



into Math™



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# Scope and Sequence

Grades 6–8

## Into Math Scope and Sequence - Grades 6–8

Ratio and Proportional Relationships			
Topic	Grade 6	Grade 7	Grade 8
<b>Concept of a Ratio</b>	<p>Understand and write ratios. (Lesson 5.1)</p> <p>Use tables and graphs to represent ratios and rate. (Lesson 5.2)</p>	<p>Use unit rates involving fractions to solve real-world problems. (Lesson 1.3)</p>	
<b>Proportional Relationships</b>		<p>Use patterns and unit rates to analyze and describe relationships. (Lesson 1.1)</p> <p>Determine if a relationship represented in a table is proportional, identify the constant of proportionality, and write an equation in the form of <math>y = kx</math>. (Lesson 1.2)</p> <p>Identify the characteristics of a proportional relationship when graphed. (Lesson 1.4)</p> <p>Use a proportional relationship to solve multi-step problems. (Lesson 1.5)</p> <p>Use scale drawings to solve problems. (Lesson 1.6)</p>	<p>Relate right triangles to the coordinates of a line going through the origin, and compare persistent features of the triangles to persistent features of the line. (Lesson 5.1)</p> <p>Write the equation of a proportional relationship. (Lesson 5.2)</p> <p>Graph proportional relationships. Interpret unit rate as the slope of the graph of a proportional relationship. (Lesson 5.3)</p> <p>Demonstrate and interpret proportional relationships between quantities. (Lesson 5.4)</p>
<b>Ratio and Rate Reasoning</b>	<p>Use a table or double number lines to compare ratios and rates. (Lesson 5.3)</p> <p>Find and use unit rates to solve problems. (Lesson 5.4)</p> <p>Use equivalent ratios to solve real-world problems. (Lesson 5.5)</p>	<p>Use proportional reasoning to calculate percent increase or decrease. (Lesson 2.1)</p> <p>Calculate markups, markdowns, retail prices, and discount prices, and represent them using equations of the form <math>y = kx</math>. (Lesson 2.2)</p>	

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Ratio and Proportional Relationships			
Topic	Grade 6	Grade 7	Grade 8
<b>Ratio and Rate Reasoning</b>	<p>Apply ratio reasoning to make and interpret circle graphs. (Lesson 6.1)</p> <p>Use equivalent ratios to convert units within a measurement system. (Lesson 6.2)</p> <p>Use equivalent ratios to convert measurements between measurement systems. (Lesson 6.3)</p> <p>Write a ratio as a percent. (Lesson 7.1)</p> <p>Find a percent of a quantity. (Lesson 7.2)</p> <p>Use percents to solve real-world problems. (Lesson 7.3)</p>	<p>Represent taxes, gratuities, and total cost using equations in the form <math>y = kx</math> by applying proportional reasoning. Use the equations to solve problems and assess reasonableness of their answers. (Lesson 2.3)</p> <p>Use proportional reasoning to find total earnings for someone earning a base salary plus a commission. Use proportional reasoning to find fees (including fees as percent and as a constant) and assess the reasonableness of their answers. (Lesson 2.4)</p> <p>Use proportional reasoning to calculate simple interest, the total value of an account earning simple interest, and assess the reasonableness of their answers. (Lesson 2.5)</p>	
The Number System			
<b>Division with Fractions</b>	<p>Divide fractions with the same denominators. (Lesson 3.1)</p> <p>Divide fractions with unlike denominators. (Lesson 3.2)</p> <p>Divide mixed numbers. (Lesson 3.3)</p> <p>Divide fractions and mixed numbers. (Lesson 3.4)</p> <p>Use LCM and GCF to add, subtract, multiply, and divide fractions. (Lesson 3.5)</p>		



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Ratio and Proportional Relationships			
Topic	Grade 6	Grade 7	Grade 8
<b>Multi-Digit Decimal Operations</b>	<p>Add and subtract multi-digit decimals. (Lesson 4.1)</p> <p>Multiply multi-digit decimals. (Lesson 4.2)</p> <p>Divide multi-digit whole numbers using the standard algorithm. (Lesson 4.3)</p> <p>Divide multi-digit decimals using the standard algorithm. (Lesson 4.4)</p> <p>Solve real-world problems involving operations with multi-digit decimals. (Lesson 4.5)</p>		
<b>Rational and Irrational Numbers</b>	<p>Identify and interpret integers using a number line. (Lesson 1.1)</p> <p>Use number lines to compare and order integers. (Lesson 1.2)</p> <p>Find and use absolute value in real-world situations. (Lesson 1.3)</p> <p>Graph rational numbers on vertical and horizontal number lines. (Lesson 2.1)</p> <p>Compare rational numbers using a number line. (Lesson 2.2)</p> <p>Compare rational numbers using the GCF and LCM. (Lesson 2.3)</p> <p>Use strategies to order rational numbers. (Lesson 2.4)</p>	<p>Use a number line to add and subtract positive integers. (Lesson 3.1)</p> <p>Use a number line to add or subtract a negative integer and then assess their results for reasonableness. (Lesson 3.2)</p> <p>Use a number line to add and subtract rational numbers. (Lesson 3.3)</p> <p>Calculate the sum of two integers. (Lesson 4.1)</p> <p>Calculate the difference of two integers without using a number line. (Lesson 4.2)</p> <p>Fluently add and subtract rational numbers without a number line. (Lesson 4.3)</p> <p>Use properties to solve multi-step problems involving sums and differences of positive and negative rational numbers. (Lesson 4.4)</p> <p>Develop rules to find the product or quotient of two integers. (Lesson 5.1)</p> <p>Find the product of three or more signed rational numbers. (Lesson 5.2)</p> <p>Express quotients in different forms. (Lesson 5.3)</p> <p>Use products and quotients of rational numbers to solve problems. (Lesson 5.4)</p> <p>Apply properties and strategies to operate with rational numbers. (Lesson 6.1)</p> <p>Use estimation to check the reasonableness of answers when solving multi-step real-world problems. (Lesson 6.2)</p> <p>Solve multi-step problems involving a combination of rational number operations. (Lesson 6.3)</p>	<p>Determine if a number is rational. (Lesson 10.1)</p> <p>Order a list of real numbers consisting of both rational and irrational numbers. (Lesson 10.3)</p>

## Into Math Scope and Sequence - Grades 6–8

Expressions and Equations			
Topic	Grade 6	Grade 7	Grade 8
<b>Numerical and Algebraic Expressions</b>	<p>Write and evaluate numerical expressions. (Lesson 8.2)</p> <p>Write an algebraic expression to represent a situation. (Lesson 8.3)</p> <p>Interpret and evaluate an algebraic expression. (Lesson 8.4)</p> <p>Identify and generate equivalent expressions. (Lesson 8.5)</p>	<p>Use linear expressions to represent a quantity in different ways. (Lesson 7.1)</p> <p>Add, subtract, factor and expand linear expressions with rational coefficients. (Lesson 7.2)</p>	
<b>Equations</b>	<p>Model and write an equation to represent a situation. (Lesson 9.1)</p> <p>Solve equations that contain addition and subtraction. (Lesson 9.2)</p> <p>Solve equations that contain multiplication and division. (Lesson 9.3)</p> <p>Write and use equations to represent situations and solve problems. (Lesson 9.4)</p> <p>Represent an equation in a table or graph. (Lesson 10.1)</p> <p>Write an equation given a verbal description of a relationship. (Lesson 10.2)</p> <p>Write an equation using a table or graph. (Lesson 10.3)</p>	<p>Represent a real-world situation with an equation. (Lesson 7.3)</p> <p>Solve real-world situations using an equation. (Lesson 7.4)</p>	<p>Use algebraic properties to solve one-variable linear equations. (Lesson 3.1)</p> <p>Recognize and interpret linear equations that have no solution or infinitely many solutions. (Lesson 3.2)</p> <p>Solve and apply linear equations in one variable. (Lesson 3.3)</p> <p>Interpret the graphical representation of two linear equations. (Lesson 7.1)</p> <p>Solve a system of two linear equations by graphing. (Lesson 7.2)</p> <p>Use substitution to solve a system of two linear equations. (Lesson 7.3)</p> <p>Use elimination to solve a system of two linear equations. (Lesson 7.4)</p> <p>Recognize and interpret systems of two linear equations that have no solution or infinitely many solutions. (Lesson 7.5)</p> <p>Use systems of two linear equations to solve real-world problems. (Lesson 7.6)</p>

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Expressions and Equations			
Topic	Grade 6	Grade 7	Grade 8
<b>Inequalities</b>	Write and graph inequalities to represent real-world situations. (Lesson 9.5)	<p>Apply properties to solve one-step inequalities. (Lesson 8.1)</p> <p>Write two-step inequalities to represent situations. (Lesson 8.2)</p> <p>Write and solve two-step inequalities to solve problems. (Lesson 8.3)</p>	
<b>Integer Exponents</b>	Write and find the value of expressions involving exponents. (Lesson 8.1)		<p>Develop and use the properties of integer exponents. (Lesson 12.1)</p> <p>Express numbers using scientific notation. (Lesson 12.2)</p> <p>Compute with numbers written in scientific notation. (Lesson 12.3)</p>
<b>Roots</b>			Evaluate square and cube roots. (Lesson 10.2)
Functions			
Topic	Grade 6	Grade 7	Grade 8
<b>Functions</b>			<p>Students will visually display a relationship between two variables. (Lesson 6.1)</p> <p>Students will write the equation of a linear function. (Lesson 6.2)</p> <p>Interpret the slope and y-intercept of a line. (Lesson 6.3)</p> <p>Students will construct a function to model a linear relationship. (Lesson 6.4)</p> <p>Use tables, graphs, and equations to compare functions. (Lesson 6.5)</p> <p>Students will sketch and analyze a graph that exhibits the qualitative features of a function. (Lesson 6.6)</p>

## Into Math Scope and Sequence - Grades 6–8

Geometry			
<b>Angles and Angle Relationships</b>		Write and solve two-step equations involving unknown angle measurements. (Lesson 7.5)	Use angle relationships in triangles. (Lesson 4.1)  Identify whether two triangles are similar, given angle measures in the triangles, and find missing angle measures in triangles known to be similar. (Lesson 4.2)  Find missing angle measures when parallel lines are cut by a transversal. (Lesson 4.3)
<b>Area and Circumference</b>	Find the area of parallelograms. (Lesson 12.1)  Find the area of triangles. (Lesson 12.2)  Find the area of trapezoids. (Lesson 12.3)  Find the area of composite figures. (Lesson 12.4)	Derive and apply formulas for circumference. (Lesson 10.1)  Derive and apply formulas for the area of a circle. (Lesson 10.2)  Use known formulas to calculate the areas of composite figures. (Lesson 10.4)	
<b>Coordinate Plane</b>	Locate rational ordered pairs on the coordinate plane. (Lesson 11.1)  Solve problems by graphing and identifying polygons in the coordinate plane. (Lesson 11.2)  Use absolute value to find the distance between two points with the same $x$ - or $y$ -coordinate. (Lesson 11.3)  Find the perimeter and area of polygons on the coordinate plane. (Lesson 11.4)		
<b>Cross Sections</b>		Describe and analyze cross sections of circular solids that result in circles, rectangles, and triangles. (Lesson 10.3)  Identify and describe the two-dimensional figures resulting from horizontal and vertical cross sections of pyramids and prisms. (Lesson 11.1)	



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Geometry			
Topic	Grade 6	Grade 7	Grade 8
<b>Pythagorean Theorem</b>			<p>Prove and use the Pythagorean Theorem. (Lesson 11.1)</p> <p>Prove and apply the Pythagorean Theorem and its converse. (Lesson 11.2)</p> <p>Use the Pythagorean Theorem to solve real-world problems involving right triangles. (Lesson 11.3)</p> <p>Use the Pythagorean Theorem to determine distance between any two points in the coordinate plane. (Lesson 11.4)</p>
<b>Two-Dimensional Figures</b>		<p>Draw and construct circles and other figures using technology and freehand with given conditions. (Lesson 9.1)</p> <p>Determine how many triangles or quadrilaterals can be made given the side lengths: none, one, or many. (Lesson 9.2)</p> <p>Determine how many triangles can be made given the angle measures: none, one, or many. (Lesson 9.3)</p> <p>Draw, construct, and analyze two-dimensional figures to solve real-world problems. (Lesson 9.4)</p>	
<b>Collect, Describe, Display, Compare, and Summarize Data</b>	<p>Identify a statistical question and describe data. (Lesson 14.1)</p> <p>Use dot plots to display data. (Lesson 14.2)</p> <p>Make histograms and frequency tables to display data. (Lesson 14.3)</p> <p>Describe a set of data using mean, median, and mode. (Lesson 15.2)</p> <p>Choose an appropriate measure of center to describe a data set. (Lesson 15.3)</p> <p>Describe overall patterns in a data set. (Lesson 16.1)</p> <p>Use box plots to display data. (Lesson 16.2)</p> <p>Determine and use the mean absolute deviation of a set of data values. (Lesson 16.3)</p> <p>Summarize a data set using range, interquartile range, and mean absolute deviation. (Lesson 16.4)</p> <p>Describe the distribution of a data set collected to answer a statistical question. (Lesson 16.5)</p>	<p>Compare the center and spread of data displayed in dot plots. (Lesson 13.1)</p> <p>Compare data displayed in box plots, and use these comparisons to draw inferences about two populations. (Lesson 13.2)</p> <p>Use means and MADs to compare two populations. (Lesson 13.3)</p>	<p>Display and analyze data with two variables. (Lesson 8.1)</p> <p>Use trend lines to describe a linear relationship between two variables. (Lesson 8.2)</p> <p>Use scatter plots and trend lines to interpret linear data in context. (Lesson 8.3)</p> <p>Interpret data by constructing two-way frequency tables. (Lesson 9.1)</p> <p>Construct two-way relative frequency tables. (Lesson 9.2)</p> <p>Interpret and analyze data using two-way relative frequency tables. (Lesson 9.3)</p>

# Into Math Scope and Sequence - Grades 6–8

Statistics and Probability			
Topic	Grade 6	Grade 7	Grade 8
<b>Two-Dimensional Figures</b>		<p>Draw and construct circles and other figures using technology and freehand with given conditions. (Lesson 9.1)</p> <p>Determine how many triangles or quadrilaterals can be made given the side lengths: none, one, or many. (Lesson 9.2)</p> <p>Determine how many triangles can be made given the angle measures: none, one, or many. (Lesson 9.3)</p> <p>Draw, construct, and analyze two-dimensional figures to solve real-world problems. (Lesson 9.4)</p>	
<b>Collect, Describe, Display, Compare, and Summarize Data</b>	<p>Identify a statistical question and describe data. (Lesson 14.1)</p> <p>Use dot plots to display data. (Lesson 14.2)</p> <p>Make histograms and frequency tables to display data. (Lesson 14.3)</p> <p>Describe a set of data using mean, median, and mode. (Lesson 15.2)</p> <p>Choose an appropriate measure of center to describe a data set. (Lesson 15.3)</p> <p>Describe overall patterns in a data set. (Lesson 16.1)</p> <p>Use box plots to display data. (Lesson 16.2)</p> <p>Determine and use the mean absolute deviation of a set of data values. (Lesson 16.3)</p> <p>Summarize a data set using range, interquartile range, and mean absolute deviation. (Lesson 16.4)</p> <p>Describe the distribution of a data set collected to answer a statistical question. (Lesson 16.5)</p>	<p>Compare the center and spread of data displayed in dot plots. (Lesson 13.1)</p> <p>Compare data displayed in box plots, and use these comparisons to draw inferences about two populations. (Lesson 13.2)</p> <p>Use means and MADs to compare two populations. (Lesson 13.3)</p>	<p>Display and analyze data with two variables. (Lesson 8.1)</p> <p>Use trend lines to describe a linear relationship between two variables. (Lesson 8.2)</p> <p>Use scatter plots and trend lines to interpret linear data in context. (Lesson 8.3)</p> <p>Interpret data by constructing two-way frequency tables. (Lesson 9.1)</p> <p>Construct two-way relative frequency tables. (Lesson 9.2)</p> <p>Interpret and analyze data using two-way relative frequency tables. (Lesson 9.3)</p>





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Statistics and Probability			
Topic	Grade 6	Grade 7	Grade 8
<b>Measures of Center</b>	Understand how fair share and balance point are related to the mean. (Lesson 15.1)		
<b>Sampling</b>		<p>Understand populations, random samples, and how to select a representative sample. (Lesson 12.1)</p> <p>Use a random sample to make inferences about a population. (Lesson 12.2)</p> <p>Understand that repeatedly sampling a population with the same size random sample will cause the data to vary. (Lesson 12.3)</p>	
<b>Probability</b>		<p>Describe the likelihood of an event in terms of a probability between 0 and 1. (Lesson 14.1)</p> <p>Find the experimental probability of an event. (Lesson 14.2)</p> <p>Determine the probability of compound events. (Lesson 14.3)</p> <p>Use experimental probability and proportional reasoning to make predictions about real-world scenarios. (Lesson 14.4)</p> <p>Find the theoretical probability of simple events and compare theoretical probability to experimental probability. (Lesson 15.1)</p> <p>Find and compare theoretical probabilities of compound events using a table, a tree diagram, and an organized list. (Lesson 15.2)</p> <p>Use theoretical probability and proportional reasoning to make a prediction about a simple or compound event, and make a qualitative prediction. (Lesson 15.3)</p> <p>Design and perform a simulation to test the probability of a simple event or a compound event. (Lesson 15.4)</p>	





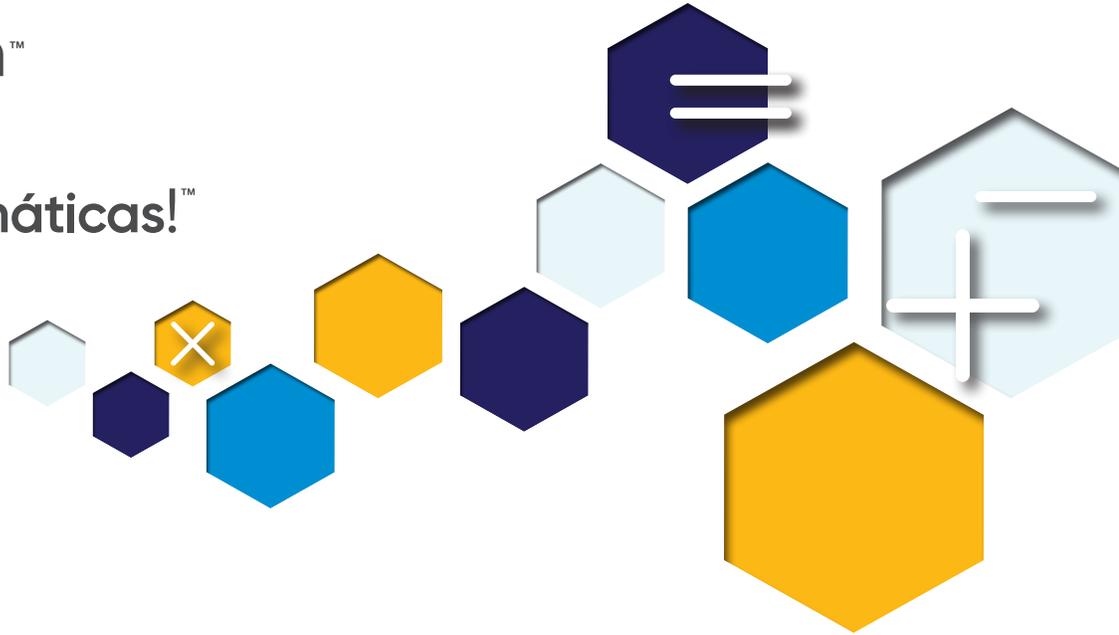




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