

Fulton County Schools 2022-2023

GSE Grade 7 Curriculum Map					
Unit 1		Semester 1		Unit 3	
Unit 1		Unit 2		Unit 3	
<u>Operations with Rational Numbers</u>		<u>Expressions and Equations</u>		<u>Ratios and Proportional Relationships</u>	
27 days		27 days		27 days	
Grade Level Standard	Direct Prerequisite Standard	Grade Level Standard	Direct Prerequisite Standard	Grade Level Standard	Direct Prerequisite Standard
<u>MGSE7.NS.1</u>	MGSE6.NS.5 MGSE6.NS.6 MGSE6.NS.7	<u>MGSE7.EE.1</u>	MGSE6.EE.3 MGSE6.EE.4	<u>MGSE7.RP.1</u>	MGSE6.RP.2
<u>MGSE7.NS.1a</u>		<u>MGSE7.EE.2</u>		<u>MGSE7.RP.2</u>	MGSE6.RP.2* MGSE6.RP.3
<u>MGSE7.NS.1b</u>		<u>MGSE7.EE.3</u>		<u>MGSE7.RP.2a</u>	
<u>MGSE7.NS.1c</u>		<u>MGSE7.EE.4</u>	MGSE6.EE.6 MGSE6.EE.7 MGSE6.EE.8	<u>MGSE7.RP.2b</u>	
<u>MGSE7.NS.1d</u>		<u>MGSE7.EE.4a</u>		<u>MGSE7.RP.2c</u>	
<u>MGSE7.NS.2</u>	MGSE6.NS.1	<u>MGSE7.EE.4b</u>		<u>MGSE7.RP.2d</u>	
<u>MGSE7.NS.2a</u>		<u>MGSE7.EE.4c</u>		<u>MGSE7.RP.3</u>	MGSE6.RP.3*
<u>MGSE7.NS.2b</u>				<u>MGSE7.G.1</u>	MGSE6.G.1
<u>MGSE7.NS.2c</u>					
<u>MGSE7.NS.2d</u>					
<u>MGSE7.NS.3</u>	MGSE6.NS.3				
<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 include the Mathematical Practices and indicate skills to maintain.</p> <p style="text-align: center;">Prioritized standards in RED Prerequisite standards in BLUE Prerequisite prioritized standards in BOLD BLUE Prerequisite standards already addressed are denoted with * Underlined standards link to STATE IMPLEMENTATION VIDEOS</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 6-8 Key: NS = The Number System RP = Ratios and Proportional Relationships EE = Expressions and Equations G = Geometry SP = Statistics and Probability.

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GSE Grade 7 Curriculum Map						
Semester 2						
Unit 4		Unit 5		Unit 6		Unit 7
<u>Geometry</u>		<u>Inferences</u>		<u>Probability</u>		GMAS Review and Show What We Know
26 days		19 days		23 days		
Grade Level Standard	Direct Prerequisite Standard	Grade Level Standard	Direct Prerequisite Standard	Grade Level Standard	Direct Prerequisite Standard	GMAS Review – 5 days Show What We Know – up to 19 days
<u>MGSE7.G.2</u>		MGSE7.SP.1	<u>MGSE6.SP.1</u> <u>MGSE6.SP.2</u>	MGSE7.SP.5		
<u>MGSE7.G.3</u>		<u>MGSE7.SP.2</u>		MGSE7.SP.6	<u>MGSE7.RP.3</u>	
MGSE7.G.4	<u>MGSE6.G.1</u>	<u>MGSE7.SP.3</u>	<u>MGSE6.NS.1</u> <u>MGSE6.SP.2*</u>	<u>MGSE7.SP.7</u> <u>MGSE7.SP.7a</u> <u>MGSE7.SP.7b</u>	<u>MGSE7.RP.3*</u>	
MGSE7.G.5		MGSE7.SP.4		<u>MGSE7.SP.8a</u> <u>MGSE7.SP.8b</u> <u>MGSE7.SP.8c</u>	<u>MGSE7.RP.3*</u>	
<u>MGSE7.G.6</u>	<u>MGSE6.G.1*</u> <u>MGSE6.G.2</u> <u>MGSE6.G.4</u>					
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GSE Grade 7 Expanded 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
Operations with Rational Numbers	Expressions and Equations	Ratios and Proportional Relationships
<p>MGSE6.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, debits/credits, 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>MGSE6.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>MGSE6.NS.7 Understand ordering and absolute value of rational numbers.</p> <p>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p> <p>MGSE7.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>MGSE7.NS.1a 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>MGSE7.NS.1b 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>MGSE7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational</p>	<p>MGSE6.EE.3 Apply the properties of operations to generate equivalent expressions.</p> <p>MGSE6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p> <p>Use properties of operations to generate equivalent expressions.</p> <p>MGSE7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>MGSE7.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>Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</p> <p>MGSE7.EE.3 Solve multistep 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 estimate can be used as a check on the exact computation.</i> <p>MGSE6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or,</p>	<p>MGSE6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$ (b not equal to zero), and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."</i></p> <p>Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>MGSE7.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>MGSE6.RP.2*</p> <p>MGSE6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems utilizing strategies such as tables of equivalent ratios, tape diagrams (bar models), double number line diagrams, and/or equations.</p> <p>MGSE7.RP.2 Recognize and represent proportional relationships between quantities.</p> <p>MGSE7.RP.2a 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>MGSE7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>MGSE7.RP.2c Represent proportional relationships by equations.</p> <p>MGSE7.RP.2d. 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>

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numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

MGSE7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.

MGSE6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, including reasoning strategies such as 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 3/4-cup servings are in 2/3 of a cup of yogurt?*
- *How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*
- *Create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient;*
- *Three pizzas are cut so each person at the table receives 1/4 pizza. How many people are at the table?*
- *Use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3 \times 3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.)*

MGSE7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

MGSE7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy 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

MGSE7.NS.2b 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.

MGSE7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.

MGSE7.NS.2d 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.

MGSE6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

depending on the purpose at hand, any number in a specified set.

MGSE6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

MGSE6.EE.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

MGSE7.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.

MGSE7.EE.4a 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. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*

MGSE7.EE.4b 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. *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.*

MGSE7.EE.4c 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.

MGSE6.RP.3*

MGSE7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, and fees.

MGSE6.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.

Draw, construct, and describe geometrical figures and describe the relationships between them.

MGSE7.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.

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MGSE7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.		
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Standards for Mathematical Practice

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| <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> |
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Unit 4	Unit 5	Unit 6	Unit 7
Geometry	Inferences	Probability	Show What We Know
<p><u>Draw, construct, and describe geometrical figures and describe the relationships between them.</u></p> <p>MGSE7.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>MGSE7.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><u>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</u></p> <p>MGSE6.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>MGSE7.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>MGSE7.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>MGSE6.G.1*</p> <p>MGSE6.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</p>	<p><u>Use random sampling to draw inferences about a population.</u></p> <p>MGSE6.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>MGSE6.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>MGSE7.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>MGSE7.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><u>Draw informal comparative inferences about two populations.</u></p> <p>MGSE6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, including reasoning strategies such as using visual fraction models and equations to represent the problem.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> • Create a story context for $(\frac{2}{3}) \div (\frac{3}{4})$ and use a visual fraction model to show the quotient; 	<p><u>Investigate chance processes and develop, use, and evaluate probability models.</u></p> <p>MGSE7.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>MGSE7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, and fees.</p> <p>MGSE7.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>MGSE7.RP.3*</p> <p>MGSE7.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> <p>MGSE7.SP.7a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events</p> <p>MGSE7.SP.7b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance</p>	<p>ALL</p>

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<p>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>MGSE6.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>MGSE7.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>	<ul style="list-style-type: none"> • <i>Use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3 \frac{3}{4}$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.)</i> • <i>How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally?</i> • <i>How many $3/4$-cup servings are in $2/3$ of a cup of yogurt?</i> • <i>How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?</i> <p>MGSE6.SP.2*</p> <p>MGSE7.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>MGSE7.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>process. For example, find the approximate probability that a spinning penny will land 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>MGSE7.RP.3*</p> <p>MGSE7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>MGSE7.SP.8a 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>MGSE7.SP.8b 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>MGSE7.SP.8c 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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