

Algebra Foundations Fall Semester Pacing Guide

First 9 Weeks		Second 9 Weeks	
Standard	Days	Standard	Days
<p>Build Relationships & Establish Routines Spend at least 5-15 minutes each day with number sense routines *this is to continue at least 3 times a week throughout the rest of the course* Spiral Reviews will be done daily throughout the course</p>	3	<p>Unit 3: Solving Linear Inequalities Unit overview: The abstraction of algebra continues in this unit as students expand their ability to algebraically and graphically (on a number line) represent, solve, explain, and interpret solutions to linear inequalities. Students refine understanding of equality within algebraic situations, and the preservation of the relationship between expressions when operating on inequalities. Standards: 8.PFA.5; A.EI.1a,b,c 8.PFA.5 The student will write and solve multistep linear inequalities in one variable, including problems in context that require the solution of a multistep linear inequality in one variable. A.EI.1 The student will represent, solve, explain, and interpret the solution to multistep linear equations and inequalities in one variable.</p>	10
<p>Unit 1: Using the Data Cycle with Bivariate Data. Unit overview: While exploring patterns, students will use the data cycle to structure their process. Students formulate questions, determine how to gather data and learn about how to ensure their sample will be representative of the population. Students will explore different types of data understanding the difference in univariate and bivariate data. Students will explore components of graphical displays that can be misleading and how statistical bias might affect data collection. Univariate data will be displayed and discussed through box plots. Relationships in bivariate data will be the basis of formulating investigative questions and collecting or acquiring data. Tables and scatterplots will provide representations of the the data in order for students to begin making observations and communicating inferences about the patterns and relationships. Standards: 8.PS.2; A.ST.1a,b,c,h,i 8.PS.2 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on boxplots. A.ST.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on representing bivariate data in scatterplots and determining the curve of best fit using linear and quadratic functions.</p>	15	<p>Unit 4: Functions & Slope Unit overview: Students build on their understanding of $y=mx$ from 7th grade by using translations to explore how y-intercepts affect the graph. Students explore how reflections affect slope. The focus of Unit 4 will be on generalized linear relationships; recognizing there is a constant rate of change (slope) and a starting point (y-intercept). Students will also recognize limitations (domain and range) of the model in the context of real-world data sets. Standards: A.F.1a; A.F.2a; 8.PFA.3 A.F.1 The student will investigate, analyze, and compare linear functions algebraically and graphically, and model linear relationships. Students will demonstrate the following Knowledge and Skills: a) Determine and identify the domain, range, zeros, slope, and intercepts of a linear function, presented algebraically or graphically, including the interpretation of these characteristics in contextual situations. A.F.2 The student will investigate, analyze, and compare characteristics of functions, including quadratic, and exponential functions, and model quadratic and exponential relationships. Students will demonstrate the following Knowledge and Skills: a) Determine whether a relation, represented by a set of ordered pairs, a table, a mapping, or a graph is a function; for relations that are functions, determine the domain and range. 8.PFA.3 The student will represent and solve problems, including those in context, by using linear functions and analyzing their key characteristics (the value of the y-intercept (b) and the coordinates of the ordered pairs in graphs will be limited to integers). Students will demonstrate the following Knowledge and Skills: a) Determine how adding a constant (b) to the equation of a proportional relationship $y = mx$ will translate the line on a graph. b) Describe key characteristics of linear functions including slope (m), y-intercept (b), and independent and dependent variables. c) Graph a linear function given a table, equation, or a situation in context. d) Create a table of values for a linear function given a graph, equation in the form of $y = mx + b$, or context. e) Write an equation of a linear function in the form $y = mx + b$, given a graph, table, or a situation in context. f) Create a context for a linear function given a graph, table, or equation in the form $y = mx + b$.</p>	20
<p>Unit 2: Expressions and Equations Unit Overview: Students will transition from expressions to two-step equations, building upon what they learned in Math 7 Standard 7.PFA.3 and applying it to different contexts. Students refine understanding of equality within algebraic situations, and the preservation of the relationship between expressions when operating on equations and inequalities. This will include properties, translating verbal into algebraic, and solving 2-step equations. Standards taught to proficiency: A.EO.1a; A.EI.1a,b,c A.EO.1 The student will represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables. A.EI.1 The student will represent, solve, explain, and interpret the solution to multistep linear equations and inequalities in one variable and literal equations for a specified variable.</p>	20		
Standards covered = 4	38	Standards covered = 3	30