

Lake Washington School District  
Teaching and Learning Framework

# Grades 7 - 12

## Mathematics

Algebra

Power Standards | 2009 - 2010

# Eighth Grade/Algebra Power Standards | 2009

## **8.1/A1.4 Core Contents: Linear functions and equations**

- PS1** Students are able to solve linear problems by writing and solving equations and inequalities, and develop the concept of absolute value. 8.1.A, 8.1.B, 8.1.F, A1.1.B, A1.4.A
- PS2** Students are able to represent linear situations with a description, table, graph, or equation, including finding an equation from an ordered pair (point) and rate of change (slope) or from two ordered pairs (points). They are able to translate from point-slope and standard form to slope-intercept form. 8.1.C, A1.4.B
- PS3** Students are able to analyze different representations to determine if the relationship is linear and find rate of change (slope) and initial value (y-intercept) and interpret these values in context. 8.1.D, 8.1.E, 8.1.G, A1.4.C
- PS4** Students are able to solve problems that can be represented by systems of equations or inequalities by writing and solving systems of equations or inequalities in two variables. A1.1.C, A1.4.D

## **8.2 Core Content: Properties of geometric figures**

- PS5** Students are able to demonstrate the Pythagorean Theorem and its converse, and apply the Pythagorean Theorem to solve problems, including finding the distance between two points in the coordinate plane. 8.2.F, 8.2.G

## **8.3/A1.6 Core Contents: Summary and analysis of data sets**

- PS6** Students are able to describe the correlation between two variables (positive or negative, weak or strong) and find the equation of a best fit line (visual and least squares utilizing technology) when appropriate. They are able to describe the meaning of the slope and y-intercept in context and make valid predictions and conclusions based on the data and line. 8.3.C, A1.6.B, A1.6.D, A1.6.E

## **8.4/A1.2 Core Contents: Numbers, expressions, and equations**

- PS7** Students are able to use the laws of exponents (product, quotient, power of a power, power of a product or quotient, and zero exponent) for both positive and negative exponents and the order of operations to simplify and evaluate expressions containing square roots and integer exponents. 8.4.C, A1.2.C
- PS8** Students are able to factor quadratics with a leading coefficient of 1, including factoring a greatest common factor, and factoring the difference of squares. They are able to multiply binomials, and simplify the addition and subtraction of polynomials. A1.2.E, A1.2.F

## **A1.3 Core Content: Characteristics and behaviors of functions**

- PS9** Students are able to determine whether a relationship is a function, evaluate and solve functions using function notation, and identify the domain, range, roots, and independent and dependent variables. A1.3.A, A1.3.B, A1.3.C

## **A1.5 Core Content: Quadratic functions and equations**

- PS10** Students are able to represent quadratic functions with words, tables, graphs, and equations and make connections between the different representations. A1.5.A
- PS11** Students are able to solve equations with real solutions and a leading coefficient of 1 by factoring, completing the square, and the quadratic formula. A1.5.C, A1.5.D

## **8.5/A1.8 Core Processes: Reasoning, problem solving, and communication**

- PS12** Students are able to solve problems by identifying and representing relevant information, selecting a model, and using the model to draw inferences and make conclusions. They verify and communicate their solution in context, using appropriate mathematical representations, symbols, and language. 8.5.B, 8.5.D, 8.5.E, A1.1.A, A1.8.A, A1.8.B, A1.8.C