Portrait of an Abington Heights 8th Grade Pre-Algebra Mathematician

By the end of 8th Grade Pre-Algebra, students will:

The Number System	Functions	Expressions and Equations	Geometry	Statistics and Probability
☐ Understand there are numbers that are not rational, and approximate them by using rational numbers ☐ Convert a terminating or repeating decimal to a rational number ☐ Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions	☐ Define, evaluate, and compare functions ☐ Compare tables, graphs, and equations ☐ Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear ☐ Use functions to model relationships between quantities ☐ Identify the rate of change and initial value of a linear function in the situation it models, and in terms of its graph or table of values	☐ Work with radicals and integer exponents ☐ Perform operations with scientific notation ☐ Perform operations with integer exponents ☐ Understand the connection between proportional relationships, lines, and linear equations ☐ Graph proportional relationships, interpreting the unit rate as the slope of the graph ☐ Analyze and solve linear equations and pairs of simultaneous linear equations ☐ Solve linear equations including rational coefficients ☐ Solve systems of linear equations	☐ Understand congruence and similarity using physical models or geometric software ☐ Identify transformations performed on a given object (reflections, rotations, translations, dilations) ☐ Understand that two figures are congruent if one can be obtained from another given a sequence of transformations (excluding dilations) ☐ Describe the effect of transformations on the coordinate plane ☐ Understand and apply the Pythagorean Theorem ☐ Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres	☐ Investigate patterns of association in bivariate data ☐ Construct and interpret scatter plots ☐ Use linear models to represent data and to solve problems ☐ Analyze frequency and relative frequency, and create two-way tables to represent distribution