



High-Quality Instructional Materials

OFFICE OF CURRICULUM AND INSTRUCTION



OKLAHOMA
Education

Oklahoma Mathematics Instructional Materials Evaluation Rubric

Instructional materials selection is an important district decision, and conducting a thorough review of instructional materials at the local level is essential in ensuring the adoption of high-quality instructional materials that meet the needs of students within a district. This evaluation rubric is designed to offer an evaluation structure that districts can utilize to determine how well instructional materials align to the Oklahoma Academic Standards (OAS) and other criteria for high-quality instructional materials. The evaluation rubric includes key considerations for high-quality instructional materials and outlines three **Gateways** for consideration when evaluating materials. Within each Gateway, **Criterion** and related **Indicators** are provided along with **Guiding Questions**. Additionally, **Priority Indicators** are indicated with an asterisk (*) as they have been deemed most essential to a quality program. Each **Indicator** is evaluated as Not Representing Quality, Approaching Quality, or Exemplifies Quality using a 0-1-2 or 0-2-4 scale score.

All scores should be based on evidence observed from the instructional materials themselves, rather than what might be inferred. The evaluation rubric is designed to allow reviewers to determine a threshold for quality for each gateway. If instructional materials meet the thresholds for Exemplifies Quality or Approaching Quality expectations for a Gateway, reviewers are prompted to move forward with reviewing the next Gateway (→). If instructional materials do not meet the thresholds for Exemplifies Quality or Approaching Quality expectations for a Gateway, reviewers are prompted not to move forward with reviewing the next Gateway (⊠).

Gateway 1 Alignment with the Oklahoma Academic Standards and Coherence	Exemplifies Quality →	Gateway 2 Building Student Knowledge	Exemplifies Quality →	Gateway 3 Teacher and Student Supports and Usability
	Approaching Quality →		Approaching Quality →	
	Not Representing ⊠		Not Representing ⊠	
Quality	Quality			

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Titles of Material(s)	Precalculus with Limits: A Graphing Approach, 8e, by Ron Larson	Grade(s) Evaluated	
Publisher	Cengage	Reviewer	

Review Summary

Gateway		Criterion	Score	Rating
1	Alignment with the Oklahoma Academic Standards and Coherence	1.1 Alignment with the Oklahoma Academic Standards	14 / 14	Exemplifies Quality
		1.2 Learning Progressions and Coherence	10 / 10	Exemplifies Quality
		Gateway 1 Sub-Total	24 / 24	Exemplifies Quality
2	Building Student Knowledge	2.1 Student Opportunities to Engage in Mathematical Actions and Processes	14 / 14	Exemplifies Quality
		2.2 The Actions and Processes of the Oklahoma Academic Standards	12 / 12	Exemplifies Quality
		2.3 Assessment	14 / 14	Exemplifies Quality
		Gateway 2 Sub-Total	40 / 40	Exemplifies Quality
3	Teacher and Student Supports and Usability	3.1 Differentiation, Scaffolding, and Supports for All Learners	10 / 10	Exemplifies Quality
		3.2 Teacher Planning and Learning for Success with the Oklahoma Academic Standards	10 / 10	Exemplifies Quality
		Gateway 3 Sub-Total	20 / 20	Exemplifies Quality
Overall Rating			Total Score	Final Rating
Exemplifies Quality: All Gateways are Exemplifies Quality Approaching Quality: All Gateways are Approaching Quality or Better Not Representing Quality: Any Gateway is Not Representing Quality			84/84	Exemplifies Quality

The instructional materials are coherent and consistent with the Oklahoma Academic Standards that specify what all students should know and be able to do as learners of mathematics at the end of each grade level.

To determine the Gateway rating, educators use evidence gathered from the instructional materials to score indicators related to each criterion.

Gateway 1 Overview		
Criterion	Indicators	Available Points
Criterion 1.1: Alignment to the Oklahoma Academic Standards The instructional materials align with the Oklahoma Academic Standards for Mathematics.	1a. - 1f.	14
Criterion 1.2: Learning Progressions and Coherence The instructional materials support the learning progressions emphasized in the Oklahoma Academic Standards for Mathematics so that the curriculum is coherent both within grades and across grade bands.	1g. - 1j.	10
		24

Criterion 1.1 Alignment to the Oklahoma Academic Standards		The instructional materials align with the Oklahoma Academic Standards for Mathematics.		
Indicators	Guiding Questions	Score	Comments	
<p>1a. The materials provide students with opportunities to develop a deep understanding of numbers, ways of representing numbers, relationships among numbers, relationships among number systems, and meanings of operations and how they relate to one another, as represented in the Oklahoma Academic Standards for Mathematics Numbers & Operations strand.</p> <p>In math courses that do not have an applicable Numbers & Operations strand to reference, instructional materials provide students with the opportunity to apply their deep understanding of numbers to the other strands represented in the Oklahoma Academic Standards for Mathematics.</p>	<ul style="list-style-type: none"> ● Do the materials prompt students to relate and connect numbers? ● Do the materials allow students to interact with numbers in various representations? 	0 1 2	<p>The Precalculus standards do not contain a Numbers & Operations strand.</p> <p>Throughout the text, students apply their understanding of number systems and operations, including complex numbers.</p>	

Criterion 1.1 Alignment to the Oklahoma Academic Standards		The instructional materials align with the Oklahoma Academic Standards for Mathematics.		
Indicators	Guiding Questions	Score	Comments	
<p>1b. The instructional materials provide students with opportunities to understand patterns, relations, and functions; represent and analyze mathematical situations and structures using algebraic symbols; use mathematical models to represent, understand, and predict quantitative relationships; and analyze change in various contexts, as represented in the Oklahoma Academic Standards for Mathematics Algebra & Algebraic Reasoning and/or Functions strands.</p> <p>In math courses that do not have an applicable Algebra & Algebraic Reasoning or Functions strand to reference, instructional materials provide students with the opportunity to use, apply, and extend these concepts to the other strands represented in the Oklahoma Academic Standards for Mathematics.</p>	<ul style="list-style-type: none"> • Do the materials embed tasks that require students to use pattern-based thinking to understand and represent mathematics in various contexts? • Do the materials include tables, pictures, graphs, open sentences, equations or inequalities, rules, and functions to model mathematics in various contexts? • Do the materials include opportunities for students to form and verify generalizations based on observations of patterns and relationships? 	<p>0 1 2</p>	<p>Text includes thorough coverage of all standards in the Functions strand of the Precalculus standards:</p> <ul style="list-style-type: none"> • Analyze functions and relations (sections 16-49, 60-112, 142-160, 182-204, 294-329) • Create functions to model relationships (pgs 50-70, 317-329) • Predict and verify solutions of functions (pgs 90-127, 151-160, 212-234) 	

Criterion 1.1 Alignment to the Oklahoma Academic Standards		The instructional materials align with the Oklahoma Academic Standards for Mathematics.		
Indicators	Guiding Questions	Score	Comments	
<p>1c. The instructional materials provide students with opportunities to develop arguments based on geometric relationships; describe spatial relationships using coordinate geometry and other representational systems; apply transformations and symmetry to analyze mathematical situations; utilize visualization, spatial reasoning, and geometric modeling to solve problems; understand the units, systems, and processes of measurement; and apply appropriate techniques, tools, and formulas to determine measurements, as represented in the Oklahoma Academic Standards for Mathematics Geometry and Measurement strand; the Reasoning & Logic, Two-Dimensional Shapes, Three-Dimensional Shapes, Circles, and Right Triangle Trigonometry strands within the Oklahoma Academic Standards for Geometry; or the Conic Sections and Trigonometry strands within the Oklahoma Academic Standards for Precalculus.</p> <p>In math courses that do not have an applicable Geometry & Measurement strand or set of strands to reference, instructional materials provide students with the opportunity to use, apply, and extend these concepts to the other strands represented in the Oklahoma Academic Standards for Mathematics.</p>	<ul style="list-style-type: none"> ● Do the materials include tasks that prompt students to recall, generate, model, and justify geometric concepts? ● Do the materials include tasks with a variety of two- and three-dimensional objects to promote visualization, spatial reasoning, and geometric modeling? 	<p>0 1 2</p>	<p>The text provides students with opportunities to learn and demonstrate their understanding of all standards in the Conic Sections strand and the Trigonometry strand.</p> <p>Conics:</p> <ul style="list-style-type: none"> ● Model with conic sections (pgs 646-665) ● Identify features of conics from graphs and equations (pgs 646-678) <p>Trigonometry:</p> <ul style="list-style-type: none"> ● Use the unit circle and relate it to trigonometric functions (pgs 256-266, 275-327) ● Apply trigonometry beyond the right triangle (294-339, 406-416) ● Use and verify trigonometric identities (pgs 352-385) ● Explore complex numbers (pgs 128-134) 	

Criterion 1.1 Alignment to the Oklahoma Academic Standards		The instructional materials align with the Oklahoma Academic Standards for Mathematics.		
Indicators	Guiding Questions	Score	Comments	
<p>1d. The instructional materials provide students with opportunities to formulate questions that can be addressed with data; to collect, organize, and display relevant data; to select and use appropriate statistical methods to analyze data, develop and evaluate inferences and predictions based on data; and to understand and apply basic concepts of probability, as represented in the Oklahoma Academic Standards for Mathematics Data and Probability strand or the Statistical Questions, Data Collection, Data Analysis, Interpretation of Results, and Probability strands in the Oklahoma Academic Standards for Statistics & Probability.</p> <p>In math courses that do not have an applicable Data & Probability strand or set of strands to reference, instructional materials provide students with the opportunity to use, apply, and extend these concepts to the other strands represented in the Oklahoma Academic Standards for Mathematics.</p>	<ul style="list-style-type: none"> • Do the materials include a variety of student interests and prompt student investigation to collect, organize, and display data? • Do the materials model the use of concrete or abstract representations (e.g., pictures, symbols, expressions, equations, graphics) of data and mathematical relationships? 	<p>0 1 2</p>	<p>The Precalculus standards do not contain a Data & Probability strand.</p> <p>The text does not include any coverage of data collection, or any data organization other than scatterplots. There are specific lessons on:</p> <ul style="list-style-type: none"> • linear models (pgs 71-79) • quadratic models (pgs 161-167) • exponential and logarithmic models (pgs 223-243) <p>Throughout the text, students are provided with “Modeling Data” exercises, which apply data concepts to the new content. For example, when learning to solve linear equations, students calculate the least square regression line for a small data set. Most of the lessons include at least one of these questions.</p>	

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<p>*1e. The materials address the full intent of the grade-level objectives and are aligned with the Oklahoma Academic Standards for Mathematics.</p>	<ul style="list-style-type: none">• Are all Oklahoma Academic Standards for the course supported by the content of the materials?• Are all Oklahoma Academic Standards for the course addressed with the appropriate depth to support students in learning the skills and information contained in the standards?	<p>0 2 4</p>	<p>The text very thoroughly addresses all standards required for Precalculus.</p>
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Criterion 1.1 Alignment to the Oklahoma Academic Standards		The instructional materials align with the Oklahoma Academic Standards for Mathematics.	
Indicators	Guiding Questions	Score	Comments
1f. The instructional materials connect the content of the Oklahoma Academic Standards for Mathematics to relevant application in real-world experiences including but not limited to college majors, postsecondary programs, and careers.	Do the materials include tasks that connect relevant learning experiences, as called for by the Oklahoma Academic Standards?	0 1 2	Throughout the text, examples and problems based on topics outside mathematics. Every lesson's set of exercises include problems based on real-world concepts, from calculating the height of a sloped roof in the first lesson, to using beginning calculus concepts to estimate the area of land in the very last lesson.
Criterion 1.1 Summary	Rating Levels	Sub-Total	Rating
	Exemplifies Quality: 12 - 14 Approaching Quality: 8 - 11 Not Representing Quality: 0 - 7	14 / 14	Exemplifies Quality

Criterion 1.2 Learning Progressions and Coherence		The instructional materials support the learning progressions emphasized in the Oklahoma Academic Standards for Mathematics so that the curriculum is coherent both within grades and across grade bands.		
Indicators	Guiding Questions	Score	Comments	
<p>1g. The amount of content designated for one grade level is viable for one school year and fosters coherence from one grade level to the next.</p>	<p>Do the instructional materials allow for reasonable completion in one academic year and connect content knowledge from one year to the next?</p>	<p>0 1 2</p>	<p>The text contains 11 chapters, and the content could be covered in a standard school year. Several of the chapters cover material that is also often covered in previous courses (Algebra 2) and subsequent courses (Calculus).</p> <p>This allows for flexibility in implementing the content, allowing teachers and schools to decide when to teach various topics over several years.</p>	
<p>1h. The materials are consistent with the progressions in the Oklahoma Academic Standards for Mathematics.</p> <ul style="list-style-type: none"> ● Materials relate grade-level concepts explicitly to prior knowledge from earlier grades. ● Materials develop according to the grade-by-grade progression in the Standards. If past or subsequent grades' content is included, it is clearly identified and related to grade-level work. 	<ul style="list-style-type: none"> ● Are the materials consistent with the progression in the standards? ● Is grade-level content connected to specific standards from earlier grades? 	<p>0 1 2</p>	<p>The text begins with a deep review of algebraic functions, then progresses into trigonometry. These are directly related to previous Algebra and Geometry courses.</p>	

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<p>*1i. The instructional materials provide all students with comprehensive and extensive opportunities to engage with grade-level activities.</p>	<ul style="list-style-type: none"> • Do materials concentrate on the mathematics of the grade/course as referenced in the Oklahoma Academic Standards? • Do the materials support student engagement with appropriate grade-level activities? 	<p>0 2 4</p>	<p>Examples in the text scaffold concepts well and build to application of learning. Each lesson has 50-150 practice exercises that range from basic skill practice to real-world examples and conceptual problems.</p> <p>Teachers will be able to find extensive opportunities for students of all abilities to engage with the content.</p>
<p>1j. The materials foster coherence across a single grade through connections among the Oklahoma Academic Standards for Mathematics.</p>	<p>Are there problems and activities that serve to connect two or more standards in a strand or two or more strands in a grade?</p>	<p>0 1 2</p>	<p>The Precalculus standards include three strands: Functions, Conic Sections, and Trigonometry. Throughout the text, the lessons on Trigonometry and Conic Sections are highly reliant on standards in the Functions strand.</p> <p>In addition, the rotation of conics is taught based on the use of Trigonometric identities.</p>

Criterion 1.2 Learning Progressions and Coherence	The instructional materials support the learning progressions emphasized in the Oklahoma Academic Standards for Mathematics so that the curriculum is coherent both within grades and across grade bands.		
Indicators	Guiding Questions	Score	Comments
Criterion 1.2 Summary	Rating Levels	Sub-Total	Rating
	Exemplifies Quality: 8 - 10 Approaching Quality: 7 - 9 Not Representing Quality: 0 - 6	10 / 10	Exemplifies Quality

Gateway 1 Points Available	Rating Levels	Gateway 1 Points Achieved	Gateway 1 Rating
24	Exemplifies Quality: 20 - 24	24 /24	Exemplifies Quality
	Approaching Quality: 13 - 19		
	Not Representing Quality: 0 - 12		
Gateway 1 Comments			

Gateway 2: Building Student Knowledge and Access

Gateway 2 examines the way materials provide opportunities for students to engage with, discuss, problem-solve, and deeply understand mathematics.

To determine the Gateway rating, educators use evidence gathered from the instructional materials to score indicators related to each criterion.

- ❑ **Materials must receive a score of Exemplifies Quality or Approaching Quality in Gateway 1 in order to be reviewed in Gateway 2.**

Gateway 2 Overview		
Criterion	Indicators	Available Points
Criterion 2.1: Student Opportunities to Engage in the Mathematical Actions and Processes (MAPs) The instructional materials provide opportunities for students to regularly use the MAPs to gain a deep understanding of the content.	2a. - 2g.	14
Criterion 2.2: The Actions and Processes of the Oklahoma Academic Standards for Mathematics The materials provide explicit opportunities for students to demonstrate independent progress to develop proficiency in the Oklahoma Academic Standards.	2h. - 2l.	12
Criterion 2.3 Assessment The materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the Oklahoma Academic Standards.	2m. - 2r.	14
		40

Criterion 2.1 Student Opportunities to Engage in the Mathematical Actions and Processes (MAPs)		The instructional materials provide opportunities for students to regularly use the MAPs to gain a deep understanding of the content.		
Indicators	Guiding Questions	Score	Comments	
2a. Attention to Developing a Deep and Flexible Conceptual Understanding: The materials support the intentional development of students' conceptual understanding of key mathematical concepts, especially where called for in specific academic standards and objectives.	<ul style="list-style-type: none"> • Are tasks and lessons in a sequence connected by an overarching mathematical concept and/or common context that links the mathematics and tasks? • Do the materials regularly include opportunities for students to apply and use mathematics in non-routine problems in the learning sequence? 	0 1 2	Each lesson is structured with an introduction, then instruction of a concept followed by 1-3 examples, which show different uses of the concept. Lessons typically contain 2-4 concepts, and often include application examples at the end of the lesson.	
2b. Attention to Developing Accurate and Appropriate Procedural Fluency: The materials provide intentional opportunities for students to develop procedural skills fluently, especially where called for in specific academic standards and objectives.	<ul style="list-style-type: none"> • Do the materials provide students with opportunities to apply math and problem solving procedures to a variety of problems and contexts accurately, efficiently, and flexibly? • Do the materials consistently provide students with opportunities to justify their choices of procedures when solving problems and to strengthen their understanding and skill through practice? 	0 1 2	Each lesson is followed by an extensive set of practice exercises. These begin with straight-forward skill practice problems. There are usually at least 4 problems of each type, allowing for extra practice for students to build skills as needed. After the skill and application problems, a set of conceptual exercises provides opportunities for students to identify misconceptions, justify or prove concepts, and combine the new learning with previous skills.	

Criterion 2.1 Student Opportunities to Engage in the Mathematical Actions and Processes (MAPs)		The instructional materials provide opportunities for students to regularly use the MAPs to gain a deep understanding of the content.	
Indicators	Guiding Questions	Score	Comments
2c. Attention to Developing Mathematical Reasoning: Materials prompt students to explore and communicate a variety of reasoning strategies to think through problems and includes opportunities for students to construct viable arguments and analyze the arguments of others concerning key grade-level mathematics details in the content standards.	<ul style="list-style-type: none"> Do students have opportunities to construct viable arguments and analyze the arguments of others (e.g. analyzing student work, conversation stems)? Are students presented with tasks that enable them to reason with mathematics, discuss, and debate appropriate processes and solutions (e.g. collaborative activities, math talks)? 	0 1 2	<p>The text contains many exercises that invoke discussion and explanation of thought processes.</p> <p>Each lesson exercise set contains error analysis problems, in which students analyze sample student work, and a graph-based analysis question, which is recommended as a prompt for class discussion.</p> <p>In online resources, most chapters have a collaborative project, in which students can work together by solving in-depth, real-life problems.</p>
2d. Attention to Developing the Ability to Communicate Mathematically: Materials explicitly attend to students discussing, writing, reading, interpreting, and translating ideas and concepts mathematically, increasing their use of mathematical language and terms and analysis of mathematical definitions as they progress through each grade level or course.	<ul style="list-style-type: none"> Do materials attend to the specialized language of mathematics? Do the materials provide opportunities for students to communicate mathematically using multiple methods (e.g., presentation, model)? 	0 1 2	<p>The text introduces new and important vocabulary terms using bold text, including terms that students have experienced in previous courses.</p> <p>Throughout the text, concepts are shown verbally, algebraically, graphically, and the lesson explicitly teaches the connections between these forms.</p> <p>Student exercises often ask for multiple modes of response. In one exercise set, students are asked to: write terms, use a table, write an</p>

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			<p>expression, use a pattern, simplify, match, write in a different form, compute, graph, justify, find an expression, and prove.</p>
<p>2e. Attention to Developing Strategies for Problem Solving: Materials include multiple entry points and strategies for students to select from to pursue solutions to various mathematical tasks.</p>	<ul style="list-style-type: none"> • Do the materials include strategies for students to discuss and reflect on their own problem-solving strategies for mathematics? • Do the materials provide strategies for students to compare a problem solving strategy to alternative problem-solving strategies? 	<p>0 1 2</p>	<p>The text regularly shows multiple methods to solve problems. These side-by-side examples can be used in class as discussion points of the benefits of each method. Examples include:</p> <ul style="list-style-type: none"> • Verifying a trigonometric identity algebraically and numerically. • Solving equations algebraically and graphically and verifying that the solutions are the same. <p>In exercises, students are often asked to solve problems and then verify their result with a different method.</p>

Criterion 2.1 Student Opportunities to Engage in the Mathematical Actions and Processes (MAPs)		The instructional materials provide opportunities for students to regularly use the MAPs to gain a deep understanding of the content.		
Indicators	Guiding Questions	Score	Comments	
2f. Attention to Developing a Productive Mathematical Disposition: Materials include opportunities for students to make use of patterns and mathematical structures and develop the ability to persevere and become resilient, effective problem solvers.	<ul style="list-style-type: none"> Do the materials provide opportunities for students to collaborate with one another, reflect, and ask clarifying questions to develop a value for alternative ways of knowing? Do the materials encourage a student mindset that problem solving extends beyond procedural or algorithmic activities with a goal that is limited to the identification of a correct answer? 	0 1 2	<p>Within lessons, the text regularly provides alternate methods for solving problems, and methods of verifying solutions. Most lessons also include application questions, which model using new learning concepts in different ways.</p> <p>Every set of student exercises contains application problems that require students to consider how the scenario requires the use of the learned mathematics. At least one question in each exercise set is specifically structured to solicit discussion and justification of problem-solving strategies.</p>	
2g. Attention to Developing the Ability to Make Conjectures, Model, and Generalize: Materials include opportunities to make predictions, draw conclusions, and make sense of problems through the use of modeling and other problem-solving strategies.	<ul style="list-style-type: none"> Do the materials prompt students to make a prediction about possible outcomes to a question and explain with reasoning? Do the materials allow students to make connections between ideas, refine processes, and extend their known strategies to apply to larger numbers and problems? 	0 1 2	<p>Throughout the text, lessons provide examples in which problems are presented, a model is created, analyzed, and used to solve the problem.</p> <p>In each exercise set, application problems are given with scaffolding prompts to support students in creating the connections from previous learning to the current problem. Most problem sets include 'Focusing on Concepts' problems, in which students engage with abstract</p>	

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			or general forms of the content from the lesson.
Criterion 2.1 Summary	Rating Levels	Sub-Total	Rating
	Exemplifies Quality: 12 - 14 Approaching Quality: 8 - 11 Not Representing Quality: 0 - 7	14 / 14	Exemplifies Quality

Criterion 2.2 The Actions and Processes of the Oklahoma Academic Standards for Mathematics		The materials provide explicit opportunities for students to demonstrate independent progress to develop proficiency in the Oklahoma Academic Standards.		
Indicators	Guiding Questions	Score	Comments	
*2h. Materials include explicit student learning goals that solicit observable evidence of student learning within progressions that guide instructional decisions.	Do the materials provide learning goals with opportunities for the teacher and students to identify what they are learning and how their daily learning connects to a longer learning progression?	0 2 4	Every lesson begins with explicit, clear student learning goals. Within the lesson, content and examples are labeled using language based upon the learning goals. In the exercise set for each lesson, problems are also labeled using these terms. The test bank provides the standards and content of each question to guide teacher planning.	
2i. Materials regularly embed activities that engage students in solving and discussing tasks that promote mathematical reasoning and problem-solving which allow multiple entry points and varied solution strategies.	Do the materials support the development of procedures or algorithms as a result of problem solving experiences, allowing for multiple and individualized approaches?	0 1 2	Throughout the text, lessons demonstrate multiple solution methods in side-by-side examples. The text strives to use analytical, graphical, and tabular methods as much as possible. In exercise sets, where applicable, students are advised that multiple methods or techniques are viable.	
2j. Materials frequently engage students in making connections among math representations to use as tools for problem-solving and to deepen their understanding of math concepts and procedures.	Do the materials include problems that can be approached from a variety of methods and emphasize connections between representations and context?	0 1 2	The use of side-by-side examples shows how a problem can be analyzed using analytic and graphical means. Likewise, in exercise problems, students are given frequent	

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			opportunities to rewrite expressions, create tables and graphs, and use these representations to analyze problems.
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Criterion 2.2 The Actions and Processes of the Oklahoma Academic Standards for Mathematics		The materials provide explicit opportunities for students to demonstrate independent progress to develop proficiency in the Oklahoma Academic Standards.		
Indicators	Guiding Questions	Score	Comments	
<p>2k. Materials include support for teachers to facilitate discourse among students which builds a shared understanding of mathematical ideas through students' analysis and comparison of approaches and arguments.</p>	<ul style="list-style-type: none"> • Do the materials include scaffolds for the teacher to model effective mathematical dialogue? • Do the materials include resources or strategies to build students' mathematical vocabulary (e.g., stories, pictures, classroom charts). • Do the materials include rich mathematical tasks that allow students to construct viable arguments and critique the reasoning of others? 	0 1 2	<p>Throughout each lesson, each example problem contains a worked-out solution, with each line accompanied by a brief mathematical explanation of the reasoning. This models the “teacher talk” that will occur in the classroom.</p> <p>Most lesson exercise sets contain error analysis problems, in which students analyze sample student work, and a graph-based analysis question, which is recommended as a prompt for class discussion.</p> <p>In online resources, each chapter has a collaborative project, in which students can work together by solving in-depth, real-life problems.</p>	
<p>2l. The materials use student-relevant questions to assess and advance reasoning and sense-making about important math ideas and relationships.</p>	<p>Do the materials use questions that refer to a variety of student interests and connect mathematical concepts to real-world issues, problems, and contexts?</p>	0 1 2	<p>Every lesson begins with “Why you should learn it”, a brief explanation of how the new concept is used in real life. At least one problem in the exercise set is based on this scenario.</p> <p>Each lesson and exercise set</p>	

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			include application problems. Due to the content covered, examples from engineering, technology and medicine are the most common. Examples from business and social issues are also present, often using real-world data.
Criterion 2.2 Summary	Rating Levels	Sub-Total	Rating
	Exemplifies Quality: 10 - 12 Approaching Quality: 7 - 9 Not Representing Quality: 0 - 6	12 / 12	Exemplifies Quality

Criterion 2.3 Assessment	The materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the Oklahoma Academic Standards.		
Indicators	Guiding Questions	Score	Comments
2m. The materials provide strategies for gathering information on students' prior knowledge within and across grade levels to guide instruction and differentiation.	Do the materials include strategies, prompts, formative assessment probes, or other guidance that support teachers in gathering information on students' prior knowledge, both within and across grade levels, in order to guide grade-level instruction and differentiation?	0 1 2	The first four chapters cover material that might have been covered in previous algebra and geometry courses and can be used by teachers to quickly review content and identify holes in prior knowledge.
2n. The materials provide opportunities for ongoing, relevant practice and review for students in learning concepts and skills and receiving feedback.	<ul style="list-style-type: none"> Do the materials include tasks that ask students to produce models, practice fluency, create arguments, justify their answers, attend to mathematical practices, and make relevant connections? Do the materials include tasks that offer revision opportunities for students from self-reflection and/or feedback from peers and/or a teacher on the task? 	0 1 2	<p>Every exercise set ends with a Cumulative Mixed Review set of problems. These problems often review concepts that will be used in the upcoming lesson.</p> <p>At the end of the chapter, an extensive review reiterates the main take-aways from each lesson, and an extensive set of review exercises is given, followed by a shorter chapter test.</p> <p>Many chapters also include a Progressive Summary which shows the growth of knowledge developed through the course, and how the new learnings relate to the rest of the course.</p> <p>An online website provides interactive pre- and post-tests for each chapter, which give feedback</p>

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		<p>to the student immediately.</p> <p>In all exercise sets, review and chapter tests, the worked-out solutions are available online for half of the questions. A link and QR code is provided at the beginning of each set. The website that hosts the worked-out solutions also provides free live tutors during evening hours during the school year.</p>
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Criterion 2.3 Assessment	The materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the Oklahoma Academic Standards.		
Indicators	Guiding Questions	Score	Comments
<p>*2o. The materials offer multiple types of assessments including ongoing formative, interim/benchmark, and summative, that clearly denote which academic standards are the focus.</p>	<ul style="list-style-type: none"> Do the materials provide a variety of assessments including ongoing, formative, interim/benchmark, and summative? Do materials denote what standard is being assessed by each item? Are students able to demonstrate their understanding of mathematics through a variety of performance assessments (e.g., posters, projects, videos, skits, conversations)? 	0 2 4	<p>The text provides review exercise sets for all chapters. These questions are labeled according to topic, but not standards.</p> <p>An online website provides a dozen student projects, tied to specific chapters or lessons.</p> <p>An Instructor Companion Site contains test banks from which teachers can select questions based on topic.</p> <p>The text relies heavily on students demonstrating their understanding through solving discrete (though complex) problems.</p>
<p>2p. The materials encourage students to monitor their own progress and set academic goals.</p>	<ul style="list-style-type: none"> Do materials provide opportunities for students to monitor their own progress (e.g., end-of-section reflection questions, checks-for-understanding, progress monitoring form) ? Do the materials include scaffolds (e.g., guiding questions, graphic organizers) for students to set math learning goal(s) for themselves? 	0 1 2	<p>An online website provides pre- and post-tests for students to check their own understanding.</p> <p>Within each lesson, every example is followed by a “checkpoint” question, which is a problem similar to the one just demonstrated. A video solution is provided on a website, which is linked in the text for each checkpoint.</p>

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Criterion 2.3 Assessment	The materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the Oklahoma Academic Standards.		
Indicators	Guiding Questions	Score	Comments
2q. The assessment materials offer accommodations that allow students to demonstrate their knowledge and skills without changing the content of the assessment.	<ul style="list-style-type: none"> Do materials support the usage of a variety of accommodations that allow the student to demonstrate their knowledge, skills, and abilities? Do materials support the usage of a variety of accommodations that alter the experience including alterations of timing, setting, presentation, and response? Are students presented with assessment tasks that have more than one method or approach for solving? 	0 1 2	The test bank software provides multiple versions of questions, and multiple levels of difficulty. Many problems in the test bank can be solved using multiple methods.
2r. The materials provide explicit guidance for teachers to use evidence of student thinking to assess their progress toward math understanding and to adjust instruction continually in ways that support and extend learning.	<ul style="list-style-type: none"> Do materials include scoring guidance (e.g., rubrics, anchors)? Does the guidance include support for teachers to interpret student performance and suggestions for follow-up? 	0 1 2	The teacher's answer keys provide full answer explanations.
Criterion 2.3 Summary	Rating Levels	Sub-Total	Rating
	Exemplifies Quality: 12 - 14 Approaching Quality: 8 - 11 Not Representing Quality: 0 - 7	14 / 14	Exemplifies Quality

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Gateway 2 Points Available	Rating Levels	Gateway 2 Points Achieved	Gateway 2 Rating
40	Exemplifies Quality: 32 - 40	40 /40	Exemplifies Quality
	Approaching Quality: 21 - 31		
	Not Representing Quality: 0 - 20		
Gateway 2 Comments			

Gateway 3: Teacher and Student Supports and Usability

Materials support teachers to fully utilize the curriculum and understand the skills and learning of their students.

To determine the Gateway rating, educators use evidence gathered from the instructional materials to score indicators related to each criterion

- ❑ **Materials must receive a score of Exemplifies Quality or Approaching Quality in Gateway 2 in order to be reviewed in Gateway 3.**

Gateway 3 Overview		
Criterion	Indicators	Available Points
Criterion 3.1: Differentiation, Scaffolding, and Supports for All Learners The materials give all students extensive opportunities and support to explore key concepts.	3a. - 3g.	10
Criterion 3.2: Teacher Planning and Learning for Success with the Oklahoma Academic Standards for Mathematics The materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support to explore key concepts.	3h. - 3i.	10
		20

Criterion 3.1 Differentiation, Scaffolding, and Supports for All Learners		The materials give all students extensive opportunities and support to explore key concepts.	
Indicators	Guiding Questions	Score	Comments
3a. The materials sequence math tasks in a way that is intentional and supports student learning.	<ul style="list-style-type: none"> ● Are the sequencing of assignments intentional in development (e.g., concrete before abstract, logical flow of material)? ● Do the materials provide problems and exercises that intentionally builds student background knowledge and enables students to apply what they have learned in past lessons and grade levels to develop proficiency in new mathematics concepts? 	0 1 2	<p>Each chapter is structured in a logical manner. Content is connected to previous learnings, and each new topic connects to those before.</p> <p>Within each lesson, concepts are presented with a meaningful introduction followed by several new learnings, each of which are supported with at least one worked out example. Lessons often contain checklists, summaries, guidelines, and other useful structures to help students create understanding.</p>
3b. Manipulatives or models both virtual and physical, are faithful, accurate, and appropriate representations of the mathematical objects they represent and connected to a variety of math tasks found in the materials.	<ul style="list-style-type: none"> ● Are the manipulatives or models consistent representations of the mathematical objects? ● Are the manipulatives or models connected to a variety of math tasks found in the materials? 	0 1 2	<p>Throughout the text, images and graphics are used to support concepts. Students are taught how to create models as part of their problem-solving process.</p> <p>The text does not contain any references to physical manipulatives, which would be mostly inefficient for the content.</p> <p>Each lesson contains one example that has a link to a Desmos Graphing Calculator interactive activity that supports and expands the example. These interactive activities range from a review of</p>

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			<p>linear functions in the first lesson, to an exploration of infinite Riemann sums in the last lesson.</p>
<p>3c. The materials are presented in an organized and visually stimulating way that supports students in engaging thoughtfully with the subject.</p>	<ul style="list-style-type: none"> ● Do the materials maintain a consistent layout for each lesson? ● Are the representations and models supportive of student learning and engagement without being visually distracting? 	<p>Narrative Evidence Only</p>	<p>Each lesson follows a structure in which standards are presented, a new learning is introduced, and examples are worked. The complexity builds throughout each lesson.</p> <p>Lessons, examples, and practice exercises are supported with photographs and diagrams.</p>

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Criterion 3.1 Differentiation, Scaffolding, and Supports for All Learners		The materials give all students extensive opportunities and support to explore key concepts.	
Indicators	Guiding Questions	Score	Comments
3d. The materials incorporate a glossary, footnotes, recordings, graphics, and/or other features that aid students in using the materials to progress understanding of mathematical concepts.	Do the materials include features (e.g., glossaries, footnotes, recordings, pictures, charts, tables) that aid students and teachers in using them effectively?	0 1 2	The front and end papers of the text contain reference information about parent functions, trigonometric identities, geometric and algebraic formulas. An online website contains videos in which a teacher works through the concepts. A video is provided for each example in the text.
3e. The materials include opportunities for teachers to personalize learning for all students.	<ul style="list-style-type: none"> • Do the materials integrate tangible and/or digital interactive tools, manipulatives/objects, and/or dynamic mathematics software in ways that engage students in mathematical actions and processes and support differentiation? • Do the materials provide supporting resources for teachers to adapt lessons or activities based on student need and experiences? 	0 1 2	The text covers content in great depth, with many different examples and applications of concepts. This allows teachers to select the topics and examples to be used, based on the needs of students.
3f. Any digital materials are web-based and compatible with multiple internet browsers (e.g., Internet Explorer, Firefox, Google Chrome). In addition, materials are “platform neutral” (i.e., are compatible with multiple operating systems and are not proprietary to any single platform) and allow the use of tablets and mobile devices.	<ul style="list-style-type: none"> • Are digital materials (either included as part of the comprehensive materials or as a part of a digital curriculum) web-based and compatible with multiple internet browsers? • Are materials “platform neutral”? 	Narrative Evidence	All online resources and materials are compatible with multiple internet browsers and platform neutral.

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Criterion 3.1 Differentiation, Scaffolding, and Supports for All Learners		The materials give all students extensive opportunities and support to explore key concepts.	
Indicators	Guiding Questions	Score	Comments
<p>3g. Materials provide teachers with strategies for meeting the needs of a range of learners.</p>	<ul style="list-style-type: none"> Do the materials provide appropriate supports, scaffolds, and/or accommodations for all students, including exceptional populations and diverse learners (e.g., learners with IEPS, heritage language learners, multilingual learners, and gifted learners) that will support their regular and active participation in learning mathematics? Do the materials provide opportunities for teachers to use a variety of grouping strategies for regular and intervention instruction (e.g., individual, small group, whole group)? If the materials include technology, it provides opportunities for teachers and/or students to collaborate with each other (e.g., websites, discussion groups, webinars)? 	<p>0 1 2</p>	<p>Throughout the text, discussion prompts are provided in side-bar boxes. These provide thoughtful questions that are relevant to the material and can be used to generate discussion prompts.</p>
<p>Criterion 3.1 Summary</p>		<p>Rating Levels</p>	<p>Sub-Total</p>
		<p>Exemplifies Quality: 8 - 10 Approaching Quality: 6 - 7 Not Representing Quality: 0 - 5</p>	<p>10 / 10</p>

Criterion 3.2 Teacher Planning and Learning for Success with the Oklahoma Academic Standards		The materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support to explore key concepts.	
Indicators	Guiding Questions	Score	Comments
<p>3h. The materials support teachers in planning and delivering effective instruction by providing:</p> <ul style="list-style-type: none"> ● Techniques to guide students’ mathematical development (e.g., question stems, facilitation guides, suggestions for differentiation). ● Common student errors and misconceptions with ways to identify and address these errors and misconceptions. 	<p>Are there embedded resources that explain common misconceptions and how the teacher can navigate through, or leverage, the misconception to progress learner understanding?</p>	0 1 2	<p>The Lesson Plans document provides specific advice and scripting for every lesson. These often include pointing out common mistakes or misunderstandings.</p> <p>The text also contains algebra tips for students, calling out common mistakes or misconceptions.</p>
<p>*3i. The materials include a teacher’s edition that contains:</p> <ul style="list-style-type: none"> ● Full, adult-level explanations and examples of mathematics concepts in each lesson. ● Ample and useful annotations. ● Suggestions for how to present the content in the student edition and in any supplemental materials. ● Guidance for the use of embedded technology to support and enhance student learning (when applicable). 	<ul style="list-style-type: none"> ● Are there overview sections and/or annotations that contain narrative information about the math content and/or ancillary documents that will assist the teacher in presenting the student material, understanding the standards, and allowing for seamless transitions of that knowledge of student learning? ● If technology support is embedded, are there links that will enhance the learning for all students? 	0 2 4	<p>A 200-page Lesson Plan document contains much of the information that could be included in a teacher’s edition.</p> <p>Each lesson is broken down into chunks, and recommended scripts and pacing are provided.</p>

Criterion 3.2 Teacher Planning and Learning for Success with the Oklahoma Academic Standards		The materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support to explore key concepts.		
Indicators	Guiding Questions	Score	Comments	
<p>3j. The materials include an outline and justification of its contents, including:</p> <ul style="list-style-type: none"> ● An explanation of the role of specific grade-level mathematics in the context of the overall mathematics curriculum for pre-kindergarten through high school. ● A list of lessons cross-referencing the academic standards addressed and providing an estimated instructional time for each lesson, chapter, and unit (i.e., pacing guide). ● Explanations of the instructional approaches of the program and identification of research-based strategies used in the materials. 	<ul style="list-style-type: none"> ● Are there chapter or lesson overviews that explain the progression of the content and how this specific course connects to previous and upcoming courses? ● Is there clear documentation that aligns standards to lessons, chapters, units, and/or topics? ● Is there clear documentation that provides estimated instructional time for lessons, chapters, units, and/or topics? ● Do the materials contain an explanation of the instructional approaches to the program? ● Do the materials contain research-based strategies? Are these strategies identified? 	0 1 2	Each lesson ends with a summary of what was learned. Each chapter also contains a detailed summary, and a progressive summary which illustrates how new learning fits with previous content.	
<p>3k. The materials provide strategies for informing families about the mathematics program and suggestions for how they can help support student progress and achievement.</p>	<ul style="list-style-type: none"> ● Do the materials include strategies to inform families about the mathematical program and how they can support student progress? ● Do the materials contain suggestions for how parents or caregivers can support student progress and achievement? 	0 1 2	There is no material provided aimed at families or caregivers.	

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	Rating Levels	Sub-Total	Rating
Criterion 3.2 Summary	Exemplifies Quality: 8 - 10 Approaching Quality: 6 - 7 Not Representing Quality: 0 - 5	10 / 10	Exemplifies Quality

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Gateway 3 Points Available	Rating Levels	Gateway 3 Points Achieved	Gateway 3 Rating
<p style="text-align: center;">20</p>	<p>Exemplifies Quality: 16 - 20</p>	<p>20 /20</p>	<p>Exemplifies Quality</p>
	<p>Approaching Quality: 11 - 15</p>		
	<p>Not Representing Quality: 0 - 10</p>		