

N-GEN MATH[®]

GEOMETRY

(WITH ALIGNMENT TO NGMLS/CCSS)

BY KIRK WEILER

UNIT #1 – BEGINNING CONCEPTS 11

- Lesson 1 – Points, Lines, and Segments – **GEO.G.CO.1**
- Lesson 2 – Circles and Arcs – **GEO.G.CO.1, GEO.G.CO.12**
- Lesson 3 – Rays and Angles – **GEO.G.CO.1**
- Lesson 4 – Types of Angles – **Foundational**
- Lesson 5 – Pairs of Angles – **Foundational**
- Lesson 6 – More Pairs of Angles - **Foundational**
- Lesson 7 – Angle Bisectors and Perpendicular Lines – **GEO.G.CO.1**
- Lesson 8 – Additional Geometric Terminology – **GEO.G.CO.1**
- Lesson 9 – Parallel Lines – **Foundational**
- Lesson 10 – Copying a Triangle – **GEO.G.CO.12**
- Lesson 11 – Geometry in the Coordinate Plane – **GEO.G.GPE.5**
- Unit 1 – Beginning Concepts – Unit Review

UNIT #2 – RIGID MOTIONS AND CONGRUENCE 63

- Lesson 1 – Transformations – **GEO.G.CO.2, GEO.G.CO.5, GEO.G.CO.6**
- Lesson 2 – Rotations – Day 1 – **GEO.G.CO.2, GEO.G.CO.4**
- Lesson 3 – Rotations – Day 2 – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6, GEO.G.CO.7**
- Lesson 4 – Point Reflections – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.12**



- Lesson 5 – Line Reflections – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6**
- Lesson 6 – Isosceles Triangles – **GEO.G.CO.7, GEO.G.CO.12, GEO.G.SRT.5**
- Lesson 7 – Perpendicular Bisectors – **GEO.G.CO.9,**
- Lesson 8 – Translations – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6**
- Lesson 9 – Congruence and Rigid Motions – **GEO.G.CO.2, GEO.G.CO.5, GEO.G.CO.6, GEO.G.CO.7**
- Lesson 10 – Symmetry – **GEO.G.CO.2, GEO.G.CO.3, GEO.G.CO.5, GEO.G.CO.6**
- Unit 2 – Rigid Motions and Congruence – Unit Review

UNIT #3 – EUCLIDEAN TRIANGLE GEOMETRY 113

- Lesson 1 – The Triangle Inequality – **GEO.G.CO.10**
- Lesson 2 – Congruent Triangles – **GEO.G.CO.7, GEO.G.CO.8, GEO.G.SRT.5**
- Lesson 3 – Drawing Inferences from Geometric Givens – **Foundational**
- Lesson 4 – The Side-Side-Side Theorem – **GEO.G.CO.6, GEO.G.CO.8, GEO.G.CO.10**
- Lesson 5 – The Side-Angle-Side Theorem – **GEO.G.CO.6, GEO.G.CO.8, GEO.G.CO.9**
- Lesson 6 – The Angle-Side-Angle Theorem – **GEO.G.CO.6, GEO.G.CO.8**
- Lesson 7 – The Properties of Equality – **GEO.G.CO.9**
- Lesson 8 – Proofs with Partitioning – **GEO.G.CO.10**
- Lesson 9 – Parallel Lines and Proof – **GEO.G.CO.9, GEO.G.CO.10**
- Lesson 10 – Exterior Angles – **GEO.G.CO.9, GEO.G.CO.10**
- Lesson 11 – Proving Lines are Parallel – **GEO.G.CO.9**
- Lesson 12 – AAS and Isosceles Triangles – **GEO.G.CO.8, GEO.G.CO.10**
- Lesson 13 – The Hypotenuse-Leg Theorem – **GEO.G.CO.6, GEO.G.CO.8, GEO.G.CO.9**
- Lesson 14 – Additional Triangle Proof – **Foundational**
- Unit 3 – Euclidean Triangle Geometry – Unit Review



UNIT #4 – CONSTRUCTIONS 179

- Lesson 1 – Introduction to Constructions – **GEO.G.CO.12**
- Lesson 2 – Copying Angles and Creating Parallel Lines – **GEO.G.CO.12**
- Lesson 3 – Constructing Translations – **GEO.G.CO.12**
- Lesson 4 – Bisecting an Angle – **GEO.G.CO.12**
- Lesson 5 – Constructing a Perpendicular to a Line – **GEO.G.CO.12**
- Lesson 6 – Constructing Reflections – **GEO.G.CO.12**
- Lesson 7 – Constructing Rotations – **GEO.G.CO.12**
- Lesson 8 – The Circumcircle and Its Center – **GEO.G.CO.12**
- Lesson 9 – The Inscribed Circle and Its Center – **GEO.G.CO.12**
- Lesson 10 – The Orthocenter of a Triangle – **GEO.G.CO.12**
- Lesson 11 – Inscribing Regular Polygons in Circles – **GEO.G.CO.13**
- Unit 4 – Constructions – Unit Review

UNIT #5 – COORDINATE GEOMETRY 235

- Lesson 1 – Slope and Parallel Lines – **GEO.G.GPE.5**
- Lesson 2 – Slope and Perpendicular Lines – **GEO.G.GPE.5**
- Lesson 3 – The Slope-Intercept Form of a Line – **GEO.G.GPE.5**
- Lesson 4 – The Point-Slope Form of a Line – **GEO.G.GPE.5**
- Lesson 5 – Horizontal and Vertical Lines – **GEO.G.CO.5**
- Lesson 6 – The Pythagorean Theorem – **GEO.G.CO.10, GEO.G.SRT.8**
- Lesson 7 – The Distance Formula – **GEO.G.GPE.4, GEO.G.GPE.7**
- Lesson 8 – The Midpoint Formula – **GEO.G.GPE.4, GEO.G.GPE.6**
- Lesson 9 – Rotations in the Coordinate Plane – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6**
- Lesson 10 – Reflections in the Coordinate Plane – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6**
- Lesson 11 – Sequences of Rigid Motions – **GEO.G.CO.2, GEO.G.CO.4, GEO.G.CO.5, GEO.G.CO.6**
- Unit 5 – Coordinate Geometry – Unit Review



UNIT #6 – QUADRILATERALS 289

- Lesson 1 – Quadrilaterals – **GEO.G.GPE.4**
- Lesson 2 – Special Quadrilaterals – **GEO.G.CO.11**
- Lesson 3 – Parallelograms – Day 1 – **GEO.G.CO.11**
- Lesson 4 – Parallelograms – Day 2 – **GEO.G.CO.11**
- Lesson 5 – The Midpoints of a Triangle – **GEO.G.CO.10**
- Lesson 6 – Rectangles – **GEO.G.CO.11**
- Lesson 7 – Rhombuses – **GEO.G.CO.11**
- Lesson 8 – Squares – **GEO.G.CO.11**
- Lesson 9 – Isosceles Trapezoids – **GEO.G.CO.11**
- Lesson 10 – The Symmetries of Quadrilaterals – **GEO.G.CO.3**
- Unit 6 – Quadrilaterals – Unit Review

UNIT #7 – DILATIONS AND SIMILARITY 339

- Lesson 1 – Dilations – **GEO.G.SRT.1**
- Lesson 2 – Dilations in the Coordinate Plane – **GEO.G.SRT.1**
- Lesson 3 – Dilations and Angles – **GEO.G.SRT.1, GEO.G.SRT.5**
- Lesson 4 – Similar Figures – **GEO.G.SRT.1, GEO.G.SRT.2**
- Lesson 5 – Similarity Criteria – **GEO.G.SRT.2, GEO.G.SRT.3, GEO.G.SRT.5**
- Lesson 6 – Reasoning with Similarity – **GEO.G.SRT.4, GEO.G.SRT.5**
- Lesson 7 – More Similarity Reasoning – **GEO.G.SRT.4**
- Lesson 8 – The Side Splitter Theorem – **GEO.G.SRT.4, GEO.G.SRT.5**
- Lesson 9 – Partitioning a Line Segment – **GEO.G.SRT.4, GEO.G.SRT.5, GEO.G.GPE.6**
- Lesson 10 – The Medians of a Triangle – **GEO.G.SRT.4**
- Lesson 11 – Partitioning the Hypotenuse with an Altitude – **GEO.G.SRT.4**
- Lesson 12 – Geometric Means – **GEO.G.SRT.4**
- Lesson 13 – Proving the Pythagorean Theorem (No Homework Assignment) – **GEO.G.SRT.4**



- Unit 7 – Dilations and Similarity – Unit Review

UNIT #8 – RIGHT TRIANGLE TRIGONOMETRY 403

- Lesson 1 – Similar Right Triangles – **GEO.G.SRT.5**
- Lesson 2 – The Trigonometric Ratios – **GEO.G.SRT.6, GEO.G.SRT.7, GEO.G.SRT.8**
- Lesson 3 – Trigonometry and the Calculator – **GEO.G.SRT.6, GEO.G.SRT.7, GEO.G.SRT.8**
- Lesson 4 – Solving for Missing Sides Using Trigonometry – **GEO.G.SRT.8**
- Lesson 5 – Applying Right Triangle Trigonometry – **GEO.G.SRT.8**
- Lesson 6 – More Applications of Trigonometry – **GEO.G.SRT.8**
- Lesson 7 – The Area Formula of a Triangle – **GEO.G.SRT.8, GEO.G.SRT.9**
- Lesson 8 – The Special Right Triangles – **GEO.G.SRT.8, GEO.G.SRT.9**
- Unit 8 – Right Triangle Trigonometry – Unit Review

UNIT #9 – CIRCLE GEOMETRY 445

- Lesson 1 – Circle Terminology – **GEO.G.C.2(a)**
- Lesson 2 – Inscribed Angles – **GEO.G.C.2(a)**
- Lesson 3 – More Work with Inscribed Angles – **GEO.G.C.2(a)**
- Lesson 4 – Intersecting Chords – **GEO.G.C.2(a), GEO.G.C.2(b)**
- Lesson 5 – Tangents to Circles – **GEO.G.C.2(a), GEO.G.C.2(b)**
- Lesson 6 – Tangents, Secants, and Their Angles – **GEO.G.C.2(a)**
- Lesson 7 – Tangent and Secant Proofs and Practice – **GEO.G.C.2(a)**
- Lesson 8 – Secant and Tangent Lengths – **GEO.G.C.2(b)**
- Lesson 9 – Equations of Circles – **GEO.G.GPE.1(a), GEO.G.GPE.1(b)**
- Lesson 10 – Placing a Circle in Standard Form – **GEO.G.GPE.1(a), GEO.G.GPE.1(b)**
- Lesson 11 – Constructing Tangents – **(+) GEO.G.C.4**
- Lesson 12 – Equations of Tangent Lines – **GEO.G.C.2(b), GEO.G.GPE.5(c)**
- Unit 9 – Circle Geometry – Unit Review



UNIT #10 – GEOMETRIC MEASUREMENT AND MODELING 507

- Lesson 1 – Perimeter – **GEO.G.GPE.7**
- Lesson 2 – The Circumference of a Circle – **GEO.G.SRT.9, GEO.G.GMD.1**
- Lesson 3 – The Areas of Polygons – **GEO.G.GPE.7, GEO.G.SRT.9**
- Lesson 4 – Areas of Similar Figures – **GEO.G.GPE.7**
- Lesson 5 – The Area of a Circle – **GEO.G.SRT.9, GEO.G.MG.1**
- Lesson 6 – Exploring the Circle Area Formula (No Homework Assignment) – **GEO.G.GMD.1, GEO.G.C.1**
- Lesson 7 – Sectors of Circles – **GEO.G.C.5**
- Lesson 8 – Solids and Their Cross Sections – **GEO.G.GMD.4**
- Lesson 9 – Volumes of Right Prisms and Cylinders – **GEO.G.GMD.1, GEO.G.GMD.3, GEO.G.MG.1, GEO.G.MG.3**
- Lesson 10 – Volumes of Pyramids and Cones – **GEO.G.GMD.1, GEO.G.GMD.3, GEO.G.MG.1, GEO.G.MG.3**
- Lesson 11 – Spheres – **GEO.G.GMD.3, GEO.G.MG.1, GEO.G.MG.3**
- Lesson 12 – Density – **GEO.G.MG.1, GEO.G.MG.2, GEO.G.MG.3**
- Lesson 13 – Geometric Modeling – **GEO.G.MG.1, GEO.G.MG.2, GEO.G.MG.3**
- Unit 10 – Geometric Measurement and Modeling – Unit Review

