

## Year at a Glance - Enhanced Math I

What Students Learn
<p>In Enhanced Math I, students work towards mastery of functions, systems of equations, Pythagorean Theorem, and statistics. They build on their understanding of proportional and linear relationships to develop a robust understanding of functions and slope, use function notation, and move beyond the idea of input and output and begin to view functions as objects that can be combined with operations. Students revisit proportional relationships as a part of linear functions and compare them with exponential functions as they can analyze increasing and decreasing rates of change as well as arithmetic and geometric sequences. Students will solve equations with reasoning before exploring the solutions to systems of linear equations and inequalities. Students explore the best ways to represent given data sets and compare the shape, center and spread of univariate data sets. They will investigate sets of data as a means to fit the appropriate model in order to make predictions. Using tools and technology, students explore constructions and transformations as a way to understand congruence of figures, and particularly, triangles. Students use the Pythagorean Theorem and apply it to solve problems involving right triangles. They build on transformations and apply them to coordinate geometry and show congruence of figures through rigid motions.</p>

Unit Titles (Time Frame*)	Overview of Depth of Mastery
1. Introduction to Functions (5 weeks)	<p><b><u>Enh Math I students work towards mastery:</u></b></p> <ul style="list-style-type: none"> <li>● Understanding solving equations as a process of reasoning and explain the reasoning</li> <li>● Defining, evaluating, comparing, and using linear functions in multiple representations as they model relationships between quantities</li> <li>● Calculating and comparing rates of change of linear functions</li> <li>● Recognizing a function as linear, exponential, or neither in multiple representations</li> <li>● Representing and solving systems of linear equations and inequalities</li> <li>● Recognizing patterns of association in bivariate data with scatter plots and formally fitting a line to a data set</li> <li>● Interpreting linear models for bivariate data</li> <li>● Understanding and applying the Pythagorean Theorem to solve real world problems including the use and knowledge of radicals</li> <li>● Understanding congruence through rigid transformations</li> </ul> <p><b><u>Enh Math I students work towards fluency:</u></b></p> <ul style="list-style-type: none"> <li>● Analyzing functions using different representations (determining if data represent a function, comparing key features of functions, using function notation)</li> <li>● Recognizing the arithmetic and geometric sequences are functions</li> <li>● Representing and solving nonlinear systems graphically</li> <li>● Describing measures of distribution (shape, center, and spread) of univariate data</li> <li>● Transforming functions</li> <li>● Making geometric constructions</li> <li>● Constructing geometric proofs</li> <li>● Using coordinates to prove simple geometric theorems algebraically</li> </ul>
2. Equations/Inequalities (4 weeks)	
3. Linear and Exponential Functions (4 weeks)	
4. Arithmetic and Geometric Sequences (3 weeks)	
5. Systems of Equations and Inequalities (4 weeks)	
6. One Variable/ Two Variable Statistics (4 weeks)	
7. Constructions, Transformations, and Coordinate Proofs (5 weeks)	
8. Pythagorean Theorem (2 weeks)	
9. Triangle Congruence w/ Rigid Motion (5 weeks)	

\*All time frames are approximations based on student progress and understanding.