

Empowerment Academy Plan: Duggan

The content recommendations for Duggan Academy are based on a combination of analysis for the major work of each grade, along with assessment data unique to the school. The major content clusters, rather than “supporting” and “additional” clusters, of the grade should constitute 65%-85% of instruction for the year and focusing Empowerment Academy content on these clusters bolsters our support significantly, particularly since we know a high percentage of students progress through the winter and spring with unfinished learning in these clusters. Additionally, this plan is predicated on grade level item analysis for the school from the 2017 MCAS, along with analysis of NWEA MAP low to low-average performance percentiles (<40th percentile) across four math domains. As a result of this combined analysis, the following standards are recommended for focus during the 2018 Duggan Empowerment Academy for **mathematics**:

Content Standard Focus

Grade 6

6.EE.1.02
6.EE.1.03
6.EE.2.05
6.EE.2.06
6.EE.2.07
6.EE.2.08
6.EE.3.09

- 1. Apply and extend previous understandings of arithmetic to algebraic expressions.*
 2. Write, read, and evaluate expressions in which letters stand for numbers.
 3. Apply the properties of operations to generate equivalent expressions.
- 2. Reason about and solve one-variable equations and inequalities.*
 5. Understand solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
 6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
 7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q , and x are all nonnegative rational numbers.
 8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
- 3. Represent and analyze quantitative relationships between dependent and independent variables.*

	<p>9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>
Grade 7	
<p>7.EE.1.02 7.EE.2.03 7.EE.2.04</p>	<p>1. <i>Use properties of operations to generate equivalent expressions.</i></p> <p>2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>2. <i>Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</i></p> <p>3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>
Grade 8	
<p>8.EE.3.07 8.EE.3.08</p>	<p>4. <i>Analyze and solve linear equations and pairs of simultaneous linear equations.</i></p> <p>7. Solve linear equations in one variable.</p> <p>8. Analyze and solve pairs of simultaneous linear equations.</p>
<p>8.F.1.01 8.F.1.02 8.F.1.03 8.F.2.04 8.F.2.05</p>	<p>1. <i>Define, evaluate, and compare functions.</i></p> <p>1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p> <p>2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p> <p>3. Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line; give examples of functions that are not linear.</p> <p>2. <i>Use functions to model relationships between quantities.</i></p> <p>4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p> <p>5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.</p>