



IM1 Essential Concepts

Algebra and Functions

Expressions and Equivalence	1. I understand that equivalence means that two (or more) expressions will be equal in value for any quantity substituted in for the unknown. I can justify the equivalence of two (or more) expressions by using tables, graphs, and symbolic methods of simplification.
Equations, Inequalities, and Systems	2. I can write equations/inequalities/systems to represent relationships and questions in realistic situations.
	3. I understand that solutions to equations/inequalities/systems are quantities that make the statement(s) true. I can find solutions (using reasoning/guess-and-check, tables, graphs, technology, and/or algebraic manipulation) and interpret these solutions in the context of the problem.
The Function Concept	4. I understand that a function is a dependent relationship between two sets of numbers or objects. I can use this understanding to reason about functions in various forms, identify non-functions, and use/explain function notation.
	5. I understand the connections between multiple representations of functions (context, rule, table, graph). I can generate missing representations from this “web” and I can use these representations to reason about realistic situations.
Building Rules to Represent Functions	6. I understand a geometric transformation as a function (ex. $x, y \rightarrow 2x, 2y$). I can use this to reason about transformations on the coordinate plane.
	7. I can write explicit and recursive rules to represent functions.
	8. I understand the two defining characteristics of a linear function (constant rate of change, initial/starting value) and can build rules to represent linear functions.
	9. I understand the two defining characteristics of an exponential function (constant multiplicative growth, initial/starting value) and can build rules to represent exponential functions.

Geometry and Measurement

Rigid Transformations and Congruence	10. I can define what it means for two figures to be congruent. I can reason from this definition to prove that two figures are or aren't congruent.
Reasoning about Properties of Shape	11. I can use coordinates to reason about distance(s) in the coordinate plane. I can use these ideas to prove geometric theorems and/or properties of shape (ex. <i>reinvent distance & midpoint formulas, compute perimeter and area of shapes in the plane, prove whether four coordinates define a rectangle</i>).

Statistics and Probability

Visual Representations of Data	12. I can create visualizations of data to portray an accurate “story” of the data. I can interpret visualizations of data and know when these visualizations might be misleading.
Analyzing and Interpreting Data	13. I can interpret center, distribution, and variability for single-variable data in order to draw conclusions about the context of the data. I can determine and justify which visualizations and statistics might be the best to choose when summarizing single-variable data.
	14. I can create and interpret scatterplots, lines or curves of best fit, and correlation strength for two-variable data in order to draw conclusions about the context of the data.