Adventist Education
A JOURNEY TO EXCELLENCE

Geometry

2010

SECONDARY MATHEMATICS STANDARDS
IN SEVENTH-DAY ADVENTIST SCHOOLS

OFFICE OF EDUCATION | North American DivisionSeventh-day Adventist Church

Mathematics Standards—Geometry

COURSE FOCUS [Apply the following to each content standard.]

GM.1 Identify SDA Christian principles and 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).
- GM.2.2 Utilize the problem-solving process (explore, plan, solve, verify).
- GM.2.3 Develop higher thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize).

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

- GM.3.1 Use a variety of strategies in the problem-solving process (patterns, tables, diagrams, etc.).
- GM.3.2 Conduct research (locate, observe/gather, analyze, conclude).
- GM.3.3 Perform calculations with and without technology in life situations.
- 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).
- 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, theorems, laws, etc.).
- GM.4.4 Classify and characterize figures and objects (angles, polygons, polyhedra, circles, and spheres).
- GM.4.5 Recognize various types of symmetry and transformations.

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

- GM.5.1 Specify spatial relationships using coordinate geometry.
- GM.5.2 Identify measurable attributes of figures and objects.
- GM.5.3 Verify similarity and congruence of geometric figures.

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.
- GM.6.2 Select and use an appropriate direct or indirect method of measurement in a given situation.
- GM.6.3 Construct geometric figures.
- GM.6.4 Use trigonometric equations to solve triangles and find areas.

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

- GM.7.1 Investigate, apply, and prove properties and theorems.
- GM.7.2 Find and interpret information from graphs, charts, and numerical data.
- GM.7.3 Predict patterns and generalize trends.
- GM.7.4 Make conjectures regarding meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.