

2023-2024

Math 6 Course Guide

#204 Math 6

#204A/204B MYP Math 6

#771 Accel Math 6

#258 Basic Math 6

Math 6 Pacing

(Days in Q1-39, Q2-44, Q3-48, Q4-49)

Module	Days	Module	Days
1 – Integers	4	8 – Percent	8
3 – Rational Numbers	8	9 – Generating Equivalent Numerical Expressions	9
2 – Factors & Multiples	4	10 – Generating Equivalent Algebraic Expressions	11
4 – Operations with Fractions	14	11 – Equations & Relationships	12
Fall Break		12 – Relationships in Two Variables	7
4 – Operations with Fractions	6		
Be here by 10/13, the end of Q1		Be here by 3/15, the end of Q3	
4 – Interventions	1	12 – Relationships in Two Variables	3-opt
5 – Operations with Decimals	9	14 – Distance & Area in Coordinate Plane	8
6 – Representing Ratios & Rates	13	13 – Area & Polygons	11
7 – Applying Ratios & Rates	12	15 – Surface Area & Volume of Solids	11
		16 - Displaying, Analyzing and Summarizing Data	10
Be here by 12/22, the end of Q2		Be here by 6/7, the end of Q4	

Math 6 – Go Math Resource and Standards

Module 1 - Integers

Resource	Topics (Standards)	Days
1.1	Identifying Integers & Their Opposites (*6.NS.C.5)	1
1.2	Comparing and Ordering Integers (6.NS.C.7b)	1
1.3	Absolute Value (6.NS.7c, 6.NS.C.7d)	1
Module 1 Quiz (Test Module 1 & 3 at end of Module 3)		1
(50 min periods)		Total = 4

Apply and extend previous understandings of numbers to the system of rational numbers. (major cluster)

*6.NS.C.5	Understand that positive and negative numbers are used together 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 quantities in real-world contexts, explaining the meaning of 0 in each situation.
6.NS.C.7	Understand ordering and absolute value of rational numbers. <ul style="list-style-type: none"> b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express that -3°C is warmer than -7°C. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt. d. Distinguish comparisons of absolute value from statements about order. For ex, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

Module 3 – Rational Numbers

Resource	Topics (Standards)	Days
3.1	Classifying Rational Numbers (6.NS.C.6a, *6.NS.C.6c)	2
3.2	Identifying Opposites and Absolute Value of Rational Numbers (*6.NS.C.6c)	1
3.3	Comparing and Ordering Rational Numbers (6.NS.C.7a, 6.NS.C.7b)	2
Review and Test (Module 1 & 3)		2
Essential Standards Reteach and Intervention (Module 1 & 3)		1
(50 min periods)		Total = 8

Apply and extend previous understandings of numbers to the system of rational numbers. (major cluster)

*6.NS.C.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. <ul style="list-style-type: none"> a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite. *c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers & other rational numbers on a coordinate plane.
6.NS.C.7	Understand ordering and absolute value of rational numbers. <ul style="list-style-type: none"> a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express that -3°C is warmer than -7°C.

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Module 2 - Factors and Multiples		
Resource	Topics (Standards)	Days
2.1	Greatest Common Factor (6.NS.B.4)	1
2.2	Least Common Multiple (6.NS.B.4)	1
9.2	Prime Factorization	1
	Module 2 Quiz (Test Module 2 & Module 4 after Module 4)	1
	(50 min periods)	Total = 4

Compute fluently with multi-digit numbers and find common factors and multiples. (additional cluster)	
6.NS.B.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9+2)$.

Module 4 – Operations with Fractions		
Resource	Topics (Standards)	Days
4.1	Applying GCF & LCM to Fraction Operations (6.NS.B.4) - add, subtract, and multiply fractions	6
4.2	Dividing Fractions (*6.NS.A.1)	4
4.3	Dividing Mixed Numbers (*6.NS.A.1)	4
	Fall Break	
4.4	Solving Multistep Problems with Fractions and Mixed Numbers (6.NS.A.1)	3
	Review and Test (Module 2 & 4)	2
	Essential Standards Reteach and Intervention	1
	(50 min periods)	Total = 20

Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (major cluster)	
*6.NS.A.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mile and area $1/2$ square mile?
Compute fluently with multi-digit numbers and find common factors and multiples. (additional cluster)	
6.NS.B.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9+2)$.

End Of Quarter One

Math 6 – Go Math Resource and Standards

Module 5 – Operations with Decimals

Resource	Topics (Standards)	Days
5.1	Dividing Whole Numbers (6.NS.B.2)	1
5.2	Adding and Subtracting Decimals (6.NS.B.3)	1
5.3	Multiplying Decimals (6.NS.B.3)	1
5.4	Dividing Decimals (6.NS.B.3)	2
5.5	Applying Operations with Rational Numbers (6.NS.B.3)	2
	Review and Test	2
	(50 min periods)	Total = 9

Compute fluently with multi-digit numbers and find common factors and multiples. (additional cluster)

6.NS.B.2	Fluently divide multi-digit numbers using the standard algorithm.
6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Module 6 – Representing Ratios and Rates

Resource	Topics (Standards)	Days
6.1	Ratios (*6.RP.A.1)	3
6.2	Rates (*6.RP.A.2)	2
6.3	Using Ratios & Rates to Solve Problems (*6.RP.A.3a, *6.RP.A.3b)	5
	Review and Test	2
	Essential Standards Reteach and Intervention	1
	(50 min periods)	Total = 13

Understand ratio concepts and use ratio reasoning to solve problems. (major cluster)

*6.RP.A.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.”
*6.RP.A.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.”
*6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *a. 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. Use tables to compare ratios. *b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

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Module 7 – Applying Ratios and Rates

Resource	Topics (Standards)	Days
7.1	Ratios, Rates, Tables and Graphs (*6.RP.A.3a)	3
7.2	Solving Problems with Proportions (*6.RP.A.3a, *6.RP.A.3b)	3
7.3	Converting within Measurement Systems (6.RP.A.3d)	2
7.4	Converting between Measurement Systems (6.RP.A.3d)	1
Review and Test		2
Essential Standards Reteach and Intervention		1
(50 min periods)		Total = 12

Understand ratio concepts and use ratio reasoning to solve problems. (major cluster)

*6.RP.A.3	<p>Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>*a. 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. Use tables to compare ratios.</p> <p>*b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</p> <p>d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>
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End Of Quarter Two

Math 6 – Go Math Resource and Standards

Module 8 – Percent

Resource	Topics (Standards)	Days
8.1	Understanding Percent (6.RP.A.3c)	2
8.2	Percent, Fractions and Decimals (6.NS.B.3)	2
8.3	Solving Percent Problems (6.RP.A.3c)	2
	Review and Test	2
	(50 min periods)	Total = 8

Understand ratio concepts and use ratio reasoning to solve problems. (major cluster)

6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g. by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
Compute fluently with multi-digit numbers and find common factors and multiples. (additional cluster)	
6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Module 9 – Generating Equivalent Numerical Expressions

Resource	Topics (Standards)	Days
9.1	Exponents (*6.EE.A.1)	2
9.2	Prime Factorization (*6.EE.A.1)	1
9.3	Order of Operations (*6.EE.A.1)	3
	Review and Test	2
	Essential Standards Reteach and Intervention	1
	(50 min periods)	Total = 9

Apply and extend previous understandings of arithmetic to algebraic expressions. (major cluster)

*6.EE.A.1	Write and evaluate numerical expressions involving whole-number exponents.
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Math 6 – Go Math Resource and Standards

Module 10 – Generating Equivalent Algebraic Expressions

Resource	Topics (Standards)	Days
10.1	Modeling and Writing Expressions (*6.EE.A.2a, *6.EE.A.2b, *6.EE.A.4, *6.EE.B.6)	3
10.2	Evaluating Expressions (*6.EE.A.2c)	2
10.3	Equivalent Expressions (*6.EE.A.2c, 6.EE.A.3, *6.EE.A.4)	3
Review and Test		2
Essential Standards Reteach and Intervention		1
(50 min periods)		Total = 11

Apply and extend previous understandings of arithmetic to algebraic expressions. (major cluster)

*6.EE.A.2	<p>Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>*a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$.</p> <p>*b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8+7)$ as a product of two factors; view $(8+7)$ as both a single entity and a sum of two terms.</p> <p>*c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.</p>
6.EE.A.3	<p>Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</p>
*6.EE.A.4	<p>Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of the number y.</p>
Reason about and solve one-variable equations and inequalities. (major cluster)	
*6.EE.B.6	<p>Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p>

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Module 11 – Equations and Relationships

Resource	Topics (Standards)	Days
11.1	Writing Equations to Represent Situations (*6.EE.B.7)	3
11.2	Addition Equations (<i>Only teach: $x + p = q$</i>) (6.EE.B.5, 6.EE.B.7) <ul style="list-style-type: none"> Complete Explore Activity p303 Addition Equations – p304 Ex. 1 & p307 Ex. 4 (optional Ex. 2 and Ex. 3) Assign - Guided Practice #1-6, 10, 12, 13, 14, 17-21	2
11.3	Multiplication Equations (<i>Only teach: $px = q$</i>) (6.EE.B.5, *6.EE.B.7) <ul style="list-style-type: none"> Complete Explore Activity p311 Multiplication Equations – p312 Ex. 1 & p315 Ex. 4 (optional Ex. 2 and Ex. 3) Assign – Guided Practice #1, 3-5, 9-12, 14, 17-19	2
11.4	Writing Inequalities (6.EE.B.8)	2
Review and Test		2
Essential Standards Reteach and Intervention (50 min periods)		1
		Total = 12

Reason about and solve one-variable equations and inequalities. (major cluster)	
6.EE.B.5	Understand solving an equation or inequality as a process of answering a 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.
*6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
6.EE.B.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

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Module 12 – Relationships in Two Variables

Resource	Topics (Standards)	Days
12.1	Graphing in the Coordinate Plane (6.NS.C.6b, *6.NS.C.6c)	1
12.2	Independent and Dependent Variables in Tables and Graphs (6.EE.C.9)	2
12.3	Writing Equations from Tables (6.EE.C.9) - simple equations $d = 65t$, $y = 2x$, $m = 3 + d$	2
	Review and Test	2
12.4	Representing Algebraic Relationships in Tables and Graphs (6.EE.C.9)	2 - optional
	Essential Standards Reteach and Intervention (50 min periods)	1 Total = 10

Apply and extend previous understandings of numbers to the system of rational numbers. (major cluster)

*6.NS.C.6	<p>Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>*c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>
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Represent and analyze quantitative relationships between dependent and independent variables. (major cluster)

6.EE.C.9	<p>Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.</p>
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End Of Quarter Three

Math 6 – Go Math Resource and Standards

Module 14 – Distance and Area in the Coordinate Plane		
Resource	Topics (Standards)	Days
Supplement	Review Integers – Module 1	1
14.1	Distance in the Coordinate Plane (6.NS.C.8)	2
14.2	Polygons in the Coordinate Plane (6.G.A.3)	2
Review and Test		2
Essential Standards Reteach and Intervention		1
(50 min periods)		Total = 8

Apply and extend previous understandings of numbers to the system of rational numbers. (major cluster)	
6.NS.C.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
Solve real-world and mathematical problems involving area, surface area, and volume. (supporting cluster)	
6.G.A.3	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 in the context of solving real-world and mathematical problems.

Module 13 – Areas and Polygons		
Resource	Topics (Standards)	Days
13.1	Area of Quadrilaterals (*6.G.A.1)	1
13.2	Area of Triangles (*6.G.A.1)	2
13.3	Solving Area Equations (*6.G.A.1)	2
13.4	Area of Polygons (*6.G.A.1)	3
Review and Test		2
Essential Standards Reteach and Intervention		1
(50 min periods)		Total = 11

Solve real-world and mathematical problems involving area, surface area, and volume. (supporting cluster)	
*6.G.A.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Math 6 – Go Math Resource and Standards

Module 15 – Surface Area and Volume of Solids

Resource	Topics (Standards)	Days
15.1	Nets and Surface Area (6.G.A.4)	3
15.2	Volume of Rectangular Prisms (*6.G.A.2)	2
15.3	Solving Volume Equations (*6.G.A.2)	3
	Review and Test	2
	Essential Standards Reteach and Intervention	1
	(50 min periods)	Total = 11

Solve real-world and mathematical problems involving area, surface area, and volume. (supporting cluster)	
*6.G.A.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, 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 in the context of solving real-world and mathematical problems.
6.G.A.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems

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Module 16 – Displaying, Analyzing and Summarizing Data

Resource	Topics (Standards)	Days
16.1	Measures of Center (6.SP.A.1, 6.SP.A.2, 6.SP.A.3, 6.SP.B.5)	2
16.2	Mean Absolute Deviation (6.SP.B.5)	1
16.3	Box Plots (6.SP.B.4)	1
16.4	Dot Plots and Data Distribution (6.SP.B.4)	2
16.5	Histograms (6.SP.B.4)	2
Review and Test (50 min periods)		2
		Total = 10

Develop understanding of statistical variability. (additional cluster)	
6.SP.A.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.
6.SP.A.2	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.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all its values with a single number, while a measure of variation describes how its values vary with a single number.
Summarize and describe distributions. (additional cluster)	
6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.B.5	Summarize numerical data sets in relation to their context, such as by: <ol style="list-style-type: none"> Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

End Of Quarter Four