

## Grade K -- Minnesota Academic Standards in Mathematics

		Understand the relationship between quantities and whole numbers up to 31.					Use objects and pictures to represent situations involving combining and separating.	
No.	Unit/Lesson	K.1.1.1	K.1.1.2	K.1.1.3	K.1.1.4	K.1.1.5	K.1.2.1	K.1.2.2
<b>0.1.0</b>	<b>Numbers to 10</b>							
0.1.1	Count 1-4	✓		✓				
0.1.2	Count 1-5	✓		✓				
0.1.3	Count 1-7	✓		✓				
0.1.4	Count 1-9	✓		✓				
0.1.5	Count 1-10	✓		✓				
0.1.6	Count 0-10	✓		✓				
0.1.7	Represent 0-2	✓	✓	✓				
0.1.8	Represent 0-5	✓	✓	✓				
0.1.9	Represent 0-8	✓	✓	✓				
0.1.10	Represent 0-10	✓	✓	✓				
<b>0.2.0</b>	<b>Numbers to 20</b>							
0.2.1	Count and Represent 0-13	✓	✓	✓				
0.2.2	Count and Represent 0-16	✓	✓	✓				
0.2.3	Count and Represent 0-19	✓	✓	✓				
0.2.4	Count and Represent 0-20	✓	✓	✓				
<b>0.3.0</b>	<b>Compare Numbers to 10</b>							
0.3.1	Match to Find More					✓		
0.3.2	More, Fewer, and Same Amounts					✓		
0.3.3	Count to Find the Greater Number					✓		
0.3.4	Compare Two Numbers					✓		
0.3.5	Compare within 5					✓		
0.3.6	Compare within 10					✓		
<b>0.4.0</b>	<b>Understand Addition within 10</b>							
0.4.1	Represent Addition within 5						✓	
0.4.2	Put Together Groups within 5						✓	
0.4.3	Explore Number Pairs for 0–5							✓
0.4.4	Explore Number Pairs for 6–9							✓
0.4.5	Explore Number Pairs for 10							✓
0.4.6	Find Numbers that Make 10							✓
0.4.7	Represent Addition within 10						✓	
0.4.8	Put Together Groups within 10						✓	
<b>0.5.0</b>	<b>Understand Subtraction within 10</b>							
0.5.1	Decompose Numbers within 5							✓
0.5.2	Represent Subtraction within 5						✓	
0.5.3	Solve Subtraction Equations within 5						✓	
0.5.4	Decompose Numbers 6–9							✓
0.5.5	Represent Subtraction within 9						✓	
0.5.6	Solve Subtraction Equations within 9						✓	
0.5.7	Decompose 10							✓
0.5.8	Solve Subtraction Problems within 10						✓	
<b>0.6.0</b>	<b>Place Value with Teen Numbers</b>							
0.6.1	Show 11–14 as 10 Ones and Some More							
0.6.2	Show 15–19 as 10 Ones and Some More							
0.6.3	Teen Numbers with Drawings and Equations							
0.6.4	Compose and Decompose Teen Numbers							
<b>0.7.0</b>	<b>Number Patterns</b>							
0.7.1	One Less/One More				✓			
0.7.2	Count to 100 by Ones			✓				
0.7.3	Count to 100 by Tens							
0.7.4	Count Forward			✓				

## Grade 1 -- Minnesota Academic Standards in Mathematics

No.	Unit/Lesson	Count, compare and represent whole numbers up to 120, with an emphasis on groups of tens and ones.					Use a variety of models and strategies to solve addition and subtraction problems in real-world and mathematical contexts.			Use number sentences involving addition and subtraction basic facts to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.				Use basic concepts of measurement in real-world and mathematical situations involving length, time and money.
		1.1.1.1	1.1.1.2	1.1.1.3	1.1.1.4	1.1.1.5	1.1.1.6	1.1.2.1	1.1.2.2	1.1.2.3	1.2.2.1	1.2.2.2	1.2.2.3	1.2.2.4
<b>1.1.0</b>	<b>Problem Solving: Addition</b>													
1.1.1	Model Joining Stories (to 5)						✓	✓		✓				
1.1.2	Ways to Make 6 and 7						✓	✓		✓				
1.1.3	Ways to Make 8 and 9						✓	✓		✓				
1.1.4	Model Joining Stories (to 9)						✓			✓			✓	
1.1.5	Commutative Property and Add Zero Property						✓			✓			✓	
1.1.6	Ways to Make 10						✓	✓		✓		✓		
1.1.7	Model Equations to Represent Addition Stories						✓			✓		✓	✓	
1.1.8	Write Equations to Represent Addition Stories						✓			✓		✓	✓	
<b>1.2.0</b>	<b>Problem Solving: Subtraction</b>													
1.2.1	Addition and Subtraction Fact Families						✓					✓		
1.2.2	Model Take From Stories						✓			✓		✓		
1.2.3	Find Missing Parts of 7 and 8						✓	✓		✓		✓		
1.2.4	Model Equations to Represent Subtraction Stories						✓			✓		✓	✓	
1.2.5	Find Missing Parts of 9 and 10						✓	✓		✓		✓		
1.2.6	Model Take-Apart/Separating Stories						✓			✓		✓	✓	
1.2.7	Write Equations to Represent Subtraction Stories						✓			✓		✓	✓	
1.2.8	Compare Stories						✓			✓		✓	✓	
1.2.9	Relate Addition and Subtraction						✓			✓		✓		
<b>1.3.0</b>	<b>Addition and Subtraction Strategies</b>													
1.3.1	Count On						✓		✓					
1.3.2	Use a Known Fact to Add						✓	✓						
1.3.3	Related Subtraction Facts through 12						✓			✓				
1.3.4	Use 10 to Subtract						✓	✓						
1.3.5	Related Subtraction Facts through 20						✓			✓				
1.3.6	Find Unknowns on Addition Table						✓				✓	✓	✓	
<b>1.4.0</b>	<b>More Work with Addition</b>													
1.4.1	Numbers Related to 10						✓	✓				✓		
1.4.2	Make 10 to Add 7 and 8						✓	✓						
1.4.3	Make 10 to Add 9						✓	✓						
1.4.4	Use Strategies to Add						✓	✓		✓				
1.4.5	Add Three Addends						✓	✓		✓				
1.4.6	Addition and Subtraction Equations						✓				✓	✓		
<b>1.5.0</b>	<b>Understand Place Value</b>													
1.5.1	Count Forward to 120			✓										
1.5.2	Teen Numbers	✓	✓											
1.5.3	Tens and Ones	✓	✓											
1.5.4	Make Numbers with Tens and Extras	✓	✓											
1.5.5	Compare Numbers through Hundreds					✓	✓							
1.5.6	Read and Write Numbers	✓	✓											
<b>1.6.0</b>	<b>Use Place Value and Properties of Operations to Add and Subtract</b>													
1.6.1	Add Two Multiples of 10						✓							
1.6.2	Add a Multiple of 10 to a 2-Digit Number on a Hundred Chart						✓							
1.6.3	Add a Multiple of 10 to a 2-Digit Number						✓							
1.6.4	Add 2-Digit Numbers						✓							
1.6.5	Subtract Multiples of 10 from Multiples of 10						✓							
<b>1.7.0</b>	<b>Number Strategies and Measurement</b>													
1.7.1	Skip-Counting								✓					
1.7.2	Add or Subtract 1 and 10 on a Number Chart				✓				✓					
1.7.3	Compare and Order Lengths													
1.7.4	Measure Length with Same-Size Units													✓



## Grade 2 -- Minnesota Academic Standards in Mathematics

No.	Unit/Lesson	Compare and represent whole numbers up to 1000 with an emphasis on place value and equality.				Demonstrate mastery of addition and subtraction basic facts; add and subtract one- and two-digit numbers in real-world and mathematical problems.				Understand length as a measurable attribute; use tools to measure length.	
		2.1.1.1	2.1.1.2	2.1.1.3	2.1.1.5	2.1.2.1	2.1.2.2	2.1.2.4	2.1.2.5	2.3.2.1	2.3.2.2
<b>2.1.0</b>	<b>Use Models to Add and Subtract</b>										
2.1.1	Use the Addition Table to Add					✓	✓		✓		
2.1.2	Use the Addition Table to Add and Subtract					✓	✓		✓		
2.1.3	Find Missing Addends with the Hundred Chart							✓	✓		
2.1.4	Add and Subtract with the Hundred Chart							✓	✓		
2.1.5	Add and Subtract within 20 Using Base Ten Blocks					✓	✓		✓		
2.1.6	Add and Subtract within 20 Using the Number Line					✓	✓		✓		
2.1.7	Add and Subtract within 100 Using Base Ten Blocks							✓	✓		
2.1.8	Add and Subtract within 100 Using the Number Line							✓	✓		
2.1.9	Use Tape Diagrams to Add							✓	✓		
2.1.10	Use Tape Diagrams to Add and Subtract							✓	✓		
<b>2.2.0</b>	<b>Use Strategies to Add and Subtract</b>										
2.2.1	Make a Ten to Add					✓	✓		✓		
2.2.2	Make a Ten to Subtract					✓	✓		✓		
2.2.3	Two-step Problems					✓	✓		✓		
2.2.4	Make a Simpler Problem to Add					✓			✓		
2.2.5	Make a Simpler Problem to Subtract					✓			✓		
2.2.6	Problem Solving with Sums to 100					✓			✓		
2.2.7	Problem Solving with Sums and Differences to 100							✓	✓		
<b>2.3.0</b>	<b>Numbers to 1000 and Place Value</b>										
2.3.1	Numbers through 100	✓	✓								
2.3.2	Numbers through 1000	✓	✓								
2.3.3	Represent Numbers on a Number Line	✓									
2.3.4	Compare Numbers Using Place Value	✓			✓						
<b>2.4.0</b>	<b>Addition with Multi-Digit Numbers</b>										
2.4.1	Add Tens to 2-Digit Numbers							✓	✓		
2.4.2	Find Sums of 2-Digit Numbers							✓	✓		
2.4.3	Use Strategies to Add 3-Digit Numbers			✓							
2.4.4	Add Tens to 3-Digit Numbers			✓							
2.4.5	Find Sums of 3-Digit Numbers										
2.4.6	Find Sums of Multi-Digit Numbers										
2.4.7	Find Sums of More than Two Numbers							✓	✓		
2.4.8	Problem Solving with Addition							✓	✓		
<b>2.5.0</b>	<b>Subtraction with Multi-Digit Numbers</b>										
2.5.1	Decompose to Subtract 2-Digit Numbers							✓	✓		
2.5.2	Find Differences of 2-Digit Numbers							✓	✓		
2.5.3	Problem Solving with 2-Digit Numbers							✓	✓		
2.5.4	Use Strategies to Subtract 3-Digit Numbers			✓							
2.5.5	Subtract Tens from 3-Digit Numbers			✓							
2.5.6	Subtract 3-Digit Numbers										
2.5.7	Subtract Multi-Digit Numbers										
<b>2.6.0</b>	<b>Measure Length</b>										
2.6.1	Measurement Tools									✓	
2.6.2	Lengths in Inches and Feet									✓	✓
2.6.3	Lengths in Centimeters and Meters									✓	✓
2.6.4	Compare Lengths										✓
<b>2.7.0</b>	<b>Add and Subtract Lengths</b>										
2.7.1	Find the Sums of Lengths					✓	✓		✓		✓
2.7.2	Find the Differences of Lengths					✓	✓		✓		✓
2.7.3	Problem Solving with Lengths					✓	✓	✓	✓		
2.7.4	Compare Problems with Lengths					✓	✓	✓	✓		

## Grade 3 -- Minnesota Academic Standards in Mathematics



No.	Unit/Lesson	Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.			Understand meanings and uses of fractions in real-world and mathematical situations.			Use single-operation input-output rules to represent patterns and relationships and to solve real-world and mathematical problems.	Use number sentences involving multiplication and division basic facts and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	Use time, money and temperature to solve real-world and mathematical problems.		
		3.1.2.3	3.1.2.4	3.1.2.5	3.1.3.1	3.1.3.2	3.1.3.3	3.2.1.1	3.2.2.1	3.2.2.2	3.3.3.1	3.3.3.2
<b>3.1.0</b>	<b>Understand Multiplication</b>											
3.1.1	Equal Groups: Repeated Addition	✓	✓						✓	✓		
3.1.2	Equal Groups: Unknown Items Per Group	✓	✓						✓	✓		
3.1.3	Equal Groups: Unknown Number of Groups	✓	✓						✓	✓		
3.1.4	Equal Groups: Rows	✓	✓						✓	✓		
3.1.5	Equal Groups: The Array Model	✓	✓						✓	✓		
3.1.6	Commutative Property of Multiplication	✓	✓						✓	✓		
3.1.7	Multiplicative Identity Property and Zero Property of Multiplication	✓	✓						✓	✓		
3.1.8	Problem Solving with Multiplication	✓	✓						✓	✓		
<b>3.2.0</b>	<b>Concept of Area</b>											
3.2.1	Compare Areas of Rectangles											
3.2.2	Tile Rectangles to Find Area											
3.2.3	Area Formula	✓	✓					✓	✓	✓		
3.2.4	Decompose a Rectangle to Find Area	✓	✓									
3.2.5	Area with Customary Units	✓	✓					✓	✓	✓		
3.2.6	Area with Metric Units	✓	✓					✓	✓	✓		
3.2.7	Decompose Figures to Find Area	✓	✓									
<b>3.3.0</b>	<b>Patterns in Multiplication</b>											
3.3.1	Multiply by 2	✓	✓									
3.3.2	Multiply by 3 and 5	✓	✓									
3.3.3	Introduction to Multiplication Tables		✓									
3.3.4	Use Multiplication Tables		✓									
3.3.5	Basic Multiplication Facts	✓	✓									
3.3.6	Patterns in the Multiplication Table		✓									
3.3.7	Learn Multiplication Facts	✓	✓									
<b>3.4.0</b>	<b>Understand Division</b>											
3.4.1	Equal Groups: Unknown Items Per Group	✓	✓						✓	✓		
3.4.2	Equal Groups: Unknown Number of Groups	✓	✓						✓	✓		
3.4.3	Equal Groups: Tape Diagrams	✓	✓						✓	✓		
3.4.4	Equal Groups: Arrays	✓	✓						✓	✓		
3.4.5	Problem Solving with Related Facts	✓	✓						✓	✓		
<b>3.5.0</b>	<b>Use Mixed Operations to Solve Problems</b>											
3.5.1	Order of Operations with Parentheses											
3.5.2	Order of Operations without Parentheses											
3.5.3	Associative and Commutative Properties	✓	✓									
3.5.4	Multiples of Ten		✓	✓								
3.5.5	Tape Diagrams	✓	✓									
3.5.6	Problem Solving with Mixed Operations											
<b>3.6.0</b>	<b>Measurement: Time, Volume, and Mass</b>											
3.6.1	Tell Time										✓	✓
3.6.2	Problem Solving with Elapsed Time										✓	✓
3.6.3	Liquid Volume											
3.6.4	Mass											
<b>3.7.0</b>	<b>Fraction Concepts</b>											
3.7.1	Model Equal Parts				✓	✓						
3.7.2	Use Fraction Bars to Name Fractions				✓							
3.7.3	Use Fraction Rectangles and Circles to Name Fractions				✓							
3.7.4	Find Equivalent Fractions				✓							
3.7.5	Compare Fractions				✓	✓	✓					
3.7.6	Find Fractions on a Number Line				✓							
3.7.7	Compare Fractions on a Number Line				✓	✓	✓					

## Grade 4 -- Minnesota Academic Standards in Mathematics



Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.

Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities.

Use number sentences involving multiplication, division and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.

No.	Unit/Lesson	Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.						Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities.						Use number sentences involving multiplication, division and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
		4.1.1.1	4.1.1.2	4.1.1.3	4.1.1.4	4.1.1.5	4.1.1.6	4.1.2.1	4.1.2.2	4.1.2.3	4.1.2.4	4.1.2.5	4.1.2.6	4.2.2.1	4.2.2.2
<b>4.1.0</b>	<b>Foundations in Base Ten</b>														
4.1.1	Read and Write Multi-Digit Numbers														
4.1.2	Place Value Relationships		✓												
4.1.3	Compare Numbers														
4.1.4	Round Numbers														
4.1.5	Addition					✓									
4.1.6	Subtraction														
4.1.7	Problem Solving with Addition and Subtraction					✓									
<b>4.2.0</b>	<b>Multiplication and Division</b>														
4.2.1	Multiplication as Comparison	✓											✓	✓	
4.2.2	Tape Diagrams and Multiplicative Comparison	✓											✓	✓	
4.2.3	Find Missing Factors	✓											✓	✓	
4.2.4	Factors and Multiples	✓													
4.2.5	Investigate Remainders														
<b>4.3.0</b>	<b>Extend Multiplication Concepts</b>														
4.3.1	Multiply by 10, 100, and 1000	✓	✓	✓											
4.3.2	Estimate Products			✓	✓										
4.3.3	Use Area Diagram to Multiply by 1-Digit Number			✓											
4.3.4	Use Distributive Property to Multiply by 1-Digit Number			✓											
4.3.5	Use Area Diagram to Multiply by 2-Digit Number			✓											
4.3.6	Use Distributive Property to Multiply by 2-Digit Number			✓											
4.3.7	Problem Solving with Multiplication			✓		✓							✓	✓	
<b>4.4.0</b>	<b>Extend Division Concepts</b>														
4.4.1	Divide 10s, 100s, and 1000s	✓					✓								
4.4.2	Estimate Quotients				✓		✓								
4.4.3	Area Diagrams in Division						✓								
4.4.4	Distributive Property in Division						✓								
4.4.5	Zeros in Division						✓								
4.4.6	Problem Solving with 1-Digit Divisors					✓	✓						✓	✓	
4.4.7	Problem Solving with Division and Other Operations					✓	✓						✓	✓	
<b>4.5.0</b>	<b>Equivalent Fractions</b>														
4.5.1	Fractions: Compare Whole Numbers to Make New Numbers								✓						
4.5.2	Compare Fractions with Models								✓						
4.5.3	Compare and Order Fractions								✓						
4.5.4	Multiply to Create Equivalent Fractions						✓								
4.5.5	Divide to Create Equivalent Fractions						✓								
<b>4.6.0</b>	<b>Operations with Fractions</b>														
4.6.1	Add Unit Fractions									✓					
4.6.2	Add Fractions									✓					
4.6.3	Subtract Fractions									✓					
4.6.4	Mixed Numbers									✓					
4.6.5	Improper Fractions									✓					
4.6.6	Problem Solving with Fractions with Like Denominators									✓					
4.6.7	Multiples of Unit Fractions														
4.6.8	Multiply a Fraction by a Whole Number														
4.6.9	Problem Solving with Fractions and Mixed Operations									✓					
<b>4.7.0</b>	<b>Decimal Fraction Concepts</b>														
4.7.1	Decimal Fractions						✓					✓			
4.7.2	Add Decimal Fractions						✓		✓			✓			
4.7.3	Write Fractions in Decimal Notation									✓		✓			
4.7.4	Compare Decimals in Tenths and Hundredths							✓		✓	✓	✓			

## Grade 5 -- Minnesota Academic Standards in Mathematics



No.	Unit/Lesson	Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.					Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.					Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.				Recognize and represent patterns of change; use patterns, tables, graphs and rules to solve real-world and mathematical problems.	Understand and interpret inequalities involving variables and whole numbers, and use them to represent and solve real-world and mathematical problems.		Describe, classify, and draw representations of three-dimensional figures.	Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.		
		5.1.1.1	5.1.1.3	5.1.1.4	5.1.2.1	5.1.2.3	5.1.2.4	5.1.2.5	5.1.3.1	5.1.3.2	5.1.3.3	5.1.3.4	5.2.1.2	5.2.3.2	5.2.3.3	5.3.1.2	5.3.2.2	5.3.2.3	5.3.2.4			
<b>5.1.0</b>	<b>Whole Numbers: Place Value &amp; Multiplication</b>																					
5.1.1	Place Value and Exponents																					
5.1.2	Multiply by 1-Digit Factors			✓																		
5.1.3	Multiply by 2-Digit Factors			✓																		
5.1.4	Use Algorithms with 1-Digit Factors			✓																		
5.1.5	Use Algorithms with 2-Digit Factors			✓																		
<b>5.2.0</b>	<b>Whole Numbers: Division</b>																					
5.2.1	Use Multiplication to Estimate Quotients	✓	✓	✓																		
5.2.2	Use Rounding to Estimate Quotients	✓	✓	✓																		
5.2.3	Use Repeated Subtraction and Multiples of 10	✓	✓	✓																		
5.2.4	Use Models with 2-Digit Divisors	✓		✓																		
5.2.5	Methods for Division	✓		✓																		
5.2.6	Problem Solving with Division	✓	✓	✓																		
<b>5.3.0</b>	<b>Decimals: Place Value and Operations</b>																					
5.3.1	Decimal Place Value				✓	✓																
5.3.2	Round Decimals						✓															
5.3.3	Compare Decimals					✓																
5.3.4	Add and Subtract Decimals							✓	✓	✓	✓											
5.3.5	Multiply and Divide Tenths and Hundredths																					
5.3.6	Multiply Decimals																					
5.3.7	Divide Decimals																					
5.3.8	Problem Solving with Decimal Operations							✓	✓	✓	✓											
<b>5.4.0</b>	<b>Fractions: Addition and Subtraction</b>																					
5.4.1	Equivalent Forms					✓		✓	✓													
5.4.2	Find Common Denominators Using Models					✓		✓	✓		✓											
5.4.3	Find Common Denominators					✓		✓	✓													
5.4.4	Add and Subtract Fractions and Mixed Numbers Using Models					✓		✓	✓		✓											
5.4.5	Add and Subtract Fractions and Mixed Numbers					✓		✓	✓		✓											
5.4.6	Estimate Sums and Differences					✓		✓	✓	✓	✓											
5.4.7	Problem Solving with Addition and Subtraction of Fractions					✓		✓	✓		✓											
<b>5.5.0</b>	<b>Fractions: Multiplication and Division</b>																					
5.5.1	Inverse Operations																					
5.5.2	Multiply Fractions Using Bar Models																					
5.5.3	Multiply Fractions Using a Number Line																					
5.5.4	Multiply Fractions Using an Area Diagram																					
5.5.5	Scale																					
5.5.6	Divide Whole Numbers by Unit Fractions																					
5.5.7	Divide Unit Fractions by Whole Numbers																					
5.5.8	Problem Solving with Multiplication and Division of Fractions																					
<b>5.6.0</b>	<b>Volume: Right Rectangular Prisms</b>																					
5.6.1	Unit Cubes																		✓			
5.6.2	Determine Volume Using Cubes															✓	✓	✓				
5.6.3	Examine Layers, Rows, and Columns															✓	✓	✓				
5.6.4	Explore Nets															✓						
5.6.5	Volume Formulas													✓	✓		✓	✓	✓			
5.6.6	Problem Solving with Volume												✓	✓		✓	✓	✓	✓			
<b>5.7.0</b>	<b>Coordinate Graphs</b>																					
5.7.1	Coordinate Plane													✓								
5.7.2	Ordered Pairs													✓								
5.7.3	Connect Points in the Plane													✓								
5.7.4	Use the Coordinate Plane													✓								

## Grade 6 -- Minnesota Academic Standards in Mathematics



No.	Unit/Lesson	Read, write, represent and compare positive rational numbers expressed as fractions, decimals, percents and ratios; write positive integers as products of factors; use these representations in real-world and mathematical situations.					Understand the concept of ratio and its relationship to fractions and to the multiplication and division of whole numbers. Use ratios to solve real-world and mathematical problems.				Multiply and divide decimals, fractions and mixed numbers; solve real-world and mathematical problems using arithmetic with positive rational numbers.				Recognize and represent relationships between varying quantities; translate from one representation to another; use patterns, tables, graphs and rules to solve real-world and mathematical problems.		Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving positive rational numbers.	Understand and interpret equations and inequalities involving variables and positive rational numbers. Use equations and inequalities to represent real-world and mathematical problems; use the idea of maintaining equality to solve equations. Interpret solutions in the original context.		Calculate perimeter, area of two- and three-dimensional figures to solve real-world and mathematical problems.	Choose appropriate units of measurement and use ratios to convert within measurement systems to solve real-world and mathematical problems.		
		6.1.1.1	6.1.1.2	6.1.1.3	6.1.1.4	6.1.1.6	6.1.1.7	6.1.2.1	6.1.2.2	6.1.2.3	6.1.2.4	6.1.3.1	6.1.3.2	6.1.3.3	6.1.3.4	6.1.3.5	6.2.1.1	6.2.1.2	6.2.2.1	6.2.3.1	6.2.3.2	6.3.1.2	6.3.3.1
<b>6.1.0</b>	<b>Rational Numbers and Absolute Value</b>																						
6.1.1	Explore Integers	✓																					
6.1.2	Rational Numbers	✓																					
6.1.3	Compare and Order Rational Numbers	✓	✓																				
6.1.4	Understand Absolute Value																						
6.1.5	Problem Solving with Absolute Value																						
<b>6.2.0</b>	<b>Rational Numbers in the Coordinate Plane</b>																						
6.2.1	Graphs on the Coordinate Plane	✓																					
6.2.2	Distance in the Coordinate Plane	✓																					
6.2.3	Reflections on the Coordinate Plane	✓																					
6.2.4	Problem Solving with the Coordinate Plane	✓																				✓	
<b>6.3.0</b>	<b>Division of Fractions</b>																						
6.3.1	Model Division with Unit Fractions									✓	✓		✓	✓									
6.3.2	Model Fraction Division									✓	✓		✓	✓									
6.3.3	Write Fraction Division Equations									✓	✓		✓	✓									
6.3.4	Fraction Division with Equations									✓	✓		✓	✓									
6.3.5	Create, Model, and Solve Problems with Fraction Division									✓	✓		✓	✓									
6.3.6	Problem Solving with Fractions and Mixed Numbers									✓	✓		✓	✓									
<b>6.4.0</b>	<b>Ratios and Rates</b>																						
6.4.1	Visualize and Represent Ratios						✓	✓															
6.4.2	Compare Ratios						✓	✓															
6.4.3	Unit Rates						✓	✓	✓														
6.4.4	Graph Rates and Other Ratios						✓	✓	✓														
6.4.5	Convert Measurement Units						✓	✓	✓														✓
6.4.6	Problem Solving with Unit Rates						✓	✓	✓														
<b>6.5.0</b>	<b>Proportions and Proportional Reasoning</b>																						
6.5.1	Write Proportions							✓															
6.5.2	Strategies to Solve Proportions							✓	✓	✓													
6.5.3	Percents							✓															
6.5.4	Solve Percent Problems				✓	✓		✓					✓	✓									
6.5.5	Problem Solving with Proportions				✓	✓		✓	✓	✓			✓	✓									
<b>6.6.0</b>	<b>Algebraic Reasoning: Write and Evaluate Expressions</b>																						
6.6.1	Introduction to Exponents																						
6.6.2	Order of Operations																	✓					
6.6.3	Numerical Expressions													✓			✓						
6.6.4	Transition to Algebraic Expressions													✓			✓						
6.6.5	Read and Write Algebraic Expressions Part 1													✓			✓						
6.6.6	Read and Write Algebraic Expressions Part 2													✓			✓						
6.6.7	Equivalent Expressions													✓			✓						
6.6.8	Use Equivalent Expressions to Simplify					✓								✓			✓						
6.6.9	Problem Solving with Algebraic Expressions													✓			✓						
<b>6.7.0</b>	<b>Equations and Inequalities</b>																						
6.7.1	Check for Solutions to Equations													✓	✓					✓			
6.7.2	Write 1-Variable Equations													✓					✓				
6.7.3	Solve 1-Variable Equations													✓					✓				
6.7.4	Problem Solving with 1-Variable Equations													✓					✓				
6.7.5	Represent 2-Variable Relationships													✓			✓		✓				
6.7.6	Analyze Relationships Using Tables and Graphs													✓			✓		✓				
6.7.7	Relate Tables and Graphs to Equations													✓			✓		✓				
6.7.8	Write Inequalities													✓			✓		✓				
6.7.9	Solutions of Inequalities													✓			✓		✓				



## Grade 7 -- Minnesota Academic Standards in Mathematics

No.	Unit/Lesson	Read, write, represent and compare positive and negative rational numbers, expressed as integers, fractions and decimals.				Calculate with positive and negative rational numbers, and rational numbers with whole number exponents, to solve real-world and mathematical problems.				Understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.		Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.			Apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers and grouping symbols; evaluate such expressions.		Represent real-world and mathematical situations using equations with variables. Solve equations symbolically, using the properties of equality. Also solve equations graphically and numerically. Interpret solutions in the original context.		Use reasoning with proportions and ratios to determine measurements, justify formulas and solve real-world and mathematical problems involving circles and related geometric figures.		Analyze the effect of change of scale, translations and reflections on the attributes of two-dimensional figures.		
		7.1.1.1	7.1.1.2	7.1.1.3	7.1.1.5	7.1.2.1	7.1.2.2	7.1.2.4	7.1.2.5	7.2.1.1	7.2.1.2	7.2.2.1	7.2.2.2	7.2.2.4	7.2.3.1	7.2.3.2	7.2.4.1	7.2.4.2	7.3.1.1	7.3.1.2	7.3.2.1	7.3.2.2	7.3.2.3
<b>7.1.0</b>	<b>Operations with Integers</b>																						
7.1.1	Add and Subtract Integers on the Number Line			✓		✓	✓	✓															
7.1.2	Add and Subtract Integers			✓		✓	✓	✓															
7.1.3	Multiply Integers on the Number Line			✓		✓	✓	✓															
7.1.4	Multiply Integers			✓		✓	✓	✓															
7.1.5	Multiply and Divide Integers		✓			✓	✓	✓															
7.1.6	Problem Solving with Integers					✓	✓	✓															
<b>7.2.0</b>	<b>Operations with Rational Numbers</b>																						
7.2.1	Add, Subtract, and Multiply Rational Numbers			✓		✓	✓	✓															
7.2.2	Operations with Rational Numbers					✓	✓	✓					✓										
7.2.3	Multiply and Divide Rational Numbers					✓	✓	✓															
7.2.4	Fractions as Division					✓	✓	✓															
7.2.5	Numerical Expressions with Rational Numbers					✓	✓	✓						✓									
7.2.6	Decimals and Fractions	✓	✓			✓	✓	✓															
7.2.7	Problem Solving with Rational Numbers					✓	✓	✓						✓									
<b>7.3.0</b>	<b>Unit Rates and Proportional Reasoning</b>																						
7.3.1	Find and Compare Unit Rates							✓				✓	✓					✓					
7.3.2	Identify Proportional Relationships from Tables and Graphs							✓	✓		✓	✓											
7.3.3	Proportional Relationships in Tables and Graphs							✓	✓		✓	✓											
7.3.4	Tables, Graphs, and Equations of Proportional Relationships							✓	✓		✓	✓	✓										
7.3.5	Scale Drawings							✓	✓		✓	✓					✓				✓	✓	✓
7.3.6	Represent Proportional Relationships							✓	✓		✓	✓											
7.3.7	Problem Solving with Unit Rates and Constant of Proportionality							✓	✓		✓	✓						✓					
<b>7.4.0</b>	<b>Proportional Reasoning and Percents</b>																						
7.4.1	Represent and Solve Proportions							✓	✓		✓	✓					✓						
7.4.2	Proportional Relationships and Percents											✓	✓										
7.4.3	Proportional Relationships and Percent Change											✓	✓										
7.4.4	Problem Solving with Percent Change											✓	✓										
7.4.5	Problem Solving with Proportional Relationships										✓	✓					✓						
<b>7.5.0</b>	<b>Algebraic Expressions</b>																						
7.5.1	Add and Subtract Linear Expressions													✓									
7.5.2	Expand Linear Expressions													✓									
7.5.3	Expand and Factor Linear Expressions													✓									
7.5.4	Analyze Equivalent Expressions													✓									
7.5.5	Simplify Multi-Step Expressions													✓	✓								
<b>7.6.0</b>	<b>Write and Solve Equations and Inequalities</b>																						
7.6.1	One-Step Equations with Rational Numbers												✓				✓						
7.6.2	Write Multi-Step Equations to Model Problems												✓				✓						
7.6.3	Solve Multi-Step Equations																✓						
7.6.4	Problem Solving with Equations												✓				✓						
7.6.5	Write Inequalities to Model Problems												✓				✓						
7.6.6	Write and Solve Inequalities Part 1												✓				✓						
7.6.7	Write and Solve Inequalities Part 2												✓				✓						
7.6.8	Problem Solving with Inequalities												✓				✓						
<b>7.7.0</b>	<b>Equations in Measurement and Geometry</b>																						
7.7.1	Circumference of a Circle	✓															✓		✓				
7.7.2	Area and Circumference of a Circle	✓															✓		✓				
7.7.3	Problem Solving with Circles	✓															✓		✓				
7.7.4	Area and Surface Area of 2- and 3-Dimensional Objects																			✓			
7.7.5	Surface Area and Volume of 3-Dimensional Objects																			✓			
7.7.6	Problem Solving with 2- and 3-Dimensional Objects																		✓	✓			