

GLENCOE CORRELATION

Mathematics: Applications and Connections, Course 3

GEORGIA

Quality Core Curriculum

Course: Eighth 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, 1-3, 1-3B, 1-4, 1-5, 1-6, 1-7A, 1-7, 1-7B, 1-8, 1-9, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-6B, 2-7, 2-8, 2-9A, 2-9, 2-9B, 2-10, 3-1, 3-2, 3-3, 3-4, 3-4B, 3-5, 3-6A, 3-6, 4-1A, 4-1, 4-1B, 4-2, 4-3, 4-3B, 4-4, 4-4B, 4-5, 4-5B, 4-6, 4-7, 4-8, 5-1A, 5-1, 5-1B, 5-2A, 5-2, 5-3A, 5-3, 5-4A, 5-4, 5-5, 5-5B, 5-6A, 5-6, 5-7, 6-1, 6-2, 6-2B, 6-3A, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8A, 6-8, 6-9, 7-1, 7-2, 7-3, 7-4, 7-5A, 7-5, 7-5B, 7-6, 7-6B, 7-7A, 7-7, 7-8, 7-9, 7-10, 8-1, 8-1B, 8-2, 8-3, 8-3B, 8-4, 8-5, 8-5B, 8-6, 8-7, 8-8, 8-8B, 8-9, 8-10, 9-1, 9-2A, 9-2, 9-3, 9-4A, 9-4, 9-5A, 9-5, 9-5B, 9-6, 9-7, 10-1, 10-1B, 10-2, 10-3, 10-4A, 10-4, 10-4B, 10-5, 10-6A, 10-6, 10-7, 10-8, 10-9, 11-1, 11-2A, 11-2, 11-3, 11-4, 11-5A, 11-5, 11-6, 11-6B, 11-7, 12-1A, 12-1, 12-2, 12-3, 12-4, 12-4B, 12-5, 12-6A, 12-6, 12-7A, 12-7, 13-1A, 13-1, 13-2, 13-3, 13-4, 13-5A, 13-5, 13-6, 13-7A, 13-7</p>

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2 Describes orally and in writing, using the appropriate vocabulary, mathematical concepts and procedures, such as solving a word problem or computing.	1-7B, 2-4, 2-6, 2-9A, 2-9B, 3-4B, 3-5, 3-6A, 4-1A, 4-3, 4-3B, 4-6, 5-1A, 5-1B, 5-3A, 5-4A, 5-5B, 5-6A, 6-2B, 6-3A, 6-8A, 7-5A, 7-5B, 7-6B, 7-7A, 8-3B, 8-8B, 9-1, 9-2A, 9-2, 9-4A, 9-4, 9-5A, 9-5, 9-5B, 9-6, 9-7, 10-1, 10-4A, 10-6A
3 Uses scientific calculator and computer skills to solve problems, to discover patterns and sequences, to investigate situations and draw conclusions.	1-3, 1-3B, 2-3, 2-6B, 3-4, 3-4B, 3-6, 4-1B, 4-2, 4-4B, 4-5B, 6-2, 6-5, 6-8A, 6-9, 7-5A, 7-6B, 7-7A, 7-7, 8-1B, 8-3, 8-5B, 8-8B, 9-7, 10-1B, 10-4B, 10-5, 12-4B
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.	2-3, 3-6, 4-2, 4-4B, 7-5A, 7-6B, 8-1B, 8-5B
Strand: Patterns & Relationships; Algebra	
5 Uses signs or symbols to represent words, phrases, numbers, or quantities.	1-6, 1-7, 1-9, 2-8, 10-3
6 Translates English phrases and sentences into mathematical/ algebraic expressions, equations, and inequalities.	1-6, 1-7, 1-9, 2-8, 10-3
7 Determines the number that makes a given number sentence true using the properties of equations.	1-3, 1-4, 1-5, 1-7, 2-3, 2-4, 2-7, 2-8, 2-9A, 2-9, 3-3, 7-1, 7-2, 7-3, 7-8, 7-9, 10-3
8 Uses order of operations to simplify numerical expressions.	1-3, 1-3B
9 Evaluates algebraic expressions using substitution.	1-3, 1-3B, 2-4, 2-8, 7-2, 7-3, 7-4
10 Solves single- and multi-step algebraic equations (including formulas) and inequalities using addition, subtraction, multiplication, and division.	1-3, 1-4, 1-5, 1-7, 2-3, 2-4, 2-5, 2-7, 2-8, 2-9A, 2-9, 3-3, 7-2, 7-8, 7-9, 7-10, 10-3
11 Finds the absolute value of any real number.	2-1

Component Strand Course Content Standard	Lesson References
12 Sets up a proportion and solves for the missing term in a proportion.	3-3, 8-1, 8-1B, 8-2, 8-3, 8-5, 8-7, 8-8, 8-9
13 Graphs simple and compound inequalities on a number line.	1-9
14 Examines relations (functions) to determine how changes in one variable can effect another variable (e.g., Given $b = 2a$. If $a = 2$, then $b = 4$. If $a = 3$, then $b = 6$).	10-1, 10-1B
15 Writes and solves an equation or simple inequality for a given word problem.	1-7, 1-9, 7-9, 10-3
16 Applies formulas (e.g., area, perimeter, circumference, volume, surface area), including investigating and using the Pythagorean Theorem.	1-8, 7-6, 7-6B, 7-7, 9-4A, 9-4, 9-5, 11-1, 11-3, 11-4, 11-5, 11-6, 11-6B
Strand: Whole Number Computation; Estimation; Whole Number Operations	
17 Adds, subtracts, multiplies, and divides integers and other rational numbers.	1-3, 2-3, 2-4, 2-5, 2-7, 2-8, 7-1, 7-2, 7-3, 7-8
18 Performs computations mentally using strategies such as multiples of ten, powers of ten, compensation, breaking apart numbers, or compatible numbers.	3-2, 3-3, 3-4, 3-5, 6-5, 6-8, 6-9, 8-1, 12-3
Strand: Geometry & Spatial Sense; Measurement	
19 Classifies plane and solid geometric figures based on their properties/characteristics (number or length of sides, angle measures, edges, faces, or vertices). This includes quadrilaterals (trapezoid, parallelogram, square, rectangle, rhombus); triangles (acute, obtuse, right, equilateral, isosceles, scalene); solids (prism, pyramid, cone, cylinder, sphere); and n-gon (pentagon, hexagon, octagon).	5-2, 5-3, 8-7, 11-2A, 11-2, 11-5A
20 Identifies physical symbolic representations using appropriate labeling of geometric figures, such as points, lines, line segments, rays, polygons, vertices, angles, and diagonals.	5-1A, 5-1, 5-1B, 5-3A
21 Uses properties to determine similarity and congruency of geometric figures.	5-5, 5-5B, 5-6A, 5-6, 8-7, 8-8
22 Solves problems by using the property that the sum of the measures of the angles in a triangle is 180° .	5-2

<p style="text-align: center;">Component Strand Course Content Standard</p>	<p style="text-align: center;">Lesson References</p>
<p>23 Uses geometric figures, properties, and relations to solve problems.</p>	<p>1-8, 5-1, 5-2, 5-3A, 5-3, 5-5, 5-6, 7-6, 7-6B, 7-7, 8-7, 8-8, 8-8B, 8-10, 9-7, 10-7, 10-8, 10-9, 11-1, 11-2, 11-3, 11-4, 11-5A, 11-5, 11-6, 11-6B</p>
<p>24 Identifies and graphs an ordered pair of integers on a four-quadrant coordinate plane.</p>	<p>2-10, 10-2, 10-4A, 10-4, 10-4B, 10-5, 10-6, 10-7, 10-8, 10-9</p>
<p>25 Analyzes effects of basic transformations on geometric shapes.</p>	<p>5-7, 10-7, 10-8, 10-9</p>
<p>26 Determines how changing a linear measure on a geometric figure affects area and volume.</p>	<p>11-6B</p>
<p>27 Measures and draws angles using a protractor and classifies angles by their measures (e.g., acute, obtuse, right, straight, complementary, supplementary).</p>	<p>5-1A, 5-1, 5-2, 5-3, 8-7, 9-7, 10-9</p>
<p>28 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.</p>	<p>1-8, 5-1A, 5-1, 5-3, 7-6, 7-7, 8-6, 8-7, 8-8, 8-8B, 9-4A, 9-4, 9-5, 9-7, 10-9, 11-1, 11-3, 11-4, 11-5, 11-6, 11-6B, 11-7</p>
<p>29 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.)</p>	<p>See inside back cover of textbook.</p>
<p>Strand: Number Sense & Numeration; Fractions & Decimals</p>	
<p>30 Uses fraction, decimals, and percents interchangeably, and recognizes equivalent representations.</p>	<p>3-2, 3-4, 3-5, 6-5, 6-8</p>
<p>31 Expresses standard numerals in scientific notation and expresses scientific notation as a standard numeral.</p>	<p>6-9</p>
<p>32 Evaluates powers using exponents and bases correctly, and finds square roots.</p>	<p>1-2, 1-3, 7-3, 9-1, 9-2A, 9-2</p>
<p>33 Compares and orders real numbers (whole numbers, integers, fractions, decimals, and percents).</p>	<p>2-2, 3-5, 6-8A, 6-8</p>

Component Strand Course Content Standard	Lesson References
34 Recognizes, describes, and applies all properties of the real number system (associative, commutative, inverses, identities, properties of zero and one, and the distributive property of multiplication over addition) in situations such as evaluating algebraic expressions and solving equations.	1-7, 7-4, 13-2, 13-3, 13-4, 13-5
35 Identifies factors and multiples, primes, and composites.	6-2, 6-2B, 6-3, 6-7
36 Writes a given positive integer as the product of a unique set of prime factors (prime factorization).	6-2
37 Identifies and applies divisibility, factors, prime factors, greatest common factor, and lowest common multiple.	6-1, 6-2, 6-2B, 6-3A, 6-3, 6-4, 6-7
38 Identifies subsets of the real numbers, and determines all subsets of which a given number is an element (e.g., The number 9 is a whole, a natural, and an integer).	2-1, 3-4, 6-4, 6-5, 6-9, 9-3, 9-5B
Strand: Statistics & Probability	
39 Identifies possible outcomes of simple and compound experiments, and predicts or describes the probability of a given event, expressed as a rational number from 0 through 1.	6-6, 12-5, 12-6, 12-7A
Strand: Problem Solving	
40 Selects and uses appropriate problem-solving strategies to solve single- and multiple-step problems.	1-1, 1-7A, 1-8, 1-9, 2-3, 2-4, 2-5, 2-7, 2-9B, 3-5, 3-6A, 4-1A, 4-4, 5-2A, 6-3A, 7-5A, 7-6, 7-7, 7-8, 7-9, 8-1, 8-1B, 8-2, 8-3, 8-3B, 8-5, 8-5B, 8-6, 8-7, 8-8, 8-9, 8-10, 9-4, 9-5A, 9-5, 10-6A, 11-1, 11-2A, 11-3, 11-4, 11-5, 11-6, 11-6B, 12-6A, 13-7A
41 Solves practical problems using ratio and proportion, including constant rate.	3-2, 3-3, 3-4, 8-1, 8-1B, 8-2, 8-3, 8-5, 8-7, 8-8, 8-9, 8-10
42 Solves practical problems using percents (e.g., sales tax, sale price and commission, and discounts).	3-2, 3-6, 4-2, 8-2, 8-3, 8-4, 8-5, 8-5B, 8-6

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Strand: Statistics & Probability	
43 Collects and organizes data, determines appropriate method and scale to display data, and constructs frequency distributions; bar, line and circle graphs; tables, and charts; line plots, stem-and-leaf plots, box-and-whisker plots, and scatter plots.	4-3, 4-6, 10-4A, 10-4, 12-1A, 12-6, 12-7A
44 Uses mean, median, mode, and range to describe tendencies of a data set and makes predictions.	4-4, 4-4B, 4-5, 4-5B, 4-6, 4-7, 4-8
45 Reads, interprets, compares, and analyzes data in frequency distributions, diagrams, charts, tables, and graphs (bar, line, circle, stacked bar, double line, and multiple bar), and makes predictions or conclusions based on this data.	2-5, 2-6, 2-9B, 3-4, 3-4B, 3-5, 3-6, 4-1A, 4-1, 4-1B, 4-2, 4-3, 4-3B, 4-4, 4-4B, 4-5, 4-5B, 4-6, 4-7, 4-8, 5-2A, 5-3A, 6-2B, 7-5, 7-6B, 7-10, 8-1B, 8-2, 8-3, 8-3B, 8-4, 8-5B, 9-5A, 10-1, 10-1B, 10-2, 10-3, 10-4A, 10-4, 10-4B, 10-5, 10-6A, 10-6, 10-8, 11-3, 12-1A, 12-4, 12-7A, 12-7