

N-GEN MATH[®] 8

(WITH NGMLS ALIGNMENT)

BY KIRK WEILER

UNIT #1 – THE ALGEBRA OF ONE VARIABLE..... 11

- Lesson 1 – Operations with Signed Numbers – **MP.1, MP.4, MP.6, MP.7**
- Lesson 2 – Variables and Expressions – **MP.1, MP.4, MP.6, MP.7**
- Lesson 3 – Combining Like Terms – **MP.1, MP.4, MP.6, MP.7**
- Lesson 4 – Solving Two-Step Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 5 – More Work with Two-Step Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 6 – Solving Equations with Variables on Both Sides – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 7 – More Work with Variables on Both Sides – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 8 – Modeling with Linear Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 9 – More Modeling with Linear Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 10 – Identities and Inconsistent Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.a, 8.EE.7.b**



UNIT #2 – TOOLS OF GEOMETRY 63

- Lesson 1 – Starting Concepts in Geometry – **MP.1, MP.4, MP.7**
- Lesson 2 – Angles and Their Measures – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 3 – Angle Pairs – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**
- Lesson 4 – Geometric Terminology – **MP.1, MP.4, MP.5, MP.7**
- Lesson 5 – Parallel Lines – **MP.1, MP.4, MP.5, MP.7, 8.G.5**
- Lesson 6 – More Work with Parallel Lines – **MP.1, MP.4, MP.5, MP.7, 8.EE.7.b**
- Lesson 7 – Geometry with Coordinates – **MP.1, MP.4, MP.7**
- Lesson 8 – Congruent Figures – **MP.1, MP.4, MP.5, MP.7, 8.G.1.a, 8.G.1.b, 8.G.2**
- Lesson 9 – Congruent Triangles – **MP.1, MP.4, MP.5, MP.7, 8.G.1.a, 8.G.1.b, 8.G.2**

UNIT #3 – TRANSFORMATIONS 111

- Lesson 1 – Introduction to Transformations – **MP.1, MP.4, MP.7, 8.G.1.a, 8.G.1.b, 8.G.3**
- Lesson 2 – Reflections – **MP.1, MP.4, MP.7, 8.G.1.a, 8.G.1.b**
- Lesson 3 – Horizontal and Vertical Lines in the Coordinate Plane – **MP.1, MP.4, MP.7**
- Lesson 4 – Reflections in the Coordinate Plane – **MP.1, MP.4, MP.7, 8.G.1.c, 8.G.3**
- Lesson 5 – Rotations – **MP.1, MP.4, MP.7, 8.G.1.a, 8.G.1.b**
- Lesson 6 – Rotations in the Coordinate Plane – **MP.1, MP.4, MP.7, 8.G.3**
- Lesson 7 – Translations – **MP.1, MP.4, MP.7, 8.G.1.a, 8.G.1.b, 8.G.1.c**
- Lesson 8 – Translations in the Coordinate Plane – **MP.1, MP.4, MP.7, 8.G.3**



- Lesson 9 – Transformations and Congruent Figures – **MP.1, MP.4, MP.7, 8.G.3**
- Lesson 10 – Rigid Motions and Parallel Lines – **MP.1, MP.4, MP.7, 8.G.5**
- Lesson 11 – Angle Sums in a Triangle – **MP.1, MP.4, MP.7, 8.G.5**
- Lesson 12 – Exterior Angles of a Triangle – **MP.1, MP.4, MP.7, 8.G.5**
- Lesson 13 – Isosceles Triangles – **MP.1, MP.4, MP.7, 8.G.5**
- Lesson 14 – Using Algebra to Model Geometry – **MP.1, MP.4, MP.6, MP.7, 8.EE.7.b**

UNIT #4 – SIMILARITY AND DILATIONS 179

- Lesson 1 – Proportional Variables – **MP.1, MP.4, MP.7**
- Lesson 2 – Introduction to Dilations – **MP.1, MP.4, MP.7**
- Lesson 3 – More Work with Dilations – **MP.1, MP.4, MP.7**
- Lesson 4 – Dilations in the Coordinate Plane – **MP.1, MP.4, MP.7, 8.G.3, 8.G.4**
- Lesson 5 – Similar Figures – **MP.1, MP.4, MP.6, MP.7, 8.G.3, 8.G.4**
- Lesson 6 – More Work with Similar Figures – **MP.1, MP.4, MP.6, MP.7, 8.G.3, 8.G.4, 8.EE.7.b**
- Lesson 7 – Mapping Similarity – **MP.1, MP.4, MP.6, MP.7, 8.G.3, 8.G.4**
- Lesson 8 – The Angle-Angle Criterion for Similar Triangles – **MP.1, MP.4, MP.6, MP.7, 8.G.3, 8.G.4, 8.G.5**
- Lesson 9 – Similar Triangles and Parallel Lines – **MP.1, MP.4, MP.6, MP.7, 8.G.3, 8.G.4, 8.G.5**

UNIT #5 – EQUATIONS OF LINES 225

- Lesson 1 – Proportional Relationships – **MP.1, MP.4, MP.7, 8.EE.5**
- Lesson 2 – More Work with Proportional Relationships – **MP.1, MP.4, MP.6, MP.7, 8.EE.5**



- Lesson 3 – Slope and Similarity – **MP.1, MP.4, MP.7, 8.EE.5, 8.EE.6, 8.G.4**
- Lesson 4 – Equations of Lines – **MP.1, MP.4, MP.7, 8.EE.5, 8.EE.6, 8.F.4**
- Lesson 5 – Slopes and Negative Numbers – **MP.1, MP.4, MP.7, 8.EE.5, 8.EE.6, 8.F.4**
- Lesson 6 – More Work with Equations of Lines – **MP.1, MP.4, MP.7, 8.EE.5, 8.EE.6, 8.F.3**
- Lesson 7 – Finding the Slope of a Line – **MP.1, MP.4, MP.7, 8.EE.5, 8.F.3, 8.F.4**
- Lesson 8 – Systems of Equations – **MP.1, MP.4, MP.7, 8.EE.8.a, 8.EE.8.b**
- Lesson 9 – Solving Systems of Equations Algebraically – **MP.1, MP.4, MP.7, 8.EE.8.a, 8.EE.8.b**
- Lesson 10 – Parallel Lines in the Coordinate Plane – **MP.1, MP.4, MP.7, 8.EE.8.a, 8.EE.8.b**

UNIT #6 – FUNCTIONS 277

- Lesson 1 – Introduction to Functions – **MP.1, MP.4, MP.7, 8.F.1**
- Lesson 2 – Features of Functions – **MP.1, MP.4, MP.7, 8.F.1, 8.F.2**
- Lesson 3 – Average Rate of Change – **MP.1, MP.4, MP.7, 8.F.2, 8.F.5**
- Lesson 4 – Linear Functions – **MP.1, MP.4, MP.7, 8.EE.6, 8.F.3, 8.F.4**
- Lesson 5 – More Work with Linear Functions – **MP.1, MP.4, MP.7, 8.EE.6, 8.F.3, 8.F.4**
- Lesson 6 – Non-Linear Functions – **MP.1, MP.4, MP.7, 8.F.3**
- Lesson 7 – Scatter Plots and Lines of Best Fit – **MP.1, MP.4, MP.7, 8.SP.1, 8.SP.2, 8.SP.3**
- Lesson 8 – More Work with Lines of Best Fit – **MP.1, MP.4, MP.7, 8.SP.1, 8.SP.2, 8.SP.3**
- Lesson 9 – The Strength of a Linear Fit – **MP.1, MP.4, MP.7, 8.SP.1, 8.SP.2, 8.SP.3**



UNIT #7 – EXPONENTS AND ROOTS 325

- Lesson 1 – Exponents – **MP.1, MP.4, MP.7, 8.EE.1**
- Lesson 2 – More Properties of Exponents – **MP.1, MP.4, MP.7, 8.EE.1**
- Lesson 3 – Simplifying Fractions – **MP.1, MP.4, MP.7, 8.EE.1**
- Lesson 4 – Negative and Zero Exponents – **MP.1, MP.4, MP.7, 8.EE.1**
- Lesson 5 – Exponent Practice – **MP.1, MP.4, MP.7, 8.EE.1**
- Lesson 6 – Square Roots – **MP.1, MP.4, MP.7, 8.NS.2, 8.EE.2**
- Lesson 7 – More Work with Square Roots – **MP.1, MP.4, MP.7, 8.NS.1, 8.NS.2, 8.EE.2**
- Lesson 8 – Cube Roots – **MP.1, MP.4, MP.7, .NS.1, 8.NS.2, 8.EE.2**

UNIT #8 – THE PYTHAGOREAN THEOREM 365

- Lesson 1 – The Pythagorean Theorem – **MP.1, MP.4, MP.5, MP.7, 8.G.7**
- Lesson 2 – The Pythagorean Theorem and Its Converse – **MP.1, MP.4, MP.5, MP.7, 8.G.7**
- Lesson 3 – Applying the Pythagorean Theorem – **MP.1, MP.4, MP.5, MP.6, MP.7, 8.G.7**
- Lesson 4 – Distance in the Coordinate Plane – **MP.1, MP.4, MP.5, MP.6, MP.7, 8.G.7, 8.G.8**
- Lesson 5 – Understanding the Pythagorean Theorem – **MP.1, MP.4, MP.7, 8.G.6**

UNIT #9 – VOLUME AND SURFACE AREA OF SOLIDS..... 397

- Lesson 1 – Volume and Surface Area of Prisms – **MP.1, MP.4, MP.5, MP.6**
- Lesson 2 – The Circumference and Area of a Circle – **MP.1, MP.4, MP.5, MP.6**
- Lesson 3 – Cylinders and Their Volumes – **MP.1, MP.4, MP.5, MP.6, 8.G.9**



- Lesson 4 – The Surface Area of a Cylinder – **MP.1, MP.4, MP.5, MP.6,**
- Lesson 5 – Cones and Their Volumes – **MP.1, MP.4, MP.5, MP.6, 8.G.9**
- Lesson 6 – Spheres – **MP.1, MP.4, MP.5, MP.6, 8.G.9**

UNIT #10 – SCIENTIFIC NOTATION 431

- Lesson 1 – Multiplying by Integer Powers of 10 – **MP.1, MP.4, MP.6, MP.7, 8.EE.1**
- Lesson 2 – Scientific Notation – **MP.1, MP.4, MP.6, MP.7, 8.EE.1, 8.EE.3, 8.EE.4**
- Lesson 3 – Operations with Numbers in Scientific Notation – **MP.1, MP.4, MP.6, MP.7, 8.EE.1, 8.EE.3, 8.EE.4**
- Lesson 4 – Scientific Notation on the Calculator – **MP.1, MP.4, MP.6, MP.7, 8.EE.1, 8.EE.3, 8.EE.4**
- Lesson 5 – Applications of Scientific Notation – **MP.1, MP.4, MP.5, MP.6, 8.EE.1, 8.EE.3, 8.EE.4**

UNIT #11 – SYSTEMS OF EQUATIONS 459

- Lesson 1 – Systems of Equations (Revisited) – **MP.1, MP.4, MP.7, 8.EE.8.a, 8.EE.8.b,**
- Lesson 2 – Solving Systems by Substitution – **MP.1, MP.4, MP.6, MP.7, 8.EE.8.a, 8.EE.8.b, 8.EE.8.c**
- Lesson 3 – Solving Systems by Elimination – **MP.1, MP.4, MP.6, MP.7, 8.EE.8.a, 8.EE.8.b**
- Lesson 4 – Modeling with Systems of Equations – **MP.1, MP.4, MP.6, MP.7, 8.EE.8.a, 8.EE.8.b, 8.EE.8.c**

