



WELCOME TO EIGHTH GRADE MATH!

By the end of the year, here is what students should be able to do:



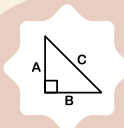
Functions

- ✓ **Linear Equations:** Students learn to use the formula $y = mx + b$ to describe relationships. *If a streaming service costs \$10 a month plus \$2 per movie, the cost is $y = 2x + 10$.*
- ✓ **Solving for x:** Moving beyond simple steps to solve complex equations where the variable might be on both sides.
- ✓ **Systems of Equations:** Finding where two lines cross on a graph to solve a problem. *If Company A and Company B have different pricing plans, at what point do they cost exactly the same?*



Expressions and Equations

- ✓ Work with radicals and integer exponents.
- ✓ Understand the connections between proportional relationships, lines, and linear equations.
- ✓ Analyze and solve linear equations and pairs of simultaneous linear equations.



Geometry

- ✓ **Pythagorean Theorem:** Use $a^2 + b^2 = c^2$ to find the missing side of a right triangle or the distance between two points on a map.
- ✓ **Transformations:** Exploring how shapes move. (Translations: Sliding, Rotations: Turning, Reflections: Flipping, Dilations: Shrinking or growing).
- ✓ **Volume of Round Objects:** Learning the formulas to find how much fits inside cylinders, cones, and spheres (like a soda can or a basketball).
- ✓ **Angles & Lines:** Understand the logic of triangles and parallel lines.

The Number System



- ✓ **Irrational Numbers:** Meeting numbers that never end and never repeat (like π or $\sqrt{2}$ and learning where they fit on a number line).
- ✓ **Exponents & Scientific Notation:** Learning to handle very large or very small numbers efficiently. *Writing the distance to the sun or the size of a cell without using fifty zeros.*

Statistics and Probability



- Bivariate Data:**
- ✓ Construct and interpret scatter plots.
- ✓ Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
- ✓ Know that straight lines are used to model relationships between two quantitative variables. *Does a person's height relate to their shoe size? Students will draw a "line of best fit" to make predictions.*