7th Grade Curriculum

UNIT 1: Reinforcement Topics

Sub-Topic 1: Fractions and Decimals Specific Topics:

- 1. Place value and rounding decimals
- 2. Convert decimals to fractions
- 3. Convert fractions to decimals
- 4. Compare and order fractions and decimals on number line
- 5. Add and subtract fractions and mixed numbers
- 6. Multiply and divide fractions and mixed numbers

UNIT 2: Number System

Sub-Topic: Operations with Signed Numbers

Specific Topics:

- 1. Add using number line/Absolute value
- 2. Add and subtract integers
- 3. Add and subtract rational numbers
- 4. Multiply and divide integers
- 5. Multiply and divide rational numbers
- 6. Real life applications with all operations

UNIT 3: Expressions and Equations

Sub-Topic: Algebraic Expressions

- 1. Write and translate algebraic expressions
- 2. Introduction to polynomials
- 3. Combining like terms
- 4. Add and subtract polynomials
- 5. Distributive property with variables and combine like terms
- 6. Factor monomials and binomials using GCF

Sub-Topic: Algebraic Equations

Specific Topics:

- 1. Solve and check one step addition/subtraction equations with integers
- 2. Solve and check one step multiplication equations, using rational numbers
- 3. Solve and check one step division equations, using rational numbers
- 4. Solve and check two step equations
- 5. Solve and check multi-step equations with distributive property and combine like terms

Sub-Topic: Inequalities

Specific Topics:

- 1. Introduction to inequalities
- 2. Solve and Graph solution set for two step inequalities

UNIT 4: Ratios and Proportional Reasoning

Sub-Topic: Ratios, Rates, Proportional Relationships

Specific Topics:

- 1. Introduction to ratios do ratios form a proportion
- 2. Unit rate/better buy
- 3. Introduction to the coordinate plane
- 4. Constant of proportionality: rate of change (use a table)
- 5. Slope as a ratio of rise/run
- 6. Interpret real life applications from tables, graphs and word problems

Sub-Topic: Proportional Applications and Percents

- 1. Real life applications to set up and solve proportions
- 2. Scale factor
- 3. Scale drawing word problems with measurement
- 4. Similar figures (Perimeter and Area)
- 5. Introduction to percent
- 6. Discount and sale price
- 7. Sales Tax
- 8. Percent of Change
- 9. Commission
- 10. Simple Interest

UNIT 5: Probability and Statistics

Sub-Topic: Sampling and Statistics

Specific Topics:

- 1. Identify types of sampling
- 2. Make comparisons and predictions
- 3. Mean, median and mode
- 4. Box and Whisker plots/ dot plots
- 5. Measures of variability

Sub-Topic: Probability

Specific Topics:

- 1. Introduction to probability
- 2. Experimental vs. Theoretical probability
- 3. Create an experiment to observe probabilities
- 4. Tree diagrams and sample space of compound events
- 5. Fundamental Counting Principle
- 6. Independent and Dependent events

UNIT 6: Geometry

Sub-Topic: Exploring Angles and Sides of Polygons

- 1. Measure, construct and classify angles using a protractor
- 2. Angle relationships: complementary, supplementary, vertical, adjacent
- 3. Solve angle relationships given angles as algebraic expressions
- 4. Construct triangles given 3 angles or sides using a protractor
- 5. Discover the triangle angle/side relationships
- 6. Classify triangles, find missing angles
- 7. Construct rectangles and parallelograms using protractor and ruler
- 8. Develop angle properties of quadrilaterals

Sub-Topic: Perimeter, Circumference and Area

Specific Topics:

- 1. Identify parts of a circle
- 2. State and use formulas for circumference and area (find diameter/radius)
- 3. Given circumference, find area
- 4. Real life applications involving circumference and area
- 5. Area and perimeter of rectangles, parallelograms, triangles and trapezoids
- 6. Area of complex figures
- 7. Real life applications of perimeter and area of all shapes

Sub-Topic: Three dimensional figures

- 1. Classify 3D shapes by the number of faces, vertices and edges
- 2. Identify 2 dimensional shapes formed by the cross section of 3D figures
- 3. Surface area of rectangular and triangular prisms and cubes
- 4. Volume and rectangular and triangular prisms and cubes
- 5. Real life application of surface area and volume