2018 Mathematics Standards—Geometry

**Course Focus (Apply the following to each content standard.)**

**GM.1 Identify the principles of SDA Christian values in correlation with mathematics.**

GM.1.1 Recognize God as creator and sustainer of an ordered universe.

GM.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.

GM.1.3 Develop accountability as expressed in God’s word and laws.

GM.1.4 Employ Christian principles as a basis for learning and growth.

GM.1.5 Broaden intellectual abilities through the study of mathematics.

GM.1.6 Make biblically-based choices when dealing with mathematical data.

GM.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

**Course Abilities (Apply the following to each content standard.)**

**GM.2 Develop abilities in mathematics.**

GM.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability). **MP.7**

GM.2.2 Utilize the problem-solving process (explore, plan, solve, verify). **MP.1, MP.2**

GM.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize). **MP.2, MP.3, MP.4**

GM.2.4 Attend to precision. **MP.6**

**GM.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**

GM.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams). **MP.7, MP.8**

GM.3.2 Conduct research (locate, observe/gather, analyze, conclude).

GM.3.3 Perform calculations with and without technology in life situations. **MP.5**

GM.3.4 Read critically and communicate proficiently with mathematical vocabulary.

**Course Content (Understand, represent, apply, analyze.)**

**GM.4 Be able to understand terms and symbols of geometry.**

GM.4.1 Demonstrate understanding of undefined terms (point, line, plane, and space). **G-CO.1**

GM.4.2 Interpret properties and relationships among figures using inductive and deductive reasoning.

GM.4.3 Understand how basic mathematical systems are built (observations, hypotheses/conjectures, postulates, theorems, corollaries).

GM.4.4 Characterize and classify objects (i.e. angles, polygons, polyhedrons, circles, and spheres). **G-CO.1, G-C.2, G-MG.1**

GM.4.5 Recognize various types of symmetry and transformations. **G-CO.2,3,4**

**GM.5 Be able to represent geometric properties and relationships.**

GM.5.1 Specify spatial relationships using coordinate geometry. **G-CO.5,6**

GM.5.2 Identify measurable attributes of figures and objects. **G-GMD.4**

GM.5.3 Verify similarity and congruence of geometric figures. **G-CO.6,7,8, G-SRT.1,2,3, G-C.1**

**GM.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**

GM.6.1 Apply coordinate geometry and algebraic formulas to verify characteristics of geometric figures. **G-SRT.5, G-GPE.1,4,5,7, G-GMD.3**

GM.6.2 Select and use an appropriate direct or indirect method of measurement. **G-GPE.6, G-C.3,4**

GM.6.3 Construct geometric figures and objects. **G-CO.12,13, G-C.3,4**

GM.6.4 Use trigonometric functions and laws to solve triangles and find areas. **G-SRT.6,7,8,9**

GM.6.5 Apply geometric methods to solve real-life problems. **G-MG.1,2,3**

GM.6.6 Use formulas to find measurable attributes of figures and objects (i.e. arc, sector, perimeter, area, surface area, volume). **G-C.2, G-GMD.1,2,3**

**GM.7 Be able to analyze results and draw appropriate conclusions.**

GM.7.1 Investigate, apply and prove properties and theorems. **G-CO.9,10,11, G-SRT.4,5, G-C.1, G-GPE.4,5**

GM.7.2 Find and interpret information from graphs, charts, and numerical data.

GM.7.3 Make conjectures regarding meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.