

Introduction:

The following Instructional Materials Scoring Rubric for Mathematics is designed to score materials in the following categories:

- Instructional Focus
- Math Practices
- Aspects of Rigor
- Accessibility Features

Scoring:

Each section is to be scored using a 0, 1, or 2. For all sections, except for Rigor, use the following rubric when deciding on the appropriate rating:

- 0: The metric is not present within the material.
- 1: The metric is present within the material. The intent and/or frequency component of the metric is not fully met.
- 2: A rating of 2 indicates the metric is present and all aspects of the metric are fully met.

For Rigor:

- 0: The standard is not instructionally present within the material.
- 1: The standard is instructionally present but does not have an instructional focus on the indicated type of rigor.
- 2: The standard is instructionally present and has a clear instructional focus on the indicated type of rigor.

Note: Some standards appear under multiple aspects of rigor (i.e., Conceptual Understanding, Procedural Fluency, or Application). When scoring these standards, only score the part of the standard relevant to that aspect of rigor, which is identified by a bold, italics, larger font.

Geometry Mathematics Instructional Materials Scoring Rubric

Gateway: The publisher must provide a Tennessee standards alignment guide as a part of the scope and sequence for the material. If this gateway is not met, the materials will not be scored.

Instructional Focus				
	0	1	2	Evidence
Connections to content from prior grades are clearly identified and explicitly related to grade-level work.				
Materials embed a minimum of 3 tasks in every unit. Each task has multiple entry-points and can be solved using a minimum of 2 solution strategies and/or representations.				
Materials give students opportunities to work problems within each lesson. Each problem set: <ul style="list-style-type: none"> Covers the full breadth of the standard(s) covered in the lesson Is aligned to on grade level expectations as identified in the standard(s) 				
Teacher resources indicate common student misconceptions in every unit and provide guidance on how to instructionally address the identified misconceptions.				
Materials provide educative supports (e.g., adult level explanations of the standards and strategies) in every lesson for teachers to ensure standards are taught accurately and to the appropriate level of rigor (i.e., conceptual understanding, procedural fluency, and application) as indicated by the standards.				
Materials develop student understanding of multiple representations (i.e., concrete, representational, abstract) for relevant standards which are identified in the state's Instructional Focus Documents.				
Materials include problems and activities in every unit that connect two or more grade level standards in a domain (e.g., 2.MD.A.1 and 2.MD.A.2).				
Materials include problems and activities in every unit that connect two or more grade level domains. (e.g., 2.MD.B.6 and 2.OA.A.1)				
Materials provide opportunities for students to participate in a spiraled review in every unit.				
Total				

Mathematical Practices				
Math Practices/Literacy Skills for Math Proficiency	0	1	2	Evidence
Materials embed the eight math practice standards in every unit.				
Math practice standards are clearly identified in both teacher and student materials.				
Materials use appropriate math vocabulary which is aligned to the grade level standards.				
Materials support students in discussing and articulating mathematical ideas. Within each lesson students either write or verbally justify their thoughts.				
Total				

Accessibility Features				
Digital Materials	0	1	2	Evidence
All lessons within the materials are available in digital form and include a printable option.				
In every lesson, materials include recommended supports, accommodations, and modifications for Students with Disabilities and English Language Learners that will support their regular and active participation in accessing on grade level material (e.g., modifying vocabulary words within word problems, sentence starters, etc.).				
Total				

Aspects of Rigor				
Conceptual Understanding: The materials support the intentional development of students' conceptual understanding of key mathematical concepts, especially where called for in specific content standards or clusters.	0	1	2	Evidence
G.N.Q.A.1 Use units as a way to understand real-world problems. ★				1
G.N.Q.A.1a Use appropriate quantities in formulas, converting units as necessary.				2
G.N.Q.A.1b <i>Define and justify appropriate quantities</i> within a context <i>for the purpose of modeling</i> .				3
G.N.Q.A.1c Choose an appropriate level of accuracy when reporting quantities.				4
G.CO.A.1 Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not, by hand for basic transformations and using technology for more complex cases.				5
G.CO.A.2 Given a rectangle, parallelogram, trapezoid, or regular polygon, determine the transformations that carry the shape onto itself and describe them in terms of the symmetry of the figure.				6
G.CO.A.3 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.				7
G.CO.A.4 Given a geometric figure, draw the image of the figure after a sequence of one or more rigid motions, by hand and using technology. <i>Identify a sequence of rigid motions that will carry a given figure onto another.</i>				8
G.CO.B.5 Given two figures, use the definition of congruence in terms of rigid motions to <i>determine informally if they are congruent.</i>				9
G.CO.B.6 Use the definition of congruence in terms of rigid motions to <i>show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.</i>				10
G.CO.B.7 Explain how the criteria for triangle congruence (ASA, SAS, AAS, SSS, and HL) follow from the definition of congruence in terms of rigid motions.				11
G.CO.C.8 Use definitions and theorems about lines and angles to solve problems and to <i>justify relationships in geometric figures.</i>				12

G.CO.C.9 Use definitions and theorems about triangles to solve problems and to <i>justify relationships in geometric figures</i> .				13
G.CO.C.10 Use definitions and theorems about parallelograms to solve problems and to <i>justify relationships in geometric figures</i> .				14
G.SRT.A.1 Use properties of dilations given by a center and a scale factor to solve problems and to <i>justify relationships in geometric figures</i> .				15
G.SRT.A.2 <i>Define similarity in terms of transformations</i> . Use transformations to <i>determine whether two figures are similar</i> .				16
G.SRT.B.3 Use congruence and similarity criteria for triangles to solve problems and to <i>justify relationships in geometric figures</i> .				17
G.SRT.C.4.a 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.				18
G.SRT.C.4.b <i>Explain</i> and use <i>the relationship between the sine and cosine of complementary angles</i> .				19
G.SRT.C.5.a <i>Know</i> and use <i>the Pythagorean Theorem and trigonometric ratios (sine, cosine, tangent, and their inverses)</i> to solve right triangles in a real-world context.				20
G.SRT.C.5.b <i>Know</i> and use <i>relationships within special right triangles</i> to solve problems in a real-world context.				21
G.GPE.A.1 Use coordinates to <i>justify geometric relationships algebraically</i> and to solve problems.				22
G.GPE.A.2 Use the slope criteria for parallel and perpendicular lines to solve problems and to <i>justify relationships in geometric figures</i> .				23
G.GPE.A.3 <i>Understand the relationship between the Pythagorean Theorem and the distance formula</i> and use an efficient method to solve problems on the coordinate plane.				24
G.GMD.A.1 Understand and explain the formulas for the volume and surface area of a cylinder, cone, prism, and pyramid.				25
G.MG.A.1 Use geometric shapes, their measures, and their properties to <i>model objects</i> found in a real-world context for the purpose of <i>approximating solutions to problems</i> . ★				26
G.S.CP.A.1 Use set notation to <i>represent contextual situations</i> . ★				27
G.S.CP.A.1.a 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").				28

G.S.CP.A.1.b Flexibly move between visual models (Venn diagrams, frequency tables, etc.) and set notation.				29
G.S.CP.B.2 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 given context. ★				30
G.S.CP.B.3 Understand and apply the Addition Rule. ★				31
G.S.CP.B.3.a Explain the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ in terms of visual models (Venn diagrams, frequency tables, etc.).				32
G.S.CP.B.3.b Apply the Addition Rule to solve problems and interpret the answer in terms of the given context.				33
G.S.CP.C.4 Calculate probabilities using geometric figures . ★				34
Procedural Skill and Fluency: The materials provide intentional opportunities for students to develop procedural skills and fluencies, especially where called for in specific content standards or clusters	0	1	2	Evidence
G.N.Q.A.1a Use appropriate quantities in formulas, converting units as necessary.				1
G.CO.A.4 Given a geometric figure, draw the image of the figure after a sequence of one or more rigid motions, by hand and using technology. Identify a sequence of rigid motions that will carry a given figure onto another.				2
G.CO.C.8 Use definitions and theorems about lines and angles to solve problems and to justify relationships in geometric figures.				3
G.CO.C.10 Use definitions and theorems about parallelograms to solve problems and to justify relationships in geometric figures.				4
G.CO.D.11 Perform formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).				5
G.CO.D.12 Use geometric constructions to solve geometric problems in context, by hand and using technology. ★				6
G.SRT.A.1 Use properties of dilations given by a center and a scale factor to solve problems and to justify relationships in geometric figures.				7
G.SRT.B.3 Use congruence and similarity criteria for triangles to solve problems and to justify relationships in geometric figures.				8
G.SRT.C.4 Use side ratios in right triangles to define trigonometric ratios.				9

G.SRT.C.4.b Explain and <i>use the relationship between the sine and cosine of complementary angles.</i>				10
G.SRT.C.5 Solve triangles.★				11
G.SRT.C.5.a <i>Know and use the Pythagorean Theorem and trigonometric ratios (sine, cosine, tangent, and their inverses) to solve right triangles</i> in a real-world context.				12
G.SRT.C.5.b <i>Know and use relationships within special right triangles to solve problems</i> in a real-world context.				13
G.SRT.C.5.c <i>Use the Law of Sines and Law of Cosines to solve non-right triangles</i> in a real-world context.				14
G.C.A.1 <i>Use proportional relationships between the area of a circle and the area of a sector within the circle to solve problems</i> in a real-world context.★				15
G.GPE.A.2 <i>Use the slope criteria for parallel and perpendicular lines to solve problems</i> and to justify relationships in geometric figures.				16
G.GPE.A.3 Understand the relationship between the Pythagorean Theorem and the distance formula and <i>use an efficient method to solve problems on the coordinate plane.</i>				17
G.GMD.A.2 <i>Use volume and surface area formulas for cylinders, cones, prisms, pyramids, and spheres to solve problems</i> in a real-world context.★				18
G.MG.A.1 <i>Use geometric shapes, their measures, and their properties to model objects</i> found in a real-world context for the purpose of approximating solutions to problems.★				19
G.S.CP.A.1 <i>Use set notation</i> to represent contextual situations.★				20
G.S.CP.A.1.b Flexibly move between visual models (Venn diagrams, frequency tables, etc.) and set notation.				21
G.S.CP.B.2 <i>Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A</i> and interpret the answer in terms of the given context.★				22
G.S.CP.B.3.b <i>Apply the Addition Rule to solve problems</i> and interpret the answer in terms of the given context.				23
Applications: The materials support the intentional development of students' ability to utilize mathematical concepts and skills in engaging applications, especially where called for in specific content standards or clusters.	0	1	2	Evidence
G.N.Q.A.1 Use units as a way to understand <i>real-world problems.</i> ★				1
G.N.Q.A.1a Use appropriate quantities in formulas, converting units as necessary.				2
G.N.Q.A.1b Define and justify appropriate quantities <i>within a context for the purpose of modeling.</i>				3

G.N.Q.A.1c Choose an appropriate level of accuracy when reporting quantities.				4
G.CO.C.8 Use definitions and theorems about lines and angles to solve problems and to justify relationships in geometric figures.				5
G.CO.C.9 Use definitions and theorems about triangles to solve problems and to justify relationships in geometric figures.				6
G.CO.C.10 Use definitions and theorems about parallelograms to solve problems and to justify relationships in geometric figures.				7
G.CO.D.12 Use geometric constructions to solve geometric problems in context, by hand and using technology. ★				8
G.SRT.A.1 Use properties of dilations given by a center and a scale factor to solve problems and to justify relationships in geometric figures.				9
G.SRT.B.3 Use congruence and similarity criteria for triangles to solve problems and to justify relationships in geometric figures.				10
G.SRT.B.4b Explain and use the relationship between the sine and cosine of complementary angles.				11
G.SRT.C.5.a Know and use the Pythagorean Theorem and trigonometric ratios (sine, cosine, tangent, and their inverses) to solve right triangles <i>in a real-world context</i> .				12
G.SRT.C.5.b Know and use relationships within special right triangles to solve problems <i>in a real-world context</i> .				13
G.SRT.C.5.c Use the Law of Sines and Law of Cosines to solve non-right triangles <i>in a real-world context</i> .				14
G.C.A.1 Use proportional relationships between the area of a circle and the area of a sector within the circle to solve problems <i>in a real-world context</i> . ★				15
G.GPE.A.1 Use coordinates to justify geometric relationships algebraically and to solve problems.				16
G.GPE.A.2 Use the slope criteria for parallel and perpendicular lines to solve problems and to justify relationships in geometric figures.				17
G.GPE.A.3 Understand the relationship between the Pythagorean Theorem and the distance formula and use an efficient method to solve problems on the coordinate plane.				18

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G.GMD.A.2 Use volume and surface area formulas for cylinders, cones, prisms, pyramids, and spheres to solve problems <i>in a real-world context</i> . ★				19
G.MG.A.1 Use geometric shapes, their measures, and their properties to model objects found <i>in a real-world context</i> for the purpose of approximating solutions to problems. ★				20
G.S.CP.A.1 Use set notation to represent contextual situations . ★				21
G.S.CP.B.2 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 given context. ★				22
G.S.CP.B.3 Understand and apply the Addition Rule. ★				23
G.S.CP.B.3.b Apply the Addition Rule to solve problems and interpret the answer in terms of the given context .				24
G.S.CP.C.4 Calculate probabilities using geometric figures. ★				25
Total				