St. Raphael the Archangel
Standard Math
7th Grade 2017-2018

Learning Goals- Students will:

Expression, Equations, and Inequalities

1. Apply the properties of real numbers to an expression in order to create an equivalent expression.
2. Evaluate expressions in which letters stand for numbers.
3. Give possible solutions to simple inequalities and graph on a number line.
4. Read and write expressions.
5. Read and write simple inequalities.
6. Use order of operations to solve expressions.
7. Solve one-step equations.
8. Solve two-step equations.
9. Identify arithmetic sequences and find subsequent terms.
10. Identify geometric sequences and find subsequent terms.
11. Demonstrate an understanding of slope.
12. Understand, identify, and write functions.
13. Evaluate and simplify expressions by combining like terms.
14. Evaluate and simplify expressions using the distributive property.
15. Evaluate expressions when given a value for each variable.
16. Read and write expressions.
17. Read and write one- and two-step equations.
18. Understand and solve Simple Interest problems.

Geometry

1. Calculate the area of irregular figures.
2. Calculate the area of triangles.
3. Calculate the perimeter of regular and irregular polygons.
4. Calculate the surface area of a three-dimensional figure (excluding cylinders).
5. Calculate the area of quadrilaterals.
6. Calculate the volume of rectangular and triangular prisms.
7. Draw a polygon in a coordinate plane when given the coordinates.
8. Graph ordered pairs on a coordinate plane.
9. Identify and describe the components of three-dimensional figures.
10. Identify and name angles and recognize adjacent, vertical, congruent,

supplementary, and complementary angles.
11. Identify and name intersecting, parallel, and skew lines.
12. Identify and name lines, points, and planes.
13. Understand how to determine whether two figures are similar.
14. Identify parts of a circle.
15. Identify, construct, and describe right, acute, obtuse, and straight angles.
16. Identify and describe a polygon, and classify it based on its number of sides.

Ratios and Proportional Relationships

1. Define, identify, write, and demonstrate and understanding of rates and ratios.
2. Use ratio and rate reasoning to solve real-world and mathematical problems. (unit rate/unit price).
3. Define, identify, write, and demonstrate an understanding of rates and ratios.
4. Identify missing side lengths of similar figures.
5. Identify scale factor.
6. Recognize, represent and solve proportional relationships between quantities.
7. Solve percent using proportions and equations.
8. Calculate discounts and mark-ups.
9. Calculate percent increase and decrease.
10. Use ratio and rate reasoning to solve real-world and mathematical problems.

Statistics and Probability

1. Create and interpret bar graphs.
2. Create and interpret frequency tables and stem and leaf plots.
3. Create and interpret line graphs.
4. Define probability and determine simple probability for single events.
5. Summarize information provided by a set of numerical data (mean, median, mode, range).
6. Calculate and analyze measures of central tendency.
7. Create and interpret box and whisker plots.
8. Create and interpret scatter plots.
9. Analyze and interpret different forms of graphs.
10. Create and interpret line plots.
11. Determine whether two variables represent positive, negative, or no correlation.
12. Identify and describe outliers from data sets.

The Number System/Rational Numbers

1. Add and subtract positive decimals.
2. Add and subtract positive fractions and mixed numbers.
3. Add integers.
4. Compare rational numbers. (positive and negative numbers, fractions, decimals, and absolute value).
5. Convert numbers between fractions, decimals, and percent.
6. Divide positive decimals.
7. Graph rational numbers (positive and negative numbers, fractions, decimals, and absolute value) on a number line.
8. Identify the greatest common factor.
9. Identify the least common multiple.
10. Multiply and divide positive fractions and mixed numbers.
11. Multiply and divide integers.
12. Multiply positive decimals.
13. Order rational numbers (positive and negative numbers, fractions, decimals, and absolute value).
14. Subtract integers.
15. Add and subtract rational numbers.
16. Identify the greatest common factor.
17. Identify the least common multiple.
18. Round decimals.
19. Multiply and divide rational numbers.
20. Convert numbers between fractions, decimals, and percent.