Math Curriculum Parent Guide

School: Middle **Grade: 6** Mathematics

Course Description: Sixth grade students are heterogeneously grouped. Flexible grouping practices are implemented within each team to provide re-teaching and enrichment activities. Whole number operations are reviewed. Emphasis is placed on decimals and fractions. Critical thinking is developed throughout the course. Extensive work is done developing problem solving skills. Percent, measurement, geometry, calculator skills and interpretations of tables, graphs and charts are introduced. This is an MCAS year.

Unit	Concepts
Geometry	Identify polygons based on properties (right acute triangle, etc) Identify intersecting, parallel, perpendicular lines
Measurement	Find perimeter and area of basic shapes using formulas Measure, classify and construct angles, triangles and quadrilaterals Identify radius, diameter and circumference Calculate the volume of rectangular prisms Find sum of angles in simple polygon Determine if two shapes are congruent
Number Sense and Operations	Utilize positive integer exponents Find common and equivalent fractions, mixed numbers, decimals and percents Locate, position, and compare integers, fractions, mixed numbers and decimals on the number line Apply divisibility rules to find greatest common factors, prime numbers, and least common multiples Add and subtract integers Add, subtract, multiply and divide fractions and decimals Apply Order of Operations.
Patterns, Relations and Algebra	Replace variables with given values to evaluate/simplify Solve linear equations using models, graphs, table or symbols Graph points on Cartesian plane
Data Analysis, Statistics and Probability	Find median, mean, mode and range of data set Construct line plots, stem and leaf, bar and circle graphs Find simple probability of an experiment (tossing a coin, etc)

Suggestions for Parental Involvement:

Reinforcement of the number facts for subtraction, addition, multiplication and division,. Correct vocabulary for geometric figures and proper naming of small numbers: ex: 0.25 is “twenty-five hundredths”. Conversion between common fractions, decimals and percents: 1/2, 1/3, 1/4, 2/3,

3/4. Math homework is generally given every night and needs to be completed on a consistent basis to be effective. Great Source has a wonderful parent resource, available on-line at www.greatsource.com, called *Math at Hand.*

School: Middle **Grade: 7** Mathematics

Course Description: Students in the seventh-grade are homogeneously grouped. For this course, students will extend their study of whole numbers, fractions and decimals. The will continue their study of ratio, proportion and percent. A review of geometric shapes and line relationships will culminate in the study of perimeter, area and volume. Variables, expressions and the set of integers will be introduced as well as the coordinate plane. Probability and statistics will be reintroduced and expanded.

Unit	Concepts
Geometry	Identify parallel, perpendicular lines, transversals
Measurement	Calculate area of non-regular and regular polygons
Number Sense and Operations	Write scientific notation Add, subtract, multiply and divide with integers Change percents-decimals-fractions Proficiently add, subtract, multiply and divide fractions Apply percents to real life problems: commission, interest, rate of change
Patterns, Relations and Algebra	Solve equations with one-step transformation. Graphing using the entire Cartesian plane
Data Analysis, Statistics and Probability	Calculate probability of simple events

Suggestions for Parental Involvement:

Reinforcement of the number facts for subtraction, addition, multiplication and division,. Correct vocabulary for geometric figures and proper naming of small numbers: ex: 0.25 is “twenty-five hundredths”. Conversion between common fractions, decimals and percents: 1/2, 1/3, 1/4, 2/3, 3/4. . Math homework is generally given every night and needs to be completed on a consistent basis to be effective. Great Source has a wonderful parent resource, *Math on Call,* available on-line at www.greatsource.com.

School: Middle **Grade: 8** Mathematics

Course Description: This course is designed to prepare students for the study of algebra and geometry in the Integrated Mathematics program in grade nine. Mastery of the concepts and operations with whole numbers, decimals, integers, and rational numbers is expected. The study of variable expressions, equations in one and two variables, ratios, proportions, and percent will be extended. Plane and solid geometry, the coordinate plane, scientific notation, properties of exponents, calculator skills, probability and statistics are also covered. Problem solving, communicating, reasoning, and connecting mathematics will be emphasized in all of the above areas of study. This is an MCAS year.

Unit	Concepts
Geometry	Study similar and congruent triangles Classify and use parallel and perpendicular lines to find equivalent angles, and classify quadrilaterals Classify quadrilaterals and triangles Identifying three-dimensional figures by attributes Apply Pythagorean Theorem;
Measurement	Apply proportions to solve similar triangles Calculate area, perimeter, circumference, surface area and volume
Number Sense and Operations	Efficiently use negative and positive exponents in scientific notation Find absolute value and percentage of change Relate equivalent forms of real numbers including squares and square root Approximate and locate irrational numbers on a number line
Patterns, Relations and Algebra	Solve two-step equations and with variables on both sides Expand numeric sequences Graph linear functions
Data Analysis, Statistics and Probability	Calculate simple probability Create histograms, stem and leaf plots, scatter plots and box-and- whiskers plots Collect, organize, analyze and display data appropriately

Suggestions for Parental Involvement:

At this level students should be showing all work on their homework. Formulas should be written down each time they are used, with the substitution of values completed in the

second step. Math homework is generally given every night and needs to be completed on a consistent basis to be effective. There is a wonderful parent/student resource available from Great Source*, Math on Call*, at www.greatsource.com.