

## Portrait of an Abington Heights 6th Grade Mathematician



By the end of 6th Grade, students will:

The Number System	Ratios & Proportional Relationships	Expressions and Equations	Geometry	Statistics and Probability
<ul style="list-style-type: none"> <li><input type="checkbox"/> Divide fractions by fractions</li> <li><input type="checkbox"/> Fluently add, subtract, multiply, and divide with whole numbers and decimals (through thousandths)</li> <li><input type="checkbox"/> Find greatest common factor and least common multiple</li> <li><input type="checkbox"/> Understand that positive and negative numbers are used together to describe quantities having opposite directions or values</li> <li><input type="checkbox"/> Find and position integers and rational numbers/pairs of numbers on a number line/coordinate plane</li> <li><input type="checkbox"/> Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane including use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Apply and extend previous understanding of numbers to system of rational numbers</li> <li><input type="checkbox"/> Understand ratio concepts and use ratio reasoning to solve problems</li> <li><input type="checkbox"/> Understand unit rate</li> <li><input type="checkbox"/> Explore and create equivalent ratios</li> <li><input type="checkbox"/> Find a percent of a quantity as a rate per 100</li> <li><input type="checkbox"/> Use ratio reasoning to convert measurement units</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Apply and extend previous understanding of arithmetic to algebraic expressions</li> <li><input type="checkbox"/> Write and evaluate numerical expressions involving whole-number exponents</li> <li><input type="checkbox"/> Write, read, and evaluate expressions in which letters stand for numbers</li> <li><input type="checkbox"/> Apply the distributive property to expressions</li> <li><input type="checkbox"/> Apply order of operations</li> <li><input type="checkbox"/> Apply properties of operations to produce equivalent expressions</li> <li><input type="checkbox"/> Write and graph an inequality in the form <math>x &gt; c</math> or <math>x &lt; c</math> and <math>x + c &lt; a</math> or <math>x + c &gt; a</math> and recognize that inequalities have infinitely many solutions</li> <li><input type="checkbox"/> Represent and analyze quantitative relationships between dependent and independent variables by writing and solving equations in the form <math>x + p = q</math> and <math>px = q</math></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Find area of triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes</li> <li><input type="checkbox"/> Apply the formulas <math>V = lwh</math> and <math>V = Bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world problems</li> <li><input type="checkbox"/> Draw polygons in coordinate plane, using coordinates to find side lengths with the same first or second coordinate</li> <li><input type="checkbox"/> Represent three-dimensional figures using nets of rectangles and triangles and find surface area of triangular and rectangular prisms</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop understanding of statistical variability</li> <li><input type="checkbox"/> Summarize and describe distributions and numerical data sets in plots on a number line, including line plots, histograms, and box-and-whisker plots</li> <li><input type="checkbox"/> Interpret data through measures of central tendency (mean, median, mode) and variability (range, interquartile range, mean absolute deviation) and describe the overall pattern and any deviations</li> </ul>