

Georgia Standards of Excellence 4.2 Curriculum Map

Georgia Standards of Excellence: Curriculum Map							
4 th Grade Unit 5	4 th Grade Unit 6	4 th Grade Unit 7	5 th Grade Unit 1	5 th Grade Unit 2	5 th Grade Unit 3	5 th Grade Unit 4	
Fractions and Decimals	Geometry	Measurement	Order of Operations and Whole Numbers	Adding and Subtracting With Decimals	Multiplying and Dividing with Decimals	Adding, Subtracting, Multiplying, and Dividing Fractions	Show What We Know
3-4 weeks	2-3 weeks	3-4 weeks	6-7 weeks	4-5 weeks	4-5 weeks	5-6 weeks	Up to 5 weeks
MGSE4.NF.5 MGSE4.NF.6 MGSE4.NF.7 MGSE4.MD.2	MGSE4.G.1 MGSE4.G.2 MGSE4.G.3	MGSE4.MD.1 MGSE4.MD.2 MGSE4.MD.3 MGSE4.MD.4 MGSE4.MD.5 MGSE4.MD.6 MGSE4.MD.7 MGSE4.MD.8	MGSE5.OA.1 MGSE5.OA.2 MGSE5.NBT.1 MGSE5.NBT.2 MGSE5.NBT.5 MGSE5.NBT.6	MGSE5.NBT.1 MGSE5.NBT.3 MGSE5.NBT.4 MGSE5.NBT.7	MGSE5.NBT.2 MGSE5.NBT.7	MGSE5.NF.1 MGSE5.NF.2 MGSE5.NF.3 MGSE5.NF.4 MGSE5.NF.5 MGSE5.NF.6 MGSE5.NF.7 MGSE5.MD.2	ALL
<p>These units were written to build upon concepts from prior units, so later units contain tasks that depend upon the concepts addressed in earlier units. All units will include the Mathematical Practices and indicate skills to maintain. <i>*Prioritized Standards are noted in RED*</i></p>							

NOTE: Mathematical standards are interwoven and should be addressed throughout the year in as many different units and tasks as possible in order to stress the natural connections that exist among mathematical topics.

Grades 3-5 Key: G= Geometry, MD=Measurement and Data, NBT= Number and Operations in Base Ten, NF = Number and Operations, Fractions, OA = Operations and Algebraic Thinking.

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Standards for Mathematical Practice			
<p>1 Make sense of problems and persevere in solving them.</p> <p>2 Reason abstractly and quantitatively.</p> <p>3 Construct viable arguments and critique the reasoning of others.</p> <p>4 Model with mathematics.</p>		<p>5 Use appropriate tools strategically.</p> <p>6 Attend to precision.</p> <p>7 Look for and make use of structure.</p> <p>8 Look for and express regularity in repeated reasoning.</p>	
4 th Unit 5	4 th Unit 6	4 th Unit 7	5 th Unit 1
Fractions and Decimals	Geometry	Measurement	Order of Operations and Whole Numbers
<p><u>Understand decimal notation for fractions, and compare decimal fractions.</u> MGSE4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$. MGSE4.NF.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram. MGSE4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model MGSE4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<p><u>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</u> MGSE4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. MGSE4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. MGSE4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.</p>	<p><u>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</u> MGSE4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.</p> <ol style="list-style-type: none"> Understand the relationship between gallons, cups, quarts, and pints. Express larger units in terms of smaller units within the same measurement system. Record measurement equivalents in a two column table. <p>MGSE4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. MGSE4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the</p>	<p><u>Write and interpret numerical expressions.</u> MGSE5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. MGSE5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product. <u>Understand the place value system.</u> MGSE5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. MGSE5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. <u>Perform operations with multi-digit whole numbers and with decimals to hundredths.</u> MGSE5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm (or other strategies demonstrating</p>

		<p>area formula as a multiplication equation with an unknown factor.</p> <p><u>Represent and interpret data.</u> MGSE4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions with common denominators by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i></p> <p><u>Geometric Measurement: understand concepts of angle and measure angles.</u> MGSE4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <ol style="list-style-type: none"> a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles. b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees. <p>MGSE4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>MGSE4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol or letter for the unknown angle measure.</p> <p>MGSE4.MD.8 Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-</p>	<p>understanding of multiplication) up to a 3 digit by 2 digit factor.</p> <p>MGSE5.NBT.6. Fluently divide up to 4-digit dividends and 2-digit divisors by using at least one of the following methods: strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations or concrete models. (e.g., rectangular arrays, area models)</p>
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		overlapping parts, applying this technique to solve real world problems.	

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5 th Unit 2	5 th Unit 3	5 th Unit 4	
Decimals	Multiplying and Dividing with Decimals	Adding, Subtracting, Multiplying, and Dividing Fractions	Show What We Know
<p><u>Understand the place value system.</u> MGSE5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p>MGSE5.NBT.3 Read, write, and compare decimals to thousandths.</p> <p style="padding-left: 20px;">a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p> <p style="padding-left: 20px;">b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>MGSE5.NBT.4 Use place value understanding to round decimals up to the hundredths place.</p> <p><u>Perform operations with multi-digit whole numbers and with decimals to hundredths.</u> MGSE5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p><u>Understand the place value system.</u> MGSE5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p><u>Perform operations with multi-digit whole numbers and with decimals to hundredths.</u> MGSE5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p><u>Use equivalent fractions as a strategy to add and subtract fractions.</u> MGSE5.NF.1 Add and subtract fractions and mixed numbers with unlike denominators by finding a common denominator and equivalent fractions to produce like denominators.</p> <p>MGSE5.NF.2 Solve word problems involving addition and subtraction of fractions, including cases of unlike denominators, (e.g., by using visual fraction models or equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</p> <p><u>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</u> MGSE5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>Example: $\frac{3}{5}$ can be interpreted as "3 divided by 5 and as 3 shared by 5."</i></p> <p>MGSE5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p style="padding-left: 20px;">a. Apply and use understanding of multiplication to multiply a fraction</p>	<p>ALL</p>

		<p>or who number by a fraction. Examples: $\frac{a}{b} \times q$ as $\frac{a}{b} \times \frac{q}{1}$ and $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$</p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>MGSE5.NF.5 Interpret multiplication as scaling (resizing), by:</p> <p>a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. Example: 4 x 10 is twice as large a 2 x 10.</p> <p>b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{(n \times a)}{(n \times b)}$ to the effect of multiplying $\frac{a}{b}$ by 1.</p> <p>MGSE5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p> <p>MGSE5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.¹</p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for</p>	
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¹ Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

$(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.

b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.

c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual *fraction* models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?

Represent and interpret data.

MGSE5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*