

## EIGHTH GRADE MATHEMATICS LEARNING GOALS

### *Mastery Level*

1. Add/subtract/multiply/divide signed numbers (including fractions, decimals and whole numbers) without a calculator.
2. Simplify algebraic expressions by combining like terms.
3. Solve equations and inequalities, including ones that involve absolute value quantities, squared quantities, and quantities that involve finding the square root of a quantity.
4. Graph simple and compound inequalities.
5. Graph points and linear equations, including finding slopes and intercepts and writing equations from the graphs.
6. Add/Sub/Mult matrices and use scalar multiplication.
7. Identify geometric terms including parallel lines, perpendicular lines, adjacent angles, vertical angles, supplementary angles, and complementary angles.
8. Identify different and similar characteristics among the different types of quadrilaterals.
9. Understand rotation and reflection symmetry.
10. Perform rigid transformations on geometric figures: reflections, rotations and translations.
11. Understand and apply the encasement method for finding the area of a polygon.
12. Understand and evaluate functions;
13. Solve systems of equations using substitution;
14. Understand set theory and find unions, intersections, and subsets of sets.
15. Identify the differences and similarities among the different sets of real numbers.
16. Apply the Right Angle Property to solve geometry problems involving circles.
17. Understand and apply seven properties of real numbers (the associative properties, commutative properties, distributive properties, and the zero product property).
18. Understand and apply the distance and midpoint formulas.
19. Find volume and surface area of prism, pyramids, cones and spheres.
20. Solve a wide variety of word problems algebraically. (This is a major component of 8th grade math)