

**2008 Revised North Carolina Course of Study Mathematics  
Correlated to**

**Academic Language Notebooks:  
The Language of Math Level C Learning System Kit**

**Grade 5**

Standards	Student Work Text	Student Vocabulary Cards Book	Teacher/Tutor Resource Binder
<b>Strands:</b>			
Number and Operations, Measurement, Geometry, Data Analysis and Probability, Algebra, Problem Solving and Reasoning			
<b>COMPETENCY GOAL 1:</b>			
The learner will build an understanding of and compute with non-negative rational numbers (.01 to at least 1,000,000).			
<b>Objectives</b>			
<b>1.01 Develop number sense for rational numbers from .01 to at least 100,000.</b>			
a. Demonstrate multiple ways to represent numbers using models, words and symbolic representations.			
b. Identify the place and the value of a given digit in order to determine the magnitude of the number.			
c. Compare and order (including the use of symbolic notation).			
d. Identify factors and multiples including square, prime, and composite whole numbers to 100.			
<b>1.02 Develop fluency and flexibility with all whole number operations (including, but not limited to, standard algorithms) involving:</b>			
a. up to three-digit by two-digit multiplication (larger numbers with calculators).			
b. up to three-digit by two-digit multiplication (larger numbers with calculators).			
c. estimation of products and quotients and justification of the reasonableness of solutions in meaningful contexts.			
d. analyzing the relationships among operations.			

<b>1.03 Develop fluency with addition and subtraction of decimals and fractions with unlike denominators (within fraction families):</b>			
-halves, fourths, eighths, sixteenths and mixed numbers;			
-thirds, sixths, twelfths and mixed numbers;			
-fifths, tenths, hundredths, thousandths and mixed numbers.			
a. Develop and analyze strategies for adding and subtracting numbers.			
b. Estimate sums and differences and justify the reasonableness of the solutions in meaningful contexts.			
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<b>COMPETENCY GOAL 2:</b>			
<b>The learner will develop fluency with standard units as they apply measurement concepts in multiple problem solving situations.</b>			
<b>Objectives</b>			
<b>2.01 Use appropriate standard units and tools to develop fluency and flexibility with unit conversions within same systems of measure; solve problems using these skills.</b>			
<b>2.02 Identify, estimate, and measure the angles of plane shapes using appropriate tools.</b>			

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2.03 Solve problems using the concepts and procedures involving elapsed time.			
<b>COMPETENCY GOAL 3:</b>			
The learner will understand and use properties and relationships of two- and three dimensional shapes.			
<b>Objectives</b>			
3.01 Identify, describe, analyze, compare, and classify triangles and quadrilaterals by properties including sides, angles and diagonals.			
3.02 Make and test conjectures about polygons involving:			
a. parallelism and perpendicularity of sides, and			
b. sum of measures of interior angles.			
3.03 Use spatial reasoning to analyze three-dimensional shapes.			
a. Describe the number of edges, faces, and vertices of polyhedra.			
b. Relate a three-dimensional shape to its two-dimensional representation (net).			
3.04 Explore concepts of volume and surface area for rectangular prisms.			
<b>COMPETENCY GOAL 4:</b>			
The learner will analyze data representations using statistical concepts.			
<b>Objectives</b>			
4.01 Use the process of statistical investigation.			
a. Pose questions, formulate hypotheses, and design studies involve single or multiple sets of data to investigate and verify hypotheses.			
b. Collect, organize, analyze, and display data using various representations, including stem-and-leaf plots.			
c. Analyze data using measures of center (mode, median) and variability (minimum and maximum values, unusual data points, and range).			
d. Explore the mean as a measure of center			

and its interpretation as a fair share.			
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<b>4.02 Compare and contrast different representations of the same data, discuss the appropriateness of each representation for the context.</b>			
<b>COMPETENCY GOAL 5:</b>			
<b>The learner will demonstrate an understanding of patterns, relationships and elementary algebraic representations.</b>			
<b>Objectives</b>			
<b>5.01 Analyze nonnumeric and numeric growing patterns.</b>			
a. Use rules to describe these patterns as functional relationships (arithmetic sequences only).			
b. Create, extend, and find missing terms.			
c. Display numeric results using coordinate graphs.			
d. Write equations with symbolic rules.			
<b>5.02 Model, write and evaluate whole number equations and equations involving addition/subtraction of decimals and fractions.</b>			
a. Represent a problem including using variables to represent unknown quantities.			
b. Demonstrate an understanding of equality and inequality.			
c. Find the value of variables.			
<b>5.03 Develop an understanding of and apply order of operations in meaningful contexts.</b>			
a. identity property for addition and multiplication,			
b. associative property for addition and multiplication, and			
c. distributive property.			
<b>5.04 Apply order of operations in meaningful contexts.</b>			
<b>COMPETENCY GOAL 6:</b>			
<b>The learner will make connections, solve problems and reason mathematically.</b>			
<b>Objectives</b>			

<b>6.01 Recognize and apply connections among mathematical ideas.</b>			
a. Connect concepts and skills from previous years to current objectives.			
b. Connect concepts and skills from multiple strands to solve problems.			
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<b>6.02 Develop fluency in solving single and multi-step problems that arise in mathematics and in other contexts, building mathematical knowledge through problem solving.</b>			
<b>6.03 Use reasoning to solve problems.</b>			
a. Understand situations and communicate mathematical problem solving.			
b. Make estimates with appropriate ranges.			
c. Reflect, extend and refine thinking.			
<b>6.04 Use the language and symbols of mathematics and appropriate technology to:</b>			
a. solve problems;			
b. communicate mathematical ideas;			
c. demonstrate understanding of problems and solutions through oral, pictorial, and written explanations.			
<b>6.05 Create and use representations to organize, record and communicate mathematical ideas.</b>			