# **Correlation to the 2016 Mathematics Standards of Learning and Curriculum Framework – Geometry**

**Text/Instructional Material Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Publisher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Committee Member: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_**

**NOTE: The rating cells in the tables below are empty in order for division-level review teams to utilize this form.**

**Section I. Correlation with the Mathematics 2016 SOL and Curriculum Framework**

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| **G.1** |  |  |  |
| **G.2** |  |  |  |
| **G.3** |  |  |  |
| **G.4** |  |  |  |
| **G.5** |  |  |  |
| **G.6** |  |  |  |
| **G.7** |  |  |  |
| **G.8** |  |  |  |
| **G.9** |  |  |  |
| **G.10** |  |  |  |
| **G.11** |  |  |  |
| **G.12** |  |  |  |
| **G.13** |  |  |  |
| **G.14** |  |  |  |

## **Section II. Additional Criteria: Instructional Planning and Support**

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| **Criteria** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| **1.** Materials emphasize the use of effective instructional practices and learning theory. |  |  |  |
| * 1. Students are guided through critical thinking and problem-solving approaches. |  |  |  |
| * 1. Concepts are introduced through concrete experiences that use manipulatives and other technologies. |  |  |  |
| * 1. Multiple opportunities are provided for students to develop and apply concepts through the use of calculators, hand held devices, computers, and other technologies. |  |  |  |
| * 1. Students use the language of mathematics including specialized vocabulary and symbols. |  |  |  |
| * 1. Students use a variety of representations (graphical, numerical, symbolic, verbal, and physical) to connect mathematical concepts. |  |  |  |
| 1. The mathematics content is significant and accurate. |  |  |  |
| * 1. Materials are presented in an organized, logical manner which represents the current thinking on how students learn mathematics. |  |  |  |
| * 1. Materials are organized appropriately within and among units of study. |  |  |  |
| * 1. Format design includes titles, subheadings, and appropriate cross-referencing for ease of use. |  |  |  |
| * 1. Writing style, length of sentences, vocabulary, graphics, and illustrations are appropriate. |  |  |  |
| * 1. Level of abstraction is appropriate, and practical examples, including careers, are provided. |  |  |  |
| * 1. Sufficient applications are provided to promote depth of application. |  |  |  |
| 1. Materials present content in an accurate, unbiased manner. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.1 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 |  |  |  |
| a) identifying the converse, inverse, and contrapositive of a conditional statement; |  |  |  |
| b) translating a short verbal argument into symbolic form; and |  |  |  |
| 1. determining the validity of a logical argument. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.2 The student will use the relationships between angles formed by two lines  intersected by a transversal to |  |  |  |
| * 1. prove two or more lines are parallel; and |  |  |  |
| b) solve problems, including practical problems, involving angles formed when parallel lines are intersected by a transversal. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.3 The student will solve problems involving symmetry and transformation.  This will include |  |  |  |
| a) investigating and using formulas for determining distance, midpoint, and slope; |  |  |  |
| b) applying slope to verify and determine whether lines are parallel or perpendicular; |  |  |  |
| 1. investigating symmetry and determining whether a figure is symmetric with respect to a line or a point; and |  |  |  |
| d) determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.4 The student will construct and justify the constructions of |  |  |  |
| a) a line segment congruent to a given line segment; |  |  |  |
| b) the perpendicular bisector of a line segment; |  |  |  |
| c) a perpendicular to a given line from a point not on the line; |  |  |  |
| d) a perpendicular to a given line at a given point on the line; |  |  |  |
| e) the bisector of a given angle, |  |  |  |
| f) an angle congruent to a given angle; |  |  |  |
| g) a line parallel to a given line through a point not on the line; and |  |  |  |
| h) an equilateral triangle, a square, and a regular hexagon inscribed in a circle. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.5 The student, given information concerning the lengths of sides and/or  measures of angles in triangles, will solve problems, including practical  problems. This willinclude |  |  |  |
| 1. ordering the sides by length, given angle measures; |  |  |  |
| b) ordering the angles by degree measure, given side lengths; |  |  |  |
| c) determining whether a triangle exists; and |  |  |  |
| 1. determining the range in which the length of the third side must lie. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.6 The student, given information in the form of a figure or statement, will  prove two triangles are congruent. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.7 The student, given information in the form of a figure or statement, will  prove two triangles are similar. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.8 The student will solve problems, including practical problems, involving  right triangles. This will include applying |  |  |  |
| 1. the Pythagorean Theorem and its converse; |  |  |  |
| 1. properties of special right triangles; and |  |  |  |
| c) trigonometric ratios. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.9 The student will verify and use properties of quadrilaterals to solve  problems, including practical problems. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.10 The student will solve problems, including practical problems, involving  angles of convex polygons. This will include determining the |  |  |  |
| 1. sum of the interior and/or exterior angles; |  |  |  |
| 1. measure of an interior and/or exterior angle; and |  |  |  |
| 1. number of sides of a regular polygon. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.11 The student will solve problems, including practical problems, by  applying properties of circles. This will include determining |  |  |  |
| 1. angle measures formed by intersecting chords, secants, and/or tangents; |  |  |  |
| 1. lengths of segments formed by intersecting chords, secants, and/or tangents; |  |  |  |
| 1. arc length; and |  |  |  |
| 1. area of a sector. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.12 The student will solve problems involving equations of circles. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.13 The student will use surface area and volume of three-dimensional objects to solve practical problems. |  |  |  |

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| **Mathematics Standard of Learning** | **Adequate**  **Rating** | **Limited**  **Rating** | **No Evidence Rating** |
| G.14 The student will apply the concepts of similarity to two- or three-  dimensional geometric figures. This will include |  |  |  |
| a) comparing ratios between lengths, perimeters, areas, and volumes of similar figures; |  |  |  |
| b) determining how changes in one or more dimensions of a figure affect area and/or volume of the figure; |  |  |  |
| c) determining how changes in area and/or volume of a figure affect one or more dimensions of the figure; and |  |  |  |
| d) solving problems, including practical problems, about similar geometric figures. |  |  |  |

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