

Year at a Glance - Math I
What Students Learn

In Math I, students work towards mastery of the foundational topics necessary to be successful in high school math. Students build on their understanding of functions from Math 8, use function notation, move beyond the idea of input and output to domain and range, and begin to view functions as objects that can be combined with operations. Students revisit what they learned in eighth grade about linear functions and compare them with exponential functions so that they can analyze increasing and decreasing rates of change. This analysis continues with arithmetic and geometric sequences. Students will continue their work of modeling and analysis of situations and apply appropriate functions to interpret relationships. Additionally, students will solve equations with reasoning before exploring the solutions to systems of linear equations and inequalities; and also 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. They build on the discussion of transformations and apply that to coordinate geometry. Students will advance their knowledge of how to show congruence of figures through rigid motions.

Unit Titles (Time Frame*)	Overview of Depth of Mastery
1. Introduction to Functions (5 weeks)	<p><u>Math I students work towards mastery:</u></p> <ul style="list-style-type: none"> ● Recognizing a function as linear, exponential or neither in multiple representations ● Constructing and comparing linear and exponential models ● Understanding solving equations as a process of reasoning and explain the reasoning ● Representing and solving systems of linear equations and inequalities ● Interpreting linear models for bivariate data ● Understanding congruence through rigid transformations <p><u>Math I students work towards fluency:</u></p> <ul style="list-style-type: none"> ● Analyzing functions using different representations (determining if data represent a function, comparing key features of functions, using function notation) ● Describing measures of distribution (shape, center and spread) of univariate data ● Recognizing that arithmetic and geometric sequences are functions ● Constructing geometric proofs ● Transforming functions ● Making geometric constructions ● Using coordinates to prove simple geometric theorems algebraically
2. Linear and Exponential Functions (5 weeks)	
3. Equations/Inequalities (4 weeks)	
4. Systems of Equations and Inequalities (3 weeks)	
5. One Variable/Two Variable Statistics (4 weeks)	
6. Arithmetic and Geometric Sequences (3 weeks)	
7. Constructions and Transformations (5 weeks)	
8. Triangle Congruence w/ Rigid Motion (5 weeks)	

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