

Geometry - CPM 2011-2012 Benchmark Blueprint

Green Dot Public Schools - CPM

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. •1: Inductive and Deductive questions only •2: questions on Axioms, Theorems, Terms only	3	3		
2.0 Students write geometric proofs, including proofs by contradiction. •1: very simple proofs angles and triangles only •2: angles and triangles only	3	3		3
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	3	3		3
4.0 Students prove basic theorems involving congruence and similarity. •2: only similar triangles •3: only triangle congruence		3	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: only similar triangles •3: both similar and congruent triangles		3	3	
6.0 Students know and are able to use the triangle inequality theorem.		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 •3: only parallel lines, and quadrilateral proofs •4: only circles	3		3	3
8.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures. •2: basic area of triangles, parallelograms, trapezoids, and squares •3: no circles		3	3	
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. •1: no equilateral triangles	3		3	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: interior angles of triangles only •2: interior and exterior angles of triangles only •3: only angles of polygons	3	3	3	



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Assessments

Geometry (continued)	1	2	3	4
13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles. •1: no formal proofs	3			3
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles. •1: only special triples using 3, 4, 5 or 5, 12, 13 •2: mixture of picture and word problems	3	3	3	3
16.0 Students perform basic constructions with straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.				3
17.0 Students prove theorems using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.			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
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: no combo of 30-60-90 and 45-45-90 triangles •4: no combo of 30-60-90 and 45-45-90 triangles			4	3
21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.				5
22.0 Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.	3	3	3	3
Total Number of Items	27	36	34	47