

# Knowre Math: **Grade 6** Curriculum

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## Chapter 1 Whole Numbers

Lesson	Topic	MGSE
1-1 Long Division with Remainders	A) Long Division with and without Remainders	MGSE6.NS.2
1-2 Long Division with Mixed Number Quotients	A) Long Division with Mixed Number Quotients	MGSE6.NS.2
1-3 Horizontal Division	A) Equivalent Divisions	MGSE6.NS.2
	B) Dividing with Multiples of 10	
	C) Horizontal Division	
1-4 Divisibility Tests	A) Divisibility Tests	MGSE6.NS.2
1-5 Multiples and Factors	A) Multiples	MGSE6.NS.2, MGSE6.NS.4.a, MGSE6.NS.4.b
	B) Least Common Multiples	
	C) Factors	
	D) Greatest Common Factors	
1-6 Exponents	A) Multiplication Symbols	MGSE6.EE.1, MGSE6.EE.4
	B) Defining Powers	
	C) Writing Expressions as Powers	
	D) Evaluating Powers	
	E) Missing Values in Power Equations	
1-7 Order of Operations	A) Order of Operations	MGSE6.EE.1
1-8 Prime Factorization	A) Prime and Composite Numbers	MGSE6.EE.1
	B) Prime Factorization Using a Completed Factor Tree	
1-9 GCF and LCM	A) Greatest Common Factors	MGSE6.NS.4.a, MGSE6.NS.4.b
	B) Least Common Multiples	

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## Chapter 2 Fractions

Lesson	Topic	MGSE
2-1 Representing Fractions	A) Fractions on Number Lines	MGSE6.NS.6.c
	B) Whole Numbers as Fractions	
	C) Equivalent Fractions	
	D) Simplifying Fractions	
	E) Mixed Numbers as Improper Fractions	
2-2 Comparing Fractions	A) Comparing Fractions	MGSE6.NS.7.b
2-3 Adding Fractions	A) Adding Fractions and Mixed Numbers	MGSE5.NF.1
2-4 Subtracting Fractions	A) Subtracting Fractions and Mixed Numbers	MGSE5.NF.1
2-5 Multiplying Fractions	A) Comparing Fractional Products and Factors	MGSE6.EE.1
	B) Multiplying Fractions	
	C) Powers of Nonnegative Fractions	
2-6 Dividing Fractions	A) Comparing Fractional Quotients and Dividends	MGSE6.NS.1
	B) Reciprocals	
	C) Dividing Fractions	

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## Chapter 3 Decimals

Lesson	Topic	MGSE
3-1 Representing Decimals	A) Decimals on Number Lines	MGSE6.NS.6.c, MGSE6.NS.7.b
	B) Representing Repeating Decimals	
	C) Comparing Decimals	
	D) Ordering Decimals	
3-2 Adding Decimals	A) Adding Decimals Vertically	MGSE6.NS.3
	B) Adding Decimals Horizontally	
	C) Rounding Decimals to Estimate Sums	
3-3 Subtracting Decimals	A) Adding Decimals Vertically	MGSE6.NS.3
	B) Adding Decimals Horizontally	
	C) Rounding Decimals to Estimate Differences	
3-4 Multiplying Decimals	A) Comparing Decimal Products and Factors	MGSE6.NS.3, MGSE6.EE.1
	B) Multiplying Decimals	
	C) Powers of Nonnegative Decimals	
	D) Rounding Decimals to Estimate Products	
3-5 Dividing Decimals	A) Comparing Decimal Quotients and Dividends	MGSE6.NS.3
	B) Dividing Decimals Using Long Division	
	C) Rounding Decimals to Estimate Quotients	
3-6 Order of Operations with Rational Numbers	A) Terminating Decimals as Fractions	MGSE6.NS.3, MGSE6.NS.7.b, MGSE6.EE.1
	B) Order of Operations with Nonnegative Rational Numbers	

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## Chapter 4 Integers

Lesson	Topic	MGSE
4-1 Number Sets and Algebra Tiles	A) Classifying Numbers	MGSE6.NS.5
	B) Using Algebra Tiles to Model Integers	
	C) Representing Situations as Integers	
4-2 Comparing and Ordering Integers	A) Integers on Number Lines	MGSE6.NS.5, MGSE6.NS.6.c, MGSE6.NS.7.a, MGSE6.NS.7.b
	B) Comparing Integers	
	C) Distance on a Number Line	
	D) Ordering Integers	
4-3 Opposites and Absolute Value	A) Opposites	MGSE6.NS.5, MGSE6.NS.6.a, MGSE6.NS.7.a, MGSE6.NS.7.c, MGSE6.NS.7.d
	B) Absolute Values	
4-4 Integer Addition with Tiles	A) Opposites	MGSE7.NS.1.b
	B) Absolute Values	
4-5 Integer Addition with Number Lines	A) Using Number Lines to Model Addition of Integers with Different Signs	MGSE7.NS.1.b
	B) Using Number Lines to Model Addition of Integers with the Same Sign	
4-6 Single-Digit Integer Addition	A) Adding One-Digit Integers	MGSE7.NS.1.b
4-7 Integer Subtraction with Tiles	A) Using Algebra Tiles to Model Subtraction of Positive Integers	MGSE7.NS.1.b
	B) Using Algebra Tiles to Model Subtraction of Integers with Different Signs	
	C) Using Algebra Tiles to Model Subtraction of Negative Integers	
4-8 Single-Digit Integer Subtraction	A) Subtracting One-Digit Integers	MGSE7.NS.1.b

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## Chapter 5 Introduction to Algebra

Lesson	Topic	MGSE
5-1 Understanding Variables and Coefficients	A) Coefficients and Variables	MGSE6.EE.2.b, MGSE6.EE.6
	B) Modeling Variable Expressions	
	C) Simplifying Variable Expressions	
5-2 Variable Expressions	A) Parts of Variable Expressions	MGSE6.EE.2.a, MGSE6.EE.2.b, MGSE6.EE.2.c, MGSE6.EE.3, MGSE6.EE.4, MGSE6.EE.6
	B) Modeling First Degree Monomials and Binomials	
	C) Combining Like Terms	
	D) Evaluating Variable Expressions	
5-3 Writing Expressions	A) Writing Variable Expressions	MGSE6.EE.2.a, MGSE6.EE.2.b, MGSE6.EE.6
5-4 Properties of Operations	A) Commutative Property	MGSE6.EE.3, MGSE6.EE.4, MGSE6.EE.6
	B) Associative Property	
	C) Using Algebra Tiles to Model Polynomial Multiplication	
	D) Using the Properties to Multiply Terms	
	E) Identity Property	
5-5 Modeling the Distributive Property	A) Using Algebra Tiles to Model the Distributive Property	MGSE6.EE.3, MGSE6.EE.6
5-6 Distributive Property	A) Distributive Property	MGSE6.NS.4.a, MGSE6.EE.3, MGSE6.EE.4, MGSE6.EE.6
	B) Rewrite Sums and Differences with the Distributive Property	

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## Chapter 6 Equations and Inequalities

Lesson	Topic	MGSE
6-1 Equations	A) Identifying Expressions and Equations	MGSE6.EE.5, MGSE6.EE.7
	B) Writing Equations	
	C) Solutions of Equations	
6-2 Solving Addition Equations with bar Models	A) Using Bar Models to Solve One-Step Addition Equations	MGSE6.EE.7
6-3 Solving Multiplication Equations with Bar Models	A) Using Bar Models to Solve One-Step Multiplication Equations	MGSE6.EE.7
6-4 Solving One-Step Addition and Subtraction Equations	A) Subtraction Property of Equality	MGSE6.EE.7
	B) Addition Property of Equality	
6-5 Solving One-Step Multiplication and Division Equations	A) Division Property of Equality	MGSE6.EE.7
	B) Multiplication Property of Equality	
6-6 Solutions of Inequalities	A) Writing Inequalities from Verbal Expressions	MGSE6.EE.5,
	B) Solutions of Inequalities	MGSE6.EE.8
6-7 Graphing Inequalities	A) Writing Inequalities from Number Lines	MGSE6.EE.5,
	B) Graphing Inequalities on a Number Line	MGSE6.EE.8
6-8 Solving One-Step Addition and Subtraction Inequalities	A) Subtraction Property of Inequality	MGSE6.EE.5
	B) Addition Property of Inequality	
6-9 Solving One-Step Multiplication and Division Inequalities	A) Division Property of Inequality	MGSE6.EE.5
	B) Multiplication Property of Inequality	

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## Chapter 7 Ratios, Rates, and Percents

<b>Lesson</b>	<b>Topic</b>	<b>MGSE</b>
7-1 Writing Ratios	A) Writing Ratios in Different Forms	MGSE6.RP.1
7-2 Simplifying Ratios	A) Simplifying Ratios in Different Forms	MGSE6.RP.1
	B) Equivalent Ratios	
7-3 Unit Rate	A) Understanding Unit Rates	MGSE6.RP.1, MGSE6.RP.2, MGSE6.RP.3.b
	B) Finding Unit Rates	
	C) Using Unit Rate to Find a Value	
7-4 Conversions	A) Customary Length Conversion Factors	MGSE6.RP.1, MGSE6.RP.3.b, MGSE6.RP.3.d
	B) Customary Unit Conversions	
	C) Metric Conversion Factors	
	D) Metric Unit Conversions	
	E) Unit Rates and Dimensional Analysis	
7-5 Percents and Fractions	A) Writing Percents as Fractions	MGSE6.RP.3.c
	B) Writing Fractions as Percents	
7-6 Percents and Decimals	A) Writing Percents as Decimals	MGSE6.RP.3.c
	B) Writing Decimals as Percents	
7-7 Percent Equation	A) Percent Equation	MGSE6.RP.3.c

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## Chapter 8 Coordinate Plane and Two-Variable Equations

Lesson	Topic	MGSE
8-1 Coordinate Plane	A) Identifying Quadrants and Axes of Coordinate Planes	MGSE6.NS.6.b, MGSE6.NS.6.c, MGSE6.NS.8
	B) Graphing Points	
	C) Writing the Coordinates of Points	
	D) Identifying Quadrants and Axes from Coordinates	
8-2 Distance on a Coordinate Plane	A) Counting to Find the Distance Between Points	MGSE6.NS.8, MGSE6.G.3
	B) Using Absolute Value to Find the Distance Between Points	
8-3 Reflections on a Coordinate Plane	A) Reflections Over the x-Axis	MGSE6.NS.6.b, MGSE6.G.3
	B) Reflections Over the y-Axis	
8-4 Relations	A) Representing Relations in Different Forms	MGSE6.RP.3.a, MGSE6.RP.3.b, MGSE6.EE.9.b
8-5 Input and Output	A) Input and Output	MGSE6.EE.9.b
	B) Independent and Dependent Variables	
8-6 Two-Variable Equations	A) Evaluating Functions	MGSE6.RP.3.a, MGSE6.EE.2.c, MGSE6.EE.9.a, MGSE6.EE.9.b
	B) Graphing Linear Functions	
	C) Writing Linear Functions	



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## Chapter 9 Area and Volume

Lesson	Topic	MGSE
9-1 Area of Rectangles and Squares	A) Areas of Rectangles	MGSE6.G.1, MGSE6.G.3
	B) Areas of Squares	
9-2 Area of Parallelograms	A) Area of Parallelograms	MGSE6.G.1, MGSE6.G.3
9-3 Area of Triangles	A) Bases and Heights of Triangles	MGSE6.G.1
	B) Areas of Triangles	
9-4 Area of Trapezoids	A) Areas of Trapezoids	MGSE6.G.1
9-5 Surface Area of Prisms and Pyramids Using Nets	A) Nets of Solids	MGSE6.G.4
	B) Surface Areas of Prisms and Pyramids from Nets	
	C) Surface Areas of Prisms	
9-6 Volume of Rectangular Prisms	A) Volume from Cubic Units	MGSE6.G.2
	B) Volumes of Right Prisms	

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## Chapter 10 Displays of Data

Lesson	Topic	MGSE
10-1 Introduction to Statistics	A) Statistical Questions	MGSE6.SP.1, MGSE6.SP.5.a, MGSE6.SP.5.b
	B) Characteristics of Data Sets	
	C) Frequency Tables	
	D) Characteristics of Tables	
10-2 Dot Plots and Data	A) Characteristics of Dot Plots	MGSE6.SP.1, MGSE6.SP.5.a, MGSE6.SP.5.b
	B) Dot Plots, Data Sets, and Frequency Tables	
10-3 Reading Dot Plots	A) Finding the Number of Observations within a Range of Numbers	MGSE6.SP.4
	B) Finding the Minimum and Maximum Values	
	C) Finding the Mode	
10-4 Histograms and Bins	A) Characteristics of Histograms	MGSE6.SP.4, MGSE6.SP.5.a, MGSE6.SP.5.b
	B) Bins	
	C) Using a Frequency Table to Create a Histogram	
10-5 Histograms and Data Sets	A) Histograms, Data Sets, and Frequency Tables	MGSE6.SP.4
	B) Finding the Number of Observations within a Range of Numbers	
	C) Values in a Histogram	

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## Chapter 11 Distributions of Data

Lesson	Topic	MGSE
11-1 Mean	A) Writing an Expression for the Mean	MGSE6.SP.2, MGSE6.SP.3, MGSE6.SP.5.c
	B) Calculating the Mean of Data Sets	
	C) How Adding or Removing Data Points Affects the Mean	
11-2 Median	A) Median	MGSE6.SP.2, MGSE6.SP.3, MGSE6.SP.5.c
	B) Mean and Median of the Same Data Set	
11-3 Range and Mean Absolute Deviation	A) Range	MGSE6.SP.2, MGSE6.SP.3, MGSE6.SP.5.c
	B) MAD	
11-4 Interquartile Range	A) Quartiles	MGSE6.SP.2, MGSE6.SP.3, MGSE6.SP.5.c
	B) IQR	
11-5 Reading Box Plots	A) Five-Number Summaries	MGSE6.SP.3, MGSE6.SP.4
	B) Measures of Variation	
	C) Box Plots and Five-Number Summaries	
11-6 Box Plots and Data	A) Box Plots, Five-Number Summaries, and Data Sets	MGSE6.SP.4
	B) Distribution of Data in a Dot Plot	
11-7 Shapes of Distributions	A) Shapes of Histograms	MGSE6.SP.2, MGSE6.SP.3, MGSE6.SP.5.c, MGSE6.SP.5.d
	B) Shapes of Dot Plots	
	C) Shape and Measure of Center	
	D) Measure of Center and Measure of Variation	
	E) Outliers and Measures of Center	