**Virginia Mathematics Standards of Learning Tracking Log**

**Bridging from Geometry to Algebra II**

The skills and strategies introduced in the Mathematics Standards of Learning vertically articulate from kindergarten to high school and many standards build in complexity within K-12 instruction. Teachers can use this tracker to help determine which standards students have had sufficient exposure and experience during the previous school year to make decisions regarding when and how experience with new standards might occur in the current school year.

|  | **Addressed during previous school year** | **Not Addressed/ Insufficient Exposure during previous school year** | **Comments** |
| --- | --- | --- | --- |
| G.1a The student will use deductive reasoning to construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include identifying the converse, inverse, and contrapositive of a conditional statement; |  |  |  |
| G.1b The student will use deductive reasoning to construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include translating a short verbal argument into symbolic form; and |  |  |  |
| G.1c The student will use deductive reasoning to construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include determining the validity of a logical argument. |  |  |  |
| G.2a The student will use the relationships between angles formed by two lines intersected by a transversal to prove two or more lines are parallel; and |  |  |  |
| G.2b The student will use the relationships between angles formed by two lines intersected by a transversal to solve problems, including practical problems, involving angles formed when parallel lines are intersected by a transversal. |  |  |  |
| G.3a The student will solve problems involving symmetry and transformation. This will include investigating and using formulas for determining distance, midpoint, and slope; |  |  |  |
| G.3b The student will solve problems involving symmetry and transformation. This will include applying slope to verify and determine whether lines are parallel or perpendicular; |  |  |  |
| G.3c The student will solve problems involving symmetry and transformation. This will include investigating symmetry and determining whether a figure is symmetric with respect to a line or a point; and |  |  |  |
| G.3d The student will solve problems involving symmetry and transformation. This will include determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods. |  |  |  |
| G.4a The student will construct and justify the constructions of a line segment congruent to a given line segment; |  |  |  |
| G.4b The student will construct and justify the constructions of the perpendicular bisector of a line segment; |  |  |  |
| G.4c The student will construct and justify the constructions of a perpendicular to a given line from a point not on the line; |  |  |  |
| G.4d The student will construct and justify the constructions of a perpendicular to a given line at a given point on the line; |  |  |  |
| G.4e The student will construct and justify the constructions of the bisector of a given angle, |  |  |  |
| G.4f The student will construct and justify the constructions of an angle congruent to a given angle; |  |  |  |
| G.4g The student will construct and justify the constructions of a line parallel to a given line through a point not on the line; and |  |  |  |
| G.4h The student will construct and justify the constructions of an equilateral triangle, a square, and a regular hexagon inscribed in a circle. |  |  |  |
| G.5a The student, given information concerning the lengths of sides and/or measures of angles in triangles, will solve problems, including practical problems. This will include ordering the sides by length, given angle measures; |  |  |  |
| G.5b The student, given information concerning the lengths of sides and/or measures of angles in triangles, will solve problems, including practical problems. This will include ordering the angles by degree measure, given side lengths; |  |  |  |
| G.5c The student, given information concerning the lengths of sides and/or measures of angles in triangles, will solve problems, including practical problems. This will include determining whether a triangle exists; and |  |  |  |
| G.5d The student, given information concerning the lengths of sides and/or measures of angles in triangles, will solve problems, including practical problems. This will include determining the range in which the length of the third side must lie. |  |  |  |
| G.6 The student, given information in the form of a figure or statement, will prove two triangles are congruent. |  |  |  |
| G.7 The student, given information in the form of a figure or statement, will prove two triangles are similar. |  |  |  |
| G.8a The student will solve problems, including practical problems, involving right triangles. This will include applying the Pythagorean Theorem and its converse; |  |  |  |
| G.8b The student will solve problems, including practical problems, involving right triangles. This will include applying properties of special right triangles; and |  |  |  |
| G.8c The student will solve problems, including practical problems, involving right triangles. This will include applying trigonometric ratios. |  |  |  |
| G.9 The student will verify and use properties of quadrilaterals to solve problems, including practical problems. |  |  |  |
| G.10a The student will solve problems, including practical problems, involving angles of convex polygons. This will include determining the sum of the interior and/or exterior angles; |  |  |  |
| G.10b The student will solve problems, including practical problems, involving angles of convex polygons. This will include determining the measure of an interior and/or exterior angle; and |  |  |  |
| G.10c The student will solve problems, including practical problems, involving angles of convex polygons. This will include determining the number of sides of a regular polygon. |  |  |  |
| G.11a The student will solve problems, including practical problems, by applying properties of circles. This will include determining angle measures formed by intersecting chords, secants, and/or tangents; |  |  |  |
| G.11b The student will solve problems, including practical problems, by applying properties of circles. This will include determining lengths of segments formed by intersecting chords, secants, and/or tangents; |  |  |  |
| G.11c The student will solve problems, including practical problems, by applying properties of circles. This will include determining arc length; and |  |  |  |
| G.11d The student will solve problems, including practical problems, by applying properties of circles. This will include determining area of a sector. |  |  |  |
| G.12 The student will solve problems involving equations of circles. |  |  |  |
| G.13 The student will use surface area and volume of three-dimensional objects to solve practical problems. |  |  |  |
| G.14a The student will apply the concepts of similarity to two- or three-dimensional geometric figures. This will include comparing ratios between lengths, perimeters, areas, and volumes of similar figures; |  |  |  |
| G.14b The student will apply the concepts of similarity to two- or three-dimensional geometric figures. This will include determining how changes in one or more dimensions of a figure affect area and/or volume of the figure; |  |  |  |
| G.14c The student will apply the concepts of similarity to two- or three-dimensional geometric figures. This will include determining how changes in area and/or volume of a figure affect one or more dimensions of the figure; and |  |  |  |
| G.14d The student will apply the concepts of similarity to two- or three-dimensional geometric figures. This will include solving problems, including practical problems, about similar geometric figures. |  |  |  |