

Georgia Standards of Excellence Fulton County Curriculum Map Math 6th Advanced

Numbers and Their Opposites	Operations with Rational Numbers	Expressions and Equations	Ratio and Proportional Relationships	Geometry 2-D	Geometry 3-D	Inferences	Probability
4 - 5 weeks	4 – 5 weeks	4 – 5 weeks	5 weeks	4 – 5 weeks	4 weeks	3-4 weeks	4 weeks
MGSE6.NS.5 MGSE6.NS.6 MGSE6.NS.7 MGSE6.NS.8	MGSE7.NS.1 MGSE7.NS.2 MGSE7.NS.3	MGSE7EE.1 MGSE7EE.2 MGSE7EE.3 MGSE7EE.4	MGSE7.RP.1 MGSE7.RP.2 MGSE7.RP.3	MGSE7.G.5 MGSE7.G.1 MGSE7.G.2 MGSE6.G.1 MGSE7.G.4 MGSE6.G.3	MGSE6.G.4 MGSE7.G.3 MGSE6.G.2 MGSE7.G.6	MGSE6.SP.1 MGSE7.SP.1 MGSE6.SP.5 MGSE7.SP.2 MGSE6.SP.4 MGSE6.SP.2 MGSE6.SP.3 MGSE7.SP.3 MGSE7.SP.4	MGSE7.SP.5 MGSE7.SP.6 MGSE7.SP.7 MGSE7.SP.8

Prioritized Standards are noted in RED

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.

Georgia Standards of Excellence: Fulton County Math 6th Advanced Curriculum Map

Standards for Mathematical Practice

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.

- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.

Unit 1	Unit 2	Unit 3	Unit 4
Numbers and Their Opposites	Operations with Rational Numbers	Expressions and Equations	Ratio and Proportional Relationships
<p>6.NS.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6.NS.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.</p> <p>b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>	<p>7.NS.1: Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>a. Show that a number and its opposite have a sum of 0 (are additive inverses). Describe situations in which opposite quantities combine to make 0. <i>For example, your bank account balance is $-\\$25.00$. You deposit $\\$25.00$ into your account. The net balance is $\\$0.00$.</i></p> <p>b. Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Interpret sums of rational numbers by describing real-world contexts.</p> <p>c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>d. Apply properties of operations as strategies to add and subtract rational numbers.</p> <p>7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy</p>	<p>7.EE.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.2: Understand that rewriting an expression in different forms in a problem context can clarify the problem and how the quantities in it are related. <i>For example, $a + 0.05a = 1.05a$ means that adding a 5% tax to a total is the same as multiplying the total by 1.05.</i></p> <p>7.EE.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), by applying properties of operations as strategies to calculate with numbers, converting between forms as appropriate, and assessing the reasonableness of answers using mental computation and estimation strategies.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> • <i>If a woman making $\\$25$ an hour gets a 10% raise, she will make an additional $1/10$ of her salary an hour, or $\\$2.50$, for a new salary of $\\$27.50$.</i> • <i>If you want to place a towel bar $9\ 3/4$ inches long in the center of a door that is $27\ 1/2$ inches wide, you will need to place the bar about 9 inches from each edge; this</i> 	<p>7.RP.1: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. <i>For example, if a person walks $1/2$ mile in each $1/4$ hour, compute the unit rate as the complex fraction $(1/2)/(1/4)$ miles per hour, equivalently 2 miles per hour.</i></p> <p>7.RP.2: Recognize and represent proportional relationships between quantities.</p> <p>a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>c. Represent proportional relationships by equations.</p> <p>d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p> <p>7.RP.3: Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, and fees.</i></p>

<p>6.NS.7: Understand ordering and absolute value of rational numbers.</p> <p>a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p> <p>b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p>c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation</p> <p>d. Distinguish comparisons of absolute value from statements about order.</p> <p>6.NS.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<p>the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> <p>7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	<p><i>estimate can be used as a check on the exact computation.</i></p> <p>7.EE.4: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i></p> <p>b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i></p> <p>c. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ in which p and q are rational numbers.</p>	
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Georgia Standards of Excellence Fulton County Math 6th Advanced

Georgia Standards of Excellence: Curriculum Map

Standards for Mathematical Practice

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Unit 5	Unit 6	Unit 7	Unit 8
Geometry 2-D	Geometry 3-D	Inferences	Probability

<p>7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p> <p>7.G.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> <p>7.G.2: Explore various geometric shapes with given conditions. Focus on creating triangles from three measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>6.G.1: Find area of right triangles, other triangles, quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>7.G.4: Given the formulas for the area and circumference of a circle, use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p>6.G.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these</p>	<p>6.G.4: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p> <p>7.G.3: Describe the two-dimensional figures (cross sections) that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms, right rectangular pyramids, cones, cylinders, and spheres.</p> <p>6.G.2: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths ($\frac{1}{2}$ u), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = (\text{length}) \times (\text{width}) \times (\text{height})$ and $V = (\text{area of base}) \times (\text{height})$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p> <p>7.G.6: Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	<p>6.SP.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>7.SP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> <p>6.SP.5: Summarize numerical data sets in relation to their context, such as by:</p> <ol style="list-style-type: none"> Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. Giving quantitative measures of center (median and/or mean) and variability (interquartile range). Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data was gathered. <p>7.SP.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.</p>	<p>7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p> <p>7.SP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency. Predict the approximate relative frequency given the probability. <i>For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</i></p> <p>7.SP.7: Develop a probability model and use it to find probabilities of events. Compare experimental and theoretical probabilities of events. If the probabilities are not close, explain possible sources of the discrepancy.</p> <ol style="list-style-type: none"> Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. <i>For example, find the approximate probability that a spinning penny will land</i>
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<p>techniques in the context of solving real-world and mathematical problems.</p>		<p>6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>6.SP.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p> <p>6.SP.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.</p> <p>7.SP.3: Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the medians by expressing it as a multiple of the interquartile range.</p> <p>7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</p>	<p><i>heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?</i></p> <p>7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.</p> <p>c. Explain ways to set up a simulation and use the simulation to generate frequencies for compound events. <i>For example, if 40% of donors have type A blood, create a simulation to predict the probability that it will take at least 4 donors to find one with type A blood.</i></p>
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