

GLENCOE CORRELATION

Mathematics: Applications and Connections, Course 2

GEORGIA

Quality Core Curriculum

Course: Seventh Grade Mathematics

Component Strand Course Content Standard	Lesson References
Strand: Problem Solving	
<p>1 Solves problems, reasons, and estimates throughout mathematics: Selects and uses problem-solving strategies such as reading the problem, drawing a picture or diagram, using trial and error, making a table or chart, looking for patterns, making a simpler problem and then generalizing, and working backwards, etc. Selects and uses appropriate tools (such as mental computation, calculators, manipulative materials, paper and pencil, computer) in solving problems. Uses appropriate estimation strategies (such as breaking numbers apart, compatible numbers, guess and check, clustering, rounding, compensation) to check the reasonableness of results. Solves nonroutine problems for which the answer is not obvious. Relates concepts and skills to practical applications.</p>	<p>1-1, 1-2, 1-3A, 1-3, 1-3B, 1-4, 1-5, 1-6, 1-7A, 1-7, 1-7B, 2-1, 2-2, 2-3, 2-3B, 2-4, 2-5, 2-6A, 2-6, 2-7, 2-8, 2-9, 3-1, 3-2A, 3-2, 3-3, 3-4, 3-4B, 3-5, 3-6A, 3-6, 3-6B, 3-7, 4-1A, 4-1, 4-1B, 4-2, 4-3, 4-3B, 4-4A, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 5-1, 5-2, 5-3, 5-3B, 5-4A, 5-4, 5-5A, 5-5, 5-6A, 5-6, 5-7A, 5-7, 5-8, 6-1A, 6-1, 6-1B, 6-2, 6-3A, 6-3, 6-4, 6-5, 6-6, 6-7A, 6-7, 7-1, 7-2, 7-3, 7-3B, 7-4A, 7-4, 7-4B, 7-5, 7-6, 7-7, 7-8, 7-9, 8-1A, 8-1, 8-2, 8-3, 8-3B, 8-4A, 8-4, 8-5, 8-6, 8-7, 8-8, 8-9, 9-1, 9-1B, 9-2A, 9-2, 9-2B, 9-3, 9-3B, 9-4A, 9-4, 9-4B, 9-5, 9-6, 9-7, 10-1A, 10-1, 10-2, 10-3A, 10-3, 10-4, 10-5A, 10-5, 10-6, 10-7A, 10-7, 11-1, 11-1B, 11-2, 11-3A, 11-3, 11-4, 11-5A, 11-5, 11-6, 11-7, 11-7B, 12-1A, 12-1, 12-1B, 12-2, 12-2B, 12-3, 12-4A, 12-4, 12-5, 13-1A, 13-1, 13-2, 13-3, 13-4, 13-5A, 13-5, 13-6A, 13-6</p>
<p>2 Describes orally and in writing, using the appropriate mathematical vocabulary, mathematical concepts and procedures, such as solving a word problem or computing.</p>	<p>1-4, 1-5, 1-7A, 2-3, 2-6A, 2-7, 3-4B, 3-5, 3-6B, 4-1A, 4-3B, 4-7, 5-1, 5-4A, 5-5A,</p>

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	5-6A, 6-1A, 6-3A, 6-7A, 7-4B, 8-1A, 8-3B, 9-1A, 9-1B, 9-2A, 9-2B, 9-3B, 9-4A, 10-1A, 10-3A, 10-5A, 10-7A, 10-7, 11-1B, 11-3A, 11-5A, 12-1A, 12-2B, 12-4A, 13-5A, 13-6A
3 Uses scientific calculator and computer skills to solve problems, to discover patterns and sequences, to investigate situations and draw conclusions.	1-3B, 1-4, 2-6, 3-4, 3-6, 4-1, 4-1B, 4-3B, 5-3B, 7-3, 8-8, 10-7, 11-3, 11-5, 11-7B, 13-1
4 Uses computer software and applications to research, investigate, and analyze data and to represent this information using charts, tables, graphs, or other presentation forms.	4-1B, 7-4, 11-3, 11-7B, 13-1
Strand: Patterns & Relationships; Algebra	
5 Identifies the use of a variable as a placeholder in an algebraic expression or equation.	1-3A, 1-3, 1-3B, 1-5, 6-1A, 6-1, 6-2, 6-3A, 6-3, 6-4, 8-3, 8-9
6 Evaluates algebraic expressions (e.g., Given $3a + 4$. If $a = 2$, then $3(2) + 4 = 10$).	1-3, 1-3B, 1-4, 5-4, 5-7
7 Writes and solves one-step algebraic equations and inequalities using addition, subtraction, multiplication, and division (e.g., $a + 11 = 15$; $b - 2 = 21$; $\frac{m}{2} = 15$; $5x = 40$).	1-5, 2-5, 5-4, 5-6, 5-7, 6-1A, 6-1, 6-2, 6-4, 7-4, 7-8, 7-9
8 Graphs inequalities on a number line.	6-5
9 Uses order of operations to simplify numerical expressions that involve addition, subtraction, multiplication, and division, with and without parenthesis.	1-2, 1-3, 1-3B, 1-4
10 Solves for the missing term in a proportion.	8-3, 8-4, 8-5, 8-8, 8-9
11 Translates English phrases and sentences into mathematical expressions, equations, and inequalities.	1-3, 1-5, 5-5, 5-7, 6-2, 6-4, 6-5, 9-2A
12 Determines how changes in one variable can affect another variable (e.g., Given $b = 2a$. If $a = 2$, then $b = 4$. If $a = 3$, then $b = 6$).	1-3, 1-3B, 1-4, 5-4, 5-5, 5-6

Component Strand Course Content Standard	Lesson References
13 Writes and solves an equation for a given word problem.	1-5, 5-5, 5-7, 6-2, 6-4
Strand: Whole Number Computation; Estimation; Whole Number Operations	
14 Uses addition, subtraction, multiplication, and division (interpreting remainders in context of problem) in computation and problem solving with whole numbers, fractions, and decimals.	1-2, 2-4, 2-5, 2-6A, 2-6, 7-2, 7-3, 7-4A, 7-4, 7-9
15 Computes with integers using models, manipulatives, and/or rules.	5-4A, 5-4, 5-5A, 5-5, 5-6A, 5-6, 5-7
16 Performs computations mentally using strategies such as multiples of tens, powers of ten, compensation, breaking apart numbers, or compatible numbers.	2-5, 4-9, 8-8
Strand: Geometry & Spatial Sense; Measurement	
17 Classifies angles as acute, right, obtuse, or straight; and names angles using points, numbers, and letters.	9-1, 9-2A, 9-2
18 Classifies quadrilaterals and triangles based on their properties.	9-4
19 Contrasts and classifies plane and solid geometric figures (polygons, cones, cylinders, prisms, pyramids).	9-2, 9-4A, 9-4, 9-4B, 9-5, 12-1, 12-1B
20 Compares and contrasts geometric figures with respect to congruency and similarity (scaling, dilations).	5-8, 9-3, 9-3B, 9-5
21 Analyzes effects of basic transformations on geometric shapes.	5-8, 9-5
22 Identifies and graphs an ordered pair of integers on a four-quadrant coordinate plane.	5-3, 5-3B, 5-8
23 Finds volume and surface area of prisms and cylinders.	12-2, 12-3, 12-4A, 12-4, 12-5
24 Finds the perimeter (or circumference) and area of polygons and circles, and the volumes and surface area of geometric solids, using formulas. (Uses student development of formulas when possible).	1-7A, 1-7, 7-6, 7-7, 10-5A, 10-5, 10-6, 12-2, 12-2B, 12-3, 12-4A, 12-4, 12-5

Component Strand Course Content Standard	Lesson References
25 Selects and uses appropriate customary and metric units of measure for length (including perimeter and circumference), area, volume, capacity, weight/mass, time, temperature, and angle measure.	1-7A, 1-7, 2-8, 3-4, 5-1, 5-2, 7-5, 7-6, 7-7, 8-4, 10-5A, 10-5, 10-6, 11-7, 12-2, 12-2B, 12-3, 12-4A, 12-4, 12-5
26 Measures angles using a protractor.	9-1A, 9-2, 9-2A, 9-2B, 9-4A
27 Converts from one metric unit to another metric unit and from one customary unit to another customary unit (length, capacity, weight/mass, time, and money).	2-8, 7-5
Strand: Number Sense & Numeration; Fractions & Decimals	
28 Compares and orders whole numbers, integer, fractions, decimals, and percents.	2-1, 4-10, 5-2, 8-7
29 Uses fractions, decimals, and percents interchangeably (e.g., $\frac{1}{4}$, .25, 25%) and recognizes equivalent representations.	2-7, 4-7, 8-6, 8-7
30 Applies properties of addition and multiplication to facilitate computation, particularly mental computation.	7-8
31 Identifies factors, multiples, primes, and composites.	1-4, 4-1A, 4-1, 4-2, 4-4, 4-9
32 Writes a given positive integer as the product of a unique set of prime factors (prime factorization).	4-2
33 Identifies greatest common factor and least common multiple.	4-4, 4-9
34 Uses divisibility rules for 2, 3, 5, 6, 9, and 10.	4-1, 4-1B
35 Identifies subsets of the real numbers and determines all subsets of which a given number is an element (e.g., 9 is a whole number, a natural number, an integer and a rational number).	2-1, 4-7, 5-1, 8-1, 8-5, 8-6, 8-7, 10-1, 10-2
Strand: Statistics & Probability	
36 Identifies possible outcomes of simple experiments and predicts or describes the probability of a given event expressed as a rational number from 0 through 1.	4-8, 10-7A, 10-7, 13-1
37 Conducts and interprets a compound probability experiment.	13-4

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Strand: Problem Solving	
38 Selects and uses appropriate problem-solving strategies to solve single- and multiple-step problems.	1-1, 1-7B, 2-3B, 2-4, 2-8, 3-2A, 3-4, 3-4B, 4-4A, 5-5, 5-7A, 5-7, 6-1B, 6-2, 6-3A, 6-3, 7-3, 7-3B, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 8-2, 8-3, 8-4A, 8-4, 8-8, 8-9, 9-4B, 10-1A, 10-3, 10-5, 10-6, 11-1B, 11-2, 11-5, 11-6, 11-7, 11-7B, 12-1B, 12-2, 12-4, 12-5, 13-1A
39 Uses proportions to solve problems involving constant rate.	8-3, 8-3B, 8-4, 8-8, 8-9, 9-3
40 Solves practical problems using percents (e.g., sales tax, sale price and commission, discounts).	4-6, 11-1, 11-2, 11-3, 11-4, 11-5, 11-6, 11-7, 11-7B
Strand: Statistics & Probability	
41 Collects, organizes data, determines appropriate method and scale to display data, and constructs frequency distributions, bar graphs, line graphs, circle graphs, tables, and charts.	3-1, 3-2, 3-4B, 3-5, 3-6B, 4-1B, 4-3B, 4-4A, 6-7A, 10-1, 10-7A, 11-3A, 11-3, 11-7B, 12-4A, 13-2, 13-4
42 Uses mean, median, and mode to describe central tendencies of a data set, and uses range to describe spread of the data.	3-1, 3-4, 3-4B, 3-6A, 3-6, 3-6B, 3-7
43 Reads and interprets data in frequency distributions, diagrams, charts, tables, and graphs; and makes predictions or conclusions based on this data.	1-2, 1-4, 2-1, 2-3, 2-8, 3-1, 3-2A, 3-2, 3-3, 3-4, 3-4B, 3-5, 3-6A, 3-6, 3-6B, 3-7, 4-1B, 4-3B, 4-4A, 5-2, 5-7A, 5-8, 6-6, 6-7A, 6-7, 7-7, 8-2, 8-3B, 8-4A, 8-9, 11-1B, 11-3A, 11-3, 11-4, 11-7B, 12-4A, 13-1A, 13-1, 13-2, 13-4, 13-5A