Measures of Academic Progress (MAP) Washington State-Aligned Geometry End of Course Version 1

The NWEA Goal Structure is a document that represents the content and structure of a state's standards documents. Goal structures are created through an alignment process that links state standards documents to the NWEA item bank. The MAP tests and associated reports for teachers and students are based upon this structure and alignment.

The alignment process begins with a thorough review of a state's standards documents by NWEA's curriculum specialists. The general goal areas or strands within a state's standards that appear across grade levels become the goals in the goal structure (indicated below as bold). Areas in a state's standards documents that are determined to be sub-domains of the goals/strands become the sub-goals in the goal structure (indented under each goal below).

Goal and sub-goal names from the Goal Structure are shortened for technical reasons to create the headings in DesCartes. Report Names are shortened further to accommodate report specifications.

Geometry Goal Structure	Geometry DesCartes	Geometry Report Names
Geometric Relationships	**Geometric Relationships**	**Geometric Relationships**
Students study basic properties of parallel and perpendicular lines, their respective slopes, and the properties of the angles formed when parallel lines are intersected by a transversal: Prove related theorems and apply them to solve both mathematical and practical problems; use inductive and deductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to find a counterexample.	Lines and Angles	

Students make connections between geometry and algebra by studying geometric properties and attributes that can be represented on the coordinate plane: Determine the coordinates of a point that is described geometrically; determine the equation of a line in the coordinate plane that is described geometrically; apply properties of triangles and quadrilaterals in the coordinate plane; determine the equation of a circle that is described geometrically in the coordinate plane.	Geometry and the Coordinate Plane	
Students study geometric transformations, focusing on the effect of such transformations and the composition of transformations on the attributes of geometric figures; study techniques for establishing congruence and similarity by means of transformations.	Geometric Transformations	
Geometric Figures	**Geometric Figures**	**Geometric Figures**
Students know and can prove theorems about two- and three-dimensional geometric figures, both formally and informally: Demonstrate that the sum of the angle measures in a triangle is 180 degrees, and apply this fact to determine the sum of the angle measures of polygons and to determine unknown angle measures; apply basic postulates and theorems about triangles; describe proportional relationships in similar figures and solve problems involving similar figures; determine and prove triangle congruence, triangle similarity, and other properties of triangles; use the properties of special right triangles to solve problems; apply the Pythagorean Theorem and its converse; solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.	Congruence, Similarity, Properties of Triangles	

Students know and can prove theorems about two- and three-dimensional geometric figures, both formally and informally: Know, prove, and apply basic theorems about properties of parallelograms, quadrilaterals and other polygons; know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles; describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties; analyze cross-sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.	Two and Three Dimensional Figures	
Measurement	**Measurement**	**Measurement**
Students extend and formalize their work with geometric formulas for perimeter, area, surface area, and volume of two- and three-dimensional figures, and their applications in complex problems: Apply formulas for arc length and area of a sector of a circle; apply formulas for surface area and volume of three-dimensional figures to solve problems; predict and verify the effect that changing one, two, or three linear dimensions has on perimeter, area, volume, or surface area of two- and three-dimensional figures; solve problems involving measurement conversions within and between systems, including those involving derived units.	Geometric Formulas and Their Applications	