

McRel Education Standards Selected Standards

Geometry

Standard 5. Understands and applies basic and advanced properties of the concepts of geometry.

Grades 6-8

- BM 1. Uses geometric methods (i.e., an unmarked straightedge and a compass using an algorithm) to complete basic geometric constructions (e.g., perpendicular bisector of a line segment, angle bisector).
- BM 2. Understands the defining properties of three-dimensional figures (e.g., a cube has edges with equal lengths, faces with equal areas and congruent shapes, right angle corners).
- BM 3. Understands the defining properties of triangles (e.g., the sum of the measures of two sides of a triangle must be greater than the measure of the third side).
- BM 6. Understands the mathematical concepts of similarity (e.g., scale, proportion, growth rates) and congruency.
- BM 7. Understands the basic concept of the Pythagorean theorem.

Grades 9-12

- BM 1. Understands that objects and relations in geometry correspond directly to objects and relations in algebra.
- BM 2. Use the Pythagorean theorem and its converse and properties of special right triangles (e.g. $30^\circ - 60^\circ - 90^\circ$ triangle) to solve mathematical and real-world problems.
- BM 3. Uses synthetic (i.e., pictorial) representations and analytic (i.e., coordinate) methods to solve problems involving symmetry and transformations of figures.
- BM 5. Uses geometric constructions (e.g., the parallel to a line through a given point not on the line, line segment congruent to a given line segment) to complete simple proofs, to model, and to solve mathematical and real-world problems
- BM 8. Uses trigonometric ratio methods to solve mathematical and real-world problems.
- BM 10. Uses inductive and deductive reasoning to make observations about and to verify properties of and relationships among figures.