Equation and Functions Learning Progression

	6th and 7th	8th	Algebra I	Algebra, Functions, Data Analysis	Algebra 2
Equations	7.14 a) solve one- and two-step linear equations in one variable b) solve practical problems one variable 7.15a) solve one-step inequalities in one variable b) graph solutions to inequalities	8.15 a) solve multistep linear equations in one variable (variable on one and two sides of equations) b) solve and graph two-step linear inequalities	A.4 solve multistep linearand quadratic equations in two variables A.5 solve multistep linear inequalities in two variables A.4.e) solve systems of two linear equations in 2 variables algebraically and graphically A.5.d) solve systems of inequalities A.4.f) solve real-world problems involving equations and systems of equations A.5.c) solve real-world problems involving inequalities		AII.4 solve (algebraically and graphically) a) abs value equation; b) quadratic equation over complex numbers; c) equation containing rational algebraic expression; d) equation containing radical expressions AII.5 solve nonlinear systems of equations (linear-quadratic, quadratic-quadratic) algebraically and graphically
	6.11 identify and graph coordinates of points	8.16 graph linear equations in two variables	A.6 graph linear equations in two variables a) determine slope as a rate of change b) write equation of line		
Relations and Functions	7.13 a) write verbal expressions as algebraic expressions and sentences as equations and vice versa 7.12 represent relationships (relations and functions) with tables, graphs, rules, and words	8.17 identify and determine domain, range, independent and dependent variable 8.14 make connections between any two representations (tables, graphs, words, and rules)	A.1 represent verbal quantitative situations algebraically A.7 investigate and analyze function families (linear and quadratic) and their characteristics algebraically and graphically A.7.f) make connection between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic.	AFDA.2 use knowledge of transformations to write equation of functions (linear, quadratic, exponential, and logarithmic) AFDA.1 investigate and analyze function families (linear, quadratic, exponential, and logarithmic) and their characteristics AFDA.4 transfer between and analyze multiple representations of functions (algebraic formulas, graphs, tables, and words)	AII.6 recognize function families (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) AII.6 convert between graphic and symbolic forms of functions using transformational approach AII.7.investigate and analyze functions algebraically and graphically g) inverse of a function; h) composition of multiple functions
		8.13 a) analyze information displayed in graphs; b) construct and analyze scatterplots	A.11 determine equation of curve best fit to make predictions and solve real-world problems using mathematicial models (linear and quadratic)	AFDA.3 generate equation for curve of best fit (linear, quadratic, exponential, and logarithmic) to model real-world problems or applications	AII.9 determine the equation of curve of best fit and solve real-world problems. Mathematical models include polynomial, exponential, and logarithmic functions.