

Glencoe
Mathematics: Applications and Connections, Course 1
 correlated to
SOUTH CAROLINA
MATH CURRICULUM STANDARDS
GRADE 6

STANDARDS	LESSON REFERENCES
<p>6-8 Number and Operations (NO)</p> <p>Standard I. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p>Expectations:</p> <p>A. Work flexibly with fractions, decimals, and percents to solve problems.</p> <p>1. Show the relationship among fractions, decimals, and percents.</p> <p>B. Compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line.</p> <p>1. Use order symbols to compare two fractions, two decimals, or two percents.</p> <p>C. Develop meaning for percents greater than 100 and less than 1.</p> <p>1. Use models to represent percents greater than 100 percent and solve problems involving them.</p> <p>D. Understand and use ratios and proportions to represent quantitative relationships.</p> <p>1. Connect the concept of ratio and fractions by determining the equivalence of two ratios.</p> <p>E. Develop an understanding of large numbers and recognize and appropriately use exponential, scientific, and calculator notation.</p> <p>1. Evaluate powers of ten up to 10^6.</p> <p>F. Use factors, multiples, prime factorization, and relatively prime numbers to solve problems.</p> <p>1. Solve problems using prime factorization,</p>	<p>5-9, 5-10, 8-4, 8-5</p> <p>3-3, 5-8</p> <p>8-4, 8-7</p> <p>5-4A, 5-4, 8-1, 8-2</p> <p>1-6, 4-9</p> <p>5-2, 5-3, 5-7, 5-8, 5-9</p>

STANDARDS	LESSON REFERENCES
<p>common multiples, and common factors, and explain the reasoning used.</p> <p>G. Develop meaning for integers and represent and compare quantities with them.</p> <p>1. Use integers to describe real world phenomena in order to develop meanings for integers.</p> <p>Standard II. Understand meanings of operations and how they relate to one another.</p> <p>Expectations:</p> <p>A. Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers.</p> <p>1. Explain the meaning and effects of adding, subtracting, multiplying and dividing.</p> <p>B. Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals.</p> <p>1. Apply the commutative, associative, and distributive properties to simplify computations with whole numbers, fractions, and decimals.</p> <p>Standard III. Compute fluently and make reasonable estimates.</p> <p>Expectations:</p> <p>A. Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods.</p> <p>1. Select appropriate methods and tools to solve problems requiring the addition, subtraction, multiplication, and division of fractions and decimals.</p> <p>B. Develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use.</p>	<p>11-1, 11-2, 11-3, 11-4, 11-5, 11-6</p> <p>Chapter 3 Project, 3-6, 4-1A, 4-1, 4-3A, 4-3, 4-3B, 4-4, 4-5, 4-6A, 4-6, 4-7, 4-9, 6-3, 6-4A, 6-4, 6-5, 6-6, Chapter 7 Project, 7-2A, 7-2, 7-3, 7-4, 7-5A, 7-5, 7-6, 7-7, 7-7B, 7-8, 7-8B, 11-3A, 11-3, 11-4, 11-5, 11-6</p> <p>4-2</p> <p>Chapter 3 Project, 3-6, 4-1A, 4-1, 4-2, 4-3A, 4-3, 4-4, 4-5, 4-6A, 4-6, 4-7, 5-9, 5-10, 6-3, 6-4A, 6-4, 6-5, 6-6, Chapter 7 Project, 7-1, 7-2A, 7-2, 7-3, 7-4, 7-5A, 7-5, 7-6, 8-3</p>

STANDARDS	LESSON REFERENCES
<p>1. Using models, divide commonly used fractions (including decimals).</p> <p>2. Use models and numbers to develop and analyze algorithms with fractions and decimals.</p> <p>3. Add, subtract, multiply and divide fractions (including decimals) to solve a variety of applied and mathematical problems.</p> <p>C. Develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results.</p> <p>1. Estimate the sums, differences, products, and quotients of fractions, describe the method used, and determine the reasonableness of results.</p>	<p>4-5, 4-6A, 4-6, 4-7, 4-8, 7-5A, 7-5, 7-6</p> <p>3-6, 4-1A, 4-1, 4-3A, 4-3, 4-5, 4-6A, 4-6, 4-7, 6-3, 6-4A, 6-4, 6-5, 6-6, 7-2A, 7-2, 7-3, 7-4, 7-5A, 7-5, 7-6</p> <p>Chapter 3 Project, 3-6, 4-1A, 4-1, 4-3A, 4-3, 4-3B, 4-4, 4-5, 4-6A, 4-6, 4-7, 4-9, 6-3, 6-4A, 6-4, 6-5, 6-6, Chapter 7 Project, 7-2A, 7-2, 7-3, 7-4, 7-5A, 7-5, 7-6, 7-7, 7-7B, 7-8</p> <p>6-2, 6-3, 6-5, 7-1, 7-2, 7-4, 7-6</p>
<p>6-8: Algebra (ALG)</p>	
<p>Standard I. Understand patterns, relations, and functions.</p>	
<p>Expectations:</p>	
<p>A. Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules.</p>	
<p>1. Describe, extend, and write rules for a wide variety of patterns.</p>	<p>1-2, 1-3, 1-5, 1-6, 5-1, 5-2A, 5-2, 5-3A, 8-1, 9-1B, 10-5A, 10-5, 12-4</p>
<p>Standard II. Represent and analyze mathematical situations and structures using algebraic symbols.</p>	
<p>Expectations:</p>	
<p>A. Develop an initial conceptual understanding of different uses of variables.</p>	
<p>1. Use order of operations to evaluate numerical expressions.</p>	<p>1-4, 1-5B, 1-6</p>
<p>B. Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope.</p>	
<p>1. Write simple equations and inequalities accurately to represent relationships.</p>	<p>12-1, 12-2, 12-3, 12-4</p>

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<p>D. Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations.</p> <p>1. Use commutative, associative and distributive properties to examine equivalence of a variety of simple algebraic expressions.</p> <p>Standard III. Use mathematical models to represent and understand quantitative relationships.</p> <p>Expectations:</p> <p>A. Model and solve contextualized problems using various representations, such as graphs, tables, and equations.</p> <p>1. Use graphs and tables to solve applied problems.</p>	<p>4-2</p> <p>4-3B, 7-8B, 8-2B, 10-6B, 12-1, 12-5A, 12-5, 12-6</p>
<p>6-8: Geometry (GEO)</p> <p>Standard I. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.</p> <p>Expectations:</p> <p>A. Precisely describe, classify, and understand relationships among types of two- and three-dimensional objects using their defining properties.</p> <p>1. Compare and contrast prisms, cylinders and pyramids with the polygons or circles that constitute their faces.</p> <p>B. Understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects.</p> <p>1. Describe relationships among angles, side lengths, perimeters, and areas of similar polygons.</p> <p>C. Create and critique inductive and deductive arguments concerning geometric ideas and relationships, such as congruence, similarity, and the Pythagorean relationship.</p> <p>1. Identify and describe point and line symmetry in two-dimensional shapes.</p> <p>2. Distinguish between similarity and congruence.</p>	<p>10-4, 10-4B, 10-5A, 10-6, 10-6B</p> <p>9-6, 9-6B</p> <p>9-5</p> <p>9-6, 9-6B</p>

STANDARDS	LESSON REFERENCES
<p>Standard II. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</p> <p>Expectations:</p> <p>A. Use coordinate geometry to represent and examine the properties of geometric shapes.</p> <p>1. Given the coordinates of three vertices of a rectangle or square oriented horizontally or vertically, use the first quadrant of the rectangular coordinate system to locate the other vertex.</p> <p>B. Use coordinate geometry to examine special geometric shapes, such as regular polygons or those with pairs of parallel or perpendicular sides</p> <p>1. Plot the vertices of squares and rectangles and determine the relationship among the coordinates.</p> <p>Standard III. Apply transformations and use symmetry to analyze mathematical situations.</p> <p>Expectations:</p> <p>A. Describe sizes, positions, and orientations of shapes under informal transformations such as flips, turns, slides, and scaling.</p> <p>1. Describe the transformation used to move a polygon from one location to another in the first quadrant.</p> <p>B. Examine the congruence, similarity, and line or rotational symmetry of objects using transformations.</p> <p>1. Apply a transformation to a polygon and describe how it has changed.</p> <p>Standard IV. Use visualization, spatial reasoning, and geometry modeling to solve problems.</p> <p>Expectations:</p> <p>A. Draw geometric objects with specified properties, such as side lengths or angle measures.</p> <p>1. Use symbols for parallel lines and perpendicular lines to describe polygons and figures where appropriate.</p>	<p>11-8</p> <p>11-8</p> <p>11-8</p> <p>11-8A, 11-8</p> <p>9-4A, 9-4, inside back cover</p>

STANDARDS	LESSON REFERENCES
<p>B. Use two-dimensional representations of three-dimensional objects to visualize and solve problems such as those involving surface area and volume.</p> <p>1. Given the top, side, and front views, construct a three-dimensional model using cubes.</p> <p>E. Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life.</p> <p>1. Identify and apply geometric concepts in a variety of practical contexts.</p> <p>6-8: Measurement (MEA)</p> <p>Standard I. Understand measurable attributes of objects and the units, systems, and processes of measurement.</p> <p>Expectations:</p> <p>C. Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.</p> <p>1. Estimate angle measure using 45 degrees, 90 degrees, 180 degrees, 270 degrees, and 360 degrees as referents and use the appropriate tools to measure any angle.</p> <p>2. Use appropriate units of measure to label angles, perimeter, and area.</p> <p>Standard II. Apply appropriate techniques, tools, and formulas to determine measurements.</p> <p>Expectations:</p> <p>A. Use common benchmarks to select appropriate methods for estimating measurements.</p> <p>1. Using standard and nonstandard units of measure, estimate and then determine length, weight/mass, area, and volume/capacity.</p>	<p>10-5A, 10-5</p> <p>1-5, 1-6, 3-2, 4-3B, 4-4, 4-4B, 4-5A, 4-5, 4-7, 5-1, 5-2, 5-6, 5-9, 6-2, 6-2B, 6-4, 6-5, 6-6, 7-3, 7-4, 7-5, 7-6, 7-8A, 7-8, 8-1, 8-3, 8-6, 9-4, 9-5, 9-6, 10-1, 10-2, 10-3, 10-3B, 10-4, 10-5A, 10-5, 10-6, 10-6B, 11-8, 12-1, 12-4, 12-4B, 12-5, 12-6, 13-3, 13-3B, 13-5</p> <p>9-1, 9-2, 9-3, 10-3B</p> <p>1-5, 4-4, 4-4B, 4-5A, 4-7, 7-1, 7-3, 7-4, 7-6, 7-8A, 7-8, 8-4, 8-6, 9-1, 9-2, 9-3, 10-1A, 10-1, 10-2, 10-3, 10-3B, 10-5A, 10-6, 10-6B, 11-2, 12-1, 12-4B, 12-5, 13-3, 13-5</p> <p>1-5, 3-2, 3-3, 3-6, 4-4, 4-4B, 4-5A, 4-7, 4-8, 4-9, 5-6, 5-7, 5-8, 7-1, 7-3, 7-4, 7-6, 7-7, 7-7B, 7-8A, 7-8, 8-4, 8-6, 10-1A, 10-1, 10-2, 10-3, 10-5A, 10-5, 10-6, 10-6B, 11-2, 12-1, 12-4B, 12-5, 13-3, 13-5</p>

STANDARDS	LESSON REFERENCES
<p>2. Estimate and justify estimates of perimeter and area of irregular shapes.</p> <p>B. Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.</p> <p>1. Select and use appropriate tools and units to measure to the degree of accuracy required in a particular situation.</p> <p>C. Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes.</p> <p>1. Investigate and describe the relationship between areas of rectangles and triangles or other quadrilaterals.</p> <p>2. Develop and apply the formulas for the area of triangles and parallelograms.</p> <p>E. Solve problems involving scale factors, using ratio and proportion.</p> <p>1. Use a scale to find distance.</p>	<p>10-1A</p> <p>2-4, 3-2A, 3-2, 3-6, 5-6, 5-7, 9-1, 9-2, 9-3, 10-3B, 10-6</p> <p>10-1, 10-2</p> <p>10-1, 10-2</p> <p>8-3</p>
<p>6-8: Data Analysis and Probability (DAP)</p> <p>Standard I. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</p> <p>Expectations:</p> <p>A. Formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population.</p> <p>1. Given a problem situation involving one population, collect, analyze, and interpret data.</p> <p>B. Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatterplots.</p> <p>1. Organize and display data in a variety of ways including frequency tables, histograms, and stem-and-leaf plots.</p>	<p>Chapter 2 Project, 2-1, 2-2, 2-3, 2-7, 2-8, Chapter 13 Project, 13-1, 13-2, 13-3, 13-3B, 13-4B</p> <p>2-1, 2-2, 2-3, 2-3B, 2-4, 2-5, 2-6, 2-7B, 2-8, 10-3B</p>

STANDARDS	LESSON REFERENCES
<p>Standard II. Select and use appropriate statistical methods to analyze data.</p> <p>Expectations:</p> <p>A. Find, use, and interpret measures of center and spread, including mean and interquartile range.</p> <p>1. Create and solve problems involving the mean, median, mode, and range of a set of data.</p> <p>B. Discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots.</p> <p>1. Interpret histograms and stem-and-leaf plots.</p> <p>2. Describe the relationship between a data set and its corresponding histogram or stem-and-leaf plot.</p> <p>Standard III. Develop and evaluate inferences and predictions that are based on data.</p> <p>Expectations:</p> <p>A. Use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken.</p> <p>1. Analyze and list the differences between two data sets.</p> <p>Standard IV. Understand and apply basic concepts of probability.</p> <p>Expectations:</p> <p>A. Understand and use appropriate terminology to describe complementary and mutually exclusive events.</p> <p>1. Identify and describe complementary events.</p> <p>B. Use proportionality and a basic understanding of probability to make and test conjectures about the results of experiments and simulations.</p> <p>1. Create a sample space for one- or two-stage events and represent it in the form of a list, chart, picture, or tree diagram.</p>	<p>2-7, 2-7B, 2-8, 2-9</p> <p>2-6</p> <p>2-6</p> <p>Chapter 2 Project, 2-1, 2-2, 2-3, 2-7, 2-8, 13-2, 13-3, 13-3B, 13-4B</p> <p>13-1</p> <p>13-1A, 13-1, 13-4, 13-4B, 13-5</p>

