NEW MEXICO
Public Education Department

F.14 - High School Geometry

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:

Section 1: Standards Review -- Math Content Standards

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.14 High School Geometry 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: HS.G-Co - Congruence									
Cluster:	**Experiment with transformations in the plane.**								
1	**G.CO.1**	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.							
2	**G.CO.2**	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).							
3	**G.CO.3**	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.							
4	**G.CO.4**	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.							
5	**G.CO.5**	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.							
Cluster:	**Understand congruence in terms of rigid motions.**								
6	**G.CO.6**	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.							
7	**G.CO.7**	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.							
8	**G.CO.8**	Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.							
Cluster:	**Prove geometric theorem.**								
9	**G.CO.9**	Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*							
10	**G.CO.10**	Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*							
11	**G.CO.11**	Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*							
Cluster:	**Make geometric constructions.**								
12	**G.CO.12**	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*							
13	**G.CO.13**	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.							
DOMAIN: HS.G-SRT - Similarity, Right Triangles, and Trigonometry									
Cluster:	**Understand similarity in terms of similarity transformations.**								
14	**G.SRT.1**	Verify experimentally the properties of dilations given by a center and a scale factor:							
15	**G.SRT.1.a**	A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.							
16	**G.SRT.1.b**	The dilation of a line segment is longer or shorter in the ratio given by the scale factor.							
17	**G.SRT.2**	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.							
18	**G.SRT.3**	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.							
Cluster:	**Prove theorems involving similarity.**								
19	**G.RST.4**	Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*							
20	**G.RST.5**	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.							
Cluster:	**Define trigonometric ratios and solve problems involving right triangles.**								
21	**G.RST.6**	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.							
22	**G.RST.7**	Explain and use the relationship between the sine and cosine of complementary angles.							
23	**G.RST.8**	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.★							
Cluster:	**Apply trigonometry to general triangles.**								
24	**G.RST.9**	(+) Derive the formula $A = 1/2\ ab\ \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.							
25	**G.RST.10**	(+) Prove the Laws of Sines and Cosines and use them to solve problems.							

26	G.RST.11	(+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).							
DOMAIN: HS.G-C - Circles									
Cluster:	**Understand and apply theorems about circles.**								
27	G.C.1	Prove that all circles are similar.							
28	G.C.2	Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*							
29	G.C.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.							
30	G.C.4	(+) Construct a tangent line from a point outside a given circle to the circle.							
Cluster:	**Find arc lengths and areas of sectors of circles.**								
31	G.C.5	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.							
DOMAIN: HS.G-GPE - Expressing Geometric Properties with Equations									
Cluster:	**Translate between the geometric description and the equation for a conic section.**								
32	G.GPE.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.							
33	G.GPE.2	Derive the equation of a parabola given a focus and directrix.							
Cluster:	**Use coordinates to prove simple geometric theorems algebraically.**								
34	G.GPE.4	Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*							
35	G.GPE.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).							
36	G.GPE.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.							
37	G.GPE.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.★							
DOMAIN: HS.G-GMD - Geometric Measurement and Dimension									
Cluster:	**Explain volume formulas and use them to solve problems.**								
38	G.GMD.1	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*							
39	G.GMD.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. ★							
Cluster:	**Visualize relationships between two-dimensional and three-dimensional objects.**								
40	G.GMD.4	Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.							
DOMAIN: GS.G-MG - Modeling with Geometry									
Cluster:	**Apply geometric concepts in modeling situations.**								
41	G.MG.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★							
42	G.MG.2	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).★							
43	G.MG.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★							
DOMAIN: HS.S-CP - Conditional Probability and the Rules of Probability									
Cluster:	**Understand independence and conditional probability and use them to interpret data.**								
44	S.CP.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").							
45	S.CP.2	Understand that two events *A* and *B* are independent if the probability of *A* and *B* occurring together is the product of their probabilities, and use this characterization to determine if they are independent.							
46	S.CP.3	Understand the conditional probability of *A* given *B* as *P*(*A* and *B*)/P(*B*), and interpret independence of *A* and *B* as saying that the conditional probability of *A* given *B* is the same as the probability of *A*, and the conditional probability of *B* given *A* is the same as the probability of *B*.							
47	S.CP.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*							
48	S.CP.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*							
Cluster:	**Use the rules of probability to compute probabilities of compound events in a uniform probability model.**								
49	S.CP.6	Find the conditional probability of *A* given *B* as the fraction of *B*'s outcomes that also belong to *A*, and interpret the answer in terms of the model.							
50	S.CP.7	Apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in terms of the model.							
51	S.CP.8	(+) Apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in terms of the model.							
52	S.CP.9	(+) Use permutations and combinations to compute probabilities of compound events and solve problems.							
DOMAIN: HS.S-MD - Using Probability to Make Decisions									
Cluster:	**Use probability to evaluate outcomes of decisions.**								
53	S.MD.6	(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).							

54	**S.MD.7**	(+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).							

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.