FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS

Subject Area: Mathematics **State-Funded Course:** Mathematics – Eight Grade

Textbook Title: Bridges to Algebra and Geometry: Mathematics in Context

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Standard (Cite Number)	**Standard** (Cite specific standard)	**Where Taught** (If print component, cite page number; if non-print, cite appropriate location.)
M8N1	Numbers and Operations Students will understand different representations of numbers including square roots, exponents, and scientific notation.	Chapter 10
M8N1.a.	Find square roots of perfect squares.	pp. 551-556
M8N1.b.	Recognize the positive square root of a number as a length of a side of a square with a given area.	pp. 551-556
M8N1.c.	Recognize square roots as points and lengths on a number line.	GA Supplement pp. 31 - 33
M8N1.d.	Understand that the square root of 0 is 0 and that every positive number has two square roots that are opposite in sign.	pp. 551-556
M8N1.e.	Recognize & use the radical symbol to denote the positive square root of a positive number.	pp. 551-556
M8N1.f.	Estimate square roots of positive numbers.	pp. 551-556
M8N1.g.	Simplify, add, subtract, multiply, and divide expressions containing square roots.	GA Supplement pp. 34 - 41
M8N1.h.	Distinguish between rational & irrational numbers.	pp. 551-556
M8N1.i.	Simplify expressions containing integer exponents.	pp. 524-529, pp. 530-534, p. 535
M8N1.j.	Express & use numbers in scientific notation.	pp. 536-541
M8N1.k.	Use appropriate technologies to solve problems involving square roots, exponents, and scientific notation.	pp. 524-529, pp. 530-534, pp. 536-541, pp. 543-548, pp. 551-556, pp. 557-562, pp. 564-565, pp. 566-573

M8G1	Geometry Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.	Chapter 9, Lesson 10-6, GA Supplement
M8G1.a.	Investigate characteristics of parallel & perpendicular lines both algebraically & geometrically.	GA Supplement pp. 20 - 22
M8G1.b.	Apply properties of angle pairs formed by parallel lines cut by a transversal.	GA Supplement pp. 23 - 30
M8G1.c.	Understand the properties of the ratio of segments of parallel lines cut by one or more transversal.	GA Supplement pp. 23 - 30
M8G1.d.	Understand the meaning of congruence--corresponding angles and sides are congruent.	pp. 488-493
M8G2	Students will understand and use the Pythagorean theorem.	pp. 557-562
M8G2.a.	Apply properties of right triangles, including the Pythagorean theorem.	pp. 557-562
M8G2.b.	Recognize and interpret the Pythagorean theorem as a statement about areas of squares on the sides of a right triangle.	pp. 557-562
M8A1	Students use algebra to represent, analyze, and solve problems.	Chapter 4
M8A1.a.	Represent a given situation using an inequality in one variable.	pp. 186-191, pp. 192-196, pp. 198-202, pp. 211-216
M8A1.b.	Simplify and evaluate algebraic expressions.	pp. 203-208
M8A1.c.	Solve algebraic equations in one variable, including equations involving absolute values.	pp. 186-191, pp. 192-196, pp. 198-202, pp. 211-216, GA Supplement pp. 10 - 12
M8A1.d.	Interpret solutions in problem contexts.	pp. 186-191, pp. 192-196, pp. 198-202, pp. 211-216
M8A2	Students will understand and graph inequalities in one variable.	Chapter 5
M8A2.a.	Represent a given situation using an inequality in one variable.	pp. 273-277, pp. 278-282
M8A2.b.	Use the properties of inequality to solve inequalities.	pp. 273-277, pp. 278-282
M8A2.c.	Graph the solution of an inequality on a number line.	pp. 273-277, pp. 278-282
M8A2.d.	Interpret solutions in problem contexts.	pp. 273-277, pp. 278-282
M8A3	Students will understand relations and linear	

	functions.	
M8A3.a.	Recognize a relation as a correspondence between varying quantities.	pp. 439-446
M8A3.b.	Recognize a function as a correspondence between inputs and outputs where the output for each input must be unique.	pp. 439-446
M8A3.c.	Distinguish between relations that are functions and those that are not functions.	pp. 439-446
M8A3.d.	Recognize functions in a variety of representations and a variety of contexts.	pp. 439-446
M8A3.e.	Use tables to describe sequences recursively and with a formula in closed form.	pp. 405-409
M8A3.f.	Understand and recognize arithmetic sequences as linear functions with whole-number input values.	GA Supplement pp. 3 - 5
M8A3.g.	Interpret the constant difference in an arithmetic sequence as the slope of associated linear function.	pp. 413-418
M8A3.h.	Identify relations and functions as linear or nonlinear.	GA Supplement pp. 13 - 16
M8A3.i.	Translate among verbal, tabular, graphic, and algebraic representations of functions.	pp. 405-409, pp. 413-418, pp. 419-425
M8A4	Students will graph and analyze graphs of linear equations.	Chapter 8
M8A4.a.	Interpret slope as a rate of change.	pp. 413-418
M8A4.b.	Determine the meaning of the slope and y-intercept in a given situation.	pp. 413-418, pp. 419-425
M8A4.c.	Graph equations of the form $y = mx + b$.	pp. 405-409, pp. 413-418, pp. 419-425
M8A4.d.	Graph equations of the form $ax + by = c$.	pp. 405-409, pp. 413-418, pp. 419-425
M8A4.e.	Determine the equation of a line given a graph, numerical information that defines the line, or a context involving a linear relationship.	pp. 405-409, pp. 413-418, pp. 419-425
M8A4.f.	Solve problems involving linear relationships.	pp. 405-409, pp. 413-418, pp. 419-425
M8A5	Students will understand systems of linear equations and use them to solve problems.	Chapter 8
M8A5.a.	Given a problem context, write an appropriate system of linear equations.	pp. 428-432
M8A5.b.	Solve systems of equations graphically and	pp. 428-432

	algebraically, using technology as appropriate.	
M8A5.c.	Interpret solutions in problem contexts.	pp. 428-432
M8D1	Students will apply basic concepts of set theory.	GA Supplement pp. 6 - 9
M8D1.a.	Demonstrate relationships among sets through use of Venn diagrams.	GA Supplement pp. 6 - 9
M8D1.b.	Demonstrate subsets, complements, intersection, and union of sets.	GA Supplement pp. 6 - 9
M8D1.c.	Use set notation to denote elements of a set.	GA Supplement pp. 6 - 9
M8D2	Students will determine the number of outcomes related to a given event.	Chapter 6
M8D2.a.	Use tree diagrams to find the number of outcomes.	pp. 316-319,
M8D2.b.	Apple the addition and multiplication principles of counting.	pp. 316-319, pp. 322-326, pp. 327-332
M8D3	Students will use the basic laws of probability.	Chapter 6
M8D3.a.	Find the probability of simple independent events.	pp. 311-315, pp. 316-319, pp. 322-326, pp. 327-332
M8D3.b.	Find the probability of compound independent events.	pp. 316-319, pp. 322-326, pp. 327-332
M8D4	Students will organize, interpret, and make inferences from statistical data.	Chapter 8
M8D4.a.	Gather data that can be modeled with a linear function.	pp. 449-455
M8D4.b.	Estimate and determine a line of best fit from a scatter plot.	GA Supplement pp. 17 - 19
M8P1	Students will solve problems (use appropriate technology).	Through text
M8P1.a.	Build new mathematical knowledge through problem solving.	Throughout text in “Math Lab” and “Think and Discuss” features.
M8P1.b.	Solve problems that arise in mathematics and in other contexts.	Throughout text in “Think and Discuss” feature and in activities at the beginning of most lessons.
M8P1.c.	Apply and adapt a variety of appropriate strategies to solve problems.	Throughout text in “Think and Discuss”, “Practice and Apply”, and “Cumulative Problem Solving” features.
M8P1.d.	Monitor and reflect on the process of mathematical problem solving.	Throughout text in “Practice and Apply” and “Cumulative Problem Solving” features.
M8P2	Students will reason and evaluate	

	mathematical arguments.	
M8P2.a.	Recognize reasoning and proof as fundamental aspects of mathematics.	Throughout text in “Think and Discuss” feature and “Communicate” section in chapter assessments.
M8P2.b.	Make and investigate mathematical conjectures.	Throughout text in “Math Lab” feature and in activities at beginning of most lessons.
M8P2.c.	Develop and evaluate mathematical arguments and proofs.	Throughout text in “Math Lab” feature when it presents a problem statement.
M8P2.d.	Select and use various types of reasoning and methods of proof.	Throughout text in “Math Lab” feature and in activities that present a problem statement and in chapter assessments.
M8P3	Students will communicate mathematically.	Throughout text in “Think and Discuss” feature, “Discussion Questions” that follow Math Labs, and “Communicate” section in chapter assessments.
M8P3.a.	Organize and consolidate their mathematical thinking through communication.	Throughout text in “Think and Discuss” feature, “Discussion Questions” that follow Math Labs, and “Communicate” section in chapter assessments.
M8P3.b.	Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Throughout text in “Think and Discuss” feature, “Discussion Questions” that follow Math Labs, and “Communicate” section in chapter assessments.
M8P3.c.	Analyze and evaluate the mathematically thinking and strategies of others.	Throughout text in “Think and Discuss” feature and “Discussion Questions” features that follow Math Labs.
M8P3.d.	Use the language of mathematics to express mathematical ideas precisely.	Throughout text in “Think and Discuss” feature, “Discussion Questions” that follow Math Labs, and “Communicate” sections in chapter assessments.
M8P4	Students will make connections among mathematical ideas and to other disciplines.	Throughout text in “Applications” section of chapter assessments, in “Cumulative Problem Solving” feature and in “Practice and Apply” section of lesson assessments.
M8P4.a.	Recognize and use connections among mathematical ideas.	Throughout text in “Applications” section of chapter assessments, in “Cumulative Problem Solving” feature and in “Practice and Apply” section of lesson assessments.
M8P4.b.	Understand how mathematical ideas interconnect and build on one another to produce coherent whole.	Throughout text in “Applications” section of chapter assessments and in “Cumulative Problem Solving” feature.
M8P4.c.	Recognize and apply mathematics in contexts outside of mathematics.	Throughout text in “Applications” section of chapter assessments, in “Cumulative Problem Solving” feature and in “Practice and Apply” section of lesson assessments.
M8P5	Students will represent mathematics in multiple ways.	Throughout text
M8P5.a.	Create and use representations to organize, record, and communicate mathematical ideas.	Throughout text in activities with problem statements at the beginning of most lessons, and in chapter assessments.
M8P5.b.	Select, apply, and translate among mathematical representations to solve problems.	Throughout text in activities with problem statements at the beginning of most lessons, and in chapter assessments.
M8P5.c.	Use representations to model and interpret physical, social, and mathematical phenomena.	Throughout text in “Cultural Connection” and application features.