NEW MEXICO
Public Education Department

F.8 - Grade 8 Math

PUBLISHER/PROVIDER MATERIAL INFORMATION (TO BE COMPLETED BY PUBLISHER/PROVIDER)			
Publisher/Provider Name/Imprint:		Grade(s):	
Title of Student Edition:		Student Edition ISBN:	
Title of Teacher Edition:		Teacher Edition ISBN:	
Title of SE Workbook:		SE Workbook ISBN:	

PUBLISHER/PROVIDER CITATION VIDEO: Reviewer must view video before starting the review of this set of materials.			
Citation Video Link:			
Citation video certification:	I certify that I have viewed the citation video for this specific publisher and set of materials.		
Digital Material Log In: (Include ONLY if submitting digital materials as part of the review set listed above.)	Website:	Username:	Password:

PUBLISHER/PROVIDER INSTRUCTIONS:

• Publisher/Provider citations for this section will refer to the **Teacher Edition (teacher-facing core material)**. The cited Teacher Edition should correspond with the title and ISBN entered on the Form F cover page, whether in print, online, or both. The review set submitted to the summer review institute should also correspond with what is cited on the Form F. If the review set is an online platform only, then that is what should be cited on the Form F and submitted for review by the review teams. If the review set is in print only, then that is what should be cited on the Form F and submitted for review by the review teams.

• For this section, the publisher/provider will enter one citation per math content standard in Column D. Each citation should direct the reviewer to a specific location in the materials that best meets the standard. The citations should be concise and should allow the reviewer to easily determine that all components of the standard have been met. Each citation should cover no more than 3 pages within the materials.

  o Column D: Enter one citation in Column D from the **Teacher Edition (teacher-facing core material)**. Each citation should direct the reviewer to a specific location in the materials that best meets the standard. **If necessary,** you may enter multiple, **targeted** citations in order to address standards with multiple components. Use as few citations as needed to meet the full intent of the standard. Your citations should be concise and should allow the reviewer to easily determine that the full intent and all components of the standard have been met.

  o Column E: The material will be scored for alignment with each standard as "Meets expectations", "Partially meets expectations", or "Does not meet expectations" based on the citation provided.

o NOTE: You may not use a citation more than once across ALL sections of the rubric.

Criteria #	Standard	F.8 Grade 8 Math Standards Review	Publisher/Provider Citation from Teacher Edition	Score	If Scored D: Reviewer's Evidence for Publisher Citation	Reviewer Citation from Student Edition/Workbook	Score	Required: Reviewer's Evidence	Comments, other citations, notes
DOMAIN: 8.NS - The Number System									
Cluster: Know that there are numbers that are not rational, and approximate them by rational numbers.									
1	8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.							
2	8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*							
DOMAIN: 8.EE - Expressions and Equations									
Cluster: Work with radicals and integer exponents.									
3	8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27.$							
4	8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.							
5	8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.*							
6	8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.							
Cluster: Understand the connections between proportional relationships, line, and linear equations.									
7	8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*							
8	8.EE.6	Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at *b*.							
Cluster: Analyze and solve linear equations and pairs of simultaneous linear equations.									
9	8.EE.7	Solve linear equations in one variable.							
10	8.EE.7.a	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where *a* and *b* are different numbers).							
11	8.EE.7.b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.							
12	8.EE.8	Analyze and solve pairs of simultaneous linear equations.							
13	8.EE.8.a	Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.							
14	8.EE.8.b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.*							
15	8.EE.8.c	Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*							
DOMAIN: 8.F - Functions									
Cluster: Define, evaluate, and compare functions.									
16	8.F.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.							
17	8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*							
18	8.F.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*							
Cluster: Use functions to model relationships between quantities.									

#	Standard	Description						
19	8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.						
20	8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.						
DOMAIN: 8.G - Geometry								
Cluster: Understand congruence and similarity using physical models, transparencies, or geometry software.								
21	8.G.1	Verify experimentally the properties of rotations, reflections, and translations:						
22	8.G.1.a	Lines are taken to lines, and line segments to line segments of the same length.						
23	8.G.1.b	Angles are taken to angles of the same measure.						
24	8.G.1.c	Parallel lines are taken to parallel lines.						
25	8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.						
26	8.G.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.						
27	8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.						
28	8.G.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*						
Cluster: Understand and apply the Pythagorean Theorem.								
29	8.G.6	Explain a proof of the Pythagorean Theorem and its converse.						
30	8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.						
31	8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.						
Cluster: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.								
32	8.G.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.						
DOMAIN: 8.SP - Statistics and Probability								
Cluster: Investigate patterns of association in bivariate data.								
33	8.SP.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.						
34	8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.						
35	8.SP.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*						
36	8.SP.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*						

Section 2: Math Content Review

PUBLISHERS/PROVIDERS:
- The Math Content Review tab will be completed solely by the reviewers. They will score each criterion and provide evidence for their score from the material based on their overall review of the material. You will not provide any citations for this tab.
- The material will be scored for alignment with each criterion as "Meets expectations", "Partially meets expectations", or "Does not meet expectations".

Criteria #	Grades K-12 Math Content Criteria	Score	Required: Reviewer's Evidence from Material *Include where you found the evidence in the material and what evidence you found that supports your score.*	Comments, citations, notes
FOCUS AREA 1: RIGOR AND MATHEMATICAL PRACTICES Materials support student mastery through a grade-appropriate balance of rigor: conceptual understanding, procedural fluency, and application. Materials meaningfully connect the Content Standards (CCSS) with the Standards for Mathematical Practice (SMPs).				
1	*Conceptual Understanding:* Materials support the intentional development of students' conceptual understanding of key mathematical concepts.			
2	*Procedural Skill and Fluency:* Materials support intentional opportunities for students to develop procedural skills and fluencies in alignment with what is called for in the grade-level standards.			
3	*Application:* Materials support students' ability to leverage mathematical skills, concepts, representations, and strategies across a range of contexts, (including applying learning to real-world situations and new contexts).			
4	*Balance of Rigor:* *With equitable intensity* The three aspects of rigor are not always treated together and are not always treated separately. The three aspects are balanced with respect to the standards being addressed in each grade level.			
5	*SMPs 1 and 6* Materials support the intentional development of making sense of problems and attending to precision as required by the mathematical practice standards 1 and 6.			
6	*SMPs 2 and 3* Materials support the intentional development of reasoning abstractly and quantitatively, along with developing viable arguments and critiquing the reasoning of others, in connection to the content standards, as required by the practice standards 2 and 3.			
7	*SMPs 4 and 5* Materials support the intentional development of modeling and using tools, in connection to the content standards, as required by the mathematical practice standards 4 and 5.			
8	*SMPs 7 and 8* Materials support the intentional development of seeing structure and generalizing, in connection to the content standards, as required by the mathematical practice standards 7 and 8.			

FOCUS AREA 2: STUDENT CENTERED INSTRUCTION Materials contain embedded resources (routines, strategies, and pedagogical suggestions) to support all students in developing a positive mathematical identity, cultivating self-efficacy, and seeing themselves as a contributor to the math community.				
9	Materials provide students with opportunities to develop self-efficacy and a positive mathematical identity through opportunities to engage in grade-level tasks using various sharing strategies and approaches.			
10	Materials provide opportunities for students to see themselves as contributors to the math community.			

	FOCUS AREA 3: INSTRUCTIONAL SUPPORTS FOR ALL STAKEHOLDERS Materials provide guidance and resources to support educators in internalizing the mathematical content and providing responsive and differentiated instruction to all students. Materials contain helpful resources to support implementation and instruction (e.g. materials for leaders, teachers, students, families/ caregivers, etc).			
11	Teacher materials contain full, adult-level explanations and examples of the mathematics concepts within lessons so teachers can improve their own knowledge of the subject. Materials are in print or clearly distinguished/accessible as a teacher's edition in digital materials.			
12	The materials provide guidance for unit/lesson preparation to support use of the materials as intended and to further develop the teachers' own understanding of the mathematical approach.			
13	Teacher materials provide insight into students' ways of thinking with respect to important mathematical concepts, especially anticipating a variety of student responses.			
14	Materials contain strategies for informing parents or caregivers about the mathematics program and suggestions for how they can help support student progress and achievement.			

Section 2: All Content Review				

PUBLISHERS/PROVIDERS:
• The All Content Review tab will be completed solely by the reviewers. They will score each criterion and provide evidence for their score
  from the material based on their overall review of the material. You will not provide any citations for this tab.
• The material will be scored for alignment with each criterion as "Meets expectations", "Partially meets expectations", or
  "Does not meet expectations".				

Criteria #	All Content Criteria Review	Score	**Required:** Reviewer's Evidence from Material *Include where you found the evidence in the material and what evidence you found that supports your score.*	Comments, citations, notes
FOCUS AREA 1: COHERENCE **Instructional materials are coherent and consistent with the New Mexico Content Standards** **that all students should study in order to be college- and career-ready.**				
1	Instructional materials address the full content contained in the standards for all students by grade level.			
2	Instructional materials support students to show mastery of each standard.			
3	Instructional materials require students to engage at a level of maturity appropriate to the grade level under review.			
4	Instructional materials are coherent, making meaningful connections for students by linking the standards within a lesson and unit.			
FOCUS AREA 2: WELL-DESIGNED LESSONS **Instructional materials take into account effective lesson structure and pacing.**				
5	The Teacher Edition presents learning progressions to provide an overview of the scope and sequence of skills and concepts. The design of the assignments shows a purposeful sequencing of teaching and learning expectations.			
6	Within each lesson of the instructional materials, there are clear, measurable, standards-aligned content objectives.			
7	Within each lesson of the instructional materials, there are clear, measurable language objectives tied directly to the content objectives.			
8	Instructional materials provide focused resources to support students' acquisition of both general academic vocabulary and content-specific vocabulary.			
9	The visual design of the instructional materials (whether in print or digital) maintains a consistent layout that supports student engagement with the subject.			
10	Instructional materials incorporate features that aid students and teachers in making meaning of the text.			
11	Instructional materials provide students with ongoing review and practice for the purpose of retaining previously acquired knowledge.			
FOCUS AREA 3: RESOURCES FOR PLANNING **Instructional materials provide teacher resources to support planning, learning,** **and understanding of the New Mexico Content Standards.**				
12	Instructional materials provide a list of lessons in the Teacher Edition (in print or clearly distinguished/ accessible as a teacher's edition in digital materials), cross-referencing the standards addressed and providing an estimated instructional time for each lesson, chapter, and unit.			
13	Instructional materials support teachers with instructional strategies to help guide students' academic development.			
14	Instructional materials include a teacher edition/ teacher-facing material with useful annotations and suggestions on how to present the content in the student edition/student-facing material and in the supporting material.			

15	Instructional materials integrate opportunities for digital learning, including interactive digital components.			
FOCUS AREA 4: ASSESSMENT **Instructional materials offer teachers a variety of assessment resources and tools** **to collect ongoing data about student progress related to the standards.**				
16	Instructional materials provide a variety of assessments that measure student progress in all strands of the standards for the content under review. *(Adopted New Mexico Content Standards for 2024: NM STEM Ready Science Standards)*			
17	Instructional materials provide multiple formative and summative assessments, clearly defining which standards are being assessed through content and language objectives.			
18	Instructional materials provide scoring guides for assessments that are aligned with the standards they address, and that offer teachers guidance in interpreting student performance and suggestions for further instruction, differentiation, and/or acceleration.			
19	Instructional materials provide appropriate assessment alternatives for English Learners, Culturally and Linguistically Diverse students, advanced students, and special needs students.			
20	Instructional materials include opportunities to assess student understanding and knowledge of the standards using technology.			
FOCUS AREA 5: EXTENSIVE SUPPORT **Instructional materials give all students extensive opportunities and support to explore key concepts.**				
21	Instructional materials can be customized or adapted to meet the needs of different student populations.			
22	Instructional materials provide differentiated strategies and/or activities to meet the needs of students working below proficiency and those of advanced learners.			
23	Instructional materials provide appropriate linguistic support for English Learners and Culturally and Linguistically Diverse students, and accommodations and modifications for other special populations that will support their regular and active participation in learning content.			
24	Instructional materials provide strategies and resources for teachers to inform and engage parents, family members, and caregivers of all learners about the program and provide suggestions for how they can help support student progress and achievement.			
25	Instructional materials include opportunities for all students that encourage and support critical and creative thinking, inquiry, and complex problem-solving skills.			
FOCUS AREA 6: CULTURAL AND LINGUISTIC PERSPECTIVES **Instructional materials represent a variety of cultural and linguistic perspectives.**				
26	Instructional materials inform culturally and linguistically responsive pedagogy by affirming students' backgrounds in the materials themselves and in the student discussions.			
27	Instructional materials provide a collection of images, stories, and information, representing a broad range of demographic groups, and do not make generalizations or reinforce stereotypes.			
28	Instructional materials provide context, illustrations, and activities for students to make interdisciplinary connections and/or connections to real-life experiences and diverse cultural and linguistic backgrounds.			
FOCUS AREA 7: INCLUSION OF CULTURALLY AND LINGUISTICALLY RESPONSIVE LENS **Instructional materials highlight diversity in culture and language through multiple perspectives.**				

29	Instructional materials include tools and resources to relate the content area appropriately to diversity in culture and language.			
30	Instructional materials include tools and resources that demonstrate multiple perspectives in a specific concept.			
31	Instructional materials engage students in critical reflection about their own lives and societies, including cultures past and present in New Mexico.			
32	Instructional materials address multiple ethnic descriptions, interpretations, or perspectives of events and experiences.			

Standards for Mathematical Practice	
1	Make sense of problems and persevere in solving them.
2	Reason abstractly and quantitatively.
3	Construct viable arguments and critique the reasoning of others.
4	Model with mathematics.
5	Use appropriate tools strategically.
6	Attend to precision.
7	Look for and make use of structure.
8	Look for and express regularity in repeated reasoning.