# Math Summer Work

Below you will find the grade level expectations for your child's math class for next year. Please look at the grade level they will be going into next year instead of what grade level they are leaving. Over the summer, we suggest reviewing these skills so we can ensure students are prepared for their upcoming year. We use the curriculum BJU if you would like to look up some of their work to have on hand for practice.

### 6th:

- times table up to 12
- read/write large #'s
- place value/rounding/estimating
- Number sense
- Know operation terms
- all operations with 2 & 3 digit #'s
- Basic fraction/decimal knowledge
- basic ratio/percent/proportions
- basic geometry terms
- Comparing/Ordering numbers
- classify 3D figures/angles/triangles
- read & solve word problems

### 7th:

- All of the above
- properties of addition/multiplication
- measurement/customary & metric
- basic understanding of integers
- write & simplify expressions
- write & solve 1 step equations
- solve multi-step equations

### 8th:

- All of the above
- solve real life problems
- ratio tables
- find % of a #/find part/find whole #
- write & solve 2 step equations and inequalities
- all operations with integers
- square roots up to 225

- Divisibility Rules (how do you know a number is divisible by 2, 3, 4, 5, 6, 9, 10, 12)-to reduce
- A strong understanding of factors and multiples.
- Strong Number Sense-Add/Subtract/Mult/Div Whole numbers (must be memorized)
- Add/Subtract/Multiply/Divide -Decimals/Fractions
- Add/Subtract/Multiply/Divide Integers
- A solid understanding of Fractions/Decimals/Percents and converting between them
- Understanding of Word Problems
- Squares/Cubes
- Graphing points, Graphing on RNL

## HS:

### Algebra 1

- Mastery of Add/Subtract/Multiply/Divide Whole Numbers, Integers, Fractions, Decimals
- Mastery of Fractions/Decimals/Percents and converting between them
- Mastery of Simplifying Expressions and Solving Equations/Inequalities
- Mastery of Graphing of a Real Number Line (Equations/Inequalities)
- Mastery of Graphing points of Coordinate plane and using a table of values and equation to graph
- understanding of Exponentials Rules (x times x)
- Prime Trees
- Understand Absolute value, opposite, reciprocals
- Perimeter/Area/Surface Are/Volume
- Basic measurement conversions
- Angles-Linear Pairs, Equal Angles, Supplementary and Complementary Angles, Vertical Angles, Adjacent Angles

### Algebra 2

- Strong sense of prerequisites for Alg -Solving equations and inequalities
- Graph lines (horizontal, vertical, oblique)
- Graph quadratics
- Graph Absolute Value
- Graphing Exponentials
- Solve Systems, Quadratics (using factoring, completing the square, quadratic equation), Absolute Value
- Factor quadratics
- Simplifying and Estimating Radicals

# Geometry

- Distance and Midpoint Formula
- Angle and Line Relationships: Transversals, Alternate Interior Angles, Alternate Exterior Angles, Consecutive Interior Angles, Corresponding Angles
- Determining parallel and perpendicular lines with algebra and coordinate methods
- Slope Formula
- Logic: inverse, converse, conditional statement, contrapositive
- Venn diagram: intersection and union
- Relationships in triangles: side and angle measure
- Determine if triangles are congruent or similar
- Pythagorean Theorem
- Sum of angles or number of sides in polygons
- Apply transformations: rotation, reflection, translation, and dilation
- Determine symmetry (point, line, or rotation)
- Determine angle measure, arc measure, and arc length
- Identify and determine measure of inscribed angles, central angles, exterior angles, tangents, secants, chords, diameter, and radius.
- Determine center, radius, and diameter from standard equation.
- Calculate volume and surface area of composite figures.