SHERWOOD CHARTER SCHOOL

2018-2019 Middle School Curriculum Planning Map
Math
8th Grade

This is a working document and subject to change.

	September	October	November	December	January	February	March	April	May	June
Component	Stage 3, Book 1: Linear Equations				Stage 3, Book 2: Geometry Stage 3, Book 3: Functions & Data				Stage 3, Book3: Functions & Data This book is aligned to the Algebra I standards.	
Topic	Block 1: Expressions and Equations Block 2: Sequence and Slope	Block 2: Sequence and Slope Block 3: Using Linear Equations Block 4: Systems of Equations	Block 4: Systems of Equations Block 5: Two-Variable Data	Block 5: Two-Variable Data	Block 1: Angles & Triangles Block 2: The Pythagorean Theorem	Block 2: The Pythagorean Theorem Block 3: Transformations	Block 4: Exponents and Volume	Block 1: Introduction to Functions Block 2: Exponents and Functions	Block 2: Exponents and Functions Block 3: Quadratic Functions	Block 4: Measure of Center Block 5: Data Displays
Topic Description	Order of operations. Evaluating expressions. The distributive property. Solving one, two, and multi-step equations. Solutions to linear equations. Linear inequalities on one variable. Recursive routines. Linear plots. Recursive routine applications. Rate of change. Recursive routines to equations. Input-output tables from equations. Calculating slope from graphs. The slope formula. Graphing using slope-intercept form. Writing linear equations for graphs and from key information. Different forms of linear equations. Graphing inequalities in two variables. Introduction to non-linear functions. Parallel, intersecting or the same line. Solving systems by: graphing, tables, substitution, elimination. Applications of systems of equations. Systems of linear inequalities. Converting repeating decimals to fractions. Scatter plots and correlation. Predicting with line of best fit. Five-number summaries of data. Q-points and lines of best fit. Using data and graphs to persuade. Bivariate data and frequency tables.				Perfect squares. Estimating square roots. The Pythagorean theorem. Converse of the P. Theorem. Applying the P. Theorem. Distance on the coordinate plane. The distance formula. Reflections. Translations. Rotations. Dilations. Transformations and congruence. Composition of transformations. Multiplication prosperities of exponents. Division properties of exponents. Science notation. Applications of scientific notation. Exponents and roots. Volume of cylinders, cones, spheres.				The real number system. Quantities. Seeing structure in expressions. Arithmetic with polynomials and rational expressions. Creating equations. Reasoning with equations and inequalities. Interpreting functions. Building functions. Linear, quadratic, and exponential models. Interpreting functions.	
Standards Alignment	Expressions and Equations: Understand the connections between proportional relationships, lines, and linear equations. Analyze and solve linear equations and pairs of simultaneous linear equations. Functions: Define, evaluate, and compare functions. Use functions to model relationships between quantities. Statistics and Probability" Investigate patterns of association in bivariate data.				The Number System: Know that there are numbers that are not rational, and approximate them by rational numbers. Expressions and Equations: Work with radicals and integer exponents. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.				Quantities and Equations, Linear and Exponential Relationships, Descriptive Statistics, Expressions and Equations, Quadratics Functions and Modeling	
Core Knowledge Correlation	N/A									
Essential Questions	What is the application of systems of equations in real-life situations?	How do you use data and graphs to show results?	How do you stretch and shrink graphs and write equations to represent the changes in the graph?	How do you apply the Pythagorean Theorem?	How do you determine the coordinates of an image after a rotation?	How do you solve inequalities with one variable?	How do you calculate slopes from graphs?	How do you solve problems involving exponential growth and decay?	How do you find the mean, median, and mode of data sets?	How d do you choose appropriate data displays?
Anticipatory Set	Block 1: Convert temperature from one system to another	Block 2: Find the rates of change in real-world situations. Write application problems.	Block 3: Create a class competition where participants graph and write linear equations.	Block 4: Develop systems of equations that make different polygons when graphed. Block 5: Find examples of positive and negative correlations in newspapers or magazines.	Block 1: How do you calculate perfect squares?	Block 2: Simplify square roots using prime factorization	Block 3: Enlarge a small picture and determine the scale factor.	Block 4: Find the circumference, surface area, and volume of various coins.	Block 1-2: Use exponential functions to look into the past to answer questions. Block 3: Create a piece of artwork using multiple parabolas.	Block 4: Use statistical hints to solve and create puzzles involving data sets. Block 5: Match graphs to data sets. Challenge a friend to solve the matching problems.
Cross Curriculum Integration/Field Trips	Explore Activity: B1: Match them Up, Addition and Subtraction Equations, Multi-step Equations, What Works?	Explore Activity: B2: Caloric Recursive Routines, Saving and Spending, Modeling with Equations, Linear Qualities, Find that Formula	Explore Activity: B3: Find the Equation, Triangle Lines, One of These Things, Match Me, In the Shade, Non-Linear Curves	Explore Activity: B4: Types of Systems, Larry's Landscaping, A Trip on I-70, What's Easiest, At the Movies B5: Finding a Good Fit, The Wave, Eliminating Bias	Explore Activity: B2: Squares that are Perfect, Calculate it!, A Rule for Right Triangles, Make it Right, 3D PT, Perimeter on the Coordinate Plane	Explore Activity: B3: Create a map of your state and translation rules from your town to other towns	Explore Activity: B4: Expand It, Going Negative, Populations, Cones in a Cylinder	Explore Activity: B1: Dog Years, A Piecewise Function, Shifting Graphs, Mirror Image, Stretch and Shrink	Explore Activity: B2: Growing Allowance, Future Values, Increase of Decrease B3: Where's the Vertex?, Finding Zeros, Double Distribute, Number Riddles, Making it Perfect	Explore Activity: B4: Mr. Booker's Class, Frog Data, Ch-Ch-Ch-Chnanges, Outliers and Data, Comparing Cell Phone Companies B5: Taking the Pulse of the Class, Predicting from Histograms, Visualizing Skew