

Geometry 2011-2012 Benchmark Blueprint

Green Dot Public Schools

Assessments

Geometry	1	2	3	4
1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	5			
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	6	4	3	3
4.0 Students prove basic theorems involving congruence and similarity. •2: congruence only - no similarity		4	3	3
5.0 Students prove triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles. •2: congruence only - no similarity		4	3	3
7.0 Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles. •1: only parallel lines cut by a transversal •3: only parallel lines cut by a transversal and quadrilateral proofs •4: only properties of circles	6	4	4	5
8.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures. •2: only basic area of a triangle, parallelogram, trapezoid, and square •3: only circumference and area of circles		3	4	4
9.0 Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.				3
10.0 Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.			4	3
12.0 Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems. •1: only interior angles of a triangle •2: only interior and exterior angles of triangles •3: only polygons •4: only angles of polygons	5	5	3	4
13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles. •3: no formal proofs		4	3	
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles. •2: only special triples: 3, 4, 5 or 5, 12, 13 •3: only pictorial or word problems		4	3	3
18.0 Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x) / \cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.			3	3



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Geometry (continued)	1	2	3	4
19.0 Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.			3	3
20.0 Students know and are able to use angle and side relationships in problems with special right triangles, such as 30°, 60°, and 90° triangles and 45°, 45°, and 90° triangles.			3	3
21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.			3	5
Total Number of Items	22	32	42	45