# <u>6th Grade Math</u>

	Units of Study * all instructional days include 1 extra day to assess REVEAL Units of Study				
Math					
<b>Connect</b>	Daily Skill Practice				
<u>Unit 1-</u>	Ratios and Rates (August 10-September 8) 21 days				
<u>Unit 2</u>	Fractions, Decimals, and Percents (September 9-September 30) 16 days				
<u>Unit 3</u>	Compute with Multi-Digit Numbers and Fractions (October 3- October 27) 17 days				
<u>Unit 4</u>	Integers, Rational Numbers, and Coordinate Plane (October 28-December 6) 22 days				
<u>Unit 5</u>	Numerical and Algebraic Expressions (December 7-January 23) 22 days				
<u>Unit 6</u>	Equations and Inequalities (January 24-February 16) 18 days				
<u>Unit 7</u>	Relationships Between Two Variables (February 17-March 7) 12 days				
<u>Unit 8</u>	Area (March 8-April 12) 20 days				
<u>Unit 9</u>	Volume and Surface Area (April 13-May 3) 15 days				
Unit 10	Satistical Measures and Displays (May 4-May 25) 16 days				

<b>Green</b>	: Priority St	tandar	ds	<mark>Pink</mark>	<mark>k: Suppo</mark> r	rting Stand	<mark>dards</mark>				
			Units (Modules)								
		1	2	3	4	5	6	7	8	9	10
	6.NS.1			Х							
	6.NS.2			Х							
	<mark>6.NS.3</mark>			Х							
	<mark>6.NS.4</mark>			Х							
	6.NS.5					Х					
	<mark>6.NS.6</mark>		Х								
	6.NS.7		Х								
	<mark>6.NS.8</mark>				Х						
	<mark>6.NS.9</mark>				Х						
	6.NS.10				Х						
	<mark>6.C.1</mark>	Х									
	<mark>6.C.2</mark>	Х									
	<mark>6.C.3</mark>	Х									
	<mark>6.C.4</mark>	Х									
	<mark>6.C.5</mark>						Х				
	<mark>6.C.6</mark>						Х				
	6.AF.1							Х			
	<mark>6.AF.2</mark>							Х			
	<mark>6.AF.3</mark>							Х			
	<mark>6.AF.4</mark>								Х		
	<mark>6.AF.5</mark>								Х		
	<mark>6.AF.6</mark>								Х		
	<mark>6.AF.7</mark>						ļ				ļ
	<mark>6.AF.8</mark>										

<mark>6.AF.9</mark>	Х				
6.AF.10				Х	
6.GM.1	Х				
6.GM.2					Х
6.GM.3					
6.GM.4					Х
<mark>6.GM.5</mark>					Х
<mark>6.GM.6</mark>					Х
6.DS.1					
6.DS.2					
6.DS.3					
6.DS.4					

#### Unit 1- Ratios and Rates

# **General Description of the Unit**

In this unit the student will write ratios to compare quantities, find unit rates, use equivalent ratios to solve ratio problems, graph and describe ratio relationships, compare ratio relationships, use bar diagrams to solve ratio and rate problems, use equivalent ratios to solve ratio and rate problems, use double numbers lines to solve ratio and rate problems and convert measurements.

Priority Standards	Supporting Standards
• <b>6.NS.10</b> Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).	<ul> <li>6.NS.9 Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</li> <li>6.NS.8 relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, a:b.</li> </ul>
Proficiency Scales 6.NS.10	Self-Awareness
	Self-Management Social Awareness

		Relationship Skills			
		Responsible Decision-Making			
<b>Conceptual Understanding</b>	<u>s</u>	Essential Questions			
	op understanding of ratios and	How are two quantitie	s related?		
	to describe the relationship		ning to maintain the same		
between two q		▲	wo quantities as one of the		
	to understand that ratios can	quantities changes?			
-	le and part to part and write	-	del to find equivalent ratios?		
ratio relationsh	ent forms that express differen	<ul> <li>How can you use graph relationships?</li> </ul>	is to represent ratio		
	their understanding of ratios	·	<ul> <li>How can you use graphs and tables to compare ratio</li> </ul>		
solve real worl		relationships?			
	sorre rear worra problemor		How can you solve real-world problems involving ratios?		
		How can you use ratio customary units of me	reasoning to convert between asurement?		
			and unit rates to compare		
		quantities?	•		
		How can you solve real-world problems involving			
		rates?			
Vey Concents	Indiana Dragoga		at a percent is a rate per 100?		
• I can understand the	<u>Indiana Process</u> <u>Standards:</u>	<ul> <li><u>Related Concepts</u></li> <li>N/A</li> </ul>	<u>Assessment Vocabulary</u> Math Terms:		
• I can understand the concept of a ratio.	<ul> <li>PS.1 Make sense of</li> </ul>	• IN/A	Equivalent ratios		
<ul> <li>I can use tables to</li> </ul>	problems and		Ratio		
find equivalent	persevere in solving		Part-to-Part		
ratios.	them.		Part-to-Whole		

<ul> <li>I can use graphs to represent ratio relationships.</li> <li>I can graph ordered pairs on the coordinate plane.</li> <li>I can use graphs and tables to compare ratio relationships</li> <li>I can solve real- world problems involving ratios.</li> <li>I can use ratio reasoning to convert between customary units of measurement.</li> <li>I can compare quantities by using unit rates.</li> <li>I can solve real- world problems involving rates.</li> </ul>	<ul> <li>PS.2 Reason abstractly and quantitatively.</li> <li>PS.3 Construct viable arguments and critique the reasoning of others.</li> <li>PS.4 Model with mathematics.</li> <li>PS.5 Use appropriate tools strategically.</li> <li>PS.6. Attend to precision.</li> <li>PS.7 Look for and make use of structure.</li> <li>PS.8 Look for and express regularity in repeated reasoning.</li> </ul>		<ul> <li>Double Number Line</li> <li>Ratio Table</li> <li>Scaling</li> <li>Coordinate Plane</li> <li>Ordered Pair</li> <li>Origin</li> <li>X-axis</li> <li>X-coordinate</li> <li>Y-axis</li> <li>Y-Coordinate</li> <li>Unit Ratio</li> <li>Rate</li> <li>Unit Price</li> <li>Unit Rate</li> </ul> Academic Terms: <ul> <li>Comparison</li> <li>Quantities</li> </ul>
Text Lesson 1-1 Lesson 1-2 Lesson 1-3 Lesson 1-4 Lesson 1-5	<u>book</u>	Manipulatives/Materials• Foldable• Bar Diagrams• Dry Erase Boards• Dry Erase Markers• Colored Pencils	Digital • Web Sketchpad • Interactive Student Edition • Math Replay Videos • eToolkit

Lesson 1-6 Lesson 1-7 Lesson 1-8	<ul> <li>Counters (2 different colors)</li> <li>Double Number Line</li> <li>Graph Paper</li> <li>Coordinate Plane</li> <li>Tape Diagrams</li> <li>Newspaper Sale Ads</li> <li>Math Journals</li> </ul>	<ul> <li>eGlossary</li> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>
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Unit 2- Fractions, Decimals, and Percents

# **General Description of the Unit**

In this unit the student will identify a percent as a rate per 100, represent percents with 10x10 grids and bar diagrams, write fractions or mixed numbers as a percent, write percents as fractions or mixed numbers, write decimals as percents, write percents as decimals, find the percent of a number, use benchmark percents to estimate the percent of a number, and find the whole, given a percent and the part of a number.

<ul> <li>Priority Standards         <ul> <li>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</li> <li>6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.</li> </ul> </li> </ul>	<ul> <li>Supporting Standards</li> <li>6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, a:b.</li> <li>6.NS.9: Understand the concept of a unit rate and use terms related in the context of a ratio relationship.</li> </ul>
Proficiency Scales <u>6.NS.10</u> <u>6.NS.5</u>	Self-Awareness

		Self-Management		
		Social Awareness		
		Relationship Skills		
		Responsible Decision-Making		
<ul> <li><u>Conceptual Understandings</u></li> <li>Students continue to develop und percents.</li> <li>Students will begin to understance greater than 100% represent nur 1 and percents less than 1% reprare significantly less than the who</li> <li>Students will build fluency with m and applying their understanding solve real-world problems.</li> </ul>	l that percents nbers greater than esent numbers that ole. nodeling percents, g of percents to	<ul> <li>Essential Questions</li> <li>How can you use fractions, decimals and percents to solve everyday problems?</li> <li>How can you use 10x10 grids and bar diagrams to model percent?</li> <li>Can you convert between percents, decimals and fractions?</li> <li>Can you use 10x10 grids to model percents that are greater than 100% and less than 1%?</li> <li>How can you relate fractions, decimals and percents?</li> <li>How can you find the percent of a number?</li> <li>Can you estimate the percent of a number?</li> <li>How can you find the whole given the percent and the part?</li> <li>How can you use proportional relationships to solve multi-step ratio and percent problems?</li> </ul>		
Key Concepts	<b>Related Concepts</b>	Assessment Vocabulary		

<ul> <li>I can use 10x10 grids and bar diagrams to model percents.</li> <li>I can use 10x10 grids to model percents that are greater that 100% and less than 1%.</li> <li>I can relate fractions, decimals, and percents.</li> <li>I can use bar diagrams, equivalent ratios, double number lines, and ratio tables to find the percent of a number.</li> <li>I can estimate the percent of number.</li> <li>I can find the whole given the percent and the part.</li> </ul>	Math Terms: • Percent • Rate Per 100 • Benchmark Percents • Equivalent Ratios Academic Terms:
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- PS.2 Reason abstractly and quantitatively.
- PS.3 Construct viable arguments and critique the reasoning of others.
- PS.5 Use appropriate tools strategically.
- PS.7 Look for and make use of structure.

**Resources** 

<u>Textbook</u>	Digital	<b>Manipulatives/Materials</b>
Lesson 2-1 Lesson 2-2 Lesson 2-3 Lesson 2-4 Lesson 2-5 Lesson 2-6	<ul> <li>Web Sketchpad</li> <li>Interactive Student Edition</li> <li>Math Replay Videos</li> <li>eToolkit</li> <li>eGlossary</li> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>	<ul> <li>10x10 grids</li> <li>Bar Diagrams</li> <li>Fraction Bars</li> <li>Foldable</li> <li>Double number line</li> <li>Math Journals</li> <li>Ratio Tables</li> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> <li>Colored Pencils</li> </ul>

Unit 3- Compute with Multi-Digit Numbers and Fractions

# **General Description of the Unit**

In this unit the student will divide multi-digit numbers, add and subtract multi-digit decimals, multiply multi-digit			
decimals, divide multi-digit decimals, find reciprocals, divide whole numbers by fractions, divide fractions by fractions,			
divide fractions by whole numbers and divide mixed numbers.			
Supporting Standards			
6.C.2: Divide multi-digit whole numbers fluently using a			
standard algorithmic approach			
<u>SEL Indicators</u>			
Self-Awareness			
Self-Management			
Social Awareness			
Social Awareness			
Relationship Skills			
Responsible Decision-Making			
Essential Questions			

<ul> <li>Students will draw on their knowledge of division to build fluency with dividing multi-digit whole numbers, with both whole number quotients and by annexing zeros in the decimal place.</li> <li>Students will apply their understanding of dividing multi-digit whole numbers to solve real-world problems</li> </ul>	<ul> <li>How are operations with fractions and decimals related to operations with whole numbers?</li> <li>Can you divide four-digit dividends by two-digit divisors?</li> <li>Can you find the quotients of multi-digit whole numbers?</li> <li>Can you perform operations on multi-digit decimals?</li> <li>Can you divide whole numbers by fractions?</li> <li>Can you divide fractions by fractions?</li> <li>Can you divide with whole and mixed numbers?</li> <li>Can you extend previous understandings of numbers to the system of rational numbers?</li> </ul>
Key ConceptsRelated ConceptsI can find quotients of multi- digit whole numbers.•I can perform operations on multi-digit decimals.•I can divide whole numbers by fractions.•I can divide fractions by fractions.•I can divide with whole and mixed numbers.•	Assessment Vocabulary         Math Terms:         Dividend         Divisor         Quotient         Annex Zeros         Inverse Property of Multiplication         Multiplicative inverse         reciprocal         Foldable

Asthematical Processes		
<ul> <li>Mathematical Processes</li> <li>PS.1 Make sense of problems and persevere in solving them.</li> <li>PS.2 Reason abstractly and quantitatively.</li> <li>PS.3 Construct viable arguments and critique the reasoning of others.</li> <li>PS.4 Model with mathematics.</li> <li>PS.5 Use appropriate tools strategically.</li> <li>PS.6 Attend to precision.</li> <li>PS.7 Look for and make use of structure.</li> <li>PS.8 Look for and express regularity in repeated reasoning.</li> </ul>		
Resources		
Textbook	Digital	Manipulatives/Materials
Lesson 3-1	• Web Sketchpad	Graph Paper
Lesson 3-2	Interactive Student Edition	Base-ten Blocks
Lesson 3-3• Math Replay Videos• Place-value charts		Place-value charts
Lesson 3-4 Lesson 3-5	<ul> <li>eToolkit</li> <li>eGlossary</li> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>	<ul> <li>Flow chart for steps for dividing whole number by a fraction.</li> <li>Visual division models</li> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> <li>Colored Pencils</li> </ul>

Unit 4- Integers, Rational Numbers, and the Coordinate Plane

# **General Description of the Unit**

In this unit the student will use integers to represent quantities, graph integers on a number line, find opposite of integers, find absolute values of integers, compare and order integers, graph rational numbers on a number line, find absolute values

of rational numbers, compare and order rational numbers, graph points in the coordinate plane, reflect points in the coordinate plane and find distance between points in the coordinate plane.		
<ul> <li><u>Priority Standards</u> <ul> <li><u>6.NS.2</u>: Understand a rational number as a point on the number line. Extend number line diagrams and coordi:nate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</li> <li><u>6.NS.4</u>: Understand ordering and absolute value of rational numbers.</li> </ul> </li> </ul>	<ul> <li><u>Supporting Standards</u> <ul> <li><u>6.NS.1:</u> Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.</li> <li><u>6.AF.8:</u> Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</li> </ul> </li> </ul>	
Proficiency Scales	SEL Indicators         Self-Awareness         Self-Management         Social Awareness	

		Relationship Skills	
		Responsible Decision-Mak	ing
<ul> <li>Students will draw on their know lines to begin to develop understa</li> <li>Students will use this understand with writing integers, explaining to in a given situation, and graphing horizontal and vertical number line</li> </ul>	anding of integers. ing to build fluency the meaning of zero sets of integers on	<ul> <li>coordinate pl</li> <li>How can you represent qu</li> <li>How can you opposites to</li> <li>Can you com line?</li> <li>Can you reas line?</li> <li>Can you iden and graph or</li> <li>Can you grap coordinate pl</li> <li>How can you between poin</li> <li>How can you</li> </ul>	gers and rational numbers related to the lane? graph integers on a number line to antities? find the opposites of integers and use understand absolute value? pare and order integers on a number on rational numbers using a number tify ordered pairs, points and quadrants dered pairs on the coordinate plane? ch reflections of points within the
Key Concepts	Related Concepts		Assessment Vocabulary
• I can use integers on a number	•		Math Terms:
line to represent quantities.			<ul> <li>Integer</li> </ul>

<ul> <li>I can find the opposites of integers and use opposites to understand absolute value.</li> <li>I can compare and order integers using a number line.</li> <li>I can reason about rational numbers using a numberline.</li> <li>I can identify ordered pairs, points, and quadrants and graph ordered pairs on the coordinate plane.</li> <li>I can graph reflections of points</li> </ul>	<ul> <li>Negative Integer</li> <li>Positive Integer</li> <li>Absolute Value</li> <li>Opposite</li> <li>Rational Numbers</li> <li>Quadrants</li> <li>Reflection</li> <li>Coordinate Plane</li> <li></li> </ul>
<ul> <li>I can use absolute value to find the distance between points on the coordinate plane.</li> </ul>	<ul> <li>Universal</li> <li>Compare/comparison</li> <li>Decrease</li> <li>Increase</li> <li>Similarities</li> <li>Differences</li> </ul>

- PS.1 Make sense of problems and persevere in solving them.
- PS.2 Reason abstractly and quantitatively.
- PS.3 Construct viable arguments and critique the reasoning of others.
- PS.4 Model with mathematics.
- PS.5 Use appropriate tools strategically.
- PS.6. Attend to precision.

	<u>Resources</u>	
Textbook Lesson 4-1 Lesson 4-2 Lesson 4-3 Lesson 4-4 Lesson 4-5 Lesson 4-6 Lesson 4-7	Digital • Web Sketchpad • Interactive Student Edition • Math Replay Videos • eToolkit • eGlossary • Interactive Spiral Review • Digital Games Library • Flash Cards	Manipulatives/Materials <ul> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> <li>Colored Pencils</li> <li>Foldable</li> <li>Number Line</li> <li>Thermometer</li> <li>Integer Sets</li> <li>Blank Coordinate Grid (4 quadrant)</li> <li>Ruler</li> <li>Math Journal</li> </ul>

Unit 5- Numerical and Algebraic Expressions

## **General Description of the Unit**

In this unit students will write products as powers, evaluate powers, evaluate numerical expressions, writing numerical expressions, write algebraic expressions, evaluate algebraic expressions, find the greatest common factor of two whole numbers, find the least common multiple of two whole numbers, use the Distributive Property, use the greatest common factor to factor numerical expressions, identify equivalent expressions, and simplify expressions by combining like terms.

<u>Priority Standards</u> 6.C.5: Evaluate positive rational numbers with whole number exponents.	<ul> <li><u>Supporting Standards</u> <ul> <li><u>6.NS.6</u>: Identify and explain prime and composite numbers.</li> <li><u>6.AF.3</u>: Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</li> </ul> </li> </ul>
Proficiency Scales	SEL Indicators         Self-Awareness         Self-Management         Social Awareness         Relationship Skills         Responsible Decision-Making
Conceptual Understandings	Essential Questions
• Students will draw on their knowledge of products to begin to develop understanding of powers and exponents.	<ul> <li>How can we communicate algebraic relationships with mathematics symbols?</li> <li>Can you write and evaluate powers?</li> </ul>

<ul> <li>Students will use this understand with writing products involving r powers using whole number exposed</li> <li>Students will build fluency with w products with whole number, fra factors.</li> <li>Students will apply their underst exponents to solve real world products products with products with y products with y products with y products will apply the products with y products will apply the products with y products will apply the products with y products with y products will apply the products y products will apply the products with y products will apply the products with y products with y products will apply the products with y products will apply the products y products with y products y products with y products y p</li></ul>	rational numbers as onents. writing powers as ctional, and decimal anding powers and	<ul> <li>Can you write and evaluate numerical expressions?</li> <li>Can you write algebraic expressions?</li> <li>Can you evaluate algebraic expressions?</li> <li>How can you solve problems by finding the greatest common factor and least common multiple of two whole numbers?</li> <li>Can you use the Distributive Property?</li> <li>Can you identify and generate equivalent algebraic expressions?</li> </ul>
<ul> <li>Key Concepts</li> <li>I can write and evaluate powers.</li> <li>I can write and evaluate numerical expressions</li> <li>I can write algebraic expressions</li> <li>I can evaluate algebraic expressions.</li> <li>I can solve problems by finding the greatest common factor and least common multiple of two whole numbers.</li> <li>I can use the Distributive Property to expand and factor expressions.</li> <li>I can identify and generate equivalent algebraic expressions.</li> </ul>	● Related Concepts	Assessment VocabularyMath Terms:BaseExponentPowerEvaluateNumerical ExpressionOrder of OperationsAlgebraAlgebraCoefficientConstantDefining the VariableLike TermsTermEvaluateCommon FactorGreatest Common FactorLeast Common Multiple

<ul> <li>Mathematical Processes</li> <li>PS.1 Make sense of problems and</li> <li>PS.2 Reason abstractly and quan</li> <li>PS.3 Construct viable arguments</li> <li>PS.4 Model with mathematics.</li> <li>PS.5 Use appropriate tools strate</li> <li>PS.6. Attend to precision.</li> <li>PS.7 Look for and make use of st.</li> <li>PS.8 Look for and express regula</li> </ul>	titatively. and critique the reasoning of others. gically. ructure.	<ul> <li>Distributive Property</li> <li>Factoring the Expression</li> <li>Associative Property</li> <li>Commutative Property</li> <li>Equivalent Expressions</li> <li>Identify Property</li> </ul> Academic Terms:	
Resources			
TextbookLesson 5-1Lesson 5-2Lesson 5-3	Digital• Web Sketchpad• Interactive Student Edition• Math Replay Videos	Manipulatives/Materials• Dry Erase Boards• Dry Erase Markers• Colored Pencils	

Lesson 5-4 Lesson 5-5 Lesson 5-6 Lesson 5-7	<ul> <li>eToolkit</li> <li>eGlossary</li> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>	<ul> <li>Order of Operations Anchor Chart</li> <li>Common Factor Chart</li> <li>Paper clips</li> <li>Foldable</li> <li>Math Journal</li> </ul>
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Unit 6- Equations and Inequalities

# **General Description of the Unit**

In this unit students will solve equations using substitution, write and solve one-step addition equations, write and solve one-step multiplication equations, write and solve one-step division equations, write and graph inequalities, and find solutions of inequalities.

Priority Standards6.AF.4: Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	<ul> <li><u>6.AF.3</u>: Define multiple variables when writing expressions to represent real world and other mathematical problems, and evaluate them for given values.</li> <li><u>6.AF.5</u>: Solve equations of the form x+p=q and px=q fluently for cases in which p, q, and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems</li> </ul>
Proficiency Scales 6.AF.4	SEL Indicators         Self-Awareness         Self-Management         Social Awareness         Relationship Skills         Responsible Decision-Making
<u>Conceptual Understandings</u>	<ul> <li>Essential Questions</li> <li>How are the solutions of equations and inequalities different?</li> </ul>

<ul> <li>Students draw on their knowled expressions to begin to develop of one-step equations.</li> <li>Students will come to understan algebraic equation means findir variable that results in a true se build fluency with using the sub to solve one-step equations.</li> <li>Students will apply this underst real-world problems.</li> </ul>	understanding nd that solving an ng a value for the ntence, and they stitution method	<ul> <li>given numbe true?</li> <li>How can you write and sol</li> <li>How can you write and sol</li> <li>How can you write and sol</li> <li>How can you to write and sol</li> </ul>	use substitution to determine whether a r in a specified set makes an equation use Subtraction Property of Equality to ve one-step addition equations? use the Addition Property of Equality to ve one-step subtraction equations? use the Division Property of Equality to ve one-step multiplication equations? use Multiplication Property of Equality solve one-step division equations? e, solve and graph inequalities?
<ul> <li>Key Concepts <ul> <li>I can use substitution to solve one-step equations</li> <li>I can use the Subtraction Property of Equality to write and solve one-step addition equations.</li> <li>I can use the Addition Property of Equality to write and solve one-step subtraction equations.</li> <li>I can use the Division Property of Equality to write and solve one-step multiplication equations.</li> </ul> </li> </ul>	Related Concepts • •		Assessment VocabularyMath Terms:• equals sign• equation• guess, check, and revise strategy• inverse operations• Subtraction Property of Equality• Addition Property of Equality• Division Property of Equality• Multiplication Property of Equality• inequality• analyze

<ul> <li>I can use the Multiplication Property of Equality to write and solve one-step division equations.</li> <li>I can write, solve, and graph inequalities.</li> </ul>		<ul> <li>revise</li> <li>check</li> <li>guess/estimate</li> <li>Compare/Contrast</li> </ul>
<ul> <li>Mathematical Processes</li> <li>PS.1 Make sense of problems and</li> <li>PS.2 Reason abstractly and quant</li> <li>PS.3 Construct viable arguments a</li> <li>PS.4 Model with mathematics.</li> <li>PS.5 Use appropriate tools strateg</li> <li>PS.6. Attend to precision.</li> <li>PS.7 Look for and make use of str</li> <li>PS.8 Look for and express regular</li> </ul>	itatively. and critique the reasoning of others. gically. ucture.	
	<u>Resources</u>	
TextbookLesson 6-1Lesson 6-2	Digital• Web Sketchpad• Interactive Student Edition	<ul> <li>Manipulatives/Materials</li> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> </ul>

Lesson 6-3 Lesson 6-4 Lesson 6-5 Lesson 6-6	<ul> <li>Math Replay Videos</li> <li>eToolkit</li> <li>eGlossary</li> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>	<ul> <li>Colored Pencils</li> <li>Poster of different ways to represent the 4 math operations.</li> <li>Foldable</li> <li>Bar Diagrams</li> <li>Math Journal</li> </ul>

Unit 7- Relationships Between Two Variables

# **General Description of the Unit**

In this unit students will find dependent variable values in a table, find independent variable in a table, write one-step and two-step equations to represent relationships between variables, graph relationships from equations form graph, and represent relationships multiple ways.

<ul> <li><u>Priority Standards</u></li> <li><u>6.AF.10</u>: Use variables to represent two quantities in a proportional relationship in a real world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</li> </ul>	<ul> <li>Supporting Standards</li> <li>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations)</li> <li>6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</li> </ul>
Proficiency Scales	<u>SEL Indicators</u>
	Self-Awareness
N/A	Self-Management
	Social Awareness
	Relationship Skills
	Responsible Decision-Makin <b>g</b>
<ul> <li>Conceptual Understandings</li> <li>Students will draw on their knowledge of simplifying expressions to develop understanding of relationships between two variables. Students will</li> </ul>	<ul> <li>Essential Questions</li> <li>What are the ways in which a relationship between two variables can be displayed?</li> </ul>

<ul> <li>identify independent and dependent use a table to build fluency with a values, given either the independent variable.</li> <li>Students will apply this understamulti-step, real-world problems.</li> </ul>	finding the variable lent variable or the Inding to solve	<ul> <li>How can you identify and use independent and dependent variables in relationships?</li> <li>Can you write equations to represent relationships?</li> <li>Can you write equations and graph lines to represent relationships?</li> <li>How can you use tables, equations and graphs to represent relationships?</li> <li>How can you use tables and graphs to determine if a relationship between two quantities is proportional?</li> </ul>
Key Concepts	<u>Related Concepts</u> ●	Assessment Vocabulary
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- PS.1 Make sense of problems and persevere in solving them.
- PS.2 Reason abstractly and quantitatively.
- PS.3 Construct viable arguments and critique the reasoning of others.
- PS.4 Model with mathematics.
- PS.5 Use appropriate tools strategically.
- PS.6. Attend to precision.
- PS.7 Look for and make use of structure.
- PS.8 Look for and express regularity in repeated reasoning.

	<u>Resources</u>	
<u>Textbook</u> Lesson 7-1 Lesson 7-2 Lesson 7-3 Lesson 7-4	Digital• Web Sketchpad• Interactive Student Edition• Math Replay Videos• eToolkit• eGlossary• Interactive Spiral Review• Digital Games Library• Flash Cards	Manipulatives/Materials <ul> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> <li>Colored Pencils</li> <li>Foldable</li> <li>Math Journal</li> </ul>

## Unit 8- Area

## **General Description of the Unit**

In this unit students will find areas of parallelograms, find missing dimensions of parallelograms, find areas of triangles, find missing dimensions of triangle, find area of trapezoids, find missing dimensions of trapezoids, find area of regular polygons, find perimeters and areas of polygons on the coordinate plane. Students will explore the relationship among the angles of a triangle, find the missing angle measures in triangles, and conclude that the interior angles of a triangle have the

sum of 180°. Students will explore the relationship among the angles of a polygon, find the missing angle measures in polygon and conclude that the interior angles of a quadrilateral have a sum of 360°.

Priority Standards	Supporting Standards
• <b>6.GM.4</b> Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve realworld and other mathematical problems.	• <b>6.GM.2</b> Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360°. Use this information to solve real-world and mathematical problems.
• <b>6.GM.3</b> Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.	<ul> <li>6.AF.1 Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in geometry and other real-world problems.</li> <li>6.AF.3 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</li> </ul>
Proficiency Scales 6.GM.4	SEL Indicators

		Self-Awareness
		Self-Management
		Social Awareness
		Relationship Skills
		Responsible Decision-Making
<ul> <li><u>Conceptual Understandings</u></li> <li>Students will draw on their polygons and basic comput understanding of area of pa</li> <li>Students will learn how to a parallelogram and build fluthe area, and finding the main of a parallelogram when give</li> <li>Students will apply their unarea of parallelograms to so real-world problems.</li> </ul>	ations to develop arallelograms. find the area of a lency with finding issing dimension ven the area. nderstanding of	<ul> <li>Essential Questions</li> <li>How are the areas of triangles and rectangles used to find the areas of other polygons?</li> <li>Can you find the areas of parallelograms, triangles trapezoids, regular polygons and polygons on the coordinate plane?</li> <li>Can you find and use the area of parallelograms?</li> <li>Can you find and use the area of triangles?</li> <li>How can you find and use the area of trapezoids by composing and decomposing into other shapes?</li> <li>How can you find the area of regular polygons by decomposing the figure into other figures?</li> <li>Can you use the coordinate plane to draw and find attributes of polygons?</li> <li>Can you find the area of composite figures?</li> <li>Can you find the area of composite figures?</li> <li>Can you find the measures of angles in polygons?</li> </ul>
Key Concepts	Related Concepts	Assessment Vocabulary

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- PS.4 Model with mathematics.
- PS.5 Use appropriate tools strategically.
- PS.6. Attend to precision.
- PS.7 Look for and make use of structure.
- PS.8 Look for and express regularity in repeated reasoning.

<u>Resources</u>	
Digital • Web Sketchpad • Interactive Student Edition • Math Replay Videos • eToolkit • eGlossary • Interactive Spiral Review • Digital Games Library	<ul> <li>Manipulatives/Materials</li> <li>Dry Erase Boards</li> <li>Dry Erase Markers</li> <li>Colored Pencils</li> <li>Foldable</li> <li>Math Journal</li> </ul>

Flash Cards	
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Unit 9- Volume and Surface Area

	General Description of the Unit
	In this unit the student will be able to find volume of rectangular prisms, triangular prisms, and pyramids, find missing
	dimensions of rectangular prisms, triangular prisms, and pyramids, and, make nets to represent rectangular prisms,
	triangular prisms, and pyramids.
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<u>Priority Standards</u> <u>Supporting Standards</u>
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<ul> <li>6.GM.5 Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.</li> <li>6.GM.6 Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.</li> </ul>	<ul> <li>6.AF.3 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</li> </ul>
Proficiency Scales N/A	Self-Awareness
	Self-Management Social Awareness

		Relationship Skills	
		Responsible Decision-Maki	ing
<ul> <li>Conceptual Understandings         <ul> <li>Students will draw on their know of polygons to develop understar rectangular prisms.</li> <li>Students will learn how to use curformula to build fluency with find rectangular prisms with fractiona finding a missing dimension give</li> <li>Students will apply their underst solve multi-step, real-world prob</li> </ul> </li> </ul>	hding of volume of bes and the volume ding the volume of al edge lengths, and n the volume. anding of volume to	figure? Can you find prisms? How can you surface area How can you surface area	describe the size of a three-dimensional and use the volume of rectangular make nets and use them to find the of rectangular prisms? make nets and use them to find the of triangular prisms? e nets and use them to find the surface
<ul> <li>Key Concepts</li> <li>I can find and use the volume of rectangular prisms</li> <li>I can make nets and find surface area of rectangular prisms.</li> <li>I can make nets and find surface area of triangular prisms.</li> <li>I can make nets and find surface area of triangular prisms.</li> <li>I can make nets and find surface area of pyramids</li> </ul>	Related Concepts <ul> <li>N/A</li> </ul>		Assessment Vocabulary Math Terms: • cubic units • prism • rectangular prism • three-dimensional figure • volume • net • surface area • triangular prism • lateral face

<ul><li>pyramid</li><li>slant height</li></ul>
Academic Terms: • explain • facilitate • engage

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Resources			
Textbook	Digital	Manipulatives/Materials	
Lesson 9-1	Web Sketchpad	Dry Erase Boards	
Lesson 9-2	Interactive Student Edition	Dry Erase Markers	
Lesson 9-3	Math Replay Videos	Colored Pencils	
Lesson 9-4	• eToolkit	Three-dimensional shapes	
	• eGlossary	• Foldable	

<ul> <li>Interactive Spiral Review</li> <li>Digital Games Library</li> <li>Flash Cards</li> </ul>	<ul> <li>Base-ten blocks</li> <li>Nets</li> <li>Formula Sheet</li> <li>Drawing paper</li> <li>Scissors</li> </ul>
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Unit 10- Statistical Measures of Displays

# **General Description of the Unit**

In this unit the student will identify statistical questions, display data in a table, construct dot plots, construct histograms, find the mean and median of a data set find the range and interquartile range of a data set, construct box plots, find the mean absolute deviation of a data set, identifying outliers of a data set and identify their effect on the measures of center and variation and interpret the distribution of a data set.

#### **Priority Standards**

• **6.DS.4** Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.

#### **Supporting Standards**

- **6.DS.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- **6.DS.2** Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.
- **6.DS.3** Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).

Proficiency Scales 6.DS.4		<u>S</u>	
<ul> <li><u>Conceptual Understandings</u></li> <li>Students will draw on their know representing and interpreting dat develop an understanding of stati</li> <li>Students come to understand tha questions anticipate a variety of a data. They also learn how to orgatin a table and analyze the results.</li> </ul>	ta to begin to stical measures. t statistical unswers based on unize collected data	•	
<ul> <li>Key Concepts <ul> <li>I can identify and use statistical questions.</li> <li>I can construct dot plots and histograms using collected data.</li> <li>I can understand and apply different measures of center.</li> <li>I can understand interquartile range and construct box plots</li> <li>I can understand mean absolute deviation.</li> <li>I can understand outliers and their effect on measures of center.</li> <li>I can interpret dot plots, histograms, and box plots</li> </ul> </li> </ul>	Related Concepts • N/A		Assessment Vocabulary Math Terms: • statistical question • statistics • dot plot • histogram • average • mean • measure of center • median • box plot • first quartile • interquartile range(IQR) • measure of variation • mean absolute deviation • outlier • cluster

	<ul> <li>distribution</li> <li>gap</li> <li>peak</li> <li>symmetric distribution</li> </ul>
	Academic Terms: analyzing interpreting presenting displayed representation compare/contrast least/greatest organize strategies

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Resources			
TextbookLesson 10-1Lesson 10-2Lesson 10-3Lesson 10-4Lesson 10-5Lesson 10-6Lesson 10-7	Digital• Web Sketchpad• Interactive Student Edition• Math Replay Videos• eToolkit• eGlossary• Interactive Spiral Review• Digital Games Library• Flash Cards	Manipulatives/Materials• Dry Erase Boards• Dry Erase Markers• Colored Pencils• Blank dot plots• Blank histograms• Foldables• Math Journal	