

## 7<sup>th</sup> Grade Curriculum 2017-2018

### 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*

##### Specific Topics:

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***

**Specific Topics:**

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***

#### **Specific Topics:**

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***

**Specific Topics:**

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