# S 1. Tha Language of

Algebra

e		Knowledge and					
Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
<ul> <li>p How can you use</li> <li>numbers and symbols</li> <li>to represent</li> <li>mathematical ideas?</li> <li>t</li> </ul>	1-1 A Plan for Problem Solving	Solve real life word problems.	Four-step plan			Pre Algebra Glenco-Math Accelerated	7.EE.A.2-Use properties of operations to generate equivalent expressions ~ Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
<ul><li>e What is the</li><li>m relationship between</li><li>b powers and</li><li>e multiplication?</li><li>r</li></ul>	1.2 Powers and Exponents	Use Powers to describe repeated multiplication.	Power Exponent Base Square Cube		Powers and Exponent	Pre Algebra Glenco-Math Accelerated	7.EE.A.1-Use properties of operations to generate equivalent expressions ~ Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
What determines which operation we use first?	1.3 Order of Operations	Use order of operation to evaluate expressions.	Order of Operations Grouping Symbols	Quiz Integers 1.1-1.3	Order of Operation s	Pre Algebra Glenco-Math Accelerated	7.EE.A.1-Use properties of operations to generate equivalent expressions ~ Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
What is the relationship between powers and multiplication?	1.4 Comparing and Ordering Integers	Compare and order integers.	Negative integers Positive integers Absolute value		Compare and Order Integers	Pre Algebra Glenco-Math Accelerated	7.NS.A.1b-Apply and extend previous understandings of operations with fractions ~ 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. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
What is the relationship between powers and multiplication?	1.5 Adding Integers	Add integers.	Opposites Negative integers		Adding Integers	Pre Algebra Glenco-Math Accelerated	7.NS.A.1-Apply and extend previous understandings of operations with fractions ~ 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.

			Positive integers				<ul> <li>7.NS.A.1a-Apply and extend previous understandings of operations with fractions ~ Describe situations in which opposite quantities combine to make 0.</li> <li>7.NS.A.1b-Apply and extend previous understandings of operations with fractions ~ 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. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</li> </ul>
							7.NS.A.1c-Apply and extend previous understandings of operations with fractions ~ Understand subtraction of rational numbers as adding the additive inverse, $p \ \hat{a} \in q = p + (\hat{a} \in q)$ . 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.
			Absolute value				7.NS.A.1d-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to add and subtract rational numbers.
What is the relationship between powers and multiplication?	1.6 Subtracting Integers	Subtract integers.	Opposites Negative integers Positive integers	Quiz Integers 1.4-1.8	Subtractin g Integers	Pre Algebra Glenco-Math Accelerated	<ul> <li>7.NS.A.1-Apply and extend previous understandings of operations with fractions ~ 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.</li> <li>7.NS.A.1a-Apply and extend previous understandings of operations with fractions ~ Describe situations in which opposite quantities combine to make 0.</li> <li>7.NS.A.1b-Apply and extend previous understandings of operations with fractions ~ Understand p + q as the number located a distance  q  from p, in the positive or negative. Show that a number and its opposite have a sum</li> </ul>
							numbers by describing real-world contexts.

7.NS.A.1c-Apply and extend previous understandings of operations with fractions ~ Understand subtraction of rational numbers as adding the additive inverse,  $p \ \hat{a} \in g^{*}$  $p + (\hat{a} \in \mathbf{g})$ . 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.

7.NS.A.1d-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to add and subtract rational numbers.

7.NS.A.2-Apply and extend previous understandings of Glenco-Math operations with fractions ~ Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 7.NS.A.2a-Apply and extend previous understandings of operations with fractions ~ 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  $(\hat{a} \in (1))(\hat{a} \in (1)) = 1$  and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

> 7.NS.A.2b-Apply and extend previous understandings of operations with fractions ~ 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  $\hat{a} \in (p/q) = (\hat{a} \in p)/q =$ p/(â€"q). Interpret quotients of rational numbers by describing real-world contexts.

> 7.NS.A.2c-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to multiply and divide rational numbers.

7.NS.A.2d-Apply and extend previous understandings of operations with fractions ~ 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.

#### Absolute value

# **Opposites**

What is the relationship between powers and multiplication?

1.7 Multiplying and Dividing Integers

Multiply and divide integers.

Negative integers

Multiplyin Pre Algebra g and Dividing Accelerated Fractions

**Positive integers** 

Absolute value

C	How do integers relate to graphing? 9 2. Solving Equations	1.8 Coordinate Plane	Graph on a coordinate plane. Identify coordinates on a graph.	Opposites Coordinates Origin	Integer Common Assessment		7.RP.A.2a-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ 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.
с	5 1		Knowledge and				
	Essential Questions	Content	Skills	Vocabulary	Assessments Lessons	Resources	Standards
t	How do we solve equations algebracially?	3.2 Solving Equations Having Like Terms and Parenthesis	Solve equations using the distributive property.	Distribute	Quiz Solving Equations 2.4- 3.2		7.EE.B.4a-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ 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.
0	How do we solve equations algebracially?	2.4 Variables and Equations	Solve equations with variables.	Equation			7.EE.B.3-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
b				Solution			7.EE.B.4-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ 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.
e				Solving an Equation			

r	How do we solve equations algebracially?	2.5 Solving Equations Using Addition or Subtraction	Solve equations using addition or subtraction.	Inverse Operations

Equivalent Equations

How do we solve equations algebracially? 2.6 SolvingSolve equationsInverseEquations UsingusingOperationsMultiplication ormultiplication ororDivisiondivision.Operations

Solving an Equation

Equivalent Equations 7.EE.B.3-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

7.EE.B.4-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ 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.

7.EE.B.3-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

7.EE.B.4-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ 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.

How do we solve equations algebracially?	2.7 Decimal Operations and Equations with Decimals	Solve equations involving decimals.	Sum	7.EE.B.3-Solve real-life and mathematica numerical and algebraic expressions and multi-step real-life and mathematical pr positive and negative rational numbers i numbers, fractions, and decimals), using Apply properties of operations to calcula in any form; convert between forms as a assess the reasonableness of answers us computation and estimation strategies.
			Difference	7.EE.B.4-Solve real-life and mathematica numerical and algebraic expressions and variables to represent quantities in a rea mathematical problem, and construct si and inequalities to solve problems by re quantities.
			Solve	
How do we solve equations algebracially?	3.1 Solving Two- Step Equations	Solve two-step equations.	Inverse Operation	7.EE.B.4a-Solve real-life and mathematic numerical and algebraic expressions and word problems leading to equations of t and $p(x + q) = r$ , where p, q, and r are sp numbers. Solve equations of these form an algebraic solution to an arithmetic so the sequence of the operations used in a
How do we solve equations algebraicly?	2.2 Distributive Property	Use the distributive property	Distribute	7.EE.A.1-Use properties of operations to equivalent expressions ~ Apply properti- strategies to add, subtract, factor, and e expressions with rational coefficients. 7 EE A 2-Use properties of operations to

al problems using d equations ~ Solve roblems posed with in any form (whole tools strategically. late with numbers appropriate; and ising mental

al problems using d equations ~ Use al-world or imple equations easoning about the

ical problems using d equations ~ Solve the form px + q = rpecific rational ns fluently. Compare olution, identifying each approach.

generate ies of operations as expand linear 7.EE.A.2-Use properties of operations to generate equivalent expressions ~ Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B.4a-Solve real-life and mathematical problems using
numerical and algebraic expressions and equations ~ 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.

7.EE.A.1-Use properties of operations to generate equivalent expressions ~ Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. 7.EE.A.2-Use properties of operations to generate equivalent expressions ~ Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B.4b-Solve real-life and mathematical problems using numerical and algebraic expressions and equations ~ Solve word problems leading to inequalities of the form px + q > rbi

7.NS.A.1a-Apply and extend previous understandings of

operations with fractions ~ Describe situations in which

opposite quantities combine to make 0.

diagram.

			subtraction	Equivalent inequality				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.
N	5. Rational Numbers and Equations							
0			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
v	How do we work with fractions?	5.1 Rational Numbers	Write fractions as decimals and decimals as fractions.	Rational Number	-			7.NS.A.1-Apply and extend previous understandings of operations with fractions ~ 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

Common

Assessment

е

2.3 Simplifying

Variable

Expressions

3.4 Solving

inequalities

How do we solve

How do we solve

equations

algebracially?

equations

algebracially?

Simplify variable Distribute

Simplify

Like Terms

Inequality

inequality

inequalities using Solution of an

expressions.

Solving

addition or

m b	Terminating Decimal Repeating Decimal	<ul> <li>7.NS.A.2b-Apply and extend previous understandings of operations with fractions ~ 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.</li> <li>7.NS.A.2d-Apply and extend previous understandings of operations with fractions ~ 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.</li> </ul>
e	Order	
r How do we work with 5.2 Adding and Add and subtract fractions? Subtracting Like like fractions. Fractions	t Numerator	7.NS.A.1b-Apply and extend previous understandings of operations with fractions ~ 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. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. 7.NS.A.1c-Apply and extend previous understandings of operations with fractions ~ Understand subtraction of rational numbers as adding the additive inverse, $p \ \hat{a} \ q = p + (\hat{a} \ q)$ . 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.
	Denominator	7.NS.A.1d-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to add and subtract rational numbers.
	Like Fractions Mixed Number Improper Fraction	7.NS.A.3-Apply and extend previous understandings of operations with fractions ~ Solve real-world and mathematical problems involving the four operations with rational numbers.

			Variable	
			Expression	
How do we work with	5.3 Adding and	Add and subtract	Least Common	Teacher
fractions?	subtracting	unlike fractions.	Denominator	Assessment
	Unlike Fractions		(LCD)	5.1 to 5.3

7.NS.A.1b-Apply and extend previous understandings of operations with fractions ~ 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. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

7.NS.A.1c-Apply and extend previous understandings of operations with fractions ~ Understand subtraction of rational numbers as adding the additive inverse, p  $\hat{a} \in q = p + (\hat{a} \in q)$ . 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.

7.NS.A.1d-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to add and subtract rational numbers.

7.NS.A.3-Apply and extend previous understandings of operations with fractions ~ Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.2-Apply and extend previous understandings of operations with fractions ~ Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 7.NS.A.3-Apply and extend previous understandings of operations with fractions ~ Solve real-world and mathematical problems involving the four operations with rational numbers.

How do we work with 5.4 Multiplying fractions? Fractions

Multiply fractions Product and mixed numbers. Simplify

How do we work with5.5 Dividingfractions?Fractions

Divide fractions Reciporcal and mixed numbers.

Quotient

7.NS.A.2a-Apply and extend previous understandings of operations with fractions ~ 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  $(\hat{a} \in 1)(\hat{a} \in 1) = 1$  and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

7.NS.A.2b-Apply and extend previous understandings of operations with fractions ~ 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  $\hat{a} \in (p/q) = (\hat{a} \in p)/q = p/(\hat{a} \in q)$ . Interpret quotients of rational numbers by describing real-world contexts.

7.NS.A.2c-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to multiply and divide rational numbers.

7.NS.A.2-Apply and extend previous understandings of operations with fractions ~ Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
7.NS.A.3-Apply and extend previous understandings of operations with fractions ~ Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.2a-Apply and extend previous understandings of operations with fractions ~ 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  $(\hat{a} \in 1)(\hat{a} \in 1) = 1$  and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

7.NS.A.2b-Apply and extend previous understandings of operations with fractions ~ 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  $\hat{a} \in (p/q) = (\hat{a} \in p)/q = p/(\hat{a} \in q)$ . Interpret quotients of rational numbers by describing real-world contexts.

7.NS.A.2c-Apply and extend previous understandings of operations with fractions ~ Apply properties of operations as strategies to multiply and divide rational numbers.

How do we work with	5.6 Using	Use multiplicative Multiplication	tive Teacher	
fractions?	Multiplicative	inverses to solve inverse	Assessment	
	Inverses to Solve	equations.	5.4 to 5.6	
	Equations			
How do we work with	5.7 Equations	Use the LCD to	Assessment	7.EE.B.4b-Solve real-life and mathematical problems using
fractions?	and Inequalities	solve equations	Unit 3	numerical and algebraic expressions and equations ~ Solve
	with Rational	and inequalities.	Fractions	word problems leading to inequalities of the form px + q > r
	Numbers			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.

# D 6. Ratio, Proportion,

#### and Probability

e			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
С	How do we use ratios and proportions to	6.1 Ratios and Rates	Find ratios and unit rates.	Ratio				7.RP.A.1-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Compute
	solve problems?							unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
e								7.RP.A.2b-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Identify
								the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
m	1			Equivalent Ratios	S			

<ul><li>e How do we use ratios and proportions to solve problems?</li><li>r</li></ul>	6.2 Writing and Solving Proportions	Write and solve proportions.	Ratio		<ul> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Recognize and represent proportional relationships between quantities.</li> <li>7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.</li> </ul>
			Proportion		7.RP.A.2b-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.
How do we use ratios and proportions to solve problems?	6.3 Solving Proportions Using Cross Products	Solve proportions using cross products.	Ratio		<ul> <li>7.RP.A.2-Analyze proportional relationships by equations?</li> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Recognize and represent proportional relationships between quantities.</li> <li>7.RP.A.2b-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</li> </ul>
			Equivalent Ratios	S	<ul> <li>7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Represent proportional relationships by equations.</li> <li>7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.</li> </ul>
How do we use ratios and proportions to solve problems?	6.4 Similar and Congruent Figures	Identify similar and congruent figures.	Cross Products Similar Figures	Teacher Assessment 6.1 to 6.3	7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.

				Corresponding Parts Congruent			<ul> <li>7.RP.A.2b-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</li> <li>7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.</li> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.</li> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships between quantities.</li> </ul>
				Figures			
	How do we use ratios and proportions to solve problems?	6.5 Similarity and Measurement	Find unknown side lengths of similar figures.	Figures Proportions Cross Products Similar Figures			<ul> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships between quantities.</li> <li>7.RP.A.2b-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</li> <li>7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.</li> <li>7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Ise proportional relationships by equations.</li> <li>7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.</li> </ul>
				Corresponding			
	How do we use ratios and proportions to solve problems?	6.6 Scale Drawings	Use proportions with scale drawings.	Scale Scale Drawing	Common Assessment		7.G.A.1-Draw construct, and describe geometrical figures and describe the relationships between them ~ 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.
J	7. Percents						
а			Knowledge and				
	Essential Questions	Content	Skills	Vocabulary	Assessments Lessons	Resources	Standards

n How do we calculate percents?	7.1 Percents and Fractions	Use a fraction to find the percent of a number.	Percent		7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships between quantities.
u					7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.
a					7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.
y					
How do we calculate percents?	7.2 Percents and Proportions	Use proportions to solve percent problems.	Percent		<ul> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Recognize and represent proportional relationships between quantities.</li> <li>7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Represent proportional relationships by equations.</li> </ul>
			Proportion		7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.
How do we calculate percents?	7.3 Percents and Decimals	Use decimals to solve percent problems.	Percent		<ul> <li>7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Recognize and represent proportional relationships between quantities.</li> <li>7.RP.A.2c-Analyze proportional relationships and use them to solve real-world and mathematical problems ~</li> <li>Represent proportional relationships by equations.</li> </ul>
			Decimal		7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.
How do we calculate percents?	7.4 The Percent Equation	Use equations to solve percent problems.	Percent	Teacher Assessment 7.1 to 7.4	7.RP.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships between quantities.

How do we calculate       7.5 Percent of       Find a percent of       Commission       7.8P.A.3-Analyze proportional relationships and use them         How do we calculate       7.5 Percent of       Find a percent of       Percent of       7.8P.A.3-Analyze proportional relationships and use them         How do we calculate       7.5 Percent of       Find a percent of       Percent of       7.8P.A.3-Analyze proportional relationships and use them         percents?       Change       Find a percent of       Percent of       Solve real-world and mathematical problems ~         Recognize and represent proportional relationships and use them       to solve real-world and mathematical problems ~         quantity.       Change       Change       Recognize and represent proportional relationships and use them         to solve real-world and mathematical problems ~       Recognize and represent proportional relationships and use them         to solve real-world and mathematical problems ~       Recognize and represent proportional relationships and use them         to solve real-world and mathematical problems ~       Represent proportional relationships to solve multistep ratio and percent proportional relationships to solve multistep ratio and percent proportional relationships and use them         percents?       Find markups, data       Recognize and represent proportional relationships and use them         how do we calculate       7.6 Percent       Find markups, data       Recogni									7.RP.A.2c-Analyze proportional relationships and use them
How do we calculate       7.5 Percent of percents?       Find a percent of change in a quantity.       Find a percent of change in a quantity.       Find a percent of change in a quantity.       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them Assessment         F       10.1 markups, Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them Assessment         F       10.1 markups, Represent proportional relationships and use them Assessment       7.5 to 7.7 Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relati									to solve real-world and mathematical problems ~
How do we calculate       7.5 Percent of       Find a percent of       Commission       7.8P.A.2-Analyze proportional relationships to solve multistep ratio and percent problems.         percents?       Change       Find a percent of       Percent of       7.8P.A.2-Analyze proportional relationships and use them quantity.         Percent S?       Change       Find a percent of       Percent of       Solve real-world and mathematical problems ~         Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~         How do we calculate       7.6 Percent       Find markups, discussed and the mathematical problems ~         Percent of       Percent of       Solve real-world and mathematical problems ~         Percent of       Dercemse       Teacher       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~         percents?       Applications       Find markups, discussed, and tips.       Assessment       to solve real-world and mathematical problems ~         F       10.Measurement, Area       Solve real-world and mathematical problems ~       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~         Percent of       Dercemase       Common       7.8P.A.2-Analyze proportional relationships and use them to so					<b>–</b>				Represent proportional relationships by equations.
How do we calculate       7.5 Percent of percents?       Find a percent of change in a quantity.       Find a percent of change in a quantity.       Percent of change in a quantity.       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them increase         How do we calculate       7.6 Percent Applications       Find markups, discounts, sales tax, and tips.       Markup Assessment       Teacher Assessment       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them Assessment         F       10. Measurement, Area and Volume       Nowledge and Kowledge and to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportion					Equation				7.RP.A.3-Analyze proportional relationships and use them
How do we calculate       7.5 Percent of Change       Find a percent of Change       Find a percent of Change       7.8P-A2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent									to solve real-world and mathematical problems ~ Use
F       1.5 Percent of Change       Find a percent of Change       Percent of Change       Cange       7.6 P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ to solve real-world and mathematical problems ~ the solve real-world and mathematical problems ~ Use proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.         Percent of       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of         Decrease       Percent of       Percent of       Percent of       Percent of <tr< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>proportional relationships to solve multistep ratio and</th></tr<>									proportional relationships to solve multistep ratio and
How do we calculate       7.5 Percent of change       Find a percent of change       Percent of change       Change       T.R.P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Recognize and represent proportional relationships to between quantities.         Percent of       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.         Percent of       Recrease       Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships to solve multistep ratio and percent problems.         Percent of percents?       Percent of Decrease       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships to solve multistep ratio and percent problems.         Percent of Decrease       Percent of Decrease       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships to solve multistep ratio and percents?         How do we calculate       7.6 Percent Applications       Find markups, Tax, and tips.       Markup Assessment       Resource to solve real-world and mathematical problems ~ Represent proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships to solve multistep ratio and percent problems.         F       10. Measurement, Area and Volume       Sixis       Vocabulary       Assessment Asse									percent problems.
How do we calculate     7.5 Percent of     Find a percent of     Percent of     T.RP.A.2-Analyze proportional relationships and use them       percents?     Change     change in a     Change     Change     Recognize and mathematical problems ~       quantity.     quantity.     Recognize and represent proportional relationships and use them     Recognize and represent proportional relationships and use them       to solve real-world and mathematical problems ~     Represent proportional relationships and use them     to solve real-world and mathematical problems ~       How do we calculate     7.6 Percent     Find markups,     Percent of     Represent proportional relationships and use them       percents?     Applications     Find markups,     Markup     Teacher     7.RP.A.2-Analyze proportional relationships and use them       percents?     Applications     Find markups,     Markup     Teacher     7.RP.A.2-Analyze proportional relationships and use them       percents?     Applications     Knowidge and tips.     Assessment     to solve real-world and mathematical problems ~       percents?     Find markups,     Markup     Teacher     7.7.7     Recognize and represent proportional relationships and use them       percents?     Applications     tax, and tips.     Assessment     to solve real-world and mathematical problems ~       Percent of     Decrease     Common     7.RP.A.2-Analyze propo					Commission				
percents?         Change         change in a quantity.         Change of contents of con		How do we calculate	7.5 Percent of	Find a percent of	Percent of				7.RP.A.2-Analyze proportional relationships and use them
<ul> <li> <ul> <li></li></ul></li></ul>		percents?	Change	change in a	Change				to solve real-world and mathematical problems $\sim$
F       1.0 Measurement, Ares         F       1.0 Measurement, Ares         P       1.0 Triangle         Now dow calculate       1.0 Triangle         Solve real-world and mathematical problems ~ Use         P       Percent of         Derease       7.5 to 7.7         P       Percent of         Derease       7.5 to 7.7         P       Percent of         Derease       Common         Assessment       to solve real-world and mathematical problems ~         Discount       T.5 to 7.7         P       Percent of         Discount       T.5 to 7.7         P       Percent of         Discount       T.8 P.A.2-Analyze proportional relationships and use them         Discount       T.5 to 7.7         P       Percent of         Discount       T.8 P.A.2-Analyze proportional				quantity.					Recognize and represent proportional relationships
F       1.0.Masurement, Are-s-       7.6 Percent       Find markups, discounts, sales tax, and tips.       Percent of tax, and tips.       7.6 Percent       7.8.P.A.2-Analyze proportional relationships by equations.         Percent of tax, and tips.       Percent of tax, and tips.       7.6 Percent       7.8.P.A.2-Analyze proportional relationships to solve multistep ratio and percent problems.         Percent of tax, and tips.       Percent of tax, and tips.       7.6 Percent       7.8.P.A.2-Analyze proportional relationships to solve multistep ratio and percent problems.         Percent of tax, and tips.       Percent of tax, and tips.       7.5 to 7.7       7.8.P.A.2-Analyze proportional relationships and use them tax, and tips.         10. Markup       Teacher       7.8.P.A.2-Analyze proportional relationships and use them tax, and tips.       7.5 to 7.7         10. Markup       Teacher       7.8.P.A.2-Analyze proportional relationships and use them tax, and tips.         10. Markup       Teacher       7.8.P.A.2-Analyze proportional relationships and use them tax, and tips.         10. Markup       Teacher       7.5 to 7.7       Execongite and represent proportional relationships and use them tax and tips.         10. Markup       Teacher       7.8.P.A.2-Analyze proportional relationships to solve multistep ratio and percent proportional relation									between quantities.
<ul> <li>For the construction of the const</li></ul>									7.RP.A.2c-Analyze proportional relationships and use them
F       1.0 Measurement, Area       7.6 Percent       Skills       Vocabulary       Assessment       Assessment       Stadards         F       1.0 Measurement, Area       Skills       Vocabulary       Assessment       Sessment       Stadards         F       1.0 Measurement, Area       Skills       Vocabulary       Assessment       Assessment       Stadards         F       1.0 Measurement, Area       Skills       Vocabulary       Assessment       Stadards         F       1.0 Measurement, Area       Skills       Vocabulary       Assessment       Stadards         F       1.0 Measuremen									to solve real-world and mathematical problems $\sim$
Percent of Increase       Percent of Increase       7.8P.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.         Percent of Decrease       Percent of Decrease       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ 0									Represent proportional relationships by equations.
<ul> <li>How do we calculate robust of the solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.</li> <li>Percent of Decrease</li> <li>Markup</li> <li>Teacher</li> <li>Assessment</li> <li>Teacher</li> <li>T</li></ul>					Percent of				7.RP.A.3-Analyze proportional relationships and use them
Porcent of Decrease       Percent of Decrease       Percent of Decrease<					Increase				to solve real-world and mathematical problems ~ Use
How do we calculate       7.6 Percent       Find markups, discounts, sales tax, and tips.       Percent of Decrease       7.5 Percent       7.8 P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~         Percents?       Applications       Applications       Assessment       to solve real-world and mathematical problems ~         Common       7.5 to 7.7       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~         Common       7.8 P.A.2c-Analyze proportional relationships and use them Assessment       to solve real-world and mathematical problems ~         Discount       J.8 P.A.2c-Analyze proportional relationships and use them Assessment       to solve real-world and mathematical problems ~         Percent problems.       Percent problems       Discount       7.8 P.A.3c-Analyze proportional relationships and use them Assessment         Violesale       Violesale       Violesale       Violesale       Violesale         F       10.1 Measurement, Area       Solve problems       Lessons       Resources       Standards         b       How do we calculate       10.1 Triangles       Solve problems       Acute Triangle       7.6 A.2-Draw construct, and describe propertical figures         and volume       Solve problems       Result riangle       7.6 A.2-Draw construct, and describe propartical figures									proportional relationships to solve multistep ratio and
Percent of Decrease       Percent of Decrease       7.6 Percent       Find markups, discounts, sales tax, and tips.       Markup       Teacher       7.8 P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~         percents?       Applications       discounts, sales tax, and tips.       7.5 to 7.7       Recognize and represent proportional relationships between quantities.         Common       7.8 P.A.2-Analyze proportional relationships and use them Assessment       to solve real-world and mathematical problems ~         Biscount       7.5 to 7.7       Recognize and represent proportional relationships and use them Assessment         Assessment       to solve real-world and mathematical problems ~         Biscount       7.8 P.A.3-CaNalyze proportional relationships and use them to solve real-world and mathematical problems ~         Discount       N.8 Assessment       to solve real-world and mathematical problems ~         Vholesale       Viscount       N.8 Assessment       to solve real-world and mathematical problems ~         Wholesale       Vholesale       Vholesale       Vholesale       Vholesale         Pescent and Volume       10.1 Triangles       Solve problems       Acute Triangle       7.6.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw									percent problems.
Provide over calculate percents?       7.6 Percent Applications       Find markups, discounts, sales tax, and tips.       Markup       Teacher       7.8P.A.2-Analyze proportional relationships and use them to solve real-world and mathematical problems ~         Provide over calculate percents?       Applications       Hind markups, discounts, sales tax, and tips.       Assessment Assessment       to solve real-world and mathematical problems ~         Recognize and represent proportional relationships and use them Assessment       Common       7.RP.A.2-Analyze proportional relationships and use them Assessment         Discount       Discount       Sessment       Sessment       Represent proportional relationships by equations.         Provide over calculate and Volume       Now Represent proportional relationships to solve real-world and mathematical problems ~       Represent proportional relationships and use them Assessment         regressent Proportional relationships to solve real-world and mathematical problems ~       New Percent Proportional relationships and use them Assessment         regressent Proportional relationships to solve real-world and mathematical problems ~       New Percent Proportional relationships and use them Assessment         regressent Proportional relationships to solve real-world and mathematical problems ~       New Percent Proportional relationships to solve real-world and mathematical problems ~         regressent Proportional relationships to solve real-world and mathematical problems ~       New Percent Proportional relationships to solve real-world and m					Percent of				
How do we calculate percents?       7.6 Percent Applications       Find markups, discounts, sales tax, and tips.       Markup Assessment Assessment to solve real-world and mathematical problems ~         Note that the percents?       Applications       Find markups, discounts, sales tax, and tips.       Narkup Assessment to solve real-world and mathematical problems ~         Note that the percents?       Narkup Assessment tax, and tips.       7.5 to 7.7       Recognize and represent proportional relationships and use them to solve real-world and mathematical problems ~         Represent proportional relationships and use them to solve real-world and mathematical problems ~       Narkup Assessment to solve real-world and mathematical problems ~         Proportional relationships and use them to solve real-world and mathematical problems ~       Narkup Assessment to solve real-world and mathematical problems ~         Proportional relationships by equations.       Discount       7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~         No dowe calculate and Volume       Wholesale       V         Proportional relationships to solve multistep ratio and percent problems.       Proportional relationships to solve multistep ratio and percent problems.         Proportional relationships to solve multistep ratio and percent problems.       Vholesale       V         Proportional relationships to solve multistep ratio and percent problems.       Proportional relationships to solve multistep ratio and percent problems. <t< td=""><td></td><td></td><td></td><td></td><td>Decrease</td><td></td><td></td><td></td><td></td></t<>					Decrease				
percents?       Applications       discount, sales tax, and tips.       Assessment 7.5 to 7.7       to solve real-world and mathematical problems ~ Recognize and represent proportional relationships between quantities.         Common Assessment       Common Assessment       7.8 P.A.2c-Analyze proportional relationships and use them Assessment         Discount       Jiscount       7.8 P.A.3-Analyze proportional relationships by equations.         Discount       Jiscount       7.8 P.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Represent proportional relationships by equations.         F       10. Measurement, Area and Volume       Knowledge and Skills       Vocabulary       Assessments       Lessons       Resources       Standards         P       Solve problems       Content       Skills       Vocabulary       Assessments       Lessons       Resources       Standards         b       How do we calculate       10.1 Triangles       Solve problems       Acute Triangle       7.6.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw		How do we calculate	7.6 Percent	Find markups.	Markup	Teacher			7.RP.A.2-Analyze proportional relationships and use them
F       10. Measurement, Area and Volume       Knowledge and Essential Questions       Cotechna Kasessments       Recognize and represent proportional relationships between quantities.         F       10. Measurement, Area and Volume       Knowledge and Kasessments       Knowledge and Kasessments       Knowledge and Kasessments         F       10. Measurement, Area and Volume       Knowledge and Kasessments       Knowledge and Kasessments       Knowledge and Kasessments       Knowledge and Kasessments         F       10. Measurement, Area and Volume       Knowledge and Kasessments       Lessons       Resourcess       Standards         F       10. Measurement, Area and Volume       Solve problems       Assessments       Lessons       Resourcess       Standards         F       10. Triangles       Solve problems       Acute Triangle       Resources       Standards         F       and volume?       Solve problems       Acute Triangle       Triangle       Triangle		percents?	Applications	discounts. sales		Assessment			to solve real-world and mathematical problems ~
F       10. Measurement, Area       Answer in the transfer       Solver       Solver <td></td> <td>F</td> <td></td> <td>tax, and tips.</td> <td></td> <td>7.5 to 7.7</td> <td></td> <td></td> <td>Recognize and represent proportional relationships</td>		F		tax, and tips.		7.5 to 7.7			Recognize and represent proportional relationships
r       10. Measurement, Area         and Volume       Xhow a calculate         r       10. Measurement, Area         and Volume       Xhow a calculate         r       10. 1 Triangles         Solve problems       Common         Assessment       Common         Assessment       to solve real-world and mathematical problems ~         Represent proportional relationships by equations.       7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems.         Wholesale       Vintersale         r       10. Measurement, Area         and Volume       Xhow dowe calculate         to solve problems       Knowledge and         k       Korie Faile         k       Kow dowe calculate         k       Now dowe calculate         k       Now dowe calculate         k       Kills         k       Kersentical figures         k       and describe the relationships between them ~ Draw <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>between quantities.</td>									between quantities.
F 10. Measurement, Area and Volume F 10. Measurement, Area and Volume F 10. Measurement, Area Area Area Area Area Area Area Area						Common			7 RP A 2c-Analyze proportional relationships and use them
F 10. Measurement, Area and Volume F 10. Measurement, Area service s						Assessment			to solve real-world and mathematical problems ~
Piscount Discount 7.RP.A.3-Analyze proportional relationships of equations. 7.RP.A.3-Analyze proportional relationships and use them to solve real-world and mathematical problems ~ Use proportional relationships to solve multistep ratio and percent problems. Wholesale F 10. Measurement, Area and Volume e Knowledge and Essential Questions Content Skills Vocabulary Assessments Lessons Resources Standards 7.G.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw						,			Represent proportional relationships by equations
<ul> <li>F 10. Measurement, Area and Volume</li> <li>F 10. Measurement, Area and Volume</li> <li>Knowledge and Essential Questions</li> <li>Content Skills Vocabulary Assessments Lessons Resources Standards</li> <li>b How do we calculate 10.1 Triangles Solve problems Acute Triangle</li> <li>7.6.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw</li> </ul>					Discount				7 RP A 3-Analyze proportional relationships and use them
<ul> <li>F 10. Measurement, Area and Volume</li> <li>F 10. Measurement, Area and Volume</li> <li>Knowledge and</li> <li>Knowledge and</li></ul>					Discount				to solve real-world and mathematical problems ~ Use
F 10. Measurement, Area and Volume          e       Knowledge and         Essential Questions       Content         Skills       Vocabulary         Assessments       Lessons         Resources       Standards         b       How do we calculate       10.1 Triangles         Solve problems       Acute Triangle         r       area and volume?       involving         Right Triangle       and describe the relationships between them ~ Draw									proportional relationships to solve multisten ratio and
F 10. Measurement, Area and Volume          F       10. Measurement, Area and Volume         e       Essential Questions         Content       Skills         Vocabulary       Assessments         Lessons       Resources         Standards         r       area and volume?									nercent problems
<ul> <li>F 10. Measurement, Area and Volume</li> <li>F 10. Measurement</li></ul>					Wholesale				percent problems.
and Volume       and Volume         e       Knowledge and         Essential Questions       Content       Skills       Vocabulary       Assessments       Lessons       Resources       Standards         b       How do we calculate       10.1 Triangles       Solve problems       Acute Triangle       7.G.A.2-Draw construct, and describe geometrical figures         r       area and volume?       involving       Right Triangle       and describe the relationships between them ~ Draw	F	10 Measurement Area	-		VVIIUIESale				
e Knowledge and Essential Questions Content Skills Vocabulary Assessments Lessons Resources Standards b How do we calculate 10.1 Triangles Solve problems Acute Triangle 7.G.A.2-Draw construct, and describe geometrical figures r area and volume? involving Right Triangle and describe the relationships between them ~ Draw	'	and Volume							
Essential Questions       Content       Skills       Vocabulary       Assessments       Lessons       Resources       Standards         b       How do we calculate       10.1 Triangles       Solve problems       Acute Triangle       7.G.A.2-Draw construct, and describe geometrical figures         r       area and volume?       involving       Right Triangle       and describe the relationships between them ~ Draw	~			Knowledge and					
b How do we calculate 10.1 Triangles Solve problems Acute Triangle 7.G.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw	e	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
r area and volume? involving Right Triangle and describe the relationships between them ~ Draw	h	How do we calculate	10 1 Triangles	Solve problems	Acute Triangle	, as cosments	2000115	Resources	7 G A 2-Draw construct and describe geometrical figures
	r	area and volume?	_011 1101Bic3	involving	Right Triangle				and describe the relationships between them ~ Draw

(freehand, with ruler and protractor, and with technology)

triangles

u

Obtuse Triangle

а r У				Equiangular Triangle Equallateral Triangle Isosceles Triangle Scalene Triangle		geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
	How do we calculate area and volume?	10.2 Polygons and Quadrilaterals	Classify polygons and quadrilaterals	Polygon Regular Polygon Convex Concave Quadrilateral Pentagon Hexagon Heptagon Octagon Trapezoid Parallelogram Rhombus Diagonal		7.G.A.2-Draw construct, and describe geometrical figures and describe the relationships between them ~ Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
	How do we calculate area and volume?	10.3 Areas of parallelograms and Trapezoids	Find the area of parallelograms and trapezoids	Base Height Area Center Radius	Teacher Assessment 10.1 to 10.4	7.G.B.4-Solve real-life and mathematical problems involving angle measure, area, surface area, and volume ~ Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
	How do we calculate area and volume?	10.4 Circumference and Area of Circle	Find the circumference and area of circles	Diameter Circumference Pi Area		7.G.B.4-Solve real-life and mathematical problems involving angle measure, area, surface area, and volume ~ Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
	How do we calculate area and volume?	10.5 Surface Areas of Prisms and Cylinders	Find the surface area of prisms and cylinders	Net		7.G.A.3-Draw construct, and describe geometrical figures and describe the relationships between them ~ Describe the two-dimensional figures that result from slicing three- dimensional figures, as in plane sections of right

rectangular prisms and right rectangular pyramids.

			Surface Area Lateral Face Lateral Area Prism Cylinder		7.G.B.6-Solve real-life and mathematical problems involving angle measure, area, surface area, and volume ~ 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.
How do we calculate	10.7 Volume of	Find the volume	Volume	Teacher	7.G.A.3-Draw construct, and describe geometrical figures
area and volume?	Prisms and	of prisms and	<b>volume</b>	Assessment	and describe the relationships between them ~ Describe
	Cylinders	cylinders		10.5 to 10.7	the two-dimensional figures that result from slicing three-
					dimensional figures, as in plane sections of right
					rectangular prisms and right rectangular pyramids.
				Common	7.G.B.6-Solve real-life and mathematical problems
				Assessment	involving angle measure, area, surface area, and volume $^{\sim}$
					Solve real-world and mathematical problems involving
					area, volume and surface area of two- and three-
					unnensional objects composed of triangles, quadrilaterais,
M11 Statistics and					polygons, cubes, and right prisms.

#### M 11. Statistics and

### Probability

а			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
r	How can we calculate the probability of an event?	11.7 Combinations	Use combinations to count possibilities	Combination				7.SP.C.7-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
С				Arrangement				7.SP.C.8-Investigate chance processes and develop, use, and evaluate probability models ~ Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
h	How can we calculate the probability of an event?	11.8 Probability of Disjoint and Overlapping Events	Find the probability that event A or event B occurs.	Disjoint events				7.SP.C.7a-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

How can we calculate the probability of an event?	11.5 Interpreting Data	Make conclusions about populations using	Margin of Error	Teacher Assessment 6.7, 6.8, 11.4	
		surveys.		& 11.5	

Survey

3/31/2016

Mutually

exclusive evnets

Overlapping

events

7.SP.C.7b-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.

7.SP.C.8a-Investigate chance processes and develop, use, and evaluate probability models ~ 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.

7.SP.C.8b-Investigate chance processes and develop, use, and evaluate probability models ~ 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 sixesâ€), identify the outcomes in the sample space which compose the event.

7.SP.C.8c-Investigate chance processes and develop, use, and evaluate probability models ~ Design and use a simulation to generate frequencies for compound events.

7.SP.A.1-Use random sampling to draw inferences about a population ~ 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.

7.SP.A.2-Use random sampling to draw inferences about a population ~ 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.

7.SP.B.3-Draw informal comparative inferences about two populations ~ Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.

			Sample	7.SP.B.4-Draw informal comparative inferences about two populations ~ Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
How can we calculate the probability of an event?	11.6 Permutations	Use permutations to count possibilities.	Prediction Permutation	7.SP.C.5-Investigate chance processes and develop, use, and evaluate probability models ~ 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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
			Factorial	7.SP.C.6-Investigate chance processes and develop, use, and evaluate probability models ~ Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative
How can we calculate the probability of an event?	6.7 Probability and Odds	Find probability and odds.	Event	7.SP.C.6-Investigate chance processes and develop, use, and evaluate probability models ~ Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
			Outcome	7.SP.C.7-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
			Favorable/Unfav orable	7.SP.C.7a-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
			Probability Theoretical Probability	

			Experimental Probability Odds		
How can we calculate the probability of an event?	6.8 Counting Principle	Use the counting principle to find probabilities.	Tree Diagram Couting Principle		7.SP.C.8-Investigate chance processes and develop, use, and evaluate probability models ~ Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
How can we calculate the probability of an event?	11.4 Collecting Data	Identify populations and sampling methods	Random sample		7.SP.A.1-Use random sampling to draw inferences about a population ~ 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.
			Systematic sample		7.SP.A.2-Use random sampling to draw inferences about a population ~ 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.
			Stratified sample Convenient sample Self-selected	2	
How can we calculate the probability of an event?	11.9 Independent and Dependent Events	Find probability that two events occur.	Independent events Dependent	Teacher Assessment 11.6, 11.7, 11.8 & 11.9	7.SP.C.7a-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. 7.SP.C.7b-Investigate chance processes and develop, use,

events

7.SP.C.7b-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.

		Probability		<ul> <li>7.SP.C.8a-Investigate chance processes and develop, use, and evaluate probability models ~ 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.</li> <li>7.SP.C.8b-Investigate chance processes and develop, use, and evaluate probability models ~ 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 sixesâ€), identify the outcomes in the sample space which compose the event.</li> <li>7.SP.C.8c-Investigate chance processes and develop, use, and evaluate probability models ~ Design and use a simulation to generate frequencies for compound events.</li> </ul>
How can we calculate Mean, Median, the probability of an Mode event?	Find and use mean, median, and mode.	Mean Median Mode Range	Assessment Unit 7 3/31/2016	7.SP.C.7-Investigate chance processes and develop, use, and evaluate probability models ~ Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

## A Angle Relationships

Л	Angle Relationships							
р			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
r	How do we use angle	13.2 Angles and	Identify angles	Transversal				7.G.B.5-Solve real-life and mathematical problems
i	relationships to find	Parallel Lines	when a	Corresponding				involving angle measure, area, surface area, and volume ~
	missing angle		transversal	angles				Use facts about supplementary, complementary, vertical,
I	measurements?		intersects lines.	Alternate				and adjacent angles in a multi-step problem to write and
				interior angles				solve simple equations for an unknown angle in a figure.
				Allemale exterior angles				
	How do we use angle	13.3 Angles and	Find the	Interior angles	Teacher			7.G.A.2-Draw construct, and describe geometrical figures
	relationships to find	Polygons	measures of	Exterior angles	Assessment			and describe the relationships between them ~ Draw
	missing angle	,0	interior and	0	13.1, 13.2 &			(freehand, with ruler and protractor, and with technology)
	measurements?		exterior angles.		13.3			geometric shapes with given conditions. Focus on
	Multi-Step Equations							
	and Inequalities							
			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards

How do we rewrite large or small numbers in other forms?	4.7 Scientific Notation	Write numbers using scientific notation.	Scientific notation		8.EE.A.3-Expressions and Equations Work with radicals and integer exponents ~ Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.
			Standard form		8.EE.A.4-Expressions and Equations Work with radicals and integer exponents ~ Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
How do we solve problems with square roots?	9.1 Square Roots	Find approximate square roots of numbers.	Square root Perfect square Radical expressions Approximate		<ul> <li>8.EE.A.2-Expressions and Equations Work with radicals and integer exponents ~ Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that ?2 is irrational.</li> </ul>
How do we solve problems with square roots?	9.3 Pythagorean Theorem	Use the Pythagorean theorem to solve problems.	Leg	Teacher Assessment 4.7, 9.1 & 9.3	<ul> <li>8.EE.A.2-Expressions and Equations Work with radicals and integer exponents ~ Use square root and cube root symbols to represent solutions to equations of the form x2</li> <li>= p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that ?2 is irrational.</li> </ul>
			Hypoteneuse		8.G.B.6-Understand and apply the Pythagorean Theorem ~ Explain a proof of the Pythagorean Theorem and its converse.
			Pythagorean Theorem		8.G.B.7-Understand and apply the Pythagorean Theorem ~ Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
					8.G.B.8-Understand and apply the Pythagorean Theorem ~ Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

M Multi-Step Equations

# and Inequalities

a			Knowledge and					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
У	How do we rewrite large or small numbers in other forms?	4.7 Scientific Notation	Write numbers using scientific notation.	Scientific notation				8.EE.A.3-Expressions and Equations Work with radicals and integer exponents ~ Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.
				Standard form				8.EE.A.4-Expressions and Equations Work with radicals and integer exponents ~ Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
	How do we solve problems with square roots?	9.1 Square Roots	Find approximate square roots of numbers.	Square root Perfect square Radical expressions Approximate				<ul> <li>8.EE.A.2-Expressions and Equations Work with radicals and integer exponents ~ Use square root and cube root symbols to represent solutions to equations of the form x2</li> <li>= p and x3 = p, where p is a positive rational number.</li> <li>Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that ?2 is irrational.</li> </ul>
	How do we solve equations algebraically?	3.2 Solving Equations Having Like Terms and Parenthesis	Solve equations with variables on both sides.	Like Term Inverse Operation				<ul> <li>8.EE.C.7-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations in one variable.</li> <li>8.EE.C.7b-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.</li> </ul>
	How do we solve equations algebraically?	3.3 Solving Equations with Variables on	Solve Equations with like terms and parenthesis.					8.EE.C.7-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations in one variable.

	Both Sides			
How do we solve problems with square roots?	9.3 Pythagorean Theorem	Use the Pythagorean theorem to solve problems.	Leg	Teacher Assessment 4.7, 9.1 & 9.3
			Hypoteneuse	
			Pythagorean Theorem	
How do we solve equations algebraically?	3.4 Solving Inequalities Using Addition	Solve inequalities using addition or subtraction.	Inequality	Teacher Assessment 3.2, 3.3, 3.4
	or Subtraction		Solution of an inequality	5/15/2016
			Equivalent	
How do we solve equations algebraically?	3.5 Solving Inequalities Using	Solving inequalities using multiplication or	inequalities	

8.EE.C.7b-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8.EE.A.2-Expressions and Equations Work with radicals and integer exponents ~ Use square root and cube root symbols to represent solutions to equations of the form x2
= p and x3 = p, where p is a positive rational number.
Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that ?2 is irrational.

8.G.B.6-Understand and apply the Pythagorean Theorem ~ Explain a proof of the Pythagorean Theorem and its converse.

8.G.B.7-Understand and apply the Pythagorean Theorem ~ Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

8.G.B.8-Understand and apply the Pythagorean Theorem ~
Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
8.EE.C.7-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations in one variable.

8.EE.C.7b-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8.EE.C.7-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations in one variable.

Multiplication or division Division

How do we solve equations algebraically? 3.6 SolvingSolve multi-stepMulti-Stepinequalities.Inequalities

Common Assessment 8.EE.C.7b-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8.EE.C.7-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations in one variable.

8.EE.C.7b-Analyze and solve linear equations and pairs of simultaneous linear equations ~ Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.