Pacing Guide

Lesson	Mathematics Standards, Grade 6	Pacing
Unit 1 NUMBER SYSTEMS AND OPERATIONS		
Module 1: Integer Concepts		
Lesson 1.1 Identify and Interpret Integers	■ 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. ■ 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.	2 days
Lesson 1.2 Compare and Order Integers on a Number Line	■ Write, interpret, and explain statements of order for rational numbers in real-world contexts.	2 days
Lesson 1.3 Find and Apply Absolute Value	■ 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. ■ Distinguish comparisons of absolute value from statements about order.	1 day
Module 2: Rational Number Concepts		
Lesson 2.1 Interpret Rational Numbers	■ 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. ■ 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. ■ 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. ■ Distinguish comparisons of absolute value from statements about order.	1 day
Lesson 2.2 Compare Rational Numbers on a Number Line	■ 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. ■ Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.	1 day

■ Major
☐ Supporting
◯ Additional

In addition to the core instructional pacing below, HMH recommends the following:
• 3 days per year for the HMH Into Math Growth Measure powered by Math Inventory
• 3 days per module for the Module Opener, Are You Ready?, Module Review, and Module Test
• 2 days per unit for the Performance Task
Using these recommendations, the total pacing for Grade 6 is 161 days.

Lesson	Mathematics Standards, Grade 6	Pacing
◯ Lesson 2.3 Find and Apply LCM and GCF	◯ 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. ■ Write, interpret, and explain statements of order for rational numbers in real-world contexts.	2 days
◯ Lesson 2.4 Order Rational Numbers	■ Write, interpret, and explain statements of order for rational numbers in real-world contexts. ◯ 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.	1 day
Module 3: Fraction Division		
◯ Lesson 3.1 Understand Fraction Division	■ 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.	2 days
◯ Lesson 3.2 Explore Division of Fractions with Unlike Denominators	■ 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.	2 days
◯ Lesson 3.3 Explore Division of Mixed Numbers	■ 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.	2 days
◯ Lesson 3.4 Practice and Apply Division of Fractions and Mixed Numbers	■ 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.	1 day
◯ Lesson 3.5 Practice Fraction Operations	■ 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. ◯ 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.	2 days

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Lesson	Mathematics Standards, Grade 6	Pacing
Module 4: Fluency with Multi-Digit Decimal Operations		
Lesson 4.1 Add and Subtract Multi-Digit Decimals	○ Fluently add, subtract, multiply, and divide multi-digit decimals using the standards algorithm for each operation.	1 day
Lesson 4.2 Multiply Multi-Digit Decimals	○ Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	1 day
Lesson 4.3 Divide Multi-Digit Whole Numbers	○ Fluently divide multi-digit numbers using the standard algorithm.	1 day
Lesson 4.4 Divide Multi-Digit Decimals	○ Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	1 day
Lesson 4.5 Apply Operations with Multi-Digit Decimals	○ Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	1 day
Unit 2 RATIO AND RATE REASONING		
Module 5: Ratios and Rates		
Lesson 5.1 Understand the Concept and Language of Ratios	■ Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	1 day
Lesson 5.2 Represent Ratios and Rates with Tables and Graphs	■ Understand the concept of a unit rate $\frac{a}{b}$ associated with a ratio $a{:}b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. ■ 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.	2 days
Lesson 5.3 Compare Ratios and Rates	■ 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.	1 day
Lesson 5.4 Find and Apply Unit Rates	■ Understand the concept of a unit rate $\frac{a}{b}$ associated with a ratio $a{:}b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. ■ Solve unit rate problems including those involving unit pricing and constant speed.	2 days
Lesson 5.5 Solve Ratio and Rate Problems Using Proportional Reasoning	■ 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. ■ Solve unit rate problems including those involving unit pricing and constant speed.	2 days

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Module 6: Apply Ratios and Rates to Measurement		
Lesson 6.1 Use Ratio Reasoning with Circle Graphs	■ 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.	1 day
Lesson 6.2 Use Rate Reasoning to Convert Within Measurement Systems	■ Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	2 days
Lesson 6.3 Use Rate Reasoning to Convert Between Measurement Systems	■ Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	2 days
Module 7: Understand and Apply Percent		
Lesson 7.1 Understand, Express, and Compare Percent Ratios	■ Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percent.	2 days
Lesson 7.2 Use Strategies to Find a Percent of a Quantity	■ Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percent.	2 days
Lesson 7.3 Solve a Variety of Percent Problems	■ Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percent.	1 day
Unit 3 EXPRESSIONS, EQUATIONS, AND INEQUALITIES		
Module 8: Numerical and Algebraic Expressions		
Lesson 8.1 Understand and Apply Exponents	■ Write and evaluate numerical expressions involving whole-number exponents.	1 day
Lesson 8.2 Write and Evaluate Numerical Expressions for Situations	■ Write and evaluate numerical expressions involving whole-number exponents. ■ 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.	2 days
Lesson 8.3 Write Algebraic Expressions to Model Situations	■ Write expressions that record operations with numbers and with letters standing for numbers. ■ 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. ■ 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.	1 day

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Module 8: Numerical and Algebraic Expressions		
Lesson 8.4 Interpret and Evaluate Algebraic Expressions	■ 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).	2 days
Lesson 8.5 Identify and Generate Equivalent Algebraic Expressions	■ Apply the properties of operations to generate equivalent expressions. ■ Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).	2 days
Module 9: Solve Problems Using Equations and Inequalities		
Lesson 9.1 Write Equations to Represent Situations	■ 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. ■ 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 non-negative rational numbers.	1 day
Lesson 9.2 Use Addition and Subtraction Equations to Solve Problems	■ 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 non-negative rational numbers.	2 days
Lesson 9.3 Use Multiplication and Division Equations to Solve Problems	■ 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 non-negative rational numbers.	2 days
Lesson 9.4 Use One-Step Equations to Solve a Variety of Problems	■ 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 non-negative rational numbers.	1 day
Lesson 9.5 Write and Graph Inequalities	■ 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. ■ Write an inequality in the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that the inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	2 days

Lesson	Mathematics Standards, Grade 6	Pacing
Module 10: Real-World Relationships Between Variables		
Lesson 10.1 Represent Equations in Tables and Graphs	■ Use variables to represent two quantities in a real-world problem that change in relation 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.	2 days
Lesson 10.2 Write Equations from Verbal Descriptions	■ Use variables to represent two quantities in a real-world problem that change in relation 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.	1 day
Lesson 10.3 Write Equations from Tables and Graphs	■ Use variables to represent two quantities in a real-world problem that change in relation 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.	2 days
Unit 4 RELATIONSHIPS IN GEOMETRY		
Module 11: Polygons on the Coordinate Plane		
Lesson 11.1 Graph Rational Numbers on the Coordinate Plane	■ 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. ■ 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. ■ 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.	2 days

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Lesson	Mathematics Standards, Grade 6	Pacing
Module 11: Polygons on the Coordinate Plane		
Lesson 11.2 Graph Polygons on the Coordinate Plane	☐ 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. ■ 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.	2 days
Lesson 11.3 Find Distance on the Coordinate Plane	■ 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. ■ 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. ■ 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.	2 days
Lesson 11.4 Find Perimeter and Area on the Coordinate Plane	■ 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. ☐ 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.	2 days
Module 12: Area of Triangles and Special Quadrilaterals		
Lesson 12.1 Develop and Use the Formula for Area of Parallelograms	☐ 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. ■ 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).	2 days

Lesson	Mathematics Standards, Grade 6	Pacing
Lesson 12.2 Develop and Use the Formula for Area of Triangles	☐ 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. ■ 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).	2 days
Lesson 12.3 Develop and Use the Formula for Area of Trapezoids	☐ 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. ■ 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).	2 days
Lesson 12.4 Find Area of Composite Figures	☐ Find the area or 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.	2 days
Module 13: Surface Area and Volume		
Lesson 13.1 Explore Nets and Surface Area	☐ Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface areas of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	2 days
Lesson 13.2 Find Volume of Rectangular Prisms	☐ 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. ■ 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).	1 day

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Module 13: Surface Area and Volume		
Lesson 13.3 Solve Volume Problems	☐ 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.	1 day
	■ 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).	
Unit 5 DATA COLLECTION AND ANALYSIS		
Module 14: Data Collection and Displays		
Lesson 14.1 Explore Statistical Data Collection	○ Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	1 day
	○ Summarize numerical data sets in relation to their context, such as by: Reporting the number of observations.	
	○ Summarize numerical data sets in relation to their context, such as by: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	
Lesson 14.2 Display Data in Dot Plots	○ Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	2 days
Lesson 14.3 Make Histograms and Frequency Tables	○ Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	2 days
Module 15: Measures of Center		
Lesson 15.1 Explore Mean as Fair Share	○ Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	1 day
Lesson 15.2 Find Measures of Center	○ Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	1 day
	○ Summarize numerical data sets in relation to their context, such as by: Reporting the number of observations.	
Lesson 15.3 Choose a Measure of Center	○ Summarize numerical data sets in relation to their context, such as by: 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.	1 day

Lesson	Mathematics Standards, Grade 6	Pacing
Module 16: Variability and Data Distribution		
Lesson 16.1 Explore Patterns of Data	◯ Summarize numerical data sets in relation to their context, such as by: 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.	1 day
Lesson 16.2 Display Data in Box Plots	◯ Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	2 days
Lesson 16.3 Find Mean Absolute Deviation	◯ Summarize numerical data sets in relation to their context, such as by: 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.	2 days
Lesson 16.4 Explore Measures of Variability	◯ Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. ◯ Summarize numerical data sets in relation to their context, such as by: 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. ◯ Summarize numerical data sets in relation to their context, such as by: 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.	2 days
Lesson 16.5 Describe Distributions	◯ 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. ◯ Summarize numerical data sets in relation to their context, such as by: 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. ◯ Summarize numerical data sets in relation to their context, such as by: 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.	2 days

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