Grade 6 Overview

Whole Number/ Fraction/Decimal Operations

Students in 6th grade are expected to have mastered all of the operations with fractions, whole numbers, and decimals, and should be able to apply them to real world situations. They should be able to:

- Add, subtract, multiply, and divide fractions and mixed numbers
- Fluently multiply and divide multi-digit whole numbers
- Add, subtract, multiply, and divide decimals
- Solve real world problems related to the addition, subtraction, multiplication, and division of fractions, decimals, and whole numbers

Number System

Students will develop an understanding of the properties of numbers. They will classify numbers as prime and composite, as well as, identify, compare, and order integers and rational numbers. They should be able to:

- Classify rational numbers and integers
- Compare and order rational numbers
- Identify the opposite and absolute value of rational numbers
- Determine the greatest common factor and least common multiple of a set of numbers
- Graph on all four quadrants of the coordinate plane
- Reflect a point on the coordinate plane over the x- and y-axis.

Ratios/Proportions

Students will understand ratio concepts and use ratio reasoning to solve problems. They should be able to:

- Identify and represent ratios
- Determine equivalent ratios
- Determine unit rate
- Understand the meaning of percent and determine the percent of a number
- Solve word problems involving proportional relationships

Algebra

Students will develop an understanding of basic algebraic relationships and patterns. Algebra is formally introduced for the first time in 6th grade. They should be able to:

- Understand the meaning of a variable
- Determine the value of an expression involving a variable after substitution
- Simplify expressions using the distributive property
- Write and evaluate one-step equations
- Identify independent and dependent variables in an equation and on a graph
- Graph equations on the coordinate plane

Geometry

Students will discover properties of 2D and 3D shapes, and solve real-world problems involving area, surface area, and volume. They should be able to:

- Determine the area of triangles and special quadrilaterals
- Find the area of a complex polygon by decomposing the shape into triangles and rectangles
- Determine the volume and surface area of prisms
- Represent 3D figures using nets
- Draw polygons in the coordinate plane

Data & Statistics

Students will develop an understanding of statistical variability and summarize and describe distributions. They should be able to:

- Find the mean, median, mode, and range of data sets
- Determine the interquartile range and mean absolute deviation
- Describe the overall shape and spread of data
- Interpret data on a line plot, box-plot, and histogram

Grade 6 Scope & Sequence

CMP3 Unit/ Description	Investigations/Standards	Learning Targets	Time Frame
Unit 1: Prime Time Properties of Numbers/ Review of Operations	- *Building on Factors and Multiples* 6.NS.B.4 - *Common Multiples and Common Factors* 6.NS.B.4 - *Factorizations: Searching for Factor Strings* 6.EE.A.1, 6.EE.A.2b, 6.NS.B.4 - *Linking Multiplication and Addition: The Distributive Property* 6.EE.A.1, 6.EE.A.2B, 6.NS.B4	● Determine the greatest common factor and least common multiple of a set of numbers ● Solve real world problems related to the greatest common factor and least common multiple ● Determine the prime factorization of numbers	4-5 Weeks
Unit 2: Let's Be Rational Fraction Operations/ Rational Numbers	- *Extending Addition and Subtraction of Fractions* 6.NS.C.6, 6.NS.B3 , 6.NS.B4 - *Building on Multiplication with Fractions* 6.EE.A.3 - *Dividing with Fractions* 6.EE.A.1, 6.EE.A.2b, 6.NS.B.4 - *Wrapping up the Operations* 6.EE.A.2c, 6.EE.B.6, 6.EE.B.7, 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2b	● Add, subtract, multiply, and divide fractions and mixed numbers ● Fluently multiply and divide multi-digit whole numbers	4-5 Weeks
Unit 3: Comparing Bits and Pieces Ratios and Proportions/ Rational Numbers	- *Making Comparisons* 6.RP.A.1, 6.RP.A.3, 6.RP.A.2, 6.NS.C.6, 6.NS.B.4 - *Connecting Ratios and Rates* 6.RP.A.1, 6.RP.A.2, 6.RP.A.3, 6.RP.A.3a, 6.RP.A.3b, 6.NS.C.6, 6.NS.B.4 - *Extending the Number Line* - 6.NS.C.5, 6.NS.C.6, 6.NS.C.6a, 6.NS.C.6c, 6.NS.C.7, 6.NS.C.7a, 6.NS.C.7b, 6.NS.C.7c, 6.NS.C.7d, 6.RP.A.1, 6.RP.A.2, 6.NS.B.4 - *Working with Percents* 6.RP.A.1, 6.RP.A.3, 6.RP.A.3c	● Identify and represent ratios ● Determine equivalent ratios ● Determine unit rate ● Understand the meaning of percent and determine the percent of a number ● Solve word problems involving proportional relationships ● Classify rational numbers and integers ● Compare and order rational numbers ● Identify the opposite and absolute value of rational numbers ● Graph on all four quadrants of the coordinate plane ● Reflect a point on the coordinate plane over the x- and y-axis.	5-6 Weeks
Unit 4: Decimal Ops Computing with Decimals and Percents	- Decimal Operations and Estimation 6.RP.A.1, 6.RP.A.2, 6.RP.A.3 - Adding and Subtracting Decimals 6.EE.A.2, 6.EE.A.2a, 6.EE.B.5,	● Add, subtract, multiply, and divide decimals ● Solve real world problems related to the addition, subtraction, multiplication, and division of decimals	3-4 Weeks

	6.EE.B.6, 6.EE.A.B.7, 6.NS.B.3 - Multiplying and Dividing Decimals 6.NS.A.1, 6.EE.B.7, 6.NS.B.2, 6.NS.B.3 - Using Percents 6.RP.A.3c, 6.NS.B.3, 6.NS.B.2, , 6.RP.A.3, 6.EE.A.3, 6.EE.B.6, 6.EE.B.7		
Unit 5: Variables and Patterns Focus on Algebra	- Variables, Tables, and Graphs 6.EE.C.9, 6.NS.C.6c, 6.NS.C.8, 6.RP.A.3a, 6.RP.A.3b, 6.RP.A.3d - Analyzing Relationships Among Variables 6.EE.C.9, 6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8, 6.NS.C.6 - Relating Variables With Equations 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2c, 6.EE.B.6, 6.EE.B.7, 6.EE.C.9, 6.RP.A.3, 6.RP.A.3a, 6.RP.A.3b, 6.RP.A.3d, 6.EE.A.1, 6.EE.A.3, 6.EE.A.4 - Expressions, Equations, and Inequalities 6.EE.A.2, 6.EE.A.2c, 6.EE.A.3, 6.EE.B.6, 6.EE.A.4, 6.EE.B.5, 6.EE.B.6, 6.EE.B.7, 6.EE.B.8, 6.EE.C.9, 6.NS.C.8, 6.RP.A.3b, 6.RP.A.3a, 6.EE.A.2a, 6.EE.A.2b,	● Understand the meaning of a variable ● Determine the value of an expression involving a variable after substitution ● Simplify expressions using the distributive property ● Write and evaluate one-step equations ● Identify independent and dependent variables in an equation and on a graph ● Graph equations on the coordinate plane	4-5 Weeks
Unit 6: Covering and Surrounding Geometry	- *Designing Bumper Cars: Extending and Building on Area and Perimeter* 6.NS.C.8, 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2c, 6.EE.A.3, 6.EE.B.6, 6.EE.C.9 - *Measuring Triangles* 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2c, 6.EE.B.6, 6.EE.A.3, 6.EE.A.4, 6.EE.C.9, 6.G.A.1 - *Measuring Parallelograms* 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2c, 6.NS.C.8, 6.EE.B.6, 6.EE.A.4, 6.EE.C.9, 6.G.A.1, 6.G.A.3 - *Measuring Surface Area and Volume* 6.EE.A.2, 6.EE.A.2a, 6.EE.A.2c, 6.NS.C.8, 6.EE.A.4, 6.EE.B.6, 6.EE.C.9, 6.G.A.1, 6.G.A.2, 6.G.A.4	● Determine the area of triangles and special quadrilaterals ● Find the area of a complex polygon by decomposing the shape into triangles and rectangles ● Determine the volume and surface area of prisms ● Represent 3D figures using nets ● Draw polygons in the coordinate plane	4-5 Weeks
Unit 7: Data About Us Data & Statistics	● *What's in a Name?* 6.EE.A.2a, 6.SP.A.1 , 6.SP.A.2 , 6.SP.A.3 , 6.SP.B.4 , 6.SP.B.5 , 6.SP.B.5a , 6.SP.B.5c ● *Who's in your Household? Using the Mean*	● Find the mean, median, mode, and range of data sets ● Determine the interquartile range and mean absolute deviation	3-4 Weeks

	6.NS.C.6, 6.NS.C.7, 6.SP.A.1 , 6.SP.A.2 , 6.SP.A.3 , 6.SP.B.4 , 6.SP.B.5 , 6.SP.B.5a , 6.SP.B.5b , 6.SP.B.5c, 6.SP.B.5d ● *What is your Favorite….? Measuring Variability* 6.RP.A.3, 6.RP.A.3b, 6.NS.C.6, 6.NS.C.7, 6.SP.A.1 , 6.SP.A.2 , 6.SP.B.4 , 6.SP.B.5 , 6.SP.A.3 , 6.SP.B.5c, 6.SP.B.5d ● *What Numbers Describe Us? Using Graphs to Group Data* 6.NS.C.6, 6.NS.C.7, 6.SP.A.1 , 6.SP.A.2 , 6.SP.B.4 , 6.SP.B.5 , 6.SP.A.3 , 6.SP.B.5a , 6.SP.B.5c, 6.SP.B.5d	● Describe the overall shape and spread of data ● Interpret data on a line plot, box-plot, and histogram	

Major Cluster
Supporting Cluster
Additional Cluster