# Grade 7 Math Learning Targets

*Here is an overview of what your student will be learning this year in 7th grade Math.*

## Integers

- Define the direction of the distance on a number line based on the sign of the addend. Negative is left/down and positive is right/up.
- Compare subtracting integers to adding the additive inverse. Example: -4 -( -3) = -4 + 3
- Multiply positive and negative integers using properties of operations.
- Identify the operation necessary to solve a word problem.
- Solve real world problems involving all four operations with integers using order of operations.

## Rational Numbers

- Explain that a negative symbol can be written in the numerator, denominator, or next to the fraction without changing the value of the fraction.
- Divide positive and negative fractions
- Define a rational number as a decimal that terminates or eventually repeats.
- Divide the numerator of a fraction by its denominator using long division.
- Solve real world problems involving all four operations with rational numbers (keep in mind order of operations).

## Expressions and Equations

- Apply properties of operations to all operations with rational coefficients.
- Expand (Distributive property) linear expressions with rational coefficients.
- Identify like terms in an algebraic expression.
- Translate word situations to algebraic expressions.
- Explain the steps used in solving an algebraic equation.
- Solve two step linear equations fluently.
- Translate verbal situations to two step linear equations.

## Ratios and Proportions

- Compute the unit rate using division.
- Divide two fractions
- Determine if two ratios are proportional using Cross Products.
- Graph ratios on a coordinate plane to determine if the ratios are proportional by observing if the graph is a straight line through the origin.
- Solve proportions by cross multiplication

## 2-Dimensional Geometry

- Classify pairs of angles as complementary, supplementary, or neither.
- Write and solve simple equations for an unknown angle in a figure.
- Classify triangles based on side and angles
- Understand that the sum of the angle measures of any triangle is 180°.
- Find missing angle measures in quadrilaterals.

## 3-Dimensional Geometry

- Use two-dimensional nets to represent three-dimensional solids.
- Find surface areas of rectangular and triangular prisms.
- Find surface areas of regular pyramids.
- Find surface areas of cylinders.
- Find volumes of prisms.

## Probability and Statistics

- Understand the concept of probability and the relationship between probability and likelihood.
- Find probabilities of events.
- Find relative frequencies.
- Use experimental probabilities to make predictions.
- Use theoretical probabilities to find quantities.
- Use tree diagrams, tables, or a formula to find the number of possible outcomes of an experiment.
- Use formulas to find probabilities of independent and dependent events.