2017-2018 WCSD Geometry/Formal Geometry Program Evaluation Rubric

Evaluator Number

15

Program Number

2

Name of Text

GEOMETRY

Publisher

Glencoe

Rate This Text Overall

- [x] **High**
- [ ] **Mid**
- [ ] **Low**

Focus: Evaluate the table of contents and any pacing guides. Do not stop there; also evaluate units, chapters, and lessons. (Both student and teacher materials)

- ⇨ Basic Terms and Constructions (G.CO.1, G.CO.12)
- ⇨ The Distance Formula (G.GPE.7)
- ⇨ The Midpoint Formula (G.GPE.7)
- ⇨ Angle Measure
- ⇨ Angles (G.CO.1, G.CO.12)
- ⇨ Inductive Reasoning and Conjecture
- ⇨ Conditional Statements
- ⇨ Deductive Reasoning
- ⇨ Postulates
- ⇨ Algebraic
- ⇨ Segment Addition Postulate
- ⇨ Proving Angle Relationships
- ⇨ Parallel and Perpendicular Lines (G.CO.1, G.CO.12)
- ⇨ Partitioning a Segment (G.GPE.6)
- ⇨ Slope and Parallel Lines (G.GPE.5)
- ⇨ Slope and Perpendicular Lines (G.GPE.5)
- ⇨ Proofs About Line Segments and Angles (G.CO.9)
- ⇨ Proofs About Parallel and Perpendicular Lines (G.CO.9)
- ⇨ Perpendiculars and Distance (G.CO.1)
- ⇨ Transformations and Rigid Motions (G.CO.2)
- ⇨ Reflections (G.CO.2, G.CO.4, **G.CO.5,** G.CO.6)
- ⇨ Translations (G.CO.2, G.CO.4, **G.CO.5**, G.CO.6)
- ⇨ Rotations (G.CO.2, G.CO.4, **G.CO.5**, G.CO.6)
- ⇨ Compositions of transformations (G.CO.6)
- ⇨ Introduce basic dilations
- ⇨ Congruence and Triangles (**G.CO.5**, G.CO.6, G.CO.7)
- ⇨ Developing Congruence Criteria (G.CO.7, G.CO.8)
- ⇨ Using Congruence Criteria in Proofs (**G.SRT.5**)
- ⇨ The Triangle Sum Theorem (**G.CO.10**)
- ⇨ The Isosceles Triangle Theorem (**G.CO.10**)
- ⇨ Congruence (Proofs involving triangle congruence, corresponding parts of triangles) (**G.CO.5,** G.CO.6)
- ⇨ Angle Bisectors (G.CO.2, G.CO.9, **G.C.3**) – (construct Angle Bisectors of triangle, Incenter and Circle)
- ⇨ Perpendicular Bisectors (G.CO.2, G.CO.9, **G.C.3**) – (construct Perpendicular Bisectors of Triangle, Circumcenter & Circle)

- Medians of a Triangle (G.CO.10, G.GPE.4) – (no need for centroid and orthocenter)
- Indirect Proofs
- Triangle Inequality
- Inequalities in Two Triangles
- Ratios, Proportions, and Similarity (**G.SRT.2**, G.C.1)
- Similarity and Triangles (**G.SRT.2**, G.SRT.3)
- Solving Problems Using Similarity (**G.SRT.5**)
- Properties of Dilations - positive and negative dilations (G.SRT.1, G.CO.2)
- Drawing Dilations (G.CO.2)
- A line parallel to one side of a triangle divides the other two proportionally, and conversely (G.SRT.4, **G.SRT.5**)
- Midsegment of a Triangle (G.CO.10)
- Geometric Mean - (**G.SRT.5**) (derive formulas-no shortcuts)
- Proving the Pythagorean Theorem (G.SRT.4, **G.SRT.5**)
- Similarity (proofs throughout unit)
- Understand Triangle Similarity lead to definitions of the Trig Ratios (**G.SRT.6, G.SRT.7**)
- Through the use of similar triangles derive the Special Right Triangles (G.SRT.4, **G.SRT.5**)
- Solving Right Triangles (**G.SRT.8**)
- The Law of Sines and Cosines (G.SRT.10+, G.SRT.11+)
- Symmetry (**G.CO.3**)
- Sides and Angles of Parallelograms (**G.CO.3**, **G.CO.11**)
- Diagonals of Parallelograms (**G.CO.11**)
- Criteria for Parallelograms -Parallelograms (proofs throughout unit) (**G.CO.11**)
- Special Parallelograms (**G.CO.11**, G.CO.13, **G.SRT.5**)
- Kites and Trapezoids
- Derive area of the equilateral triangle (inscribed in a circle) (G.CO.13)
- Derive areas of polygons (inscribed in a circle) – solve for apothem (**G.SRT.8,** G.CO.13)
  (Use trig ratios and the Pythagorean Theorem to solve right triangles in applied problems)
- Coordinate Proofs - Distance, midpoint, slope, polygons, area (**G.CO.10**, G.GPE.4, G.GPE.7)
- Give an informal argument for the formulas for the circumference and area of a circle. (G.GMD.1)
- Central Angles and Inscribed Angles (**G.C.2**)
- Prove properties of angles for a quadrilateral inscribed in a circle. (**G.C.3**)
- Segments in circles (**G.C.2,** G.C.4+)
- Inscribed and Circumscribed Circles of triangles (Examine the relationships in the circle) (G.C.3)
- Circumference and Arc Length (G.CO.1, G.C.5)
- Area of Circles and Sectors (G.C.5)
- Visualizing Three-Dimensional Figures (G.GMD.4)
- Surface Area (use nets and find surface area of figures with regular polygonal bases) (7.G.6, **G.SRT.8**)
- Volume of Prisms and Cylinders (7.G.6, 8.G.9, **G.GMD.1, G.GMD.3**)
- Volumes of Pyramids and Cones (8.G.9, **G.GMD.1, G.GMD.3**)
- Volume of Spheres (8.G.9, G.GMD.2+, **G.GMD.3**)
- Solving Design Problems (**G.GMD.3**, G.MG.3)
- Probability and Set Theory (S.CP.1)
- Mutually Exclusive and Overlapping Events (**S.CP.7**)
- Understand the conditional probability of A given B (**S.CP.3**)
- Construct and interpret two-way frequency tables of data (**S.CP.4**)
- Independent Events (**S.CP.2, S.CP.3, S.CP.4,** S.CP.5)

100% of the standards are in the textbook.
Formal

Yes (although segments in circles are no longer in this textbook... This topic isn't actually in the standards but is taught in the course.). Proofs are treated fairly well, although there is a much heavier emphasize on flow proofs than is needed. Teachers will need to do some supplementing for proofs. The formality of proofs is maintained in this book.

- ○ Less than 25%
- ○ Less than 85% but greater than 50%
- ○ Less than 100% but greater than 85%
- ● 100%

100% of the standards are in the textbook.
Regular

Yes (although segments in circles are no longer in this textbook. At times in the past that has been taught in this course; not certain if it will be in the future, wasn't in the course in 2016-2017.). Proofs are handled fairly well but will require some supplementing.

- ○ Less than 25%
- ○ Less than 85% but greater than 50%
- ○ Less than 100% but greater than 85%
- ● 100%

Student work involves significant work with applications/modeling and problems that use algebra skills.
Formal

Very strong on algebra skills; strong on application/modeling, although not always at the most rigorous level (high but not exceptionally high.)

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

Student work involves significant work with applications/modeling and problems that use algebra skills.
Regular

Yes, very strong for algebra and at a level that will challenge a regular student.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

There are problems at a level of sophistication appropriate to high school (beyond mere review of previous course standards) that involve the application of knowledge and skills from grades 6-8.
Formal

Yes, consistently true.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

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Regular

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Assessment: Do assessment tasks reveal whether student comprehend at all levels of rigor?
Formal

Yes

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- ○ Sometimes occurs
- ○ Frequently occurs
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Assessment: Do assessment tasks reveal whether student comprehend at all levels of rigor?
Regular

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Rigor: Do the materials feature high-quality conceptual problems and conceptual discussion questions? Do they provide opportunities for multiple representations?
Formal

Yes, although the book is heavier in procedural/fluency than in conceptual development in the assignments. The lessons should be supplemented with more conceptual development.

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Rigor: Are the materials designed so that students attain the fluency and procedural skills required? Evaluate the lessons, daily routines, and homework assignments for evidence in the development of fluency and procedural skill supported by conceptual understanding.
Formal

Yes, this is an area of strength.

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Rigor: Are the materials designed so that teachers and students spend sufficient time working with applications, including single- and multi-step contextual problems to afford student opportunities for practice, and engage them in problem solving?
Formal

Yes; many are well-written, but some aren't as authentic as others that I have seen. Many of the multi-step problems won't be truly challenging for Formal students. There is one Performance Task per unit. These are okay but not great.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

Rigor: Are the materials designed so that teachers and students spend sufficient time working with applications, including single- and multi-step contextual problems to afford student opportunities for practice, and engage them in problem solving?
Regular

Yes, many are written at a level that will be challenging yet achievable for regular Geometry. Some will be too hard for a regular stood, but there are a large number that are appropriate in each section.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

Coherence: Are the materials coherent in their content, do the standards build on each other in a way that is beneficial to the instruction, student practice and assessments?
Formal

Yes, area of strength for this book.

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Mathematical Practices: Are the mathematical practices addressed in such a way to benefit instruction and expectation of students?
Formal

Yes, covered pretty well. Teachers would want to craft lessons that focus on these practices in a way that has more depth than the lessons in the textbook.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
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Mathematical Practices: Are the mathematical practices addressed in such a way to benefit instruction and expectation of students?
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Additional Comments (overall impression of the text)

Strong book; order makes sense, has enough problems at a variety of levels for both courses. Proofs are handled fairly well but will need some supplementation. Performance tasks are good but not great, so teachers will probably want to supplement here as well.