# Mathletics Georgia Mathematics Standards Activities

🗋 Home

Fractions, decimals and percent

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Working with integers

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Activities

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Skill Quest



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## Mathletics

Georgia Mathematics Standards Activities September 2023

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1.2 Solve problems involving radicals and integer exponents including relevant application situations; apply place value understanding with scientific notation and use scientific notation to explain real phenomena
2 Patterning & Algebraic Reasoning17
2.1 Create and interpret expressions within relevant situations. Create, interpret, and solve linear equations and linear inequalities in one variable to model and explain real phenomena
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## Grade 7

#### **1** Numerical Reasoning

Course Topic	Activities Title
REVIEW 7.NR.1 Add &	Integers on a Number Line
subtract rational numbers	Ordering Integers (Number Line)
	Comparing Integers
	Add Like Fractions
	Add Like Mixed Numbers
	Subtract Like Fractions

1.1 Solve relevant, mathematical problems, including multi-step problems, involving the four operations with rational numbers and quantities in any form (integers, percentages, fractions, and decimal numbers).

7.NR.1.1		
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.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

<b>7.NR.1.2</b> Show and explain 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 applicable situations.		
Course Topic	Activities Title	
7.NR.1 Add & subtract	Add Integers	
rational numbers	Adding Integers: Positive, Negative or Zero	
	Subtract Integers	
	Integers: Add and Subtract	
	Negative or Positive?	
	More with Integers	

<b>7.NR.1.3</b> Represent addition and subtraction with rational numbers on a horizontal or a vertical number line diagram to solve authentic problems.		
Course Topic	Activities Title	
7.NR.1 Add & subtract	Add Unlike Fractions	
rational numbers	Add Mixed Numbers: Signs Can Differ	
	Subtract Unlike Fractions	
	Subtract Mixed Numbers: Signs Differ	
	Subtract Negative Mixed Numbers	

7.NR.1.4		
Show and explain 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 contextual		
situations.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.NR.1.5		
Apply properties of operations, including part-whole reasoning, as strategies to add		
and subtract rational numbers.		
Course Topic	Activities Title	
Teacher directed Teacher directed		

7.NR.1.6		
Make sense of multiplication of rational numbers using realistic applications.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.NR.1.7		
Show and explain that integers can be divided, assuming the divisor is not zero, and		
every quotient of integers is a rational number.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.NR.1.8		
Represent the multiplicati	Represent the multiplication and division of integers using a variety of strategies and	
interpret products and quotients of rational numbers by describing them based on the		
relevant situation.		
Course Topic	Activities Title	
7.NR.1 Multiply & divide	Integers: Multiplication and Division	
rational numbers	Multiplying and Dividing Integers	
	Integers: Order of Operations (PEDMAS)	
	Integers: Operations Order	

7.NR.1.9	
Apply properties of operations as strategies to solve multiplication and division	
problems involving rational numbers represented in an applicable scenario.	
Course Topic	Activities Title
7.NR.1 Multiply & divide	Multiply Two Fractions 2
rational numbers	Divide Fractions by Fractions 2
	Divide Mixed Numbers with Signs

<b>7.NR.1.10</b> Convert rational numbers between forms to include fractions, decimal numbers and percentages, using understanding of the part divided by the whole. Know that the decimal form of a rational number terminates in 0s or eventually repeats.	
Course Topic	Activities Title
7.NR.1 Convert between	Fractions to Decimals
fractions, decimals & percentages	Decimals to Fractions 1
	Mixed to Improper Fractions
	Improper Fraction to Mixed Numeral
	Percents to Fractions
	Fractions to Percentages (Non-Calculator)
	Mixed decimal, percentage and fraction conversions
	Decimal to Percentage
	Percents and Decimals

7.NR.1.11	
Solve multi-step, contextual problems involving rational numbers, converting between	
forms as appropriate, and assessing the reasonableness of answers using mental	
computation and estimation strategies.	
Course Topic	Activities Title
7.NR.1 Contextual problems	Fraction Word Problems
with rational numbers More Fraction Problems	
	Percentage Word Problems

## 2 Patterning & Algebraic Reasoning

Course Topic	Activities Title
REVIEW 7.PAR.2 Expand &	Expanding Brackets
factorise expressions	Factorising Expressions
	Simplifying Expressions

## 2.1 Use properties of operations, generate equivalent expressions and interpret the expressions to explain relevant situations.

7.PAR.2.1	
Apply properties of operations as strategies to add, subtract, factor, and expand linear	
expressions with rational coefficients.	
Course Topic	Activities Title
7.PAR.2 Expand & factorise	Using the Distributive Property
expressions	Expand then Simplify
	Factorising

7.PAR.2.2	
Rewrite an expression in different forms from a contextual problem to clarify the	
problem and show how the quantities in it are related.	
Course Topic	Activities Title
Teacher directed	Teacher directed

Course Topic	Activities Title
REVIEW 7.PAR.3 Equations	Writing Equations
& Inequalities	I am Thinking of a Number!
	Equations to Solve Problems
	Solve Equations: Add, Subtract 1
	Solve Equations: Multiply, Divide 1
	Inequalities on a Number Line: Mixed Basics

# 2.2 Represent authentic situations using equations and inequalities with variables; solve equations and inequalities symbolically, using the properties of equality.

7.PAR.3.1	
Construct algebraic equations to solve practical problems leading to equations of the	
form $px + q = r$ and $p(x)$	( + q) = r, where p, q, and r are specific rational numbers.
Interpret the solution based on the situation.	
Course Topic	Activities Title
7.PAR.3 Equations &	Write an Equation: Word Problems
Inequalities	Solve Equations: Add, Subtract 2
	Solve Equations: Multiply, Divide 2

Solve Multi-Step Equations
Solving Simple Equations

7.PAR.3.2		
Construct algebraic inequ	alities to solve problems, leading to inequalities of the form	
px + q > r, px + q < r, px	+ q ≤ r, or px + q ≥ r, where p, q, and r are specific rational	
numbers. Graph and inte	erpret the solution based on the realistic situation that the	
inequalities represent.		
Course Topic	Activities Title	
7.PAR.3 Equations &	Inequalities on a Number Line: Basics	
Inequalities Solving Inequalities 2		
	Solve One-Step Inequalities 1	
	Solve One-Step Inequalities 2	

Course Topic	Activities Title
REVIEW 7.PAR.4 Rates,	Ratios
Ratios & Proportions	Equivalent Ratios
	Ratio Word Problems
	Word Problems: Ratio
	Solve Proportions
	Rate Word Problems
	Calculating Percentages 1
	Percentage of an amount using fractions (<100%)
	Solve Percent Equations

2.3 Recognize proportional relationships in relevant, mathematical problems; represent, solve, and explain these relationships with tables, graphs, and equations.

7.PAR.4.1	
Compute unit rates associated with ratios of fractions, including ratios of lengths,	
areas and other quantities measured in like or different units presented in realistic	
problems.	
Course Topic	Activities Title
7.PAR.4 Rates, Ratios &	Rates
Proportions	

7.PAR.4.2		
Determine the unit rate (constant of proportionality) in tables, graphs (1, r), equations,		
diagrams, and verbal descriptions of proportional relationships to solve realistic		
problems.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.PAR.4.3	
Determine whether two quantities presented in authentic problems are in a	
proportional relationship.	
Course Topic	Activities Title
7.PAR.4 Rates, Ratios &	Average Speed
Proportions	Distance Travelled
	Time Taken

<b>7.PAR.4.4</b> Identify, represent, and use proportional relationships.	
7.PAR.4 Rates, Ratios &	y=ax
Proportions	

7.PAR.4.5	
Use context to 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.	
Course Topic	Activities Title
7.PAR.4 Rates, Ratios &	Conversion Graphs
Proportions	

7.PAR.4.6	
Solve everyday 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.	
Course Topic	Activities Title
7.PAR.4 Rates, Ratios &	Scale Factor
Proportions	Scale Measurement
	Floor Plans

7.PAR.4.7		
Use similar triangles to explain why the slope, m, is the same between any two distinct		
points on a nonvertical line in the coordinate plane.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.PAR.4.8	
Graph proportional relationships, interpreting the unit rate as the slope of the graph.	
Compare two different proportional relationships represented in different ways.	
Course Topic	Activities Title
	Slope of a Line

7.PAR.4 Rates, Ratios &	Equation of a Line 1
Proportions	

Course Topic	Activities Title
REVIEW 7.PAR.4	Best Buy
Percentage problems	Percent Increase and Decrease
	Solve Percent Equations

<b>7.PAR.4.9</b> Use proportional relationships to solve multi-step ratio and percent problems presented in applicable situations.	
Course Topic	Activities Title
7.PAR.4 Percentage	Commission
problems	Successive Discounts
	Profit and Loss
	Simple Interest
	Percentage Error
	Percentage Word Problems

7.PAR.4.10	
Predict characteristics of a population by examining the characteristics of a	
representative sample. Recognize the potential limitations and scope of the sample to	
the population.	
Course Topic	Activities Title
Teacher directed	Teacher directed

7.PAR.4.11	
Analyze sampling methods and conclude that random sampling produces and	
supports valid inferences.	
Course Topic	Activities Title
7.PAR.4.11 Data sampling	Data sampling
	Methods of Data Sampling

7.PAR.4.12	
Use data from repeated random samples to evaluate how much a sample mean is	
expected to vary from a population mean. Simulate multiple samples of the same size.	
Course Topic	Activities Title
Teacher directed	Teacher directed

## 3 Geometric & Spatial Reasoning

Course Topic	Activities Title
REVIEW 7.GSR.5 Angle	What Type of Angle 2?
relationships	Classifying Angles

3.1 Solve practical problems involving angle measurement, circles, area of circles, surface area of prisms and cylinders, and volume of cylinders and prisms composed of cubes and right prisms.

7.GSR.5.1		
Measure angles in whole nonstandard units.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7.GSR.5.2	
Measure angles in whole number degrees using a protractor.	
Course Topic	Activities Title
7.GSR.5 Angle relationships	Measuring Angles
	Estimating Angles

7.GSR.5.3	
Use facts about supplementary, complementary, vertical, and adjacent angles in a	
multi-step problem to write and solve equations for an unknown angle in a figure.	
Course Topic	Activities Title
7.GSR.5 Angle relationships	Equal, Complement, or Supplement?
	Vertically Opposite: Value of x
	Vertically Opposite Angles: Unknown Values

Course Topic	Activities Title
REVIEW 7.GSR.5 Circumference & greg of	Circle Terms
circles	

7.GSR.5.4	
Explore and describe the relationship between pi, radius, diameter, circumference, and	
area of a circle to derive the formulas for the circumference and area of a circle.	
Course Topic	Activities Title
Teacher directed	Teacher directed

<b>7.GSR.5.5</b> Given the formula for the area and circumference of a circle, solve problems that exist in everyday life.	
Course Topic	Activities Title
7.GSR.5 Circumference &	Calculate Circumference of Circles
area of circles	Area: Circles 1
	Area: Circles 2
	Perimeter and Circles
	Area: Annulus

Course Topic	Activities Title
REVIEW 7.GSR.5 Surface	Nets
area & volume including	Surface Area: Cuboids
cylinders	Surface Area: Rectangular Prisms
	Surface Area: Rectangular Prisms 1
	Surface Area: Triangular Prisms 1
	Volume of Rectangular Prisms 1

7.GSR.5.6	
Solve realistic problems involving surface area of right prisms and cylinders.	
Course Topic	Activities Title
7.GSR.5 Surface area &	Surface Area: Cylinders
volume including cylinders	

7.GSR.5.7	
Describe the two-dimensional figures (cross sections) that result from slicing three-	
dimensional figures, as in the plane sections of right rectangular prisms, right	
rectangular pyramids, cones, cylinders, and spheres.	
Course Topic	Activities Title
Teacher directed	Teacher directed

7.GSR.5.8	
Explore volume as a measurable attribute of cylinders and right prisms. Find the	
volume of these geometric figures using concrete problems.	
Course Topic	Activities Title
7.GSR.5 Surface area &	Volume: Cuboid 2
volume including cylinders	Volume: Rectangular Prisms 2
	Volume of Triangular prisms
	Volume: Prisms
	Volume: Cylinders

## 4 Probability Reasoning

4.1 Using mathematical reasoning, investigate chance processes and develop, evaluate, and use probability models to find probabilities of simple events presented in authentic situations.

7.PR.6.1	
Represent the probability of a chance event as a number between 0 and 1 that	
expresses the likelihood of the event occurring. Describe that a probability near 0	
indicates an unlikely event, a probability around 1/2 indicates an event that is neither	
unlikely nor likely, and a probability near 1 indicates a likely event.	
Course Topic	Activities Title
7.PR.6 Probability	Chance Dial
	Probability Scale

7.PR.6.2	
Approximate the probability of a chance event by collecting data on an event and	
observing its long-run relative frequency will approach the theoretical probability.	
Course Topic	Activities Title
7.PR.6 Probability	Relative Frequency
	Simple Probability

7.PR.6.3	
Develop a probability model and use it to find probabilities of simple events. Compare	
experimental and theoretical probabilities of events. If the probabilities are not close,	
explain possible sources of the discrepancy	
Course Topic	Activities Title
7.PR.6 Probability	Find the Probability
	Introductory Probability
	Dice and Coins

7.PR.6.4	
Develop a uniform probability model by assigning equal probability to all outcomes	
and use the model to determine probabilities of events.	
Course Topic	Activities Title
Teacher directed	Teacher directed

7.PR.6.5	
Develop a probability model (which may not be uniform) by observing frequencies in	
data generated from a chance process.	
Course Topic	Activities Title
7.PR.6 Probability	Probability Tables

	Probability With Replacement
	Probability Without Replacement

Course Topic	Activities Title
REVIEW 7.PR.6 Data	Dot Plots
analysis	Histograms
	Understanding Box-and-Whisker Plots
	Mean from Frequency Table
	Median from Frequency Table
	Mode from Frequency Table
	Calculating Interquartile Range
	Data extremes and Range

#### 7.PR.6.6

Use appropriate graphical displays and numerical summaries from data distributions with categorical or quantitative (numerical) variables as probability models to draw informal inferences about two samples or populations.

Course Topic	Activities Title
7.PR.6 Data analysis	Divided Bar Graphs
	Double Stem and Leaf Plots
	Box-and-Whisker Plots 2
	Data Extremes and Range
	Which Measure of Central Tendency?

## Grade 8

## **1** Numerical Reasoning

Course Topic	Activities Title
REVIEW 8.NR.1 Rational	Exponents
numbers	Powers of Integers

**1.1** Solve problems involving irrational numbers and rational approximations of irrational numbers to explain realistic applications.

8.NR.1.1	
Distinguish between rational and irrational numbers using decimal expansion. Convert	
a decimal expansion which repeats eventually into a rational number.	
Course Topic	Activities Title
8.NR.1 Rational numbers	Fraction to Terminating Decimal
	Recurring Decimals
	Irrational Numbers

8.NR.1.2	
Approximate irrational numbers to compare the size of irrational numbers, locate them	
approximately on a number line, and estimate the value of expressions.	
Course Topic	Activities Title
8.NR.1 Rational numbers	Estimating Square Roots

1.2 Solve problems involving radicals and integer exponents including relevant application situations; apply place value understanding with scientific notation and use scientific notation to explain real phenomena.

8.NR.2.1	
Apply the properties of integer exponents to generate equivalent numerical	
	expressions.
Course Topic	Activities Title
8.NR.2 Exponent rules	Exponent Notation
	Exponent Notation and Algebra
	Properties of Exponents
	Exponent Laws with Brackets
	The Zero Exponent
	Negative Exponents
	Integer Exponents
	Multiplication with Exponents
	Simplifying with Exponent Laws 1

	Exponent Laws and Algebra
	Exponent Form to Numbers

8.NR.2.2	
Use square root and cube root symbols to represent solutions to equations. Recognize that x2 = p (where p is a positive rational number and  x  $\leq$ 25) has two solutions and x3 = p (where p is a negative or positive rational number and  x  $\leq$ 10) has one solution. Evaluate square roots of perfect squares $\leq$ 625 and cube roots of perfect cubes $\geq$ - 1000 and $\leq$ 1000.	
Course Topic	Activities Title
8.NR.2 Square/cube roots &	Square Roots
scientific notation	Square Roots 1
	Square and Cube Roots

<b>8.NR.2.3</b> Use numbers expressed in scientific notation to estimate very large or very small quantities, and to express how many times as much one is than the other	
Course Topic	Activities Title
8.NR.2 Square/cube roots &	Scientific Notation
scientific notation	Scientific Notation 1
	Scientific Notation 2
	Scientific Notation to Decimal
	Ordering Scientific Notation

8.NR.2.4	
Add, subtract, multiply and divide numbers expressed in scientific notation, including	
notation that has been generated by technology (e.g., calculators or online technology	
tools).	
Course Topic Activities Title	
Teacher directed	Teacher directed

## 2 Patterning & Algebraic Reasoning

Course Topic	Activities Title
<b>REVIEW 8.PAR.3 Equations</b>	Solve Multi-Step Equations
& inequalities	Solving Simple Equations
	Graphing Inequalities 2
	Solve One-Step Inequalities 1
	Solve One-Step Inequalities 2

2.1 Create and interpret expressions within relevant situations. Create, interpret, and solve linear equations and linear inequalities in one variable to model and explain real phenomena.

8.PAR.3.1	
Interpret expressions and parts of an expression, in context, by utilizing formulas or	
expressions with multiple terms and/or factors.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.PAR.3.2	
Describe and solve linear equations in one variable with one solution $(x = a)$ , infinitely	
many solutions ( $a = a$ ), or no solutions ( $a = b$ ). Show which of these possibilities is the	
case by successively transforming the given equation into simpler forms, until an	
equivalent equation of the form $x = a$ , $a = a$ , or $a = b$ results (where a and b are	
different numbers).	
Course Topic Activities Title	
Teacher directed	Teacher directed

<b>8.PAR.3.3</b> Create and solve linear equations and inequalities in one variable within a relevant application.	
Course Topic	Activities Title
8.PAR.3 Equations &	Equations with Grouping Symbols
inequalities	Equations with Fractions
	Equations with Decimals
	Equations to Solve Problems
	Equations: Variables, Both Sides
	Solving More Equations

#### 8.PAR.3.4

Using algebraic properties and the properties of real numbers, justify the steps of a one-solution equation or inequality.

Course Topic	Activities Title
Teacher directed	Teacher directed

8.PAR.3.5	
Solve linear equations and inequalities in one variable with coefficients represented by	
letters and explain the solution based on the contextual, mathematical situation.	
Course Topic	Activities Title
8.PAR.3 Equations &	Solve Two-Step Inequalities
inequalities	Solving Inequalities 3
	Graphing Inequalities 3

8.PAR.3.6	
Use algebraic reasoning to fluently manipulate linear and literal equations expressed	
in various forms to solve relevant, mathematical problems.	
Course Topic	Activities Title
8.PAR.3 Equations &	Rearranging the Equation
inequalities	

Course Topic	Activities Title
REVIEW 8.PAR.4 Linear	y=ax
relationships	Slope of a Line
	Equation of a Line 1

2.2 Show and explain the connections between proportional and nonproportional relationships, lines, and linear equations; create and interpret graphical mathematical models and use the graphical, mathematical model to explain real phenomena represented in the graph.

	8.PAR.4.1	
	Use the equation $y = mx$ (proportional) for a line through the origin to derive the	
	equation $y = mx + b$ (non-proportional) for a line intersecting the vertical axis at b.	
Course Topic Activities Title		
	8.PAR.4 Linear relationships	Determining a Rule for a Line

8.PAR.4.2	
Show and explain that the graph of an equation representing an applicable situation	
in two variables is the set of all its solutions plotted in the coordinate plane.	
Course Topic	Activities Title
8.PAR.4 Linear relationships	Which Straight Line?
	Equation from Point and Gradient
	Modeling Linear Relationships

## 3 Functional & Graphical Reasoning

3.1 Describe the properties of functions to define, evaluate, and compare relationships, and use functions and graphs of functions to model and explain real phenomena.

8.FGR.5.1	
Show and explain that a function is a rule that assigns to each input exactly one	
output.	
Course Topic	Activities Title
8.FGR.5 Functions & graphs	Function Rules and Tables
	Find the Function Rule

8.FGR.5.2	
Within realistic situations, identify and describe examples of functions that are linear	
or nonlinear. Sketch a graph that exhibits the qualitative features of a function that	
has been described verbally.	
Course Topic	Activities Title
8.FGR.5 Functions & graphs	Travel Graphs
	Identifying Graphs
	Vertical Line Test

	8.FGR.5.3
Relate the domain of a linear function to its graph and where applicable to the	
quantitative relationship it describes.	
Course Topic	Activities Title
8.FGR.5 Functions & graphs	Domain

8.FGR.5.4	
Compare properties (rate of change and initial value) of two functions used to model	
an authentic situation each represented in a different way (algebraically, graphically,	
numerically in tables, or by verbal descriptions).	
Course Topic	Activities Title
8.FGR.5 Functions & graphs	Intercepts

	8.FGR.5.5
Write and explain the equations $y = mx + b$ (slope-intercept form), $Ax + By = C$	
(standard form), and $(y - y1) = m(x-x1)$ (point-slope form) as defining a linear function	
whose graph is a straight line to reveal and explain different properties of the function.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.5.6	
Write a linear function defined by an expression in different but equivalent forms to	
reveal and explain different properties of the function.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.5.7	
Construct a function to model a linear relationship between two quantities. Determine	
the rate of change and initial value of the function from a description of a relationship	
or from two (x,y) values, including reading these from a table or from a graph.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.5.8	
Explain the meaning of the rate of change and initial value of a linear function in terms	
of the situation it models, and in terms of its graph or a table of values	
Course Topic	Activities Title
Teacher directed	Teacher directed

	8.FGR.5.9
Graph and analyze linear functions expressed in various algebraic forms and show key	
characteristics of the graph to describe applicable situations.	
Course Topic	Activities Title
Teacher directed	Teacher directed

# 3.2 Solve practical, linear problems involving situations using bivariate quantitative data.

8.FGR.6.1	
Show that straight lines are widely used to model relationships between two	
quantitative variables. For scatter plots that suggest a linear association, visually fit a	
straight line, and informally assess the model fit by judging the closeness of the data	
points to the line of best fit.	
Course Topic Activities Title	
8.FGR.6 Bivariate data Scatter Plots	

8.FGR.6.2		
Use the equation of a linear model to solve problems in the context of bivariate		
measurement data, interpreting the slope and intercepts.		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

8.FGR.6.3	
Explain the meaning of the predicted slope (rate of change) and the predicted intercept	
(constant term) of a linear model in the context of the data	
Course Topic	

Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.6.4	
Use appropriate graphical displays from data distributions involving lines of best fit to	
draw informal inferences and answer the statistical investigative question posed in an	
unbiased statistical study."	
Course Topic	Activities Title
Teacher directed	Teacher directed

# 3.3 Justify and use various strategies to solve systems of linear equations to model and explain realistic phenomena.

8.FGR.7.1	
Interpret and solve relevant mathematical problems leading to two linear equations in	
two variables.	
Course Topic	Activities Title
8.FGR.7 Simultaneous	Solve Systems by Graphing
equations	Simultaneous Linear Equations
	Linear Modeling

8.FGR.7.2	
Show and explain that solutions to a system of two linear equations in two variables	
correspond to points of intersection of their graphs, because the points of intersection	
satisfy both equations simultaneously.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.7.3	
Approximate solutions of two linear equations in two variables by graphing the	
equations and solving simple cases by inspection.	
Course Topic	Activities Title
Teacher directed	Teacher directed

8.FGR.7.4	
Analyze and solve systems of two linear equations in two variables algebraically to	
find exact solutions.	
Course Topic	Activities Title
Course Topic 8.FGR.7 Simultaneous	Activities Title Simultaneous Equations 1

8.FGR.7.5	
Create and compare the equations of two lines that are either parallel to each other,	
perpendicular to each other, or neither parallel nor perpendicular.	
Course Topic	Activities Title
8.FGR.7 Simultaneous	Are they Parallel?

equations

## 4 Geometric & Spatial Reasoning

4.1 Solve geometric problems involving the Pythagorean Theorem and the volume of geometric figures to explain real phenomena.

8.GSR.8.1	
Explain a proof of the Pythagorean Theorem and its converse using visual models.	
Course Topic	Activities Title
8.GSR.8 Pythagoras	Pythagorean Triads

8.GSR.8.2	
Apply the Pythagorean Th	neorem to determine unknown side lengths in right triangles
within authentic, mathematical problems in two and three dimensions	
Course Topic	Activities Title
8.GSR.8 Pythagoras	Pythagorean Theorem
	Pythagoras: Find a Short Side (integers only)
	Pythagoras: Find a Short Side (decimal values)
	Pythagoras: Find a Short Side (rounding needed)
	Pythagoras' Theorem
	Find Slant Height

8.GSR.8.3	
Apply the Pythagorean Theorem to find the distance between two points in a	
coordinate system in practical, mathematical problems.	
Course Topic	Activities Title
8.GSR.8 Pythagoras	Distance Between Two Points

Course Topic	Activities Title
REVIEW 8.GSR.8 Volume	Volume: Rectangular Prisms 2
	Volume of Triangular prisms
	Volume: Prisms

8.GSR.8.4	
Apply the formulas for the volume of cones, cylinders, and spheres and use them to	
solve in relevant problems.	
Course Topic	Activities Title
8.GSR.8 Volume	Volume: Cylinders
	Volume: Cones
	Volume: Spheres



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