Math 7-1 Curriculum Guide

This course utilizes the following texts:
Singapore Math, Discovering Mathematics Common Core Textbooks 7A and 7B
Singapore Math, Discovering Mathematics Common Core Workbooks 7A and 7B

Unit 1: Real Numbers
- Real numbers (identifying real/non-real, rational, irrational, integers, whole, natural)
- Square roots (up to 225), cube roots (up to 125) and approximating irrationals
- Integers and absolute value
- Adding, subtracting, multiplying & dividing integers
- Comparing and ordering fractions and decimals
- Fraction/Decimal Conversions
- Adding, subtracting, multiplying & dividing rational numbers
- Order of Operations with Rational Numbers (review of exponents may be needed)
- Evaluating Algebraic expressions and formulas

Unit 2: Expressions, Equations & Inequalities
- Properties and expression vocabulary
- Translating verbal expressions to math
- Simplifying linear expressions including like terms and the distributive property
- Factoring expressions
- Solving one-step, two-step and multi-step equations including with the distributive property and variables on both sides
- Solving equations by clearing fractions/decimals
- Solve word problems algebraically
- Writing & graphing inequalities
- Solving multi-step inequalities
- Solve inequality word problems algebraically

Unit 3: Ratios, Rates & Proportions (Can now use calculators)
- Ratio, rate & unit rate
- Writing and solving proportions
- Similar figures and scale drawings (indirect measurement)
- Recognize and represent proportional relationships (constant of proportionality) between quantities (table, equations & graphs)

Unit 4: Percent and Applications of Percentages
- Comparing, ordering & converting fractions, decimals & percents
- Percent proportion & percent equation
- Percent change, percent error
- Discount, markup, sales tax, gratuity, commission, simple interest, working backwards

Unit 5: Probability & Statistics
- Outcomes, events, sample space, probability notation
- Experimental & theoretical probability (include complement of an event)
- Compound events (independent and dependent events)
- Tree diagrams with and without probability
- Counting principle
- Statistical samples & populations (biased vs. unbiased)
- Measures of central tendency (mean, median, mode)
- Identify the best measure of central tendency
- Measures of Variability
- Interpreting graphs (line, bar, circle, histogram, dot plot, stem and leaf plot)
- Misleading graphs and statistics
- Scatterplots and Correlation

Unit 6: Plane Geometry
- Basic Geometry Vocabulary
- Angles – adjacent, vertical, complementary, supplementary
- Parallel lines & transversals (include statement reason charts)
- Triangles (include angle sum, exterior angle theorems)
- Quadrilaterals and Quadrilateral Properties
- Polygons (interior and exterior angles)

Unit 7: Perimeter, Area, Surface Area & Volume
- Circles vocabulary and relationships
- Circle formulas
- Polygon Area and Perimeter Review
- Composite figures and shaded region problems (area and perimeter)
- Word Problem Applications
- Nets, Faces, Edges, and Vertices
- Surface area of prisms, pyramids, and cylinders
- Volume of prisms, pyramids, and cylinders
- Composite Surface area and volume

Optional Unit 8: Graphing on the Coordinate Plane
- Plotting points and vocabulary
- Graphing linear equations using a chart