LEVEL 5 MATH SCOPE AND SEQUENCE

CURRICULUM FRAMEWORK

Germantown Academy Lower School uses **Math in Focus** as a curriculum framework. Math in Focus, the United States' adaptation of Singapore Math, is a mastery-based program that builds problem solving skills through hands-on learning, visualization, and pictorial representations.

PROGRAM ELEMENTS

Concepts Students build a solid understanding of the mathematical ideas underlying procedures and algorithms.	**Fact Fluency** Students gain automaticity with their basic facts (+/- to 20; x/÷ 1-12). Fact fluency is an important foundation that allows students to access, apply, and retain new, more complex learning.
Skills Students learn strategies and procedures for problem solving. They learn to apply these strategies and procedures flexibly and efficiently.	**Assessment** Student progress is regularly monitored, both formally and informally. Assessment guides skills-based grouping (1st -5th grades) and identifies need for support or challenge.

INSTRUCTIONAL GROUPINGS

Progressing through typical developmental stages, students' pace of learning may vary within the same grade level. Beginning in third grade, math instruction occurs in "just right" skills-based groups. "Just right" groups are determined in the first few weeks of school and monitored throughout the year through a variety of formal and informal assessments. Our goal is to best meet students' need for support and challenge while helping them build confidence as math learners.

LEVEL 5 MATH CONCEPTS

Numbers, Operations, Algebraic Thinking and Problem Solving

Whole Numbers

- Express numbers to 10,000,000 in various forms
- Use exponents to denote powers of 10
- Compare (use >, <, and =) and order whole numbers up to 10,000,000
- Use estimation and mental math to estimate sums, differences, products, and quotients
- Multiply multi-digit numbers
- Find quotients involving multi-digit dividends
- Use the order of operations in numeric expressions with two or more operations and grouping symbols
- Write and solve equations
- Write, model, and solve multi-step word problems using all 4 operations (+, -, x, ÷)

Fractions, Decimals, and Percents

- Understand the relationships between fractions and division expressions
- Add and subtract unlike fractions and mixed numbers
- Simplify fractions
- Multiply and divide proper fractions, improper fractions, and whole numbers
- Read, write, model, and understand decimals (tenths, hundredths, thousandths)
- Round decimals
- Add, subtract, multiply, and divide with decimals
- Explain patterns in the number of zeros and decimal point placement when multiplying/dividing by powers of 10
- Relate, compare, and convert between fractions, decimals, and percents
- Estimate sums, differences, products, and quotients with fractions, decimals, and percents
- Write, model, and solve real world problems involving fractions, decimals, and percents (all 4 operations)

Measurement, Data and Geometry

- Identify and plot points in the first quadrant of the coordinate plane
- Apply the properties of right, isosceles, and equilateral triangles, parallelograms, rhombuses, and trapezoids
- Convert between units of measurement (length, weight/mass, volume) using customary and metric units
- Use formulas to find the volumes of rectangular prisms and other solid figures
- Estimate and measure volume in cubic units
- Understand the concept of ratio and use ratios to solve problems
- Make and analyze a line plot to represent a data set in fractions of a unit
- Interpret tally charts, bar graphs, picture graphs, tables, line graphs, and line plots to solve problems