

Lake Washington School District  
Teaching and Learning Framework

# Geometry

# Mathematics

Power Standards | 2009-2010

**G.1 Core Content: Logical arguments and proofs**

**PS1** Students are able to use inductive reasoning to make and test conjectures and deductive reasoning to prove or disprove conjectures. G.1.B, G.1.C

**G.2 Core Content: Lines and angles**

**PS2** Students know and are able to prove and apply theorems about perpendicular and parallel lines and angles, including angles that arise from parallel lines intersected by a transversal. G.2.B

**G.3 Core Content: Two- and three-dimensional figures**

**PS3** Students are able to determine, prove, and apply triangle congruence, triangle similarity, and the sum of angles property for triangles. G.3.A, G.3.B

**PS4** Students know and are able to prove and apply the Pythagorean Theorem and its converse. G.3.D

**PS5** Students are able to use basic trigonometric definitions (sine, cosine, and tangent), the Pythagorean Theorem and knowledge of special triangles (30-60-90, 45-45-90) to solve problems that can be represented by right triangles. G.3.C, G.3.D, G.3.E

**PS6** Students know and are able to prove and apply side, angle, and diagonal theorems of parallelograms, including those applying only to rectangles, rhombi, and squares. G.3.F

**G.4 Core Content: Geometry in the coordinate plane**

**PS7** Students are able to use the coordinate plane to find equations of lines that are described geometrically including a line through two given points and a line through a given point that is parallel or perpendicular to a given line. G.4.A

**PS8** Students are able to use the coordinate plane to find points described geometrically (i.e. midpoints, vertices, etc.) and verify properties of triangles and parallelograms. G.4.B, G.4.C

**G.5 Core Content: Geometric transformations**

**PS9** Students are able to sketch and describe the rules for a composition of transformations (translations, reflections, rotations, and dilations) that superimposes one figure (pre-image) on to another congruent or similar figure (image). G.5.A, G.5.C

**G.6 Additional Key Content**

**PS10** Students are able to solve problems by applying formulas for surface area and volume of three-dimensional figures (prisms, cylinders, pyramids, cones, and spheres) and are able to predict and verify the effect of changing one or more linear dimensions on the surface area and volume of a figure. G.6.C, G.6.D

**G.7 Core Processes: Reasoning, problem solving, and communication**

**PS11** Students are able to analyze and represent problem situations mathematically; select and apply appropriate strategies to solve the problem, verify their solutions, and communicate their methods and solutions efficiently using appropriate mathematical representations, symbols, and language. G.7.A, G.7.B, G.7.C, G.7.F