This document is a list of "big ideas" that are essential to mastery of grade-level content and is not to be interpreted as a complete list of all topics to be taught. Content vocabulary should be an emphasis at ALL grades. In addition, the Math Practice Standards should be embedded throughout.

6th Grade:
1) Extend understanding of fractions, decimals, and percents.
2) Understand and use ratios, ratio reasoning and unit rates.
3) Solve algebraic expressions.
4) Solve and interpret 1-step equations and 1-step inequalities.
5) Construct, analyze and interpret data in a variety of graphical manners (number line, line plot, dot plot, histogram, box plot (box and whiskers)); compute mean, median, mode and range.
6) Find the area of complex 2-D figures (including composing or decomposing figures), review volume of 3-D figures with <u>fractional</u> side lengths, and calculate the surface area of 3-D figures.
7) Represent and understand integers and position on both horizontal and vertical number lines including ordering, comparing, and absolute value.
8) Extend understanding of the coordinate plane to all four quadrants.

7th Grade:
1) Analyze and use proportions and proportional reasoning including scale drawings.
2) Represent proportional relationships with the constant of proportionality in tables, graphs, equations and verbal descriptions.
3) Solve and apply percent problems including tax, gratuities, discount, simple interest and percent of change.
4) Perform operations on rational numbers including integers and positive/negative fractions & decimals.
5) Determine and analyze probabilities by constructing sample space and conducting sample and conducting experiments.
6) Solve problems involving area and circumference of circles.
7) Solve equations for unknown angle measures including complementary, supplementary, vertical and adjacent angles.
8) Use central tendency and variability to compare two sets of data.
9) Solve and interpret multi-step equations and inequalities.

8th Grade:
1) Work with irrational numbers, radicals and integer exponents.
2) Graph linear equations and extend understanding of slope as the rate of change.
3) Solve multi-step equations including those with variables on both sides, the distributive property, and combining like terms.
4) Solve systems of two linear equations in two variables algebraically and estimate solutions graphically (both by hand and on a graphing calculator).
5) Investigate and interpret patterns of association in bivariate data using scatterplots and lines of fit.
6) Define, evaluate and compare functions using tables, graphs, equations, and verbal descriptions.
7) Understand and apply the Pythagorean Theorem.
8) Work with transformations in a coordinate plane.
9) Work with parallel lines cut by a transversal.