

Math Pacing Guide - Grade 8 (2009-2010)

Revised June 2009

Suggested Time Frame	Goal	Objectives	Suggested Sample Activities/ Resources
<p>1st Quarter</p> <p>Algebra Foundations, Integers and Exponents</p> <p>(Essential Emphasis- Equations, Integers, and rational numbers)</p> <p>18 Days</p>	<p>(Goal 1) The learner will understand and compute with real numbers. (10 - 15% of EOG)</p> <p>(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)</p> <p>(Goal 4) The learner will understand and use graphs and data analysis. (20 - 25% of EOG)</p>	<p>1.01 Develop number sense for the real numbers. a. Define and use irrational numbers. b. Compare and order.</p> <p>1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.</p> <p>5.01 Develop an understanding of function. a. Translate among verbal, tabular, graphic, and algebraic representations of functions</p> <p>5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.</p> <p>5.04 Solve equations using the inverse relationships of addition and subtraction, multiplication and division, squares and square roots, and cubes and cube roots.</p> <p>4.01 Collect, organize, analyze, and display data (including scatter plots) to solve problem.</p>	<ul style="list-style-type: none"> • Math Tiles • Graphic organizer of real number system • Superstars • http://www.ncpublicschools.org/publications/ • Week by Week Essentials • http://community.learnnc.org/dpi/math/archives/2005/06/grades_68_resou.php • NAEP examples • Hotmath.com • Text Chapter 1 • Text Chapter 2 (Omit section 2-8) • Collect class data (ex: age, heart rate, height, etc. • ClassScope • NC Math Resource Book

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<p>Real Numbers and Solving Equations</p> <p>12 days</p>	<p>(Goal 1) The learner will understand and compute with real numbers. (10 - 15% of EOG)</p> <p>(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)</p> <p>Skills to Maintain</p>	<p>1.01 Develop number sense for the real numbers. a. Define and use irrational numbers. b. Compare and order. c. Use estimates of irrational numbers in appropriate situations.</p> <p>1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.</p> <p>5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.</p> <p>5.04 Solve equations using the inverse relationships of addition and subtraction, multiplication and division, squares and square roots, and cubes and cube roots.</p> <p>STBM: Factors and Multiples</p>	<ul style="list-style-type: none"> • Hands-On Equations • Menu Math (www.tttpress.com) • Number games • Index Cards (matching equations) • Graphing Calculators • Floor Graphs • Wall Graphs (Inequalities) • Text Chapter 3 (Rational #) • Kamico Instructional Grade 8

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<p>Collecting, Displaying, and Analyzing Data</p> <p>12 days</p>	<p>(Goal 1) The learner will understand and compute with real numbers. (10 - 15% of EOG)</p> <p>(Goal 4) The learner will understand and use graphs and data analysis. (20 - 25% of EOG)</p> <p>Skills to Maintain</p>	<p>1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.</p> <p>4.01 Collect, organize, analyze, and display data (including scatter plots) to solve problem.</p> <p>4.02 Approximate a line of best fit for a given scatter plot; explain the meaning of the line as it relates to the problem and make predictions.</p> <p>4.03 Identify misuses of statistical and numerical data.</p> <p>STBM: Box Plots and Histograms</p>	<ul style="list-style-type: none"> • Spaghetti for lines of best fit • Graphing Calculators for Scatter Plots and lines of fit • Text Chapter 4 (scatterplots) • NC Math Resource Book • http://community.learnnc.org/dp/i/math/archives/2005/06/grades_68_resou.php

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<p>2nd Quarter</p> <p>Geometry</p> <p>21 days</p> <p>(Essential Emphasis: Functions, Geometric Properties, Indirect Measurement, Dilations)</p>	<p>(Goal 1) The learner will understand and compute with real numbers. (10 - 15% of EOG)</p> <p>(Goal 2) The learner will understand and use measurement concepts. (10 - 15% of EOG)</p> <p>(Goal 3) The learner will understand and use properties and relationships in geometry. (10 - 15% of EOG)</p> <p>(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)</p> <p>Skills to Maintain</p>	<p>1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.</p> <p>2.01 Determine the effect on perimeter, area or volume when one or more dimensions of two and three-dimensional figures are changed.</p> <p>3.02 Apply geometric properties and relationships, including the Pythagorean theorem, to solve problems.</p> <p>5.01 Develop an understanding of function. c. Find, identify, and interpret the slope (rate of change) and Intercepts of a linear relation.</p> <p>STBM: Volume and Surface Area</p>	<ul style="list-style-type: none"> • Geometric solids • Graph paper squares • Scale drawings • Create 2-D and 3-D figures • Text Chapters 5 and 6 • (Omit sections 5-1, 5-6, 5-7, 5-8, 5-9, and 6-5) • ClassScape • NC Math Resource Book • http://community.learnnc.org/dp/math/archives/2005/06/grades_68_resou.php • Study Island • Kamico Instructional Grade 8

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<p>Ratios, Proportions Percents, and Probability</p> <p>30 days (6 days in 3rd quarter)</p>	<p>(Goal 1) The learner will understand and compute with real numbers. (10 - 15% of EOG)</p> <p>(Goal 2) The learner will understand and use measurement concepts. (10 - 15% of EOG)</p> <p>(Goal 3) The learner will understand and use properties and relationships in geometry. (10 - 15% of EOG)</p> <p>Skills to Maintain</p>	<p>1.01 Develop number sense for the real numbers. c. Use estimates of irrational numbers in appropriate situations.</p> <p>1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.</p> <p>2.02 Apply and use concepts of indirect measurement.</p> <p>3.01 Represent problem situations with geometric models.</p> <p>3.03 Identify, predict, and describe dilations in the coordinate plane.</p> <p>STBM: Ratio, Proportion, and Percent</p>	<ul style="list-style-type: none"> • Pattern Blocks (Lab 7A) • Graph Paper (Lab 7B) • Unifix cubes or cm cubes • Graphing Calculators • (Technology Lab Chapter 8) • Text Chapters 7-8 • NC Math Resource Book • http://community.learnnc.org/dp/math/archives/2005/06/grades_68_resou.php

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<p>3rd Quarter</p> <p>Equations and Inequalities</p> <p>20 Days</p> <p><u>(Essential Emphasis: Functions, Linear Equations and Inequalities, Slope)</u></p>	<p>(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)</p>	<p>5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.</p> <p>5.04 Solve equations using the inverse relationships of addition and subtraction, multiplication and division, squares and square roots, and cubes and cube roots.</p>	<ul style="list-style-type: none"> • Algebra Tiles • Graphing Calculators • Text Chapter 10 • ClassScape • NC Math Resource Book • http://community.learnnc.org/dpi/math/archives/2005/06grades_68_resou.php • Kamico Instructional Grade 8

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<p>Graphing Linear Equations</p> <p>20 Days</p>	<p>(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)</p>	<p>5.01 Develop an understanding of function.</p> <ol style="list-style-type: none"> Translate among verbal, tabular, graphic, and algebraic representations of functions. Identify relations and functions as linear or nonlinear. Find, identify, and interpret the slope (rate of change) and intercepts of a linear relation. Interpret and compare properties of linear functions from tables, graphs, or equations. <p>5.02 Write an equation of a linear relationship given: two points, the slope and one point on the line, or the slope and y-intercept.</p> <p>5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.</p>	<ul style="list-style-type: none"> • Algebra Tiles • Graphing Calculators • Text Chapter 11 • NC Math Resource Book • http://community.learnnc.org/dp/i/math/archives/2005/06/grades_68_resou.php

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4th Quarter Functions and Linear Functions 10 days <u>(Essential Emphasis: Linear Relationships, Slope, Rate of Change)</u>	(Goal 5) The learner will understand and use linear relations and functions. (35 - 40% of EOG)	5.01 Develop an understanding of function. a. Translate among verbal, tabular, graphic, and algebraic representations of functions. b. Identify relations and functions as linear or nonlinear. 5.02 Write an equation of a linear relationship given: two points, the slope and one point on the line, or the slope and y-intercept. 5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.	<ul style="list-style-type: none"> • Graphing Calculators • Text Chapter 12 • Sections 4 and 5 • ClassScape • NC Math Resource Book • http://community.learnnc.org/dp/i/math/archives/2005/06/grades_68_resou.php • Kamico Instructional Grade 8
10 Days	EOG Review		<ul style="list-style-type: none"> • DPI Website Sample EOG Items • http://www.ncpublicschools.org/accountability/testing/eog/sampleitems/newcurmath8

Useful Web Portal for 8th Grade Math Concepts: <http://www.kn.pacbell.com/wired/bluewebn/>

Use the 3 weeks after EOGs to enrich and enhance the math curriculum. Consider using “mini projects” that integrate math with students’ interests/other subject areas.