analyze" and "represent" along with questions students should ask themselves when seeing these words in a prompt. In addition, each topic overview has key terms like those in Volume 1, Module 1, Topic 2 Overview which lists new terminology such as circumcenter, incenter, centroid and orthocenter.
7. INDICATORS OF QUALITY: Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards.	**Required** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Students are asked to produce answers and solutions, arguments and explanations, diagrams, and mathematical models in a course-appropriate way. For example, in Module 1, Topic 3, Lesson 4, students create graphic organizers defining

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
☒ Yes ☐ No			the different types of transformations in the Talk the Talk portion of the lesson, while in the Review portion of the lesson, students complete the construction of a reflection (problem 1) and describe a sequence of transformations (problem 2). In Module 1, Topic 2, Lesson 4, Activity 4.2, students provide explanations, create conjectures, construct line segments, and use a protractor as an introduction to Triangle Sum Theorem and Exterior Angle Theorem. In Module 5, Topic 1, Lesson 1, Activity 1.2, students create a tree diagram (problem 1), explain the levels of the diagram and if order matters (problem 2), write the sample space as an organized list (problem 3), and analyze the sample space to answer nesting questions (problem 4). In Module 4, Topic 1, Lesson 1, Activity 1.1, students use patty paper, make identifications, summarize, and label diagrams as an introduction to circles. In Module 4, Topic 2, Lesson 3, students "Consider Elizabeth's statement about additional points on circle G.2. Justify Elizabeth's reasoning and identify additional points on circle G."
	Required **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on	**Yes**	There are separate teacher materials that support and reward teacher study. Module and topic overviews in addition to detailed notes are available for every lesson. Each lesson in the teacher edition has an overview, the standards addressed, essential ideas, lesson structure, pacing facilitation notes, differentiation

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.		strategies, grouping strategies, look fors, misconceptions, and questions to ask for the activities. The Teacher Implementation Guide provides information regarding sequencing and lesson flow. For example, in the Topic Overview for Module 3 of the Teacher Implementation Guide Volume 2, it states "How is Similarity organized? Similarity begins with a review of what students already know about dilations from their experience in middle school. Students relate dilating figures to the familiar 'pinch and zoom' feature that touchscreen technology uses to enlarge and reduce images while maintaining the ratios of dimensions." In Module 2, Topic 2, Lesson 5, the Teacher Edition, Differentiation Strategy for the Talk the Talk portion of the lesson explains, "To extend the activity, ask students to list each step in their solution process and the property or theorem used to justify the step. Students can then compare the methods they used to determine all of the arc and angle measures. Some students may use more efficient approaches to the problem situation." Another example supporting teacher study is evidenced in Module 4, Topic 2, Lesson 3, Teacher Edition, the Misconception listed which points out to teachers that, "Students may reverse the coordinates. The x-coordinate must appear first and the y-coordinate be written second." In Module 5, Topic 1, Lesson 3, Activity 3.2, the Look Fors states,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			"As students work, look for the use of the Rule of Compound Probability involving and when calculating P(A and B). Students should use the formula that they developed in the previous activity to determine P(A or B). They can use their organized list to verify whether their formula works." The Module 2, Topic 2, Lesson 4, Activity 4.2, Misconceptions states, "Students may already be familiar with this theorem. Check to make sure they do not use the converse of this theorem to prove this theorem. It may be useful to have a discussion about why it is not acceptable to use a converse theorem in the proof of the actual theorem."
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners (ELL) and other special populations is present and thoughtful in the materials. ELL tips are provided within the lesson plans. For example, in Module 1, Topic 1, Lesson 3, Activity 3.3, the ELL tip states "Determine whether students are familiar with the term "extend." If not, state the two definitions of extend as to make longer or wider, and to hold something out toward someone. Discuss real-life examples of the term extend, such as extending a roadway, extending a deadline, extending the range of acceptable answers on a test, and extending a hand for someone to shake. Ensure students' understanding of the context of 'extend' in Question 1, as to make the given line segment longer." In

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Module 3, Topic 1, Lesson 6, Activity 6.1, Facilitation Notes, Differentiation, teachers are provided with the following note, "To support students who struggle, guide them to complete the steps in the worked example in addition to analyzing each step." In Module 4, Topic 1, Lesson 4 Teacher Lesson Plan, it is noted that "To support students who struggle, provide a pre-built spreadsheet and discuss how it relates to their table in Question 2." In Module 2, Topic 3, Lesson 1, the Teacher Lesson Plan notes "To extend the activity, ask students to prove the theorem themselves without using the template in Question 3." In Module 1, Topic 2, Lesson 2, the ELL tip is to "Discuss the meaning of the term interior as it applies to the interior angle of a polygon. While the prefix in- can mean in, on, or not, in this case it means in. A synonym using the same prefix is inside. Ask students where they may have heard the term interior used before, such as the interior of a car or an interior designer, and have them explain their meanings as the inside of a car or professional who designs the inside decoration of a room or building. Then, refer back to the context and have students explain what the interior angle of a polygon is in their own words." In Module 4, Topic 1, Lesson 2, the Teacher Edition, the ELL tip tells teachers to make sure students understand the word tethered from the word problem in the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			activity.
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. Geometry contains five modules that are divided by topics and lessons with numerous activities. The activities contain problems which allow students to learn new mathematics. For example, Module 2, Topic 1, Lesson 2 contains five activities that provide students with the opportunity to "use facts to create and verify proofs of the SSS, SAS, and ASA Congruence Theorems using rigid motion transformations." Materials also include an assignment with practice and review exercises at the end of each lesson. Students have the opportunity to practice content from each topic on the skills practice worksheets. The materials also contain math coaching software called MATHia that provides content review and extra practice for students. In Module 1, Topic 1, Lesson 3 there are 4 activities with 4-10 multipart questions that consist of solving problems to learn new math. The assignment portion consists of writing, 6 practice problems, a "stretch" prompt, and 3 review questions. These activities represent the application of student learning to build mastery.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. There is a sequence to each lesson which supports learning. For each lesson,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students are provided a Lesson Warm-Up, Learning Goals, Getting Started activity, activities aimed to provide instruction, and Talk the Talk activity. Lessons end with an assignment which includes a write, remember, practice, stretch, and review section. For example, in Module 1, Topic 2, Lesson 4 there are 3 activities. The first activity introduces the converse of conditional statements and base angles of isosceles triangles, the second activity discusses triangle angle sum and exterior angle theorem, and the last activity discusses the triangle inequality theorem and midsegments (LSSM G.CO.C.10). In Module 2, Topic 3, Lesson 1, students begin with a warmup where they "Determine all the angle measures and side lengths of each right triangle." They then construct right triangles of various side lengths and also prove the Hypotenuse-Leg Congruence Theorem (LSSM G.CO.C.10). In Module 3, Topic 1, Lesson 3, students solve proportions in the warm-up exercise and use construction tools in Activity 3.2 to "make a conjecture about the angle bisectors of a triangle and the side lengths" (LSSM G.SRT.B.4). In Module 3, Topic 2, Lesson 4, students complete two activities using cosine and cosine inverse and end the lesson with a Talk the Talk where students match each ratio with the appropriate abbreviation and description, then determine which ratio can be used to solve different

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			situations that are described.
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	The materials support the uses of technology as called for in the standards. In the MATHia software Rigid Motions unit, students draw a transformed figure and specify a sequence of transformations which maps one figure onto another (LSSM G.CO.A.5). In Module 3, Topic 2, Lesson 2, Activity 2, question 1, part C students are instructed to, "Use technology to calculate the value of tan 4° and use it to determine whether the ramp meets the safety rules. Round your answer to the nearest hundredth." Also, in Module 4, Topic 2, Lesson 2, Activity 3, the Teacher Edition explains that students should use graphing technology to graph circles.
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**	
I: Non-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of instructional time to the major work of the grade. Although some of the instructional lessons and assignments include standards outside of Geometry, there are implementation suggestions provided for Louisiana teachers for each of these lessons and assessments.

[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
	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, and materials include problems and activities that serve to connect two or more clusters in a domain, or two or more domains in the course.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards and help students meet all of the rigorous expectations of the standards. The materials are designed so that students attain fluency and procedural skills and students 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 such a way to enrich the content standards of the course.
II: Additional Criteria of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics from across domains and clusters throughout the course by staying consistent with the progressions in the Standards.
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.
	7. Indicators of Quality	**Yes**	The materials provide teachers and students with a variety of tools they need

[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
			to meet the expectations of the standards.
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.

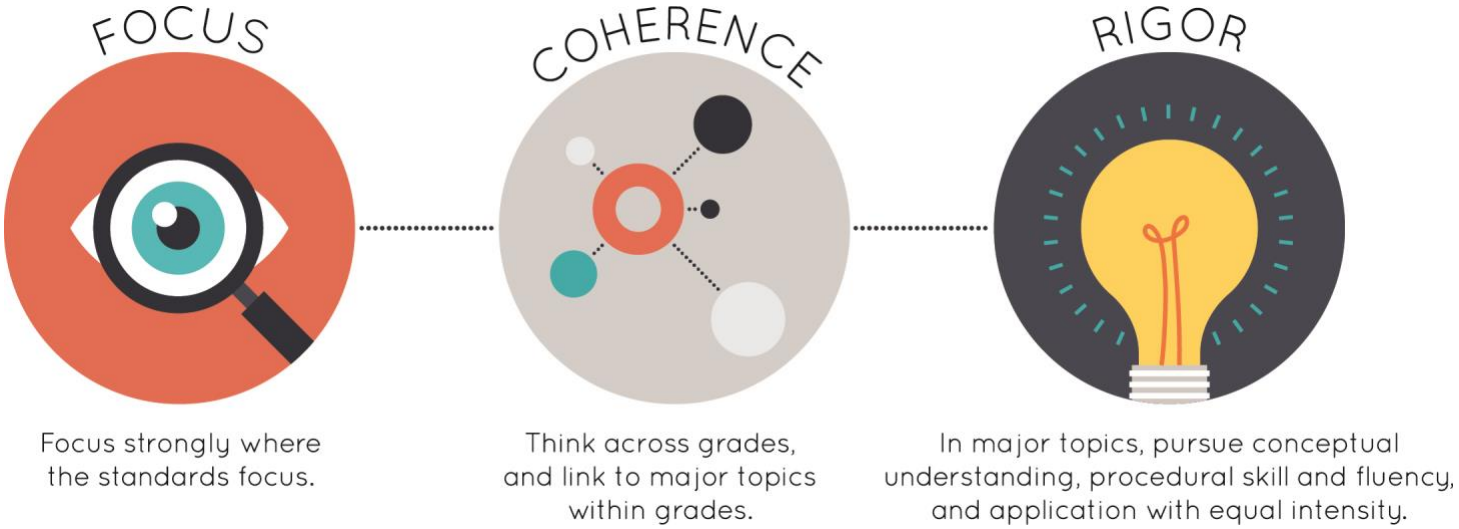
Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their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

The 2019-2020 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Beauregard, Bossier, Caddo, Calcasieu, Caldwell, City of Monroe, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, Jefferson, Jefferson Davis, KIPP New Orleans, Lafayette, Lafourche, Lincoln, Livingston, LSU Lab School, Orleans, Orleans/Lusher Charter School, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, RSD Choice Foundation, St. John the Baptist, St. Charles, St. James, St. Landry, St. Mary, St. Tammany, Tangipahoa, Vermillion, Vernon, West Baton Rouge, West Feliciana, and Zachary. This review represents the work of current classroom teachers with experience in grades 9-12.

Appendix I.

Publisher Response

Strong mathematics instruction contains the following elements:



Title: **High School Math Learning Solutions - Geometry**

Grade/Course: **Geometry**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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	PUBLISHER RESPONSE
Section I: Non-negotiable Criteria of Superior Quality **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 should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of class time to the major work of the grade. Of 138 instructional days, 92 (67%), including time spent on instructional lessons and the MATHia Software/Skills Practice, are spent on major work of the grade. 71 (52%) instructional days address only major standards, 21 (15%) address a combination of major and supporting/additional standards, and 46 (33%) address supporting and/or additional standards.	
	Required **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the appropriate course. While 13 of the total 58 instructional lessons include standards that are outside of Geometry, implementation suggestions are provided for Louisiana teachers. The Carnegie Louisiana Scope and Sequence guide suggests skipping 7 of these lessons and adjusting the other 6 lessons. For example, students connect the Pythagorean Theorem to the Pythagorean Identity (LSSM A2: F.TF.C.8) in Module 4, Topic 2, Lesson 4, but the Louisiana Scope and Sequence document states, “Skip this lesson and its corresponding assignment.	

[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	PUBLISHER RESPONSE
			Removing this lesson will not have any impact on future lessons in the textbook." For Module 5, Topic 1, Lesson 4, the Louisiana Scope and Sequence document suggests that teachers complete the Getting Started, Activity 1, 2, and 3 portions of the lesson which involve understanding independent events and applying the addition rule (LSSM S.CP.B.2, S.CP.B.7) and that teachers eliminate Practice Question 2 and Review Question 2, which involves finding the probability of compound events (CCSS S.CP.B.9). In Module 5, Topic 2, Lesson 5, teacher directions state, "In addition to providing opportunities for students to use geometric probability, this lesson includes standards [CCSS] S.MD.B6 and S.MD.B7. Complete Activity 1: Geometric Probability only." In Module 4, Topic 2, Lesson 5, teacher directions state, "This lesson addresses standard [CCSS] G-GPE.A2. Skip this lesson and its corresponding assignment. Removing this lesson will not have any impact on future lessons in the textbook." Assessments make students and teachers responsible for topics that have been introduced prior to assessment; however, teachers are instructed to skip lessons and corresponding assessment questions in the Carnegie Louisiana Scope and Sequence. For example, the End of Topic Assessment for Module 2, Topic 1 assesses standards	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			G.CO.7, G.CO.8, and G.CO.9 as students apply theorems about angles. Assessment notes provided for teachers includes guidance on which assessment items are appropriate for Louisiana students. In Module 4, Topic 2, teachers are directed, "Select assessment questions from these suggestions: Pre-/Post Test: Q1 - 5 End of Topic Test: Q1 - 9 Standardized Test: Q3, 8, 9, 11, 12, 13, 16, and 19. Students should not be held accountable for determining the value of a trigonometric function in a given quadrant and writing the equation of a parabola (given a focus and directrix), an ellipse, and a hyperbola. Additional assessment questions are available through Edulastic." Also found in Module 4, Topic 2, End of Topic Assessment, students identify trigonometric ratios using the Pythagorean identity of sin2 + cos2 = 1 (LSSM F.TF.C.8) which is an Algebra II standard.	
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Lessons use activities that allow students to use supporting content to master the major content. For example, in Module 1, Topic 1, Lesson 2, students make formal geometry constructions (Supporting LSSM G.CO.D.12) to prove the slope criteria for parallel and perpendicular lines (Major LSSM G.GPE.B.5). In Module 1, Topic 1, Lesson 3 students construct parallel lines	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			in Activity 1 in accordance with supporting work (LSSM G.CO.D.12) and then use this to prove the slope criteria for parallel and perpendicular lines on a coordinate plane in Activity 2 in accordance with major work (LSSM G.GP.B.5). In Module 1, Topic 3, Lesson 1, students are reminded of the definitions of lines, line segments, and angles in Activity 1 (Supporting LSSM G.CO.A.1) and then use these terms to develop definitions of rigid motions in the "Talk the Talk" portion of the lesson, both in accordance with supporting work. Later in the lesson, students use descriptions to predict the effects rigid motions have on a given figure, which directly aligns with major work (LSSM G.CO.B.6).	
	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**	The 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. Several lessons include standards from different clusters and domains. For example, Module 1, Topic 1, Lesson 5 addresses major LSSM G.GPE.B.5, G.GPE.B.7 and G.MG.A2 as students consider real-world situations requiring them to calculate the perimeter and area of polygons, connecting the Expressing Geometric Properties with Equations (GPE) and the Modeling with Geometry (MG) domains. Module 3, Topic 1, Lesson 3 addresses major LSSM G.CO.C.10, G.SRT.A.1a, and G.SRT.B.4 as students use paragraphs and two-column proofs to prove various theorems.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			Additionally, students verify properties of dilations (LSSM G.SRT.A.1a) in Activity 1, prove the angle bisector and proportional side theorem in Activity 2, then apply these theorems in Activity 3 (LSSM G.SRT.B.4). This lesson connects the Congruence(CO) and Similarity, Right Triangles, and Trigonometry (SRT) domains, as well as the clusters A, Understand similarity in terms of similarity transformation, and B, Prove theorems involving similarity within the SRT domain. In Module 4, Topic 2, Lesson 1, students use the measures and properties of geometric shapes (LSSM G.MG.A.1) to identify the shapes of two-dimensional cross-sections of three-dimensional objects (LSSM G.GMD.B.4) connecting the Modeling with Geometry (MG) and Geometric Measure and Dimension (GMD) domains. In Module 3, Topic 1, Lesson 4 students use the properties of similarity transformations to establish the AA criterion (LSSM G.SRT.A.3) and prove theorems about triangles (LSSM G.SRT.B.4), connecting clusters A, Understand similarity in terms of similarity transformation, and B, Prove theorems involving similarity within the same domain. Also, in Module 4, Topic 1, Lesson 1, students prove that all circles are similar in Activity 1 (LSSM G.C.A.1) and give an informal argument for the circumference of a circle formula in the “Worked Example” portion of Activity 1 and follow	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			up questions (LSSM G.GMD.A.1) which connects the Circles (C) and (GMD) 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 amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where indicated by standards that explicitly call for conceptual understanding. Students complete exploratory activities and answer follow up questions to develop their conceptual understanding. For example, in Module 2, Topic 1, Lesson 2, Activity 2.2, students are asked, "If 3 corresponding sides of two triangles are congruent, can the triangles always be mapped onto each other by a series of reflections?" which allows them to conceptually develop the notion of triangle congruence using rigid transformations (LSSM G.CO.B.8). In Module 3, Topic 2, Lesson 1, Activity 1.1, students "create a pair of similar triangles, justify that they are similar, and determine side length ratios as they did in the Getting Started, but begin with a 45°-45°-90° triangle" and use questions such as, "In the 45°-45°-90° triangle, why are the ratios formed by the opposite side length to the hypotenuse side length and the adjacent side length to the hypotenuse side length always the same ratio?" which uses similarity concepts to develop ratios for special right triangles (LSSM G.SRT.C.6). In Module 1, Topic 3, Lesson 3, Activity 3.1, students examine reflections to develop	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			definitions based on the length of different line segments and their orientation. In this activity, students are expected to justify their reasoning about the relationships among different line segments to conceptualize their thinking about reflections (LSSM G.CO.A.4).	
	Required **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with algebraic operations is provided in order for students to have the foundation for later work in algebra.	**Yes**	The materials are designed so that students attain the fluency and procedural skills required by the Standards and give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. For example, in Module 1, Topic 2, Lesson 3, Activity 3.1, facilitation notes state, “In this activity, students duplicate an angle and construct an angle that is twice the measure of a given angle. Students also revisit the construction from the Getting Started activity to construct a regular hexagon inscribed in a circle by duplicating 60° angles to create six equilateral triangles sharing the center of the circle as a vertex. They compare the processes used to duplicate an angle and duplicate a line segment.”(LSSM G.CO.D.12 and G.CO.D.13). In Module 4, Topic 2, Lesson 3, Activity 3.1, “students are given a circle with a center point at the origin and the length of the radius. They use the Pythagorean Theorem to determine the coordinates of points that lie on the circumference of a circle.” (LSSM G.GPE.A.1 and G.GPE.B.4). In Module 1, Topic 1, Lesson 4, students use coordinates	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			alongside the Pythagorean Theorem and slope to determine the most precise name for a given quadrilateral or triangle (LSSM G.GPE.B.4). In Module 4, Topic 2, Lesson 2, students complete the square in multiple problems to determine the center and radius of a circle (LSSM G.GPE.A.1). In Module 3, Topic 1, Lesson 6, Activity 2, students find the point that is ½, ¼, and ⅓ along the directed line segment in problem 2, parts a, b, and c, respectively (LSSM G.GPE.B.6).	
	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**	The 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. For example, in Module 4, Topic 1, Lesson 4, Activity 3, students are given a situation with 2 different cylinders made from the same size sheet of paper, each with their own constraint for height. Students are then asked to construct an argument explaining which cylinder (if either) would have a greater volume, determine the radius and height of each cylinder, and calculate the volume of each cylinder. Students are then asked to explain if the height or radius has a greater impact on a cylinder's volume and to determine a radius given height and volume (LSSM G.MG.A.3). Also, in Module 5, Topic 2, Lesson 1, Activity 3, students are given a partially complete two-way frequency table. Students are asked to find relative	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			frequencies of certain events, to determine a probability for certain events and explain how it was reached, and to explain if being a male is independent of liking to listen to music after school (LSSM G.CP.A.4). In Module 3, Topic 2, Lesson 3, students use sine and sine inverse to determine lengths and angles in real-world problems involving triangles (LSSM G.SRT.C.8). In Module 4, Topic 1, Lesson 4, Activity 4.6, students use volume and surface area of three-dimensional shapes to solve real-world problems (LSSM G.GMD.A.3, G.MG.A.3). In Module 5, Topic 1, Lesson 3, Activity 3.2, students apply the Addition Rule for Probability to answer questions such as "A new holiday—Probability Day—is going to be celebrated at your school. It may be celebrated on any of the first 3 days of any month. The problem now is to choose which day it will fall on. Of course, the day will be selected at random. First, the month will be selected and then the day." (LSSM S.CP.B.7)	
	Required **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in application after solidifying conceptual understanding with ample opportunity to gain procedural fluency as called for in the LSSM for Geometry. Topics effectively build conceptual understanding and provide students the opportunity to demonstrate understanding through the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			end of lesson practice problems and stretch problems. Students are given ample practice in procedural skill and fluency as well as targeted coursework where skills and understanding are used to solve multi-step real-world problems. For example, in Module 3, Topic 1, Lesson 1, Getting Started, students conceptualize and answer questions related to dilations. In Activity 1.1 of the same lesson, students apply concepts of dilations to real-world problems addressing the application expectation of the standard. In Activity 1.3 of the same lesson, students use geometric theorems to determine similarity addressing the procedural skill expectation of the standard (LSSM G.SRT.A.1, G.SRT.A.2, and G.SRT.B.5). In Module 1, Topic 1, Lesson 5, students answer conceptual/procedural questions such as “Carter has an irregular backyard because it backs onto the foothill of a mountain and is very rocky. The composite figure graphed on the coordinate plane represents the flat area of Carter’s backyard. Each interval of the coordinate plane represents two yards. 1. Carter will install fencing all around the flat area of his backyard. Determine the amount of fencing he needs to the nearest whole yard. 2. Carter wants to lay grass sod in the flat area of his backyard. Determine the total area of sod he needs.” (LSSM G.GPE.7) In Module 1, Topic 2, Lesson 3,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			Activity 4 students use procedural skill and fluency to bisect an angle using patty paper in the first worked example, are shown how to bisect an angle using a compass and straightedge in the second worked example, and then bisect an angle on their own in problem 2 (LSSM G.CO.D.12). In addition, in Module 3, Topic 2, Lesson 2, Activity 1, students are given a description of a ramp. In problem 1, students must draw a diagram and find the length of a ramp, in problem 2, students do the same with a second ramp, in problem 3, students compare the two ramps and explain if they are similar, in problem 4 students explain what the ratio of rise to run of the ramp means, and in problem 5 students compare the angles of inclination of the ramps, incorporating conceptual, procedural skill and fluency, and application in one activity (LSSM G.SRT.C.8).	
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**Required** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	The materials address the practice standards in such a way as to enrich the content standards of the grade/course. The practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials. Each lesson has questions which correlate to the math practice standards which are noted through symbols in the lesson. For example, in Module 4, Topic 1, Lesson 4, students answer “Use centimeter cubes to construct these pyramids. (Pyramids are given in an	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			image.) Then answer the questions and explain your reasoning. a. Describe the two-dimensional shape of the top surface of each layer of cubes. b. Explain why the two-dimensional surfaces of the cube layers represent similar figures. c. What is the volume of each pyramid? d. For each of the two pyramids, determine the volume of a prism that has the same base." This activity addresses MP.4 (Modeling with mathematics). In Module 2, Topic 1, Lesson 3, Activity 3.1, students use MP.3 (Construct viable arguments and critique the arguments of others) and MP.2 (Reason abstractly and quantitatively) to answer questions such as "Suppose AD bisects ∠A, and AD ⊥ BC. Are there congruent triangles in this diagram? Explain your reasoning." and "Simone says that since △ ABC and △DCB have two pairs of congruent corresponding sides and congruent corresponding angles, then the triangles are congruent by SAS. Is Simone correct? Explain your reasoning." In Module 2, Topic 2, Lesson 2, Activity 2.4, students write a proof plan to explain their reasoning (MP.3). In Module 5, Topic 1, Lesson 1, Activity 1.1, students use tree diagrams to list sample spaces (MP.5). In Module 1, Topic 3, Lesson 2, Activity 1, students analyze a diagram of translated triangles and determine how each image point moved in relation to its pre-image. Students must answer questions such as question 1c, "Measure the lengths of the	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			two line segments used in the translation. What do you notice?" This is denoted in the teacher materials as having a three-dimensional cube symbol which represents use of MP.7 or MP.8.	
Section II: Additional Criteria 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 course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide extensive student work with course-level problems. For example, Module 1, Topic 2, Lesson 2 addresses LSSM G.CO.C.11 through problems such as, "Nichole observed the relationship between the interior angles of the isosceles trapezoid. She conjectured that trapezoids have two pairs of congruent angles that are adjacent to each other. Do you think Nichole's conjecture is correct? Draw examples to justify your answer." In Module 2, Topic 3, Lesson 5, "Talk the Talk" problem 2 states, "Consider the rotational symmetries of an equilateral triangle, square, and regular hexagon. a. What relationship exists between the rotational symmetries of each figure and its interior angle measures? b. Test the pattern you noticed on a regular pentagon and regular hexagon. What do you notice?" (LSSM G.CO.A.3) In Module 4, Topic 2, Lesson 3, Activity 3.1, problem 2 states, "Use the Pythagorean Theorem to determine whether point B (4, 3) lies on circle A, and then explain your reasoning." (LSSM G.GPE.A.1). In Module 3, Topic 2, Lesson 1, students are to "Determine all of the side length ratios and corresponding	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			angle measures for the two triangles. Explain how you know that △ABC is similar to △ADE" and "Given a leg length x, determine the lengths of the other sides of the 45°-45°-90° triangle. Label the triangle." (LSSM G.SRT.C.6) Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year. Each lesson begins with a Getting Started section to activate prior knowledge, either from earlier grades/courses, or previous lessons within the course. This section allows students to make connections from previously learned content to the course level content within the lesson.	
	Required **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview sections and in the Teacher's Implementation Guide. Prior knowledge is also pointed out to students and families within the Family Guide for each Topic. For example, Module 1, Topic 3, Lesson 2, the Getting Started portion of the lesson has students graph the equation of g(x) when given f(x), where g(x) has been horizontally or vertically translated (LSSM A1: F.BF.B.3). The materials explain that students should already know how to represent vertical and horizontal translations of functions and how they will next learn how to	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			represent geometric translations of figures. Within the lesson through pieces of Activity 1, it is explained to students that a translation can be represented by a directed line segment (LSSM G.CO.A.2). In Module 2, Topic 3, Topic Overview, What is the Entry Point for Students, the materials state, "In elementary school, students learned to classify quadrilaterals. In middle school, they were reminded of these classifications when they composed and decomposed figures to derive the area formulas for shapes. This lesson builds upon their intuitive understanding from earlier grades and the conjectures they made in Composing and Decomposing Shapes."	
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	The materials include learning objectives that are visibly shaped by the LSSM Cluster headings. While cluster headings are not explicitly used, the objectives are modeled after cluster headings and standards. For example, Module 2, Topic 3, Overview, How Does a Student Demonstrate Understanding? states, "Prove properties about sides, diagonals, and angles of parallelograms, rhombi, rectangles, squares, trapezoids, and kites." This objective is modeled after the Congruence Cluster (G.CO.C) "Prove Geometric Theorems." In Module 5, Topic 1, Lesson 2, the first outcome, "Determine the probability of two or more independent events," directly relates to the language and intent of LSSM cluster heading for	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			S.CP.A "Understand independence and conditional probability and use them to interpret data." Another example is standard G.CO.B.6 (given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent) which directly aligns with the first outcome from Module 2, Topic 1, Lesson 2, "Use the definition of congruence in terms of rigid motions to show that two triangles are congruent." Module 3, Topic 1, Lesson 2 learning goals are "Establish the Angle-Angle (AA) Similarity criterion for two triangles to be similar. Establish the Side-Side-Side (SSS) Similarity criterion for two triangles to be similar. [and] Establish the Side-Angle-Side (SAS) Similarity criterion for two triangles to be similar." These objectives are aligned to the SRT Cluster (Similarity, Right Triangles, and Trigonometry) of the LSSM.	
6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE: Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**Required** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	The materials attend to the full meaning of each practice standard. Throughout the materials, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind as described in the practice standard. In addition, alignments to practice standards are accurate. The materials define the mathematical practices as Habits of Mind. An overview of the Habits of Mind is provided in the Teacher's Implementation Guide Volume 1. The Habits of Mind are	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			also identified throughout the materials using symbols. For example, in Module 2, Topic 2, Lesson 2, Activity 2.1, students translate an angle along a transversal to create parallel lines and congruent corresponding angles. They write a paragraph proof (which requires abstract reasoning) for the Corresponding Angles Theorem and show how to use translations to prove the Corresponding Angles Converse Theorem which corresponds to MP.2 (Reason abstractly and quantitatively). In Module 1, Topic 1, Lesson 5, Activity 5.2, "students calculate the area of a triangle with no horizontal or vertical sides" which requires attention to precision (MP 6). In Module 5, Topic 1, Lesson 1, Activity 1.1 students analyze different tree diagrams to determine whether the sample space for pizza toppings is the same, utilizing MP.5 (Using appropriate tools strategically). Another example is found in Module 4, Topic 1, Lesson 4, Activity 4.5 where students utilize MP.6 by attending to precision when finding the volume of a sphere given a radius (LSSM G.GMD.A.3).	
	Required **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in	**Yes**	The materials provide sufficient opportunities for students to construct viable arguments and critique the reasoning of others (MP.3). Students are routinely asked to critique the reasoning of other students by examining student work within the material. For example, in Module 1, Topic 2, Lesson 2, Activity 2.3,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	the Standards that explicitly set expectations for multi-step problems.		students are provided a conjecture by a fictional student and asked to determine if the conjecture is correct by drawing examples to justify their response. In Module 3, Topic 1, Lesson 3, Activity 3.4, students are provided with a fictional student's response. Students are asked to test the conjecture and explain their reasoning. In Module 5, Topic 2, Lesson 1, problem 10, students are asked, "How do the results of the survey compare with the estimate that almost 90% of athletes are right-handed?" Three student sample answers are given. Students are told who is correct and told to explain why, along with explaining why the other two sample answers are wrong. In Module 2, Topic 2, Lesson 2, problem 1 students are given two students' proof plans explaining how they would prove alternate interior angles are congruent given two parallel lines and a transversal. Students must explain whose plan is correct and justify their answer. In Module 1, Topic 3, Lesson 4, students "Draw an example to explain why Tori is correct. Tori: If two points Q and Q' are equidistant from the center, then the perpendicular bisector of QQ' passes through the center." In Module 3, Topic 2, Lesson 5, Talk the Talk, students complete the following problem, "Felix made the given statement. Give a counterexample to explain why Felix is incorrect. Felix: You need to know any two measures of a right	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			triangle to determine all the unknown measures of the triangle."	
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of practice standards in the classroom or in students' mathematical development. Although the practice standards are presented as Habits of Mind and as symbols that will be used to denote which practice(s) each activity uses, the facilitation notes in the teacher materials do not explain how the practice standards should be used or help develop understanding within the activity. The Teacher Implementation Guide includes a section entitled Habits of Mind which states, "Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. However, it is your responsibility as a teacher to recognize these opportunities and incorporate these practices into your daily rituals." In Module 2, Topic 1, Lesson 2, Activity 2.1, the target indicates that students should be using practice standard 6. However, there is no statement in the teacher facilitation notes that explains how attending to precision should be utilized in this activity in connection to students' mathematical development. In Module 4, Topic 2, Lesson 1, Activity 1.2, there is a three-dimensional cube that indicates practice standards 7 and 8, but no explanation in the teacher facilitation notes of how students analyzing cross sections of a tree trunk	Carnegie Learning's High School Math Solution explicitly connects content standards and practice standards. Materials address the practice standards in such a way as to enrich the major work of the grade -- strengthening the focus rather than detracting from it. Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. Each activity denotes the habit of mind highlighted with an icon that represents the mathematical practice or pair of practices intentionally being developed. In the front matter of the Student Edition (FM-18) and the Teacher's Implementation Guide (FM-34), we explain the practices with their corresponding icon. There are four icons: one represents a single practice, while the other three represent pairs of practices. No icon is used for Math Practice 1 (Make sense of problems and persevere in solving them.) because this practice is evident every day in every lesson. Teacher-directed materials that explain the role of the practice standards: •In the TIG front matter, we explain how to integrate the practices into daily instruction. For example, "When you are facilitating each lesson, listen carefully and value diversity of thought, redirect students' questions with guiding

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			incorporates these practice standards. Module 3, Topic 2, Lesson 2, Activity 2.4 has a target symbol indicating the use of MP.6. In addition, the facilitation notes state, “In this activity, the inverse tangent, or the arctangent is defined. Students use calculators to solve for the measure of either acute angles in a right triangle when the length of the adjacent side and the length of the opposite side are known. Ask a student to read the introduction and definition aloud. Analyze the worked example as a class. Have students work with a partner or in a group to complete Questions 1 and 2. Share responses as a class.” However, it is not evident from the facilitation note how or when students are to attend to precision.	questions, provide additional support with those struggling with a task, and hold students accountable for an end product. When students share their work, make your expectations clear, require that students defend and talk about their solutions, and monitor student progress by checking for understanding. Consider having students create "I can" statements for each practice or pair of practices. This strategy can help students become reflective about their work." •The Topic Overview in the Teacher's Implementation Guide identifies how students develop proficiency in the habits of mind in that Topic. For example in Topic 1, Using a Rectangular Coordinate System, "How do the activities in Quantities and Relationships promote student expertise in the mathematical practice standards? All Carnegie Learning topics are written with the goal of creating mathematical thinkers who are active participants in class discourse, so elements of habits of mind should be evident in all lessons. Students are expected to make sense of problems and work towards solutions, reason using concrete and abstract ideas, and communicate their thinking while providing a critical ear to the thinking of others. In this topic, students use tools appropriately to accurately construct basic geometric shapes. They attend to precision as they use clear reasoning to classify

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				shapes and to accurately calculate lengths and relationships of sides and perimeters and areas of figures. Students use reasoning as they seek efficient strategies for making these calculations. They make use of structure as they recognize the significance of perpendicular lines through a given vertex when calculating the area of a triangle given any side as the base. They use the structure of geometric shapes to decompose composite figures into sets of non-overlapping triangles and rectangles. •The icon also appears within each lesson's facilitation notes with questions listed to facilitate the learning where they occur. The Facilitation Notes provide teachers with resources for supporting students as they develop proficiencies in the habits of mind. •In the example provided, Module 2, Topic 1, Lesson 2, Activity 2.1 Congruent Line Segments by Reflections, students develop proficiency in the precision practice, as denoted by the target icon. In addition to the questions in the Student Edition that require students to use precise language when identifying elements of a geometric figure, the Questions to ask in the TIG support teachers as they interact with students developing proficiency in precision. For example, "Why does it make sense that the congruence statement is written as AB = FD rather than AB = DF?

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				How would you complete the congruence statement ED = ___? Why is it acceptable to name ∠R and ∠W with single letters? Why do the congruent angles with vertices at points X and V need to be named with three letters rather than one letter? What is another way to label each of the angles with a single arc marker?" •In the second example provided, Module 4, Topic 2, Lesson 1, Activity 1.2 Two-Dimensional Cross-Sections, students are working on looking for and making use of structure and regularity in repeated reasoning. The SE provides questions requiring students to analyze the structures of cubes and pyramids and notice the commonalities and differences in their cross-sections. Again, the Questions to ask in the Teacher's Implementation Guide provide teachers with the tools to foreground this practice in their instruction. For example, "When a plane cuts through the cylinder perpendicular to its height, what is the relationship between the plane and the base of the cylinder? When a plane cuts through the cylinder perpendicular to the base, what is the relationship between the plane and the altitude of the cylinder? What if a plane cuts through the cylinder at an angle along its height less than 90°? Are there different ways you can slice the figure to create the same cross-section? What are the different ways to slice each

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				figure to get different cross-sections? Is a rectangular cross-section possible? If so, how? Is a square cross-section possible? If so, how? Is a trapezoidal cross-section possible? If so, how? Is a triangular cross-section possible? If so, how?" •Going beyond merely explaining the role of each practice, the High School Math Solution provides teachers and students with the resources that they need at point of use.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	The materials explicitly attend to the specialized language of mathematics. For example, in Module 3, Topic 2, Lesson 1, the Differentiation strategies for Activity 1.1 state “To support students who struggle, Review the naming convention for the angles and sides of a triangle. The side opposite an angle is the lowercase version of the same letter as the capital letter representing the angle.” This also serves as a preview of what is meant by opposite side in the paragraph following problem 2. In Module 2, Topic 3, Lesson 2, Activity 2.2 the facilitation notes suggest, “As students work, look for the correct use of the definition of a rectangle in the proof. They should not justify a specific property of parallelograms using the definition of a rectangle. The justification should be the specific property of the parallelogram that is used.” In Module 5, Topic 2, Lesson 2, Activity 2.2,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			Differentiation Strategies, teachers are directed to support students who struggle by having them, “take notes within the worked example for understanding and reference. Discuss the meaning of each expression in general terms, and have students note that information on the left of each expression. Have students insert an example with values on the right of each expression.” Vocabulary is explicitly defined in activities. In Module 2, Topic 3, Lesson 2, the definitions for various quadrilaterals are provided. At the beginning of the student workbook, there is an academic glossary that defines words such as “analyze” and “represent” along with questions students should ask themselves when seeing these words in a prompt. In addition, each topic overview has key terms like those in Volume 1, Module 1, Topic 2 Overview which lists new terminology such as circumcenter, incenter, centroid and orthocenter.	
7. INDICATORS OF QUALITY: Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**Required** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Students are asked to produce answers and solutions, arguments and explanations, diagrams, and mathematical models in a course-appropriate way. For example, in Module 1, Topic 3, Lesson 4, students create graphic organizers defining the different types of transformations in the Talk the Talk portion of the lesson, while in the Review portion of the lesson, students complete the construction of a reflection (problem 1) and describe a	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			sequence of transformations (problem 2). In Module 1, Topic 2, Lesson 4, Activity 4.2, students provide explanations, create conjectures, construct line segments, and use a protractor as an introduction to Triangle Sum Theorem and Exterior Angle Theorem. In Module 5, Topic 1, Lesson 1, Activity 1.2, students create a tree diagram (problem 1), explain the levels of the diagram and if order matters (problem 2), write the sample space as an organized list (problem 3), and analyze the sample space to answer nesting questions (problem 4). In Module 4, Topic 1, Lesson 1, Activity 1.1, students use patty paper, make identifications, summarize, and label diagrams as an introduction to circles. In Module 4, Topic 2, Lesson 3, students "Consider Elizabeth's statement about additional points on circle G.2. Justify Elizabeth's reasoning and identify additional points on circle G."	
	Required **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students.	**Yes**	There are separate teacher materials that support and reward teacher study. Module and topic overviews in addition to detailed notes are available for every lesson. Each lesson in the teacher edition has an overview, the standards addressed, essential ideas, lesson structure, pacing facilitation notes, differentiation strategies, grouping strategies, look fors, misconceptions, and questions to ask for the activities. The Teacher Implementation Guide provides information regarding sequencing and lesson flow. For example,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			in the Topic Overview for Module 3 of the Teacher Implementation Guide Volume 2, it states “How is Similarity organized? Similarity begins with a review of what students already know about dilations from their experience in middle school. Students relate dilating figures to the familiar ‘pinch and zoom’ feature that touchscreen technology uses to enlarge and reduce images while maintaining the ratios of dimensions.” In Module 2, Topic 2, Lesson 5, the Teacher Edition, Differentiation Strategy for the Talk the Talk portion of the lesson explains, “To extend the activity, ask students to list each step in their solution process and the property or theorem used to justify the step. Students can then compare the methods they used to determine all of the arc and angle measures. Some students may use more efficient approaches to the problem situation.” Another example supporting teacher study is evidenced in Module 4, Topic 2, Lesson 3, Teacher Edition, the Misconception listed which points out to teachers that, “Students may reverse the coordinates. The x-coordinate must appear first and the y-coordinate be written second.” In Module 5, Topic 1, Lesson 3, Activity 3.2, the Look Fors states, “As students work, look for the use of the Rule of Compound Probability involving and when calculating P(A and B). Students should use the formula that they developed in the previous activity to	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			determine P(A or B). They can use their organized list to verify whether their formula works." The Module 2, Topic 2, Lesson 4, Activity 4.2, Misconceptions states, "Students may already be familiar with this theorem. Check to make sure they do not use the converse of this theorem to prove this theorem. It may be useful to have a discussion about why it is not acceptable to use a converse theorem in the proof of the actual theorem."	
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students. The language in which problems are posed is carefully considered.	**Yes**	Support for English Language Learners (ELL) and other special populations is present and thoughtful in the materials. ELL tips are provided within the lesson plans. For example, in Module 1, Topic 1, Lesson 3, Activity 3.3, the ELL tip states "Determine whether students are familiar with the term "extend." If not, state the two definitions of extend as to make longer or wider, and to hold something out toward someone. Discuss real-life examples of the term extend, such as extending a roadway, extending a deadline, extending the range of acceptable answers on a test, and extending a hand for someone to shake. Ensure students' understanding of the context of 'extend' in Question 1, as to make the given line segment longer." In Module 3, Topic 1, Lesson 6, Activity 6.1, Facilitation Notes, Differentiation, teachers are provided with the following note, "To support students who struggle, guide them to complete the steps in the worked	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			example in addition to analyzing each step." In Module 4, Topic 1, Lesson 4 Teacher Lesson Plan, it is noted that "To support students who struggle, provide a pre-built spreadsheet and discuss how it relates to their table in Question 2." In Module 2, Topic 3, Lesson 1, the Teacher Lesson Plan notes "To extend the activity, ask students to prove the theorem themselves without using the template in Question 3." In Module 1, Topic 2, Lesson 2, the ELL tip is to "Discuss the meaning of the term interior as it applies to the interior angle of a polygon. While the prefix in- can mean in, on, or not, in this case it means in. A synonym using the same prefix is inside. Ask students where they may have heard the term interior used before, such as the interior of a car or an interior designer, and have them explain their meanings as the inside of a car or professional who designs the inside decoration of a room or building. Then, refer back to the context and have students explain what the interior angle of a polygon is in their own words." In Module 4, Topic 1, Lesson 2, the Teacher Edition, the ELL tip tells teachers to make sure students understand the word tethered from the word problem in the activity.	
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises,	**Yes**	The underlying design of the materials distinguishes between problems and exercises. Geometry contains five modules that are divided by topics and lessons with	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	students apply what they have already learned to build mastery. Each problem or exercise has a purpose.		numerous activities. The activities contain problems which allow students to learn new mathematics. For example, Module 2, Topic 1, Lesson 2 contains five activities that provide students with the opportunity to "use facts to create and verify proofs of the SSS, SAS, and ASA Congruence Theorems using rigid motion transformations." Materials also include an assignment with practice and review exercises at the end of each lesson. Students have the opportunity to practice content from each topic on the skills practice worksheets. The materials also contain math coaching software called MATHia that provides content review and extra practice for students. In Module 1, Topic 1, Lesson 3 there are 4 activities with 4-10 multipart questions that consist of solving problems to learn new math. The assignment portion consists of writing, 6 practice problems, a "stretch" prompt, and 3 review questions. These activities represent the application of student learning to build mastery.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. There is a sequence to each lesson which supports learning. For each lesson, students are provided a Lesson Warm-Up, Learning Goals, Getting Started activity, activities aimed to provide instruction, and Talk the Talk activity. Lessons end with an assignment which includes a write, remember, practice, stretch, and review	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			section. For example, in Module 1, Topic 2, Lesson 4 there are 3 activities. The first activity introduces the converse of conditional statements and base angles of isosceles triangles, the second activity discusses triangle angle sum and exterior angle theorem, and the last activity discusses the triangle inequality theorem and midsegments (LSSM G.CO.C.10). In Module 2, Topic 3, Lesson 1, students begin with a warmup where they "Determine all the angle measures and side lengths of each right triangle." They then construct right triangles of various side lengths and also prove the Hypotenuse-Leg Congruence Theorem (LSSM G.CO.C.10). In Module 3, Topic 1, Lesson 3, students solve proportions in the warm-up exercise and use construction tools in Activity 3.2 to "make a conjecture about the angle bisectors of a triangle and the side lengths" (LSSM G.SRT.B.4). In Module 3, Topic 2, Lesson 4, students complete two activities using cosine and cosine inverse and end the lesson with a Talk the Talk where students match each ratio with the appropriate abbreviation and description, then determine which ratio can be used to solve different situations that are described.	
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	The materials support the uses of technology as called for in the standards. In the MATHia software Rigid Motions unit, students draw a transformed figure and specify a sequence of transformations	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			which maps one figure onto another (LSSM G.CO.A.5). In Module 3, Topic 2, Lesson 2, Activity 2, question 1, part C students are instructed to, "Use technology to calculate the value of tan 4° and use it to determine whether the ramp meets the safety rules. Round your answer to the nearest hundredth." Also, in Module 4, Topic 2, Lesson 2, Activity 3, the Teacher Edition explains that students should use graphing technology to graph circles.	
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**		
I: Non-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of instructional time to the major work of the grade. Although some of the instructional lessons and assignments include standards outside of Geometry, there are implementation suggestions provided for Louisiana teachers for each of these lessons and assessments.	
	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, and materials include problems and activities that serve to	

[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	PUBLISHER RESPONSE
			connect two or more clusters in a domain, or two or more domains in the course.	
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards and help students meet all of the rigorous expectations of the standards. The materials are designed so that students attain fluency and procedural skills and students 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 such a way to enrich the content standards of the course.	
II: Additional Criteria of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics from across domains and clusters throughout the course by staying consistent with the progressions in the Standards.	
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.	
	7. Indicators of Quality	**Yes**	The materials provide teachers and students with a variety of tools they need to meet the expectations of the standards.	
FINAL DECISION FOR THIS MATERIAL: **Tier I, Exemplifies quality**				

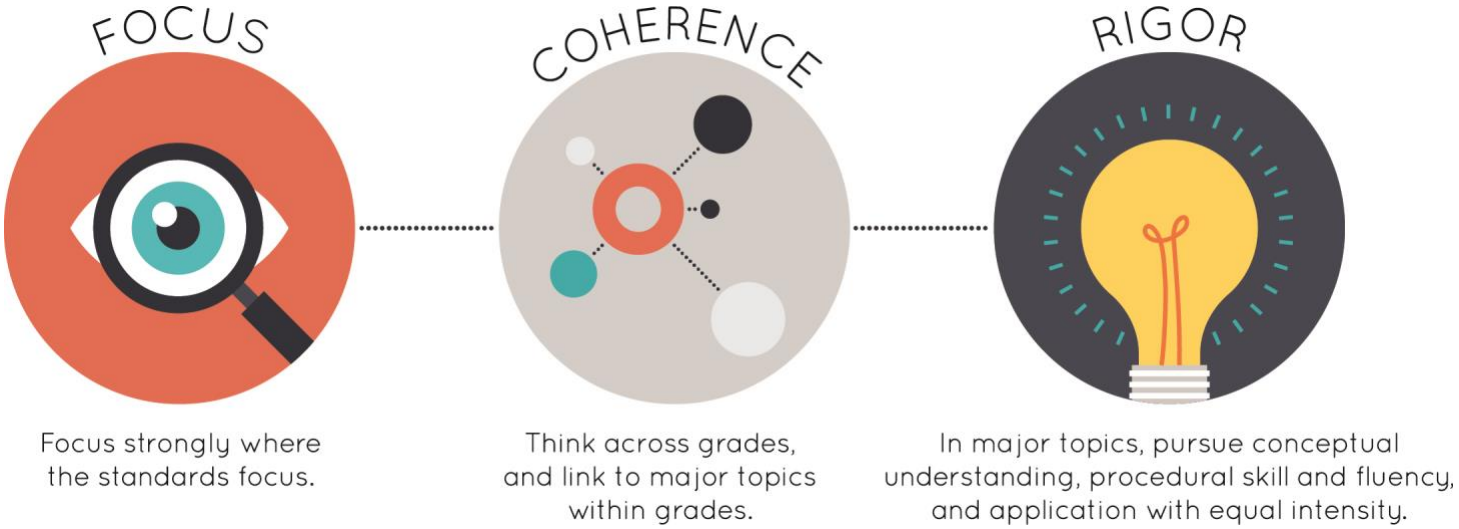
[5] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier I rating.

DEPARTMENT of EDUCATION
Louisiana Believes

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

FULL CURRICULUM
Instructional Materials

Strong mathematics instruction contains the following elements:



Title: **High School Math Learning Solutions – Algebra II**

Grade/Course: Algebra II

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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 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 should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of class time to the major work of the grade. Of 139 instructional days, 90 (65%) spend time on the major work of the grade. There are 9 (6%) days spent on major standards, 81 (58%) spent on a combination of major and supporting and/or additional standards, and 49 (35%) spent on additional and/or supporting standards.
	Required **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the appropriate course. While 43 of the total 65 instructional lessons include standards that are outside of Algebra II, implementation suggestions are provided for Louisiana teachers. For example, in Module 2, Topic 3, Lesson 1, it is explained as follows: "This lesson addresses standard F.IF.7d(+). Skip this lesson and its corresponding assignment. The LSSM A2 standards do not require students to graph rational functions." Another example is seen in Module 1, Topic 1, Lesson 2, where students are asked, "You have described geometric patterns using words. How can you write an algebraic expression to represent a pattern? And how do you

[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
			know whether two expressions are equivalent?" which aligns to LSSM A1: A.SSE.A1b and also addresses on-level standard A2: A.CED.A1. Assessment notes provided for teachers include guidance on which assessment items are appropriate for Louisiana students. For example, in Module 2, Topic 3, the Assessment Guidance states, "Select assessment questions from these suggestions: Pre-/Post Test: Q1(a), and 4-8, End of Topic Test: Q5-9 Standardized Test: Q2 -5, 7,8,10,11,13,16 and 18. Students should not be held accountable for graphs or rational functions, except in cases where they solve equations graphically using technology according to standard A2: A-REI.D.11. They are also not responsible for the transformations of graphs and closure properties of rational functions." Teachers are given the option of using additional assessment questions made available through Edulastic.
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Lessons use activities that allow students to use supporting content to master the major content. For example, in Module 1, Topic 3, Lesson 4, students graph polynomial functions by identifying zeros from factorizations and composing linear and quadratic functions to create cubic functions, connecting supporting LSSM F.IF.C.7c to major LSSM

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			F.BF.A.1b. In Module 2, Topic 1, Lesson 1, Activity 1.1, Problem 2 and Problem 3, students factor polynomial functions and sketch a graph as called for by supporting LSSM F.IF.C.7. Students then analyze what the graphs have in common and what differences they possess in accordance with major LSSM F.IF.B.4, which calls for interpreting key features of graphs. Another example is seen in Module 5, Topic 2, Lesson 2, Activity 2.1, as students are given three sample-types (convenience, subjective, and volunteer) and asked to analyze a discussion between Olivia and Ricky on which is more likely to be a representative population of circle areas connecting supporting LSSM S.IC.A.1 to major LSSM S.IC.B.3.
	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**	The 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. The materials connect cluster "C. Analyze functions using different representations," and "B. Interpret functions that arise in applications in terms of the context" within the Interpreting Functions (IF) domain. For example, in Module 3, Topic 1, Lesson 1, Activity 1.2, students graph functions and the inverses by reflecting over the line y=x in Problem 1 (LSSM F.IF.C.7e), and in Problem 2, students explain which of the functions they graphed are invertible and explain their reasoning based on the vertical line test

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			(LSSM F.IF.B.4) connecting clusters in the same domain. The materials also connect the Building Functions (BF) and the Seeing Structure in Expressions (SSE) domains. This is evidenced in Module 3, Topic 2, Lesson 1, Activity 1.2, where students are to write arithmetic and geometric sequences explicitly and recursively (LSSM F.BF.A.2), while also using the formula to solve problems involving modeling (LSSM A.SSE.B.4) connecting domains within the course.
Non-negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**Required** **3a) *Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where indicated by standards that explicitly call for conceptual understanding. In Module 1, Topic 1, Lesson 6, Activity 6.2, Problem 1 asks students to: "Complete each statement with always, sometimes, or never. a. If a number is an imaginary number, then it is_____ a complex number. b. If a number is a complex number, then it is_____ an imaginary number. c. If a number is a real number, then it is _____a complex number. d. If a number is a real number, then it is _____an imaginary number, or e. If a number is a complex number, then it is _____a real number" (LSSM N.CN.A.2). Students find examples and counterexamples for each statement to determine if they are always, sometimes, or never true. In Module 2, Topic 3, Lesson 5, students use graphs to approximate solutions and then verify their work

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			algebraically. Students are asked to show all work and explain their reasoning by explaining each step in solving the equation (LSSM A.REI.A.1). In Activity 5.2, Problem 3 students answer: "a. What is different about the structure of this equation compared to the equation in Question 1? b. Explain how Dona rewrote the proportion to solve the equation," after they analyze the rational equations of two students (LSSM A.REI.A.1). This activity uses MP.7 as students must analyze the structure of the equation. In Module 3, Topic 1, Lesson 4, Activity 4.3, students analyze the strategies used in worked examples that show how to extract roots or rewrite a radical expression in order to determine when it is necessary to use the absolute value symbol to rewrite the expression. Specifically, students are to "Explain why it is not necessary to use the absolute value symbol around j^2 and why it is necessary to use the absolute value symbol around k" when analyzing the worked examples of two students (LSSM N.RN.A.1).
	Required **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with	**Yes**	The materials are designed so that students attain the fluency and procedural skills required by the Standards. There are multiple opportunities through the Lesson Activity and Practice, Skill Practice worksheets, and MATHia software. For example, in Module 1, Topic 1, Lesson 5, Activity 5.1, problem 3, asks students to "Use factoring to solve each quadratic

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	algebraic operations is provided in order for students to have the foundation for later work in algebra.		equation, if possible" for four different equations (LSSM A.REI.B.4). This is also evident in Module 3, Topic 1, Lesson 5, Activity 5.1, problem 2, where students solve and check six radical equations in one variable (LSSM A.REI.A.2). In the MATHia software for Module 2, Workspace 3 "Solving Quadratic Equations," there are practice problems for students to become fluent in solving quadratic equations, along with a "Skillometer" that lists 7 skills that are needed to master solving quadratic equations with complex equations (LSSM N.CN.C.7). Module 3, Topic 1, Skills Practice sheet also allows students to sketch the graph of the inverse of 6 functions from a function, to determine if 6 functions are invertible from given graphs, and to determine if 6 functions are invertible from given equations (LSSM F.BF.B.4). This activity gives students the necessary practice to master the procedural skill of finding the inverse of functions.
	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	**Yes**	The 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. For example, in Module 2, Topic 1, Lesson 4, Activity 4.3, students create and solve polynomial inequalities to represent situations, such as the path of a kicked soccer ball (LSSM A.CED.A.1). In Module 3,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	expectations for multi-step and real-world problems are explicit.		Topic 4, Lesson 1, Activity 1.3, students are given the scenario: "Vince wants to purchase a laptop with high screen resolution for his gaming hobby. He charges the $1000 purchase to a credit card with 19% interest." In Problem 3, Part B of Activity 1.3, students are to "write the formula to calculate the minimum monthly payment" to model the situation (LSSM F.BF.A.2). In Module 5, Topic 1, Lesson 3, Activity 3.2, Problem 1 explains the normal distribution at which teens send and receive text messages every day. Multi-part questions are used to ask students to calculate the 50th percentile for the data set, answer two reasoning questions about percentiles, and to explain their thinking on all parts (LSSM S.ID.A.4). Additionally, in Module 5, Topic 2, Lesson 4, students calculate confidence intervals for a real-world situation related to the preference for a particular brand of water (S.IC.B.4).
	Required **3d) *Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in applications after solidifying conceptual understanding with ample opportunity to gain procedural skills and fluency where called for in the LSSM for Algebra II. For example, the aspects are treated separately in Module 4, Topic 2, Lesson 3, Activity 3.1, where students use procedural skill and fluency to complete a table of values using the sine function and answer questions relating amplitude,

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			period, and phase shift of the trigonometric function to model rabbit populations (LSSM F.IFB.4 and F.TF.B.5). The aspects of rigor are treated together in Module 3, Topic 3, Lesson 5, Activity 5.2, Problem 2, where students complete the following problem: "Gina claims that when she started working with an up and coming boy band, they had 18,450 online followers, and she was able to increase their followers by 26% per month. a. Use Gina's claim to write a function to represent the number of online followers that the boy band had after t months. b. If Gina started working with the band on May 1st, how many online followers did they have by September 1st? c. How long did it take for the band to surpass 100,000 online followers?" This incorporates the procedural skill of writing a function, understanding the concept of the function to interpret it for Parts B and C, and applying the skill and concept to a real-world situation (LSSM F.LE.A.2).
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**Required** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	The materials address the practice standards in such a way as to enrich the content standards of the grade/course. The practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials. The Teacher Implementation Guide, Volume 1, lists the Habits of Mind, the connection to the Mathematical Practice Standards (MP), and explains that "Each lesson provides opportunities for

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			students to think, reason, and communicate their mathematical understanding." Questions that correlate to the math practice standards are noted with symbols in the lessons. In Module 1, Topic 2, Lesson 2, Activity 2.3, Problem 3, students reason abstractly about how graphs behave at zeros of linear factors versus square factors (MP.2). In Module 4, Topic 2, Lesson 5, Activity 5.2, students have the opportunity to model mathematics as a graph to show an object's height relative to its starting position in relation to time, then answer questions about interpreting the graph and writing equations from it (MP.4). In Module 4, Topic 1, Lesson 5, Activity 5.2, Problem 1, students answer the question, "How can you write the tangent function in terms of sine and cosine, using the unit circle?" which requires students to use appropriate tools strategically (MP.5). In Module 3, Topic 2, Lesson 1, Activity 1.1 explains that "In this activity, students compare two different salaries: one modeled by a constant and the other by a geometric sequence with a common ratio of 2. Students determine when one salary surpasses the other salary." This lesson utilizes MP.7 and MP.8 as indicated by the symbol of a cube which, as explained in the Teacher's Implementation Guide, represents the use of MP.7 and MP.8.
Section II: Additional Criteria of Superior Quality			

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT: Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**Required** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide extensive student work with course-level problems. During the Develop section of the materials, students engage in a variety of tasks and problem solving to develop mathematical knowledge through discourse and collaboration. In the Demonstrate section of the materials, students demonstrate what they have learned and also engage in a self-assessment to monitor their own progress towards mastering learning goals. Students then complete an assignment where they practice the skills and concepts learned. The materials also include MATHia software that creates a personalized learning path with ongoing formative assessment adapted for each student. Each lesson includes a warm-up section at the beginning where students work a few problems from previously learned content. For example, in Module 2, Topic 3, Lesson 4, the Getting Started portion of the lesson states, “In elementary school, you divided rational numbers using long division. You wrote the quotient first with a remainder and then as a mixed number. For example... How are the quotients of rational expressions connected to those you determined in elementary school?” This connects LSSM A.APR.D.6 to prior learning from elementary school. In the Module 3, Topic 4, Lesson 1, Warm-Up, students write geometric sequences given

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			the common ratio and first number in the sequence which is an Algebra I topic (LSSM A.SSE.1a). In the same lesson, Activity 1.1, students explore a geometric series introduced by the statement, "A geometric series is the sum of the terms of a geometric sequence. For example, adding the terms of the sequence 1, 3, 9, 27, 81 creates the geometric series 1 + 3 + 9 + 27 + 81." This allows students to make connections from previously learned content to the course level content within the lesson.
	Required **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview sections and in the Teacher's Implementation Guide. Prior knowledge is also pointed out to students and families within the Family Guide for each Topic. For example, in Module 3, Topic 1, Topic Overview, "What is the Entry Point for Students," the materials explain that "Beginning in middle school, students have been solving equations using the Properties of Equality. In grade 8, they solved for unknown values in the Pythagorean Theorem by taking the square root of both sides. Now, students extend their skills by using the same structure and reasoning to solve radical equations." In Module 4, Topic 2, the Family Guide in "Where have we been?"

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			explains that "In previous courses, students have analyzed exponential functions, including their key characteristics and transformations. They have also investigated inverse functions in the previous topic and in earlier courses. Although they may not be familiar with the constant e, students have experience with irrational numbers, including some square roots and π." In "Where are we going?" it is explained that "Students will use the intuitions they gain by studying the graphs of logarithmic functions in the next topic to analyze logarithmic equations and apply logarithmic functions to situations. As will be shown in the situations in these topics, logarithmic functions have a number of applications in astronomy, medicine, mechanics, physics, and seismology" (LSSM F.IF.C.7).
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	The materials include learning objectives that are visibly shaped by LSSM Cluster headings. For example, in Module 3, Topic 1, Lesson 3, one of the learning goals listed is to "Analyze transformations of radical functions using transformational function form," which directly aligns with the language and intent of LSSM F.BF.B.3. Also in Module 3, Topic 3, Topic Overview, "How Does a Student Demonstrate Understanding?" the objectives are listed as being able to "Use the properties of exponents to rewrite exponential expressions in equivalent forms; Understand the inverse relationship

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			between exponents and logarithms; and, Convert exponential equations into logarithmic equations, and vice versa." These objectives are modeled after cluster C of the Functions: Linear, Quadratic, and Exponential Models domain to "Construct and compare linear, quadratic, and exponential models and solve problems."
6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE: Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**Required** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	The materials attend to the full meaning of each practice standard. Throughout the materials, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind as described in the practice standard. The practice standards are listed as "Habits of Mind" at the beginning of the student materials and it is explained that every activity will have a symbol that indicates the practice standard that is aligned. In Module 2, Topic 2, Lesson 1, Activity 1.3, students prove polynomial identities by reasoning abstractly and quantitatively (MP.2). In Module 5, Topic 1, Lesson 1, Activity 1.1, students construct viable arguments (MP.3) as indicated by a puzzle piece symbol and answer questions such as "Describe the shape and spread of each histogram. What might these characteristics reveal about the data for each company?" In Module 1, Topic 2, Lesson 1, Activity 1.1, students model with mathematics (MP.4) as indicated by a symbol of a hand holding a wrench and

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			create "a table of values with different heights and widths and define a function for the width of the drain given a height of h feet." In Module 5, Topic 1, Lesson 3, Activity 3.1, students attend to precision (MP.6), as indicated by a symbol of a target and must calculate "the percent of data that falls within a given interval when the boundaries of the interval are not multiples of the standard deviation." Additionally, in Module 3, Topic 4, Lesson 1, Activity 1.1, students use Euclid's Method to compute geometric series while looking for and making use of structure (MP.7) as symbolized by a three-dimensional box.
	Required **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.	**Yes**	The materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards. Students are given opportunities to construct arguments and critique those of others in multiple activity questions where a thumbs up/thumbs down symbol indicates the use of MP.3. For example, in Module 2, Topic 3 Lesson 4, Teacher's Implementation Guide, Activity 4.3 clarifies that "In this activity, students analyze a worked example that shows how to subtract rational expressions." In Module 5, Topic 2, Lesson 1, Getting Started Problem 3, students examine work completed by Huck and Patch to determine who is correct in

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			regards to the population of a study. Also, in Module 1, Topic 3, Lesson 1, Activity 1.3, Problem 1 students are given the graph of a function and three different worked examples and must determine if the function has symmetry and why or why not. Students must choose which of the explanations given is correct and also explain their reasoning.
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. The Teacher's Implementation Guide, "Habits of Mind" states, "Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. However, it is your responsibility as a teacher to recognize these opportunities and incorporate these practices into your daily rituals." In addition, a note is included that states, "When you are facilitating each lesson, listen carefully and value diversity of thought, redirect students' questions with guiding questions, provide additional support with those struggling with a task, and hold students accountable for an end product. When students share their work, make your expectations clear, require that students defend and talk about their solutions, and monitor student progress by checking for understanding." While the Teacher's Implementation Guide includes information about Math Practice

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			Standards, it serves as a general overview without details on how each practice standard should be used in the lessons. For example, in Module 3, Topic 1, Lesson 3, Activity 3.1 includes the box symbol. The facilitation notes state, "In this activity, students use the context of building a logo to investigate the effects of transforming the square root function and the cube root function. They write equations of functions and add them to the graph of the logo. Students also identify the domain of functions and compare their key characteristics." However, it is not evident from this facilitation note how or when students are to look for and make use of a structure or to look for and express regularity in repeated reasoning. Similarly, in Module 3, Topic 2, Lesson 2, Activity 2.1, students analyze whether the b-value of exponential functions indicates decay or growth. The activity includes the target symbol to indicate the use of MP.6 but lacks information in the facilitation notes on how to do so.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	The materials explicitly attend to the specialized language of mathematics. The student workbook begins with an "Academic Glossary" and defines words such as "analyze" and "represent." Students are given questions they should ask themselves when seeing these words in a prompt, along with key phrases to look for that relate to these terms. Each lesson includes the list of key terms found

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			in the introduction and their definitions within context as the lesson progresses. For example, in Module 2, Topic 3, Lesson 1, the key terms of a "rational function" and "vertical asymptote" are listed at the beginning of the lesson and defined in Activity 1.1 between Problem 3 and Problem 4. Students are then asked to choose rational functions and determine if they have vertical asymptotes utilizing the precise mathematical language previously introduced. In Module 5, Topic 2, Lesson 2, Activity 2.1, the definitions for "convenience sample," "subjective sample," and "volunteer sample" are provided. In Problem 1 of this activity, students are presented with the following: "Olivia and Ricky discussed whether a convenience sample or a subjective sample is more likely to be representative of the population of circle areas. Who is correct? Explain your reasoning." In this activity, students must utilize the definitions in order to answer the reasoning questions using the meaning of the terms to support their answers.
7. INDICATORS OF QUALITY: Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**Required** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Students are asked to produce answers and solutions, arguments and explanations, diagrams, and mathematical models in a course-appropriate way. For example, in Module 2, Topic 1, Lesson 4, Activity 4.2, students complete the following problem: "Samson, Kaley, Paco, and Sal each solved the quadratic

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			inequality $2x^2 + 14x < -24$. a. Explain how Samson and Paco could have determined the zeros and axis of symmetry of the function. b. Explain why the graphs of Samson and Paco are different, yet generate the same answers." In Module 2, Topic 1, Lesson 4, Activity 4.3, Problem 1, students write an inequality to represent the height of the soccer ball in the problem but must answer the question by first solving the inequality and then explain their reasoning. In Module 3, Topic 3, Lesson 5, Review Problem 3 a partially filled in table is given for students to use as they determine whether the information represents an example of 'exponential growth' or 'decay function' and explain why, write the function, and complete the table. In Module 5, Topic 1, Lesson 1, Activity 1.1, students create a table that conveys relative frequencies and a histogram to represent those frequencies. In Module 5, Topic 1, Lesson 2, students interpret graphs, use graphs, estimate, and approximate the area under the curve for normal distributions.
	Required **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion	**Yes**	There are separate teacher materials that support and reward teacher study. Teacher materials include, but not limited to, discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	of desired mathematical behaviors being elicited among students.		flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students. The Teacher's Implementation Guide provides information regarding sequencing and lesson flow. Each lesson includes facilitation notes, "Differentiation Strategies," and student "Look Fors." For example, in Module 2, Topic 1, Lesson 2, Activity 2.1, the "Look For" explains that "As students work, look for different answers as to whether h(x) is completely factored. It is completely factored over the set of real numbers, but not over the set of complex numbers. -Sign errors when using the values of x from the quadratic formula to write the factors." In Module 2, Topic 2, Lesson 1, Activity 1.1, the Facilitation Notes clarify that "As students work, look for the numbers they choose to work with. It is an easier problem if students think of 112 as 100 + 12 rather than 54 + 58. If students choose difficult numbers, there is more room for arithmetic errors when substituting the values into the polynomial identities. Misconception: Students may think that they need to choose specific numbers for each calculation. Students can choose any number as long as the values are substituted into the appropriate polynomial identity."
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students.	**Yes**	Support for English Language Learners (ELL) and other special populations is present and thoughtful in the materials.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
	The language in which problems are posed is carefully considered.		For example, in Module 2, Topic 3, Lesson 6, Activity 6.1, an ELL tip informs teachers that "Two non-mathematical terms that appear in this activity are 'marketing department' and 'vinyl.' Assess students' prior knowledge of the terms 'marketing department' and 'vinyl.' Define 'marketing' as the action or business of promoting and selling products or services. Therefore, a 'marketing department' is a group of people who are dedicated to promoting and selling products and services in a business. Define 'vinyl' as a thin material that is used for wallpapers and other covering materials. Discuss the application of the terms as they are used in the activity." Also, in Module 1, Topic 2, Lesson 3, Activity 3.1, Facilitation Notes, Differentiation, teachers are provided with the following note: "To support students who struggle, provide them with a list of key characteristics to address in Question 2, part (a). The list should include: intervals of increase or decrease, maximum or minimum values, domain, range, x-intercepts, and y-intercept."
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The materials are divided into modules, topics, and lessons. Each lesson has a warm-up and Getting Started portion followed by multiple activities. Through the activities, students complete tasks along with explorative questions aiding them in learning the new mathematics.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			For example, Module 1, Topic 3, Lesson 2 contains three activities that provide students with the opportunity to graph cubic and quadratic functions. The materials also include an assignment with practice and review exercises at the end of each lesson. Students also have an opportunity to practice content from each topic on the skills practice worksheets. For example, in Module 3, Topic 1, Lesson 1, there is a three-question Warm Up, Getting Started portion with 5 questions, two activities each with 4 multi-part questions pertaining to them, a Talk the Talk portion with 2 multi-part questions, 3 multi-part practice problems, 1 multi-part Stretch problems, and 4 multi-part Review questions. In addition, MATHia review software includes videos to coach students through every topic and gives access to more practice exercises.
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Every lesson starts with a warm-up activity which then leads to a Getting Started set of problems opening the lesson to the multiple activities. The activities increase in complexity as students progress through the lesson. After the activities, the assignment consists of a writing portion, practice, and a review. In addition, for higher level students, the assignment has a Stretch portion that presents more challenging questions. For example, in Module 3, Topic 1, Lesson 1, students

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			explore inverses of functions. In the lesson warm-up, students determine which of three graphs are functions. In the Getting Started section, students use patty paper to reflect across the x and y axes. In Activity 1.1, students transpose graphs using transformation and analyze Cole's work on transposing his graph. The assignment section of each lesson has a Write, Remember, Practice, and Stretch section for current material and a Review section for previous content. In Module 1, Topic 3, Lesson 4, Activity 4.1, students build a cubic function; in Activity 4.2, students analyze functions that build quartic functions; and, in Activity 4.3, students build a quartic function.
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	The materials support the uses of technology as called for in the standards. For example, it is stated in Module 2, Topic 2, Lesson 3, Activity 3.1, Problem 3 to "Use technology to determine the regression equation for the average number of vehicles entering and exiting downtown on a typical weekday" (LSSM S.ID.B.6a). In MATHia, Investigating Periodic Functions, Graphs of Trigonometric Functions, students must graph trigonometric functions using a graphing applet (F.IF.C.7e).

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.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
Compile the results for Sections I and II to make a final decision for the material under review.			
Section	**Criteria**	**Yes/No**	
I: Non-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of instructional time to the major work of the grade. Although some of the instructional lessons and assignments include standards outside of Algebra II, there are implementation suggestions provided for Louisiana teachers for each of these lessons and assessments.
	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through the connections between supporting and major LSSM, as well as through the connections made between different clusters and domains.
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards and help students meet all of the rigorous expectations of the standards. The materials are designed so that students attain fluency and procedural skills and students 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 such a way to enrich the content standards of the course.
II: Additional Criteria of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics from across domains and clusters throughout the course by staying consistent with the progressions in the Standards.

[4] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier I or Tier II rating.
[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
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.
	7. Indicators of Quality	**Yes**	The materials provide teachers and students with a variety of tools they need to meet the expectation of the standards.
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.

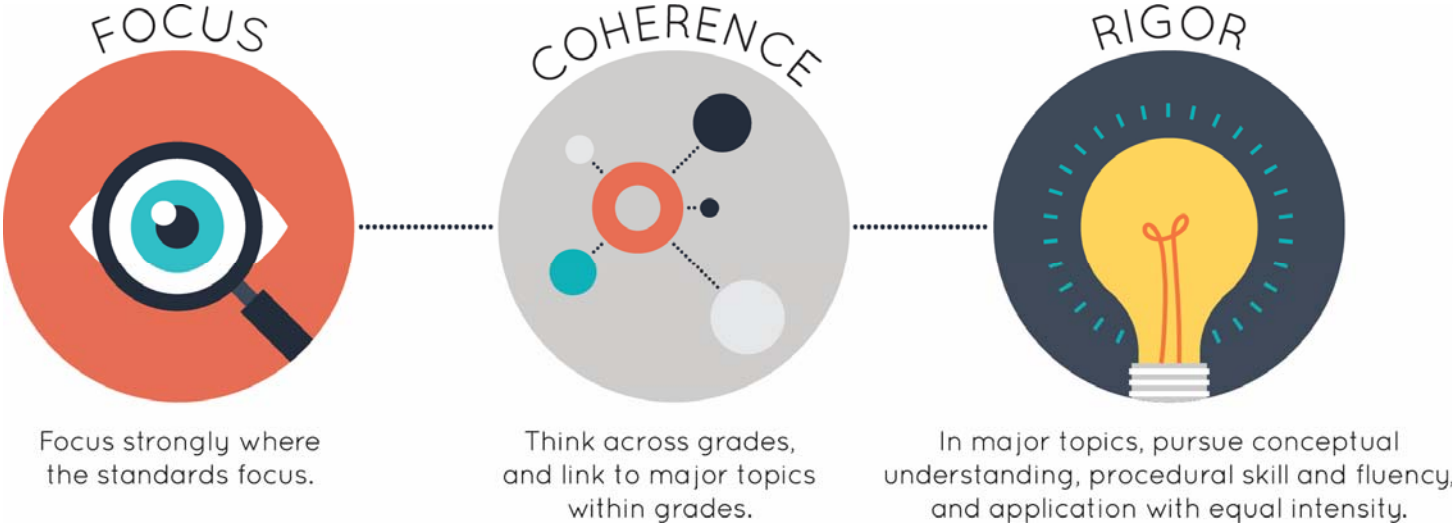
Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their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

The 2019-2020 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Beauregard, Bossier, Caddo, Calcasieu, Caldwell, City of Monroe, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, Jefferson, Jefferson Davis, KIPP New Orleans, Lafayette, Lafourche, Lincoln, Livingston, LSU Lab School, Orleans, Orleans/Lusher Charter School, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, RSD Choice Foundation, St. John the Baptist, St. Charles, St. James, St. Landry, St. Mary, St. Tammany, Tangipahoa, Vermillion, Vernon, West Baton Rouge, West Feliciana, and Zachary. This review represents the work of current classroom teachers with experience in grades 9-12.

Appendix I.

Publisher Response

Strong mathematics instruction contains the following elements:



Title: **High School Math Learning Solutions – Algebra II**

Grade/Course: **11**

Publisher: **Carnegie Learning, Inc.**

Copyright: **2018**

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	PUBLISHER RESPONSE
Section I: Non-negotiable Criteria of Superior Quality **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 should devote the large majority of class time to the major work of each grade/course. Each grade/course must meet the criterion; do not average across two or more grades.	**Yes**	The materials devote a large majority of class time to the major work of the grade. Of 139 instructional days, 90 (65%) spend time on the major work of the grade. There are 9 (6%) days spent on major standards, 81 (58%) spent on a combination of major and supporting and/or additional standards, and 49 (35%) spent on additional and/or supporting standards.	
	Required **1b)** In any one grade/course, instructional materials should spend minimal time on content outside of the appropriate grade/course. Previous grade/course content should be used only for scaffolding instruction. In assessment materials, there are no chapter tests, unit tests, or other such assessment components that make students or teachers responsible for any topics before the grade/course in which they are introduced in the Standards.	**Yes**	The instructional materials spend minimal time on content outside of the appropriate course. While 43 of the total 65 instructional lessons include standards that are outside of Algebra II, implementation suggestions are provided for Louisiana teachers. For example, in Module 2, Topic 3, Lesson 1, it is explained as follows: "This lesson addresses standard F.IF.7d(+). Skip this lesson and its corresponding assignment. The LSSM A2 standards do not require students to graph rational functions." Another example is seen in Module 1, Topic 1, Lesson 2, where students are asked, "You have described geometric patterns using words. How can you write an algebraic expression to represent a pattern? And how do you	

[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	PUBLISHER RESPONSE
			know whether two expressions are equivalent?" which aligns to LSSM A1: A.SSE.A1b and also addresses on-level standard A2: A.CED.A1. Assessment notes provided for teachers include guidance on which assessment items are appropriate for Louisiana students. For example, in Module 2, Topic 3, the Assessment Guidance states, "Select assessment questions from these suggestions: Pre-/Post Test: Q1(a), and 4-8, End of Topic Test: Q5-9 Standardized Test: Q2 -5, 7,8,10,11,13,16 and 18. Students should not be held accountable for graphs or rational functions, except in cases where they solve equations graphically using technology according to standard A2: A-REI.D.11. They are also not responsible for the transformations of graphs and closure properties of rational functions." Teachers are given the option of using additional assessment questions made available through Edulastic.	
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**	The materials connect supporting content to major content in meaningful ways so that focus and coherence are enhanced throughout the year. Lessons use activities that allow students to use supporting content to master the major content. For example, in Module 1, Topic 3, Lesson 4, students graph polynomial functions by identifying zeros from factorizations and composing linear and quadratic functions to create cubic functions, connecting supporting LSSM F.IF.C.7c to major LSSM	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			F.BF.A.1b. In Module 2, Topic 1, Lesson 1, Activity 1.1, Problem 2 and Problem 3, students factor polynomial functions and sketch a graph as called for by supporting LSSM F.IF.C.7. Students then analyze what the graphs have in common and what differences they possess in accordance with major LSSM F.IF.B.4, which calls for interpreting key features of graphs. Another example is seen in Module 5, Topic 2, Lesson 2, Activity 2.1, as students are given three sample-types (convenience, subjective, and volunteer) and asked to analyze a discussion between Olivia and Ricky on which is more likely to be a representative population of circle areas connecting supporting LSSM S.IC.A.1 to major LSSM S.IC.B.3.	
	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**	The 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. The materials connect cluster "C. Analyze functions using different representations," and "B. Interpret functions that arise in applications in terms of the context" within the Interpreting Functions (IF) domain. For example, in Module 3, Topic 1, Lesson 1, Activity 1.2, students graph functions and the inverses by reflecting over the line y=x in Problem 1 (LSSM F.IF.C.7e), and in Problem 2, students explain which of the functions they graphed are invertible and explain their reasoning based on the vertical line test	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			(LSSM F.IF.B.4) connecting clusters in the same domain. The materials also connect the Building Functions (BF) and the Seeing Structure in Expressions (SSE) domains. This is evidenced in Module 3, Topic 2, Lesson 1, Activity 1.2, where students are to write arithmetic and geometric sequences explicitly and recursively (LSSM F.BF.A.2), while also using the formula to solve problems involving modeling (LSSM A.SSE.B.4) connecting domains within the course.	
Non-negotiable **3. RIGOR AND BALANCE:** Each grade's instructional materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by helping students develop conceptual understanding, procedural skill and fluency, and application. ☒ Yes ☐ No	**Required** **3a)** ***Attention to Conceptual Understanding:*** Materials develop conceptual understanding of key mathematical concepts, especially where called for explicitly in specific content standards or cluster headings by amply featuring high-quality conceptual problems and discussion questions.	**Yes**	The materials develop the conceptual understanding of key mathematical concepts, especially where indicated by standards that explicitly call for conceptual understanding. In Module 1, Topic 1, Lesson 6, Activity 6.2, Problem 1 asks students to: "Complete each statement with always, sometimes, or never. a. If a number is an imaginary number, then it is_____ a complex number. b. If a number is a complex number, then it is_____ an imaginary number. c. If a number is a real number, then it is _____a complex number. d. If a number is a real number, then it is _____an imaginary number, or e. If a number is a complex number, then it is _____a real number" (LSSM N.CN.A.2). Students find examples and counterexamples for each statement to determine if they are always, sometimes, or never true. In Module 2, Topic 3, Lesson 5, students use graphs to approximate solutions and then verify their work	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			algebraically. Students are asked to show all work and explain their reasoning by explaining each step in solving the equation (LSSM A.REI.A.1). In Activity 5.2, Problem 3 students answer: "a. What is different about the structure of this equation compared to the equation in Question 1? b. Explain how Dona rewrote the proportion to solve the equation," after they analyze the rational equations of two students (LSSM A.REI.A.1). This activity uses MP.7 as students must analyze the structure of the equation. In Module 3, Topic 1, Lesson 4, Activity 4.3, students analyze the strategies used in worked examples that show how to extract roots or rewrite a radical expression in order to determine when it is necessary to use the absolute value symbol to rewrite the expression. Specifically, students are to "Explain why it is not necessary to use the absolute value symbol around j^2 and why it is necessary to use the absolute value symbol around k" when analyzing the worked examples of two students (LSSM N.RN.A.1).	
	Required **3b)** ***Attention to Procedural Skill and Fluency:*** The materials are designed so that students attain the fluencies and procedural skills required by the Standards. Materials give attention throughout the year to individual standards that set an expectation of procedural skill and fluency. In grades K-6, materials provide repeated practice toward attainment of fluency standards. In higher grades, sufficient practice with	**Yes**	The materials are designed so that students attain the fluency and procedural skills required by the Standards. There are multiple opportunities through the Lesson Activity and Practice, Skill Practice worksheets, and MATHia software. For example, in Module 1, Topic 1, Lesson 5, Activity 5.1, problem 3, asks students to "Use factoring to solve each quadratic	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	algebraic operations is provided in order for students to have the foundation for later work in algebra.		equation, if possible" for four different equations (LSSM A.REI.B.4). This is also evident in Module 3, Topic 1, Lesson 5, Activity 5.1, problem 2, where students solve and check six radical equations in one variable (LSSM A.REI.A.2). In the MATHia software for Module 2, Workspace 3 "Solving Quadratic Equations," there are practice problems for students to become fluent in solving quadratic equations, along with a "Skillometer" that lists 7 skills that are needed to master solving quadratic equations with complex equations (LSSM N.CN.C.7). Module 3, Topic 1, Skills Practice sheet also allows students to sketch the graph of the inverse of 6 functions from a function, to determine if 6 functions are invertible from given graphs, and to determine if 6 functions are invertible from given equations (LSSM F.BF.B.4). This activity gives students the necessary practice to master the procedural skill of finding the inverse of functions.	
	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	**Yes**	The 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. For example, in Module 2, Topic 1, Lesson 4, Activity 4.3, students create and solve polynomial inequalities to represent situations, such as the path of a kicked soccer ball (LSSM A.CED.A.1). In Module 3,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	expectations for multi-step and real-world problems are explicit.		Topic 4, Lesson 1, Activity 1.3, students are given the scenario: "Vince wants to purchase a laptop with high screen resolution for his gaming hobby. He charges the $1000 purchase to a credit card with 19% interest." In Problem 3, Part B of Activity 1.3, students are to "write the formula to calculate the minimum monthly payment" to model the situation (LSSM F.BF.A.2). In Module 5, Topic 1, Lesson 3, Activity 3.2, Problem 1 explains the normal distribution at which teens send and receive text messages every day. Multi-part questions are used to ask students to calculate the 50th percentile for the data set, answer two reasoning questions about percentiles, and to explain their thinking on all parts (LSSM S.ID.A.4). Additionally, in Module 5, Topic 2, Lesson 4, students calculate confidence intervals for a real-world situation related to the preference for a particular brand of water (S.IC.B.4).	
	Required **3d)** ***Balance:*** The three aspects of rigor are not always treated together and are not always treated separately.	**Yes**	The three aspects of rigor are not always treated together or separately throughout the curriculum. Students engage in applications after solidifying conceptual understanding with ample opportunity to gain procedural skills and fluency where called for in the LSSM for Algebra II. For example, the aspects are treated separately in Module 4, Topic 2, Lesson 3, Activity 3.1, where students use procedural skill and fluency to complete a table of values using the sine function and answer questions relating amplitude,	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			period, and phase shift of the trigonometric function to model rabbit populations (LSSM F.IFB.4 and F.TF.B.5). The aspects of rigor are treated together in Module 3, Topic 3, Lesson 5, Activity 5.2, Problem 2, where students complete the following problem: “Gina claims that when she started working with an up and coming boy band, they had 18,450 online followers, and she was able to increase their followers by 26% per month. a. Use Gina’s claim to write a function to represent the number of online followers that the boy band had after t months. b. If Gina started working with the band on May 1st, how many online followers did they have by September 1st? c. How long did it take for the band to surpass 100,000 online followers?” This incorporates the procedural skill of writing a function, understanding the concept of the function to interpret it for Parts B and C, and applying the skill and concept to a real-world situation (LSSM F.LE.A.2).	
Non-negotiable **4. FOCUS AND COHERENCE VIA PRACTICE STANDARDS:** Materials promote focus and coherence by connecting practice standards with content that is emphasized in the Standards. ☒ Yes ☐ No	**Required** **4a)** Materials address the practice standards in such a way as to enrich the content standards of the grade/course; practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials.	**Yes**	The materials address the practice standards in such a way as to enrich the content standards of the grade/course. The practices strengthen the focus on the content standards instead of detracting from them, in both teacher and student materials. The Teacher Implementation Guide, Volume 1, lists the Habits of Mind, the connection to the Mathematical Practice Standards (MP), and explains that “Each lesson provides opportunities for	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			students to think, reason, and communicate their mathematical understanding." Questions that correlate to the math practice standards are noted with symbols in the lessons. In Module 1, Topic 2, Lesson 2, Activity 2.3, Problem 3, students reason abstractly about how graphs behave at zeros of linear factors versus square factors (MP.2). In Module 4, Topic 2, Lesson 5, Activity 5.2, students have the opportunity to model mathematics as a graph to show an object's height relative to its starting position in relation to time, then answer questions about interpreting the graph and writing equations from it (MP.4). In Module 4, Topic 1, Lesson 5, Activity 5.2, Problem 1, students answer the question, "How can you write the tangent function in terms of sine and cosine, using the unit circle?" which requires students to use appropriate tools strategically (MP.5). In Module 3, Topic 2, Lesson 1, Activity 1.1 explains that "In this activity, students compare two different salaries: one modeled by a constant and the other by a geometric sequence with a common ratio of 2. Students determine when one salary surpasses the other salary." This lesson utilizes MP.7 and MP.8 as indicated by the symbol of a cube which, as explained in the Teacher's Implementation Guide, represents the use of MP.7 and MP.8.	
Section II: Additional Criteria of Superior Quality				

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
5. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL CONTENT: Materials foster focus and coherence by linking topics (across domains and clusters) and across grades/courses by staying consistent with the progressions in the Standards. ☒ Yes ☐ No	**Required** **5a)** Materials provide all students extensive work with course-level problems. Review of material from previous grades and courses is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.	**Yes**	The materials provide extensive student work with course-level problems. During the Develop section of the materials, students engage in a variety of tasks and problem solving to develop mathematical knowledge through discourse and collaboration. In the Demonstrate section of the materials, students demonstrate what they have learned and also engage in a self-assessment to monitor their own progress towards mastering learning goals. Students then complete an assignment where they practice the skills and concepts learned. The materials also include MATHia software that creates a personalized learning path with ongoing formative assessment adapted for each student. Each lesson includes a warm-up section at the beginning where students work a few problems from previously learned content. For example, in Module 2, Topic 3, Lesson 4, the Getting Started portion of the lesson states, “In elementary school, you divided rational numbers using long division. You wrote the quotient first with a remainder and then as a mixed number. For example... How are the quotients of rational expressions connected to those you determined in elementary school?” This connects LSSM A.APR.D.6 to prior learning from elementary school. In the Module 3, Topic 4, Lesson 1, Warm-Up, students write geometric sequences given	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			the common ratio and first number in the sequence which is an Algebra I topic (LSSM A.SSE.1a). In the same lesson, Activity 1.1, students explore a geometric series introduced by the statement, "A geometric series is the sum of the terms of a geometric sequence. For example, adding the terms of the sequence 1, 3, 9, 27, 81 creates the geometric series 1 + 3 + 9 + 27 + 81." This allows students to make connections from previously learned content to the course level content within the lesson.	
	Required **5b)** Materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge.	**Yes**	The materials relate course-level concepts explicitly to prior knowledge from earlier grades and courses. Prior knowledge is pointed out to teachers within the Topic Overview sections and in the Teacher's Implementation Guide. Prior knowledge is also pointed out to students and families within the Family Guide for each Topic. For example, in Module 3, Topic 1, Topic Overview, "What is the Entry Point for Students," the materials explain that "Beginning in middle school, students have been solving equations using the Properties of Equality. In grade 8, they solved for unknown values in the Pythagorean Theorem by taking the square root of both sides. Now, students extend their skills by using the same structure and reasoning to solve radical equations." In Module 4, Topic 2, the Family Guide in "Where have we been?"	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			explains that “In previous courses, students have analyzed exponential functions, including their key characteristics and transformations. They have also investigated inverse functions in the previous topic and in earlier courses. Although they may not be familiar with the constant e, students have experience with irrational numbers, including some square roots and π.” In “Where are we going?” it is explained that “Students will use the intuitions they gain by studying the graphs of logarithmic functions in the next topic to analyze logarithmic equations and apply logarithmic functions to situations. As will be shown in the situations in these topics, logarithmic functions have a number of applications in astronomy, medicine, mechanics, physics, and seismology” (LSSM F.IF.C.7).	
	5c) Materials include learning objectives that are visibly shaped by LSSM cluster headings and/or standards.	**Yes**	The materials include learning objectives that are visibly shaped by LSSM Cluster headings. For example, in Module 3, Topic 1, Lesson 3, one of the learning goals listed is to “Analyze transformations of radical functions using transformational function form,” which directly aligns with the language and intent of LSSM F.BF.B.3. Also in Module 3, Topic 3, Topic Overview, “How Does a Student Demonstrate Understanding?” the objectives are listed as being able to “Use the properties of exponents to rewrite exponential expressions in equivalent forms; Understand the inverse relationship	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			between exponents and logarithms; and, Convert exponential equations into logarithmic equations, and vice versa." These objectives are modeled after cluster C of the Functions: Linear, Quadratic, and Exponential Models domain to "Construct and compare linear, quadratic, and exponential models and solve problems."	
6. ALIGNMENT CRITERIA FOR STANDARDS FOR MATHEMATICAL PRACTICE: Aligned materials make meaningful and purposeful connections that enhance the focus and coherence of the Standards rather than detract from the focus and include additional content/skills to teach which are not included in the Standards. ☒ Yes ☐ No	**Required** **6a)** Materials attend to the full meaning of each practice standard. Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind described in the practice standard. Alignments to practice standards are accurate.	**Yes**	The materials attend to the full meaning of each practice standard. Throughout the materials, each mathematical practice standard is meaningfully present in the form of assignments, activities, or problems that stimulate students to develop the habits of mind as described in the practice standard. The practice standards are listed as "Habits of Mind" at the beginning of the student materials and it is explained that every activity will have a symbol that indicates the practice standard that is aligned. In Module 2, Topic 2, Lesson 1, Activity 1.3, students prove polynomial identities by reasoning abstractly and quantitatively (MP.2). In Module 5, Topic 1, Lesson 1, Activity 1.1, students construct viable arguments (MP.3) as indicated by a puzzle piece symbol and answer questions such as "Describe the shape and spread of each histogram. What might these characteristics reveal about the data for each company?" In Module 1, Topic 2, Lesson 1, Activity 1.1, students model with mathematics (MP.4) as indicated by a symbol of a hand holding a wrench and	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			create “a table of values with different heights and widths and define a function for the width of the drain given a height of h feet.” In Module 5, Topic 1, Lesson 3, Activity 3.1, students attend to precision (MP.6), as indicated by a symbol of a target and must calculate “the percent of data that falls within a given interval when the boundaries of the interval are not multiples of the standard deviation.” Additionally, in Module 3, Topic 4, Lesson 1, Activity 1.1, students use Euclid’s Method to compute geometric series while looking for and making use of structure (MP.7) as symbolized by a three-dimensional box.	
	Required **6b)** Materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards (cf. MP.3). Materials engage students in problem solving as a form of argument, attending thoroughly to places in the Standards that explicitly set expectations for multi-step problems.	**Yes**	The materials provide sufficient opportunities for students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content standards. Students are given opportunities to construct arguments and critique those of others in multiple activity questions where a thumbs up/thumbs down symbol indicates the use of MP.3. For example, in Module 2, Topic 3 Lesson 4, Teacher’s Implementation Guide, Activity 4.3 clarifies that “In this activity, students analyze a worked example that shows how to subtract rational expressions.” In Module 5, Topic 2, Lesson 1, Getting Started Problem 3, students examine work completed by Huck and Patch to determine who is correct in	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			regards to the population of a study. Also, in Module 1, Topic 3, Lesson 1, Activity 1.3, Problem 1 students are given the graph of a function and three different worked examples and must determine if the function has symmetry and why or why not. Students must choose which of the explanations given is correct and also explain their reasoning.	
	6c) There are teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development.	**No**	There are no teacher-directed materials that explain the role of the practice standards in the classroom and in students' mathematical development. The Teacher's Implementation Guide, "Habits of Mind" states, "Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. However, it is your responsibility as a teacher to recognize these opportunities and incorporate these practices into your daily rituals." In addition, a note is included that states, "When you are facilitating each lesson, listen carefully and value diversity of thought, redirect students' questions with guiding questions, provide additional support with those struggling with a task, and hold students accountable for an end product. When students share their work, make your expectations clear, require that students defend and talk about their solutions, and monitor student progress by checking for understanding." While the Teacher's Implementation Guide includes information about Math Practice	Carnegie Learning's High School Math Solution explicitly connects content standards and practice standards. Materials address the practice standards in such a way as to enrich the major work of the grade -- strengthening the focus rather than detracting from it. Each lesson provides opportunities for students to think, reason, and communicate their mathematical understanding. Each activity denotes the habit of mind highlighted with an icon representing the mathematical practice or pair of practices intentionally being developed. In the front matter of the Student Edition (FM-18) and the Teacher's Implementation Guide (FM-32), we explain the practices with their corresponding icon. There are four icons: one represents a single practice, while the other three represent pairs of practices. No icon is used for Math Practice 1 (Make sense of problems and persevere in solving them.) because this practice is evident every day in every lesson.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			Standards, it serves as a general overview without details on how each practice standard should be used in the lessons. For example, in Module 3, Topic 1, Lesson 3, Activity 3.1 includes the box symbol. The facilitation notes state, “In this activity, students use the context of building a logo to investigate the effects of transforming the square root function and the cube root function. They write equations of functions and add them to the graph of the logo. Students also identify the domain of functions and compare their key characteristics.” However, it is not evident from this facilitation note how or when students are to look for and make use of a structure or to look for and express regularity in repeated reasoning. Similarly, in Module 3, Topic 2, Lesson 2, Activity 2.1, students analyze whether the b-value of exponential functions indicates decay or growth. The activity includes the target symbol to indicate the use of MP.6 but lacks information in the facilitation notes on how to do so.	Teacher-directed materials that explain the role of the practice standards: • In the TIG front matter, we explain how to integrate the practices into daily instruction. For example, "When you are facilitating each lesson, listen carefully and value diversity of thought, redirect students' questions with guiding questions, provide additional support with those struggling with a task, and hold students accountable for an end product. When students share their work, make your expectations clear, require that students defend and talk about their solutions, and monitor student progress by checking for understanding. Consider having students create "I can" statements for each practice or pair of practices. This strategy can help students become reflective about their work." • The Topic Overview in the Teacher's Implementation Guide identifies how students develop proficiency in the habits of mind in that Topic: For example, in Topic 1, Exploring and Analyzing Patterns, "How do the activities in Quantities and Relationships promote student expertise in the mathematical practice standards? All Carnegie Learning topics are written with the goal of creating mathematical thinkers who are active

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				participants in class discourse, so elements of habits of mind should be evident in all lessons. Students are expected to make sense of problems and work towards solutions, reason using concrete and abstract ideas, and communicate their thinking while providing a critical ear to the thinking of others. Students use reasoning to make sense of quantities and their relationships in real-world situations. They express these relationships using graphs, tables, and expressions, creating coherent and equivalent representations. As they analyze tiling patterns, students notice repeated calculations and use the structure of the pattern to model it with an expression. They continue to make use of the structure of quadratics when they rewrite them in different forms and identify the key characteristics that are indicated in each form. Finally, when considering representations of functions and solution strategies, students justify their conclusions, communicate their reasoning, and analyze the arguments of others. • The icon also appears within each lesson's facilitation notes with questions listed to facilitate the learning where they occur. The Facilitation Notes provide teachers with resources for supporting students as they develop proficiencies in the habits of mind.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				In the example provided, Module 3, Topic 1, Lesson 3, Activity 3.1 Transformations of Radical Functions, students are working on looking for and making use of structure and regularity in repeated reasoning, as denoted by the box icon. In addition to the questions in the Student Edition that require students to use the structure of function transformation forms to transform radical functions, the Questions to ask in the TIG support teachers as they interact with students developing proficiency in identifying structure and repeated reasoning. For example, "Did the reflections of the functions appear as you imagined them to be? Explain why or why not. Why is the reflection of f(x) not visible on your design? Why is the negative sign included in the argument under the radical symbol instead of in front of the radical symbol? Why does replacing every x with 2x in the function cause a reflection across the respective lines x = C ? Which value in the transformation function is multiplied by -1 to result in a reflection across the respective lines x = C ?" In the second example provided, Module 3, Topic 2, Lesson 2, Activity 2.1 Key Characteristics of Exponential Functions, students are developing proficiency in using precision, as denoted by the target icon. The SE provides questions requiring students to write exponential functions that satisfy precise characteristics as well

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
				as to summarize characteristics for the exponential growth and exponential decay functions using precise terminology and notation. Again, the Questions to ask in the Teacher's Implementation Guide provide teachers with the tools to foreground this practice in their instruction. For example, "How would you describe the behavior of the graph g(x) = 0^x? How would you describe the behavior of the graph g(x) = 1^x? What do you think occurs when b is a negative value? Why are negative b-values affected differently than positive b-values when raised to different powers? How do even and odd exponents affect negative b-values? How would you describe the behavior of a graph of an exponential function with a negative b-value?" Going beyond merely explaining the role of each practice, the High School Math Solution provides teachers and students with the resources that they need at point of use.
	6d) Materials explicitly attend to the specialized language of mathematics.	**Yes**	The materials explicitly attend to the specialized language of mathematics. The student workbook begins with an “Academic Glossary” and defines words such as “analyze” and “represent.” Students are given questions they should ask themselves when seeing these words in a prompt, along with key phrases to look for that relate to these terms. Each lesson includes the list of key terms found	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			in the introduction and their definitions within context as the lesson progresses. For example, in Module 2, Topic 3, Lesson 1, the key terms of a “rational function” and “vertical asymptote” are listed at the beginning of the lesson and defined in Activity 1.1 between Problem 3 and Problem 4. Students are then asked to choose rational functions and determine if they have vertical asymptotes utilizing the precise mathematical language previously introduced. In Module 5, Topic 2, Lesson 2, Activity 2.1, the definitions for “convenience sample,” “subjective sample,” and “volunteer sample” are provided. In Problem 1 of this activity, students are presented with the following: “Olivia and Ricky discussed whether a convenience sample or a subjective sample is more likely to be representative of the population of circle areas. Who is correct? Explain your reasoning.” In this activity, students must utilize the definitions in order to answer the reasoning questions using the meaning of the terms to support their answers.	
7. INDICATORS OF QUALITY: Quality materials should exhibit the indicators outlined here in order to give teachers and students the tools they need to meet the expectations of the Standards. ☒ Yes ☐ No	**Required** **7a)** There is variety in what students produce. For example, students are asked to produce answers and solutions, but also, in a grade-appropriate way, arguments and explanations, diagrams, mathematical models, etc.	**Yes**	There is variety in what students produce. Students are asked to produce answers and solutions, arguments and explanations, diagrams, and mathematical models in a course-appropriate way. For example, in Module 2, Topic 1, Lesson 4, Activity 4.2, students complete the following problem: “Samson, Kaley, Paco, and Sal each solved the quadratic	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			inequality $2x^2 + 14x < -24$. a. Explain how Samson and Paco could have determined the zeros and axis of symmetry of the function. b. Explain why the graphs of Samson and Paco are different, yet generate the same answers." In Module 2, Topic 1, Lesson 4, Activity 4.3, Problem 1, students write an inequality to represent the height of the soccer ball in the problem but must answer the question by first solving the inequality and then explain their reasoning. In Module 3, Topic 3, Lesson 5, Review Problem 3 a partially filled in table is given for students to use as they determine whether the information represents an example of 'exponential growth' or 'decay function' and explain why, write the function, and complete the table. In Module 5, Topic 1, Lesson 1, Activity 1.1, students create a table that conveys relative frequencies and a histogram to represent those frequencies. In Module 5, Topic 1, Lesson 2, students interpret graphs, use graphs, estimate, and approximate the area under the curve for normal distributions.	
	Required **7b)** There are separate teacher materials that support and reward teacher study including, but not limited to: discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson flow, guidance on questions that prompt students thinking, and discussion	**Yes**	There are separate teacher materials that support and reward teacher study. Teacher materials include, but not limited to, discussion of the mathematics of the units and the mathematical point of each lesson as it relates to the organizing concepts of the unit, discussion on student ways of thinking and anticipating a variety of student responses, guidance on lesson	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	of desired mathematical behaviors being elicited among students.		flow, guidance on questions that prompt students thinking, and discussion of desired mathematical behaviors being elicited among students. The Teacher's Implementation Guide provides information regarding sequencing and lesson flow. Each lesson includes facilitation notes, "Differentiation Strategies," and student "Look Fors." For example, in Module 2, Topic 1, Lesson 2, Activity 2.1, the "Look For" explains that "As students work, look for different answers as to whether h(x) is completely factored. It is completely factored over the set of real numbers, but not over the set of complex numbers. -Sign errors when using the values of x from the quadratic formula to write the factors." In Module 2, Topic 2, Lesson 1, Activity 1.1, the Facilitation Notes clarify that "As students work, look for the numbers they choose to work with. It is an easier problem if students think of 112 as 100 + 12 rather than 54 + 58. If students choose difficult numbers, there is more room for arithmetic errors when substituting the values into the polynomial identities. Misconception: Students may think that they need to choose specific numbers for each calculation. Students can choose any number as long as the values are substituted into the appropriate polynomial identity."	
	7c) Support for English Language Learners and other special populations is thoughtful and helps those students meet the same standards as all other students.	**Yes**	Support for English Language Learners (ELL) and other special populations is present and thoughtful in the materials.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
	The language in which problems are posed is carefully considered.		For example, in Module 2, Topic 3, Lesson 6, Activity 6.1, an ELL tip informs teachers that "Two non-mathematical terms that appear in this activity are 'marketing department' and 'vinyl.' Assess students' prior knowledge of the terms 'marketing department' and 'vinyl.' Define 'marketing' as the action or business of promoting and selling products or services. Therefore, a 'marketing department' is a group of people who are dedicated to promoting and selling products and services in a business. Define 'vinyl' as a thin material that is used for wallpapers and other covering materials. Discuss the application of the terms as they are used in the activity." Also, in Module 1, Topic 2, Lesson 3, Activity 3.1, Facilitation Notes, Differentiation, teachers are provided with the following note: "To support students who struggle, provide them with a list of key characteristics to address in Question 2, part (a). The list should include: intervals of increase or decrease, maximum or minimum values, domain, range, x-intercepts, and y-intercept."	
	7d) The underlying design of the materials distinguishes between problems and exercises. In essence, the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Each problem or exercise has a purpose.	**Yes**	The underlying design of the materials distinguishes between problems and exercises. The materials are divided into modules, topics, and lessons. Each lesson has a warm-up and Getting Started portion followed by multiple activities. Through the activities, students complete tasks along with explorative questions aiding them in learning the new mathematics.	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			For example, Module 1, Topic 3, Lesson 2 contains three activities that provide students with the opportunity to graph cubic and quadratic functions. The materials also include an assignment with practice and review exercises at the end of each lesson. Students also have an opportunity to practice content from each topic on the skills practice worksheets. For example, in Module 3, Topic 1, Lesson 1, there is a three-question Warm Up, Getting Started portion with 5 questions, two activities each with 4 multi-part questions pertaining to them, a Talk the Talk portion with 2 multi-part questions, 3 multi-part practice problems, 1 multi-part Stretch problems, and 4 multi-part Review questions. In addition, MATHia review software includes videos to coach students through every topic and gives access to more practice exercises.	
	7e) Lessons are appropriately structured and scaffolded to support student mastery.	**Yes**	Lessons are appropriately structured and scaffolded to support student mastery. Every lesson starts with a warm-up activity which then leads to a Getting Started set of problems opening the lesson to the multiple activities. The activities increase in complexity as students progress through the lesson. After the activities, the assignment consists of a writing portion, practice, and a review. In addition, for higher level students, the assignment has a Stretch portion that presents more challenging questions. For example, in Module 3, Topic 1, Lesson 1, students	

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
			explore inverses of functions. In the lesson warm-up, students determine which of three graphs are functions. In the Getting Started section, students use patty paper to reflect across the x and y axes. In Activity 1.1, students transpose graphs using transformation and analyze Cole's work on transposing his graph. The assignment section of each lesson has a Write, Remember, Practice, and Stretch section for current material and a Review section for previous content. In Module 1, Topic 3, Lesson 4, Activity 4.1, students build a cubic function; in Activity 4.2, students analyze functions that build quartic functions; and, in Activity 4.3, students build a quartic function.	
	7f) Materials support the uses of technology as called for in the Standards.	**Yes**	The materials support the uses of technology as called for in the standards. For example, it is stated in Module 2, Topic 2, Lesson 3, Activity 3.1, Problem 3 to "Use technology to determine the regression equation for the average number of vehicles entering and exiting downtown on a typical weekday" (LSSM S.ID.B.6a). In MATHia, Investigating Periodic Functions, Graphs of Trigonometric Functions, students must graph trigonometric functions using a graphing applet (F.IF.C.7e).	
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.				

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES	PUBLISHER RESPONSE
Compile the results for Sections I and II to make a final decision for the material under review.				
Section	**Criteria**	**Yes/No**		
I: Non-negotiable Criteria of Superior Quality[4]	1. Focus on Major Work	**Yes**	The materials devote the majority of instructional time to the major work of the grade. Although some of the instructional lessons and assignments include standards outside of Algebra II, there are implementation suggestions provided for Louisiana teachers for each of these lessons and assessments.	
	2. Consistent, Coherent Content	**Yes**	Focus and coherence are enhanced throughout the curriculum through the connections between supporting and major LSSM, as well as through the connections made between different clusters and domains.	
	3. Rigor and Balance	**Yes**	The materials reflect the balances in the Standards and help students meet all of the rigorous expectations of the standards. The materials are designed so that students attain fluency and procedural skills and students 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 such a way to enrich the content standards of the course.	
II: Additional Criteria of Superior Quality[5]	5. Alignment Criteria for Standards for Mathematical Content	**Yes**	The materials foster focus and coherence by linking topics from across domains and clusters throughout the course by staying consistent with the progressions in the Standards.	

[4] Must score a "Yes" for all Non-negotiable Criteria to receive a Tier I or Tier II rating.
[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	PUBLISHER RESPONSE
	6. Alignment Criteria for Standards for Mathematical Practice	**Yes**	The materials provide practice standards that make meaningful and purposeful connections to enhance the content of the course. Practice standards are linked to each activity, but teachers are not provided with an explanation as to how each practice standard should be addressed within the activity.	
	7. Indicators of Quality	**Yes**	The materials provide teachers and students with a variety of tools they need to meet the expectation of the standards.	
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 2019-2020 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Ascension, Beauregard, Bossier, Caddo, Calcasieu, Caldwell, City of Monroe, Desoto, East Baton Rouge, Einstein Charter Schools, Iberia, Jefferson, Jefferson Davis, KIPP New Orleans, Lafayette, Lafourche, Lincoln, Livingston, LSU Lab School, Orleans, Orleans/Lusher Charter School, Ouachita, Plaquemines, Pointe Coupee, Rapides, Richland, RSD Choice Foundation, St. John the Baptist, St. Charles, St. James, St. Landry, St. Mary, St. Tammany, Tangipahoa, Vermillion, Vernon, West Baton Rouge, West Feliciana, and Zachary. This review represents the work of current classroom teachers with experience in grades 9-12.

Appendix II.

Public Comments

There were no public comments submitted.