

All components need to be taught and assessed. **Bold components** are priorities and should be taught to mastery and included on the outcome assessment.

M.7.1	Students will calculate sums and differences of integers and apply them to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
1	M.7.1.1	Identify rational and irrational numbers and relate them to whole numbers and integers.	
1	M.7.1.2	Describe situations in which opposite quantities make zero (opposites add to zero) reviewing the concept of absolute value.	7.NS.A.1.a 7.NS.A.1.b
	M.7.1.3	Use integer rules to add integers and apply to real world contexts.	7.NS.A.1.d
2	M.7.1.4	Demonstrate an understanding of subtraction of integers as adding the additive inverse, $p - q = p + (-q)$, showing the distance between them on a number line is the absolute value of their difference.	7.NS.A.1.c
3	M.7.1.5	Use integer rules to subtract integers and apply to real world contexts.	7.NS.A.1.d

Academic Vocabulary: Identify, describe, demonstrate, apply

Content Vocabulary: rational, irrational, integer, additive inverse, opposites, absolute value

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M.7.2	Students will calculate sums and differences of rational numbers and apply them to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.2.1	Apply integer rules to add rational numbers (decimals).	7.NS.A.1.d
2	M.7.2.2	Apply integer rules to subtract rational numbers (decimals).	7.NS.A.1.d
2	M.7.2.3	Apply integer rules to add rational numbers (fractions and mixed numbers).	7.NS.A.1.d
2	M.7.2.4	Apply integer rules to subtract rational numbers (fractions and mixed numbers).	7.NS.A.1.d
3	M.7.2.5	Apply integer rules to add and subtract rational numbers, in real world contexts. (decimal, fractions, and mixed numbers)	7.NS.A.1.d

Academic Vocabulary:

Content Vocabulary:

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M.7.3	Students will calculate products and quotients of integers and rational numbers and apply these rules to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
3	M.7.3.1	Use rules of multiplication of signed numbers to multiply integers and rational numbers.	7.NS.A.2.a 7.NS.A.2.c
2	M.7.3.2	Convert a rational number to a terminating or repeating decimal using long division.	7.NS.A.2d
3	M.7.3.3	Show that $\frac{-p}{q} = \frac{p}{-q} = -(\frac{p}{q})$ are equal. Divide integers and rational numbers (provided that the divisor is not zero) using rules of division of signed numbers.	7.NS.A.2.b 7.NS.2.A.c
	M.7.3.4	Solve multi-step problems with rational numbers in any form (whole numbers, fractions, and decimals) using order of operations.	7.NS.A.3
3	M.7.3.5	Solve real world problems with rational numbers in any form to include multiplication, division, and multiple operations.	7.NS.A.3 7.EE.B.3

Academic Vocabulary:

Content Vocabulary: rational numbers, distributive property, integer rules

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M.7.4	Students will examine given relationships of multiple representations to determine if they are proportional.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.4.1	Calculate unit rates including ratios of lengths, areas and other quantities measured in like or different units. Include better buy and complex fractions.	7.RP.A.1
1	M.7.4.2	Explain if two quantities are proportional by creating ratios from a table and determining if they are equal.	7.RP.A.2.a
3	M.7.4.3	Determine if two quantities are proportional by graphing them on a coordinate plane, looking for a straight line through the origin, and interpret the meaning of (0,0) and (1,r) in the context of the situation.	7.RP.A.2.a 7.RP.A.2.d
2	M.7.4.4	Identify the constant of proportionality from a table, graph, equation, and real-world context. Write an equation using the constant of proportionality ($y = kx$).	7.RP.A.2.b 7.RP.A.2.c

Academic Vocabulary: determine, identify, explain, reproduce

Content Vocabulary: proportional relationship, constant of proportionality, unit rate, complex fraction, equation

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M.7.5	Students will solve multistep percent problems using proportions and apply them to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.5.1	Write expressions involving percents in equivalent forms to determine how quantities are related.	7.EE.A.2
2	M.7.5.2	Calculate markups (tax, gratuity, fees, and commission) and markdowns (sales and coupons).	7.RP.A.3
1	M.7.5.3	Calculate percent error.	7.RP.A.3
2	M.7.5.4	Solve percent of change problems including percent increase and decrease.	7.RP.A.3
2	M.7.5.5	Solve percent problems involving simple interest.	7.RP.A.3
3	M.7.5.6	Solve multistep percent problems in real world contexts including markups, markdowns, and commission.	7.RP.A.3

Academic Vocabulary: solve, calculate

Content Vocabulary: percent, percent change, percent increase, percent decrease, markup, tip, tax, fees, commission, markdown, discount, simple interest

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M.7.6	Students will create simulations to calculate probabilities.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
1	M.7.6.1	Define the meaning of an experiment, event, trial, sample space, and outcome and interpret probability as the likelihood of the event occurring and it is identified as a number between zero and one. (Note that a number closer to one has a greater chance of occurring, a probability of one half is as likely as not, and a number closer to zero has a smaller chance of occurring.)	7.SP.C.5
2	M.7.6.2	Collect data, calculate the theoretical and experimental probabilities of simple events and the complement of an event, and make a prediction based on the collected data.	7.SP.C.6
2	M.7.6.3	Calculate theoretical and experimental probability of compound events using organized lists, tables, tree diagrams, and simulations.	7.SP.C.8a 7.SP.C.8.b
1	M.7.6.4	Develop a probability model (which may or may not be uniform), use it to find the probability of events, compare probabilities to the model, and explain any discrepancies.	7.SP.C.7.a 7.SP.C.7.b
3	M.7.6.5	Create and use a simulation to generate frequencies of compound events.	7.SP.C.8.c

Academic Vocabulary: create, calculate, interpret

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Content Vocabulary: probability, sample space, event, trial, outcome, simulation

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M.7.7	Students will simplify expressions with rational numbers.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
3	M.7.7.1	Combine like terms in order to simplify linear expressions.	7.EE.A.1 7.EE.A.2
2	M.7.7.2	Add and subtract linear expressions.	7.EE.A.1
3	M.7.7.3	Use expansion to make an equivalent expression $[a(b*c)=ab+ac]$ including rational coefficients.	7.EE.A.1
2	M.7.7.4	Use factorization $[ab+ac=a(b*c)]$ to make equivalent expressions.	7.EE.A.1

Academic Vocabulary:

Content Vocabulary:

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M.7.8	Students will write and solve equations with rational numbers to apply them to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.8.1	Solve one step equations (add, subtract, multiply, divide) involving rational coefficients and terms.	7.EE.B.4a
3	M.7.8.2	Solve multistep equations in the form $px+q=r$, $p(x+q)=r$, and $x/p + q = r$ where p,q, and r are rational numbers.	7.EE.B.4a
3	M.7.8.3	Write and solve one step equations in real world contexts, including defining the variable.	7.EE.B.4.a
3	M.7.8.4	Write and solve two step equations in real world contexts, including defining the variable.	7.EE.B.4.a

Academic Vocabulary:

Content Vocabulary: simplify, linear expressions, distributive property, solve one step equations, two step equations

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M.7.9	Students will define the variable to write and solve inequalities with rational numbers and interpret the solutions to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.9.1	Solve one step inequalities (add and subtract) and graph the solution set on a number line.	7.EE.B.4b
2	M.7.9.2	Solve one step inequalities (multiply and divide) and graph the solution set on a number line.	7.EE.B.4b
3	M.7.9.3	Solve two step inequalities and graph the solution set on a number line.	7.EE.B.4b
	M.7.9.4	Write and solve one step inequalities in real world contexts, including defining the variable and graphing the solution on a number line.	7.EE.B.4b
	M.7.9.5	Write and solve two step inequalities in real world contexts, including defining the variable and graphing the solution on a number line.	7.EE.B.4b

Academic Vocabulary: solve, interpret

Content Vocabulary: inequality, one step inequality, two step inequality, shaded region

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M.7.10	Students will solve area, surface area, and volume problems including composite figures and apply it to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.10.1	Solve real world problems involving areas of triangles, quadrilaterals, and polygons.	7.G.B.6
1	M.7.10.2	Identify and describe the cross section of right rectangular prisms and right rectangular pyramids.	7.G.A.3
2	M.7.10.3	Solve real world problems by calculating the area of composite polygons whose makeup is limited to triangles and quadrilaterals.	7.G.B.6
3	M.7.10.4	Solve real world problems by calculating the surface area of composite figures.	7.G.B.6
3	M.7.10.5	Solve real world problems by calculating the volume of composite figures.	7.G.B.6

Academic Vocabulary: calculate

Content Vocabulary: cross section, face, edge, vertices, surface area, volume

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M.7.11	Students will solve problems involving circles and apply it to real world contexts.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
2	M.7.11.1	Identify parts of a circle including the center, radius, diameter, and circumference	7.G.B.4
1	M.7.11.2	Calculate circumference given the radius or diameter.	7.G.B.4
3	M.7.11.3	Calculate the radius given the circumference and the diameter given the circumference.	7.G.B.4
1	M.7.11.4	Calculate area given radius, diameter, and circumference.	7.G.B.4

Academic Vocabulary:

Content Vocabulary: center, diameter, radius, circumference, circumference, and area formulas

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M.7.12	Students will analyze angle diagrams to solve multi-step problems.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
1	M.7.12.1	Define the characteristics of complementary, supplementary, vertical, and adjacent angles.	7.G.B.5
2	M.7.12.2	Identify complementary, supplementary, vertical, and adjacent angles from a diagram (separately and together).	7.G.B.5
3	M.7.12.3	Use characteristics of angles in a one or two-step problem to write and solve equations to find a missing angle from a diagram.	7.G.B.5
1	M.7.12.4	Create geometric shapes with given conditions (with ruler, protractor, and with technology), drawing triangles only if they have determined the provided conditions describe a unique triangle or infinite, similar triangles.	7.G.A.2
2	M.7.12.5	Calculate actual lengths and areas using a scale drawing by writing proportions.	7.G.A.1
1	M.7.12.6	Reproduce a scale drawing using a different scale.	7.G.A.1

Academic Vocabulary: calculate, solve

Content Vocabulary: complementary angles, supplementary angles, vertical angles, adjacent angles,

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M.7.13	Students will compare data distributions and make inferences about the given populations.		
Pacing Instruct/ Assess	Component Code	Component	Standard(s)
	M.7.13.1	Identify a sample of a population to include random samples and bias and state that random sampling techniques tend to produce representative samples and explain this given sample.	7.SP.A.1
	M.7.13.2	Using given data, create inferences about a population with unknown characteristics of interest.	7.SP.A.2
	M.7.13.3	Generate multiple samples (of the same size) to make predictions.	7.SP.A.2
	M.7.13.4	Compare the means and compare the mean absolute deviations given two visual distributions line plots/dot plots) with similar variables.	7.SP.B.3
	M.7.13.5	Use measures of centers for numerical data to compare and make inferences about the population.	7.SP.B.4
	M.7.13.6	Use measures of variability for numerical data to compare and make inferences about the population.	7.SP.B.4

Academic Vocabulary: identify, compare, create, inferences

Content Vocabulary: populations, sample, random, biased, box plot, dot/line plot, measures of variability