

N-GEN MATHTM 8

BY KIRK WEILER

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

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

UNIT #2 – TOOLS OF GEOMETRY 63

- Lesson 1 – Starting Concepts in Geometry
- Lesson 2 – Angles and Their Measures
- Lesson 3 – Angle Pairs
- Lesson 4 – Geometric Terminology
- Lesson 5 – Parallel Lines
- Lesson 6 – More Work with Parallel Lines
- Lesson 7 – Geometry with Coordinates



UNIT #2 – TOOLS OF GEOMETRY (CONT.)..... 63

- Lesson 8 – Congruent Figures
- Lesson 9 – Congruent Triangles

UNIT #3 – TRANSFORMATIONS 111

- Lesson 1 – Introduction to Transformations
- Lesson 2 – Reflections
- Lesson 3 – Horizontal and Vertical Lines in the Coordinate Plane
- Lesson 4 – Reflections in the Coordinate Plane
- Lesson 5 – Rotations
- Lesson 6 – Rotations in the Coordinate Plane
- Lesson 7 – Translations
- Lesson 8 – Translations in the Coordinate Plane
- Lesson 9 – Transformations and Congruent Figures
- Lesson 10 – Rigid Motions and Parallel Lines
- Lesson 11 – Angle Sums in a Triangle
- Lesson 12 – Exterior Angles of a Triangle
- Lesson 13 – Isosceles Triangles
- Lesson 14 – Using Algebra to Model Geometry

UNIT #4 – SIMILARITY AND DILATIONS 179

- Lesson 1 – Proportional Variables
- Lesson 2 – Introduction to Dilations
- Lesson 3 – More Work with Dilations
- Lesson 4 – Dilations in the Coordinate Plane



UNIT #4 – SIMILARITY AND DILATIONS (CONTINUED) 179

- Lesson 5 – Similar Figures
- Lesson 6 – More Work with Similar Figures
- Lesson 7 – Mapping Similarity
- Lesson 8 – The Angle-Angle Criterion for Similar Triangles
- Lesson 9 – Similar Triangles and Parallel Lines

UNIT #5 – EQUATIONS OF LINES 225

- Lesson 1 – Proportional Relationships
- Lesson 2 – More Work with Proportional Relationships
- Lesson 3 – Slope and Similarity
- Lesson 4 – Equations of Lines
- Lesson 5 – Slopes and Negative Numbers
- Lesson 6 – More Work with Equations of Lines
- Lesson 7 – Finding the Slope of a Line
- Lesson 8 – Systems of Equations
- Lesson 9 – Solving Systems of Equations Algebraically
- Lesson 10 – Parallel Lines in the Coordinate Plane

UNIT #6 – FUNCTIONS 277

- Lesson 1 – Introduction to Functions
- Lesson 2 – Features of Functions
- Lesson 3 – Average Rate of Change
- Lesson 4 – Linear Functions
- Lesson 5 – More Work with Linear Functions
- Lesson 6 – Non-Linear Functions



UNIT #6 – FUNCTIONS (CONTINUED)..... 277

- Lesson 7 – Scatter Plots and Lines of Best Fit
- Lesson 8 – More Work with Lines of Best Fit
- Lesson 9 – The Strength of a Linear Fit

UNIT #7 – EXPONENTS AND ROOTS 325

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

UNIT #8 – THE PYTHAGOREAN THEOREM 365

- Lesson 1 – The Pythagorean Theorem
- Lesson 2 – The Pythagorean Theorem and Its Converse
- Lesson 3 – Applying the Pythagorean Theorem
- Lesson 4 – Distance in the Coordinate Plane
- Lesson 5 – Understanding the Pythagorean Theorem



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

- Lesson 1 – Volume and Surface Area of Prisms
- Lesson 2 – The Circumference and Area of a Circle
- Lesson 3 – Cylinders and Their Volumes
- Lesson 4 – The Surface Area of a Cylinder
- Lesson 5 – Cones and Their Volumes
- Lesson 6 – Spheres

UNIT #10 – SCIENTIFIC NOTATION 431

- Lesson 1 – Multiplying by Powers of 10
- Lesson 2 – Scientific Notation
- Lesson 3 – Operations with Numbers in Scientific Notation
- Lesson 4 – Scientific Notation on the Calculator
- Lesson 5 – Applications of Scientific Notation

UNIT #11 – SYSTEMS OF EQUATIONS 459

- Lesson 1 – Systems of Equations (Revisited)
- Lesson 2 – Solving Systems by Substitution
- Lesson 3 – Solving Systems by Elimination
- Lesson 4 – Modeling with Systems of Equations



