

**Correlation of the Understanding Math 2008© Programs
 With the Next Generation Sunshine State Standards for Mathematics
 Grade: 8**

The Understanding Math 2008© series of programs consists of the following nine programs written for fourth to tenth grade:

Understanding Whole Numbers and Integers
Understanding Measurement and Geometry
Understanding Fractions
Understanding Graphing
Understanding Percent

Understanding Equations
Understanding Probability
Understanding Algebra
Understanding Exponents

The programs are designed for use in a variety of teaching and learning environments ranging from a teacher-centered approach with one computer to a student-centered lab approach. The lessons may also be used in remediation, tutorials, intervention, resource, and fast tracking.

Each program contains several sections with several topics. Every topic has the following:

- 1) an interactive concept introduction, usually with a variety of graphic approaches;
- 2) a number of particular examples;
- 3) practice questions with random questions, but specific feedback;
- 4) a topic test with random questions and tracking;
- 5) on-line worksheets selected from our website (www.neufeldmath.com).

Each of the Big Ideas and Support Ideas have been correlated to the Understanding Math 2008© programs and lessons. The page numbers where each Idea may be found is listed below:

Big Idea 1	(pages 2 - 4)
Big Idea 2	(pages 4 - 5)
Big Idea 3	(pages 6 - 6)
Supporting Idea 4 Algebra	(pages 7 - 7)
Supporting Idea 5 Geometry and Measurement	(pages 7 - 8)
Supporting Idea 6 Number and Operations	(pages 8 - 10)

Ideas that are ***not included*** in the current Understanding Math 2008© programs are noted in the Understanding Math 2008© Program/Sections/Lessons column as *not yet correlated*.

For lesson planning purposes, there is space in the chart for notes, material lists, links, resources etc.

MA.8.A.1.3 Use tables, graphs, and models to represent, analyze, and solve real-world problems related to systems of linear equations.		
	<p>Understanding Graphing 2008</p> <p>Section 8: Equation of a Straight Line</p> <p>Points of Intersection of 2 Lines</p> <p>Example 1 Example 2</p> <p>Understanding Equations 2008</p> <p>Section 6: Solving Linear Systems</p> <p>About This Topic</p> <p>The Meaning of a Linear System</p> <p>The Meaning of Solving a Linear System</p> <p>Solving a Linear System by Graphing</p> <p>Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines</p> <p>Solving Problems Using Linear Systems</p> <p>Example 1- Beginning of Question Example 1- Draw Graph Example 2- Beginning of Question Example 2- Draw Graph</p>	<p>Notes</p> <p>Notes</p>
MA.8.A.1.4 Identify the solution to a system of linear equations using graphs.		
	<p>Understanding Graphing 2008</p> <p>Section 8: Equation of a Straight Line</p> <p>Points of Intersection of 2 Lines</p> <p>Example 1 Example 2</p> <p>Understanding Equations 2008</p> <p>Section 6: Solving Linear Systems</p> <p>About This Topic</p> <p>The Meaning of a Linear System</p> <p>The Meaning of Solving a Linear System</p> <p>Solving a Linear System by Graphing</p> <p>Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines</p> <p>Solving Problems Using Linear Systems</p> <p>Example 1- Beginning of Question Example 1- Draw Graph Example 2- Beginning of Question Example 2- Draw Graph</p>	<p>Notes</p> <p>Notes</p>



MA.8.G.2.3 Demonstrate that the sum of the angles in a triangle is 180-degrees and apply this fact to find unknown measure of angles and the sum of angles in polygons.

		Notes
	<p>Understanding Measurement and Geometry 2008</p> <p>Section 6: Angles and Polygons</p> <p>Angles in Triangles</p> <p>Angles in Polygons</p>	<p>Exploration</p> <p>An Explanation</p> <p>Exterior Angles</p> <p>Example</p> <p>Method 1</p> <p>Method 2</p>

MA.8.G.2.4 Validate and apply Pythagorean Theorem to find distances in real world situations or between points in the coordinate plane.

		Notes
	<p>Understanding Exponents 2008</p> <p>Section 6: Pythagorean Theorem</p> <p>In This Topic</p> <p>The Right Triangle</p> <p>Math or Magic?</p> <p>Squares on a Grid</p> <p>Squares on the Sides of a Right Triangle</p> <p>The Pythagorean Theorem</p> <p>Example Questions</p> <p>Practice Questions</p>	<p>Introduction</p> <p>Omar's Rope Trick #1</p> <p>Omar's Rope Trick #2</p> <p>Our Rope Trick</p> <p>Example 1</p> <p>Example 2</p> <p>Example 3</p> <p>Example 4</p> <p>Triangle #1</p> <p>Triangle #2</p> <p>Triangle #3</p> <p>The Pattern</p> <p>In General</p> <p>Theorem</p> <p>Example 1... Pole Example</p> <p>Example 2... Tower Example</p> <p>Example 3... Walking Example</p> <p>Example 4... Lake Example</p> <p>Example 5... Geometric Example</p> <p>5 questions (randomly generated)</p>



BIG IDEA 3 - Analyze and summarize data sets.

MA.8.S.3.1 Select, organize and construct appropriate data displays, including box and whisker plots, scatter plots, and lines of best fit to convey information and make conjectures about possible relationships.

<p>Understanding Graphing 2008 Section 2: Statistics Presenting Data</p>	<p>Stem and Leaf Diagram- Example 1... Age of Fans Stem and Leaf Diagram- Example 2... Height of Students Bar Graph- Example 1... Energy Bar Graph- Example 2... Lengths of Rivers Histogram- Example 1... Height of Students Histogram- Example 2... Roll of Die Line Graph- Example 1... Life Expectancy Line Graph- Example 2... Software Profits Circle or Pie Graphs- Example 1... The Radio Station Circle or Pie Graphs- Example 2... Heath Survey Scatter Plot- Example 1... The T-Shirt Tailor Scatter Plot- Example 2... Matching</p>	<p>Notes</p>
<p>Box and Whisker Plot</p> <p>Understanding Graphing 2008 Section 6: Linear Relations Line of Best Fit</p>	<p>Concepts Example1: Math Marks Example 2: Income in 1998</p> <p>Example 1 Example 2</p>	<p>Notes</p>

MA.8.S.3.2 Determine and describe how changes in data values impact measures of central tendency.

<p>Understanding Graphing 2008 Section 2: Statistics Measures of Central Tendency</p>	<p>Introduction The Mean Average The Median Average The Mode Summary Another Example Adding Data Points</p>	<p>Notes</p>
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Supporting Idea 4: Algebra

MA.8.A.4.1 Solve literal equations for a specified variable.

		Notes
	Understanding Equations 2008 Section 4: Solving Multi-Step Equations Literal Equations	What Are They? How Do You Solve Them? Why Solve the Literal Equation? A Perimeter Example A Temperature Example

MA.8.A.4.2 Solve and graph one- and two-step inequalities in one variable.

		Notes
	Understanding Equations 2008 Section 7: Solving Inequalities Inequalities	What Are They? Inequalities vs. Equations Summary of Relationships
	Inequalities on a Number Line	Example 1 Example 2 Example 3 Example 4
	Solving Inequalities	Example 1 Example 2 Example 3 Example 4 Example 5
	Solving Compound Inequalities	Example 6 Example 1 Example 2

Supporting Idea 5: Geometry and Measurement

MA.8.G.5.1 Compare, contrast, and convert units of measure between different measurement systems (US customary or metric (SI)) and dimensions including temperature, area, volume, and derived units to solve problems.

		Notes
	Understanding Measurement and Geometry 2008 Section 1: An Introduction to Measurement Metric Conversions - Length	Introduction - Off Computer Understanding Metric Prefixes Metric Prefixes at Work Metric Match - Introduction Metric Match - Examples- 3 questions (randomly generated) Converting



	US Standard Conversions - Length Benchmarks - Metric Benchmarks - US Standard My Body - Metric and US Standard Rudy's Run Metric and US Standard Practice Questions	Introduction - Off Computer Converting Introduction Examples- 4 questions (randomly generated) Introduction Practice- 4 questions (randomly generated) Metric- 10 questions (randomly generated) US Standard- 10 questions (randomly generated)
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Supporting Idea 6: Number and Operations

MA.8.A.6.1 Use exponents and scientific notation to write large and small numbers and vice versa and to solve problems.

	Understanding Exponents 2008 Section 4: Scientific Notation Why Use Scientific Notation? Scientific Notation for Large Numbers Scientific Notation for Small Numbers Examples Practice Questions	Notes Introduction Chart The Rule The Steps Introduction Chart Steps Number Question Park Question Sun Question Kitchen Question 5 questions (randomly generated)
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MA.8.A.6.2 Make reasonable approximations of square roots and mathematical expressions that include square roots, and use them to estimate solutions to problems and to compare mathematical expressions involving real numbers and radical expressions.

	Understanding Exponents 2008 Section 5 : Square Root Example Questions	Notes 1. Radicals First 2. The Four Equations 3. Lawn Questions 4. Make a Square
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	Estimating Square Roots	Example 1 Example 2
	Estimating Square Roots on the Number Line	
	Practice Questions	10 questions (randomly generated)

MA.8.A.6.3 Simplify real number expressions using the laws of exponents.

		Notes
	Understanding Exponents 2008	
	Section 3: Exponent Rules	
	In The Topic	
	Multiplication of Powers with the Same Base	Expanding the Exponents The Pattern In General
	Division of Powers with the Same Base	Expanding the Exponents The Pattern In General
	Raising a Power to an Exponent	Expanding the Exponents The Pattern In General
	Raising a Product to an Exponent	Expand the Exponent In General
	A Power with Exponent 0	Explanation with b Explanation with a Summary
	A Power with a NEGATIVE Exponent	Method 1 - Explanation with b Method 1 - Explanation with k Method - Bacteria Doubling Summary
	Summary of Exponent Rules	
	Example Questions	Example 1 Example 2 Example 3 Example 4 Example 5 Example 6 Example 7 Example 8 Example 9 Example 10 Example 11



MA.8.A.6.4 Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, and irrational numbers) using multi-step and real world problems.

<p>Understanding Percent 2008 Section 6: Problems Involving Percent Steps in Solving Problems Finding The Percent Percent of a Number</p>	<p>Theatre Example Earnings Example Nickel Ore Example</p>	<p>Notes</p>
<p>Understanding Exponents 2008 Section 2 : Exponents in Formulas Examples with Area Formulas</p>	<p>Example 1 Example 2</p>	<p>Notes</p>

