2017-2018 WCSD Geometry/Formal Geometry Program Evaluation Rubric

Evaluator Number

15

Program Number

6

Name of Text

Big Ideas Math Geometry

Publisher

Big Ideas Learning

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

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Wide variety of problems with modeling and algebra skills with enough variety of difficulty for both Formal and Geometry. Lots with systems and factoring. Practice A and Practice B are also available with even more practice with these skills. Application problems are decent and well-represented in each section.

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Yes, at a wide variety of levels so that students could be remediated or challenged as needed.

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Yes for all of the above. Concept development is a strength in the higher-numbered items in the book. HOWEVER, the focus for all the explorations is very concrete (technology to look at measurements and determine a pattern) instead of on proofs. Formal would need to supplement this strongly in the lessons. I do NOT like the student journal, which has room for the concrete explorations, theorems/

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Additional Comments (overall impression of the text)

Overall very impressed with this text but do have a few concerns. Well-organized, easy to use, plenty of resources for teachers to customize to the needs of their classes. I like how the proofs start with algebraic but think some supplementation would be needed prior to the treatment of two-column geometric proofs with the book (up to 8 steps in the first section of proofs... Too much!). Don't love the order for triangle congruency although each topic is treated well. The explorations are good for Geom and at times for Formal, but are ALWAYS concrete and never go in the direction of proofs, which is unfortunate. The performance tasks in the Assessment Book are excellent (although the performance tasks in the textbook are way to open-ended to be very worthwhile.). Could have more application problems, in