



Math Curriculum Guide: Eighth Grade

Revised for 2008-2009

INTRODUCTION:

This Curriculum Guide is an evolving document that will serve teachers in all of our eighth grade math classrooms. Our own teachers, working with a variety of resources, constructed the sequence to accompany the Glencoe textbooks adopted in 2005. We look forward to your comments and suggestions for improvement as we work together to provide the best possible educational experience for children in the Lynchburg City Schools.

When one views a curriculum sequence like this one, it is critical that the listing not be interpreted to mean that each topic should be taught only once. Rather, the introduction of that topic should occur before or within the given six weeks, and a major focus during that time would be to address those specific SOL.

As educators, we recognize that it is unrealistic to think that these topics can be taught and mastered in a day or even a week. A sound educational approach involves weaving the math SOL throughout the school year and into other subject matter as well. To truly understand and be able to demonstrate mastery of the math SOL, students need to experience the SOL content spiraled throughout the curriculum at appropriate cognitive levels during the entire school year.

As you use this guide, periodically send your comments and suggestions for improvement to Patty West at westpl@lcsedu.net .

Thank you for all that you do for our children and for your fellow educators.

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1 st Six Weeks SOL Objectives	Textbook References
8.1 Simplify numerical expressions involving positive exponents, order of operations and properties of operations with real numbers	Ch 1 Integers 1.2 Variables, expressions and properties 1.3 Integers and absolute value 1.4-1.6(+,-,x, /) integers 1.7 writing expressions and equations
8.4 Apply the order of operations to evaluate algebraic expressions for given values of the variable	
8.1 Compare and order fractions, decimals, percents and numbers written in scientific notation	Ch 2 Algebra: Rational Numbers 2.1 Fractions and decimals 2.2 Comparing and ordering rational numbers 2.3-2.4 x, / rational numbers 2.5-2.6 +, - like and unlike fractions 2.8 Powers and exponents 2.9 Scientific notation
8.3 Solve practical problems involving rational numbers	
NOTES: Students will need to be introduced to the scientific calculator during this six weeks period.	
2 nd Six Weeks SOL Objectives	Textbook References
8.10 Verify and use Pythagorean Theorem	Ch 3 Real Numbers and the Pythagorean Theorem 3.1 -3.2 Square roots 3.3 Real Number System 3.4 -3.5 Pythagorean Theorem http://www.shodor.org/interactivate/activities/SquaringTheTriangle/
8.2 The Real Number System	
8.1 Properties of operations with Real Numbers	
8.5 Identify perfect squares and approximate the value of square roots	
8.17 Solve problems using proportions, formulas, & functions	Ch 4 Proportions, Algebra and Geometry 4.1 Ratios and rates 4.4 solving proportions 4.5 Similar polygons and golden rect. 4.6 Scale drawings and models 4.7 Indirect measurement Ch 6.5 Congruent polygons
8.3 Solve practical problems involving rational numbers, ratios, proportions and percents	Ch 5 Percents 5.1-5.2 Ratios, fractions, decimals 5.3-5.4 percent proportion 5.5 Percent and estimation 5.6 Percent equation 5.8 Simple interest*
NOTES: * Only simple interest will be tested on the 8 th grade SOL test.	

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3 rd Six Weeks SOL Objectives	Textbook References
8.4 Apply the order of operations to evaluate algebraic expressions for given values of the variable	Ch 1.8-1.9 Solving equations
8.15 Solve two-step equations and inequalities in one variable using concrete materials, pictorial representations and paper and pencil.	Ch 2 2.7 Solving equations with rational numbers Ch 10 * Algebra: More Equations and Inequalities 10.1 Simplifying algebraic expression 10.2-10.3 Solving and writing 2-step equations 10.5-10.7 Inequalities
8.16 Graph a linear equation in two variables in a coordinate plane	http://www.shodor.org/interactivate/activities/OrderedSimplePlot/ Ch 11 Algebra: Linear Functions 11.1 Sequences 11.2-11.3 Functions and graphing functions 11.5 **Slope-intercept form http://www.shodor.org/interactivate/activities/WholeNumberCruncher/
8.18 Use the algebraic terms: <i>domain</i> , <i>range</i> , <i>independent variable</i> and <i>dependent variable</i> .	
8.14 Describe and represent relations and functions using tables, graphs, and rules	
8.17 Solve problems using proportions, formulas, & functions	
NOTES: * Hands-on-Equations SmartBoard Activity is available in the Math Resource Folders. ** Although slope is not part of the 8 th grade Standards, students are expected to identify the equation of a linear graph and vice versa on the SOL test. The easiest way to do that is with the slope-intercept form of the equation.	
4 th Six Weeks SOL Objectives	Textbook References
8.11 Analyze problem situations, such as games of chance, board games, or grading scales, and make predictions using knowledge of probability	Ch 8 Probability 8.1 Probability and simple events 8.2 Counting outcomes 8.6 – 8.7 Experimental probability/sampling
8.12 Use information displayed in line, bar, circle, and picture graphs, frequency distributions, box-and-whiskers plots, scattergrams and histograms to make comparison, predictions, and inferences	Ch 9 Statistics and Matrices 9.1 Histograms 9.2 circle graphs 9.3 Choosing an appropriate display 9.4 Measures of central tendency 9.5 Measures of variation 9.6 Box-and-whiskers plots 9.7 Misleading graphs and statistics 9.8 Matrices
8.13 Use a matrix to organize and describe data	
8.12 Use information displayed in scattergrams to make comparison, predictions, and inferences	Ch 11.6 scatter plots
NOTES:	

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5 th Six Weeks SOL Objectives	Textbook References
8.6 Vertical, supplementary, and complementary angles and measure and draw angles	Ch 6 Geometry 6.1 Lines and angles http://www.shodor.org/interactivate/activities/Angles/ 6.4 Classifying quadrilaterals
8.17 Solve problems using proportions, formulas, & functions	Ch 7 Geometry: Measuring Area and Volume 7.1 Area of quadrilaterals, triangles, trapezoids* 7.2 Circumference and area of circles* (continue with Ch 7.4 - 7.8 if time allows)
7.7 *Estimate and find the area of polygons by subdividing; apply perimeter and area formulas in practical situations	
NOTES: * Review if needed.	
6 th Six Weeks SOL Objectives	Textbook References
8.9 Construct a 3-D model given a top, side, and/or bottom view of the figure.	Ch 7 Geometry: Measuring Area and Volume (cont'd) 7.4 3-D figures 7.5 - 7.6 Volume 7.7-7.8 surface area
8.7 Investigate and solve problems with surface area and volume	
8.8 Transformations and applications of transformations	Ch 6.7-6.9 Transformations http://www.shodor.org/interactivate/activities/Transmographer/ http://www.shodor.org/interactivate/activities/TransmographerTwo/ Ch 4.8 Dilations
8.15 Solve two-step equations and inequalities in one variable using concrete materials, pictorial representations and paper and pencil.	Ch 10.4 Solving equations with variables on both sides
Review for SOL test	
*A.1 Solve multi-step linear equations and inequalities in one variable; solve literal equations (formulas) for a given variable, and apply these skills to solve practical problems.	Ch 12 Nonlinear Functions and Polynomials
Using the Graphing Calculator	
NOTES: * To be taught after the SOL test. This will provide time to review the other five six weeks material for the test.	