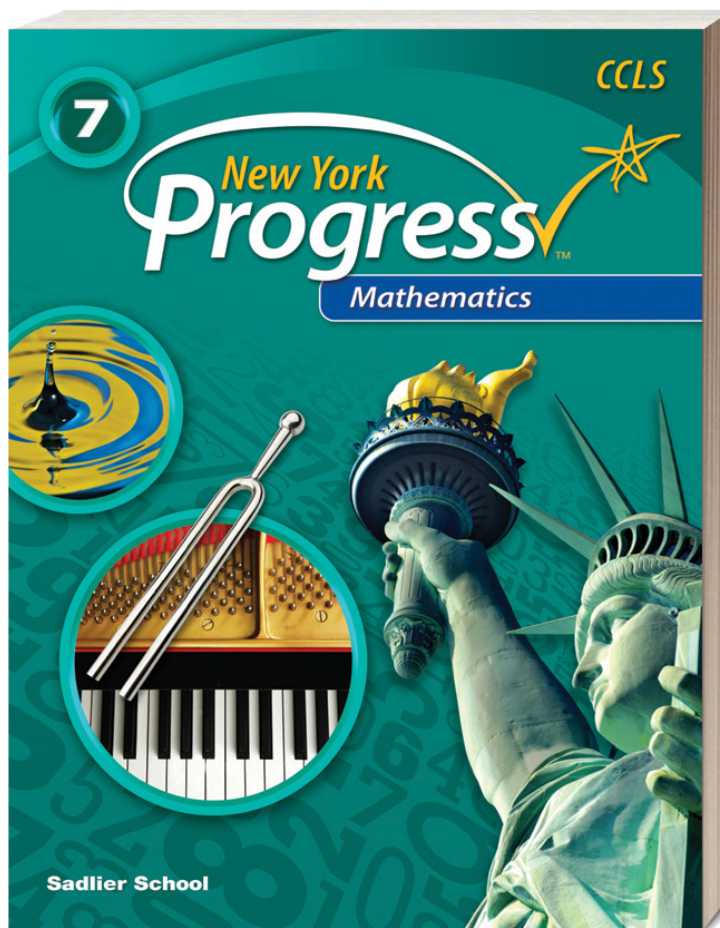


New York Progress Mathematics

Correlation to the New York State Next Generation
Mathematics Learning Standards (2017) UPDATED JUNE 2019

Grade 7



Learn more at www.sadlier.com/school/mathematics

NY-7.RP RATIO AND PROPORTIONAL REASONING

Grade 7 Content Standards	<i>New York Progress Mathematics, Grade 7</i>
---------------------------	---

Analyze proportional relationships and use them to solve real-world and mathematical problems.

<p>NY-7.RP.1 Compute unit rates associated with ratios of fractions.</p> <p>e.g., If a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the rate as the complex fraction $\frac{\frac{1}{2}}{\frac{1}{4}}$ miles per hour, equivalently 2 miles per hour with 2 being the unit rate.</p> <p>Note: Problems may include ratios of lengths, areas, and other quantities measured in like or different units, including across measurement systems.</p>	<p>Lesson 1 Compute Unit Rates—pp. 10-17</p>
<p>NY-7.RP.2 Recognize and represent proportional relationships between quantities.</p>	
<p>NY-7.RP.2a Decide whether two quantities are in a proportional relationship.</p> <p>Note: Strategies include but are not limited to the following: testing for equivalent ratios in a table and/or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p>	<p>Lesson 2 Identify Proportional Relationships—pp. 18-25</p>
<p>NY-7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p>	<p>Lesson 3 Identify the Constant of Proportionality—pp. 26-33</p>
<p>NY-7.RP.2c Represent a proportional relationship using an equation.</p> <p>e.g., If total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</p>	<p>Lesson 4 Represent Proportional Relationships with Equations—pp. 34-41</p>
<p>NY-7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p>	<p>Lesson 5 Interpret Graphs of Proportional Relationships—pp. 42-49</p>

S and Sadlier® are registered trademarks of William H. Sadlier, Inc. All rights reserved. May be reproduced for educational use (not commercial use).

NY-7.RP RATIO AND PROPORTIONAL REASONING

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
<p>NY-7.RP.3 Use proportional relationships to solve multistep ratio and percent problems.</p> <p>Note: Examples of percent problems include: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and percent error.</p>	<p>Lesson 6 Problem Solving: Multi-step Ratio Problems—pp. 50–57</p> <p>Lesson 7 Problem Solving: Multi-step Percent Problems—pp. 58–65</p>

NY-7.NS THE NUMBER SYSTEM

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
<p>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p>	
<p>NY-7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers. Represent addition and subtraction on a horizontal or vertical number line.</p>	
<p>NY-7.NS.1a Describe situations in which opposite quantities combine to make 0.</p>	<p>Lesson 8 Understand Addition of Integers—pp. 72–79</p>
<p>NY-7.NS.1b Understand addition of rational numbers; $p + q$ is the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p>	<p>Lesson 8 Understand Addition of Integers—pp. 72–79</p>
<p>NY-7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p>	<p>Lesson 9 Understand Subtraction of Integers—pp. 80–87</p>

S and Sadlier® are registered trademarks of William H. Sadlier, Inc. All rights reserved. May be reproduced for educational use (not commercial use).

NY-7.NS THE NUMBER SYSTEM	
Grade 7 Content Standards	New York Progress Mathematics, Grade 7
NY-7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.	Lesson 10 Add and Subtract Rational Numbers—pp. 88–95
NY-7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	
NY-7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	Lesson 11 Understand Multiplication of Integers—pp. 96–103
NY-7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(\frac{p}{q}) = \frac{-p}{q} = \frac{p}{-q}$. Interpret quotients of rational numbers by describing real-world contexts.	Lesson 12 Understand Division of Integers—pp. 104–111
NY-7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.	Lesson 13 Multiply and Divide Rational Numbers—pp. 112–119
NY-7.NS.2d Convert a fraction to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	Lesson 14 Convert Rational Numbers to Decimal Form—pp. 120–127

NY-7.NS THE NUMBER SYSTEM

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
<p>NY-7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p> <p>Note: Computations with rational numbers extend the rules for manipulating fractions to complex fractions limited to $\frac{a}{\frac{b}{\frac{c}{d}}}$ where $a, b, c,$ and d are integers and $b, c,$ and $d \neq 0$.</p>	<p>Lesson 15 Apply Rational-Number Operations—pp. 128-135</p> <p>Lesson 13 Multiply and Divide Multi-digit Decimals—pp. 112-119</p>

NY-7.EE EXPRESSIONS, EQUATIONS, AND INEQUALITIES

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
---------------------------	--

Use properties of operations to generate equivalent expressions.

<p>NY-7.EE.1 Add, subtract, factor, and expand linear expressions with rational coefficients by applying the properties of operations.</p>	<p>Lesson 16 Combine Like Terms to Simplify Linear Expressions—pp. 142-149</p> <p>Lesson 17 Expand and Factor Linear Expressions—pp. 150-157</p>
<p>NY-7.EE.2 Understand that rewriting an expression in different forms in real-world and mathematical problems can reveal and explain how the quantities are related.</p> <p>e.g., $a + 0.05a$ and $1.05a$ are equivalent expressions meaning that “increase by 5%” is the same as “multiply by 1.05.”</p>	<p>Lesson 16 Combine Like Terms to Simplify Linear Expressions—pp. 142-149</p> <p>Lesson 17 Expand and Factor Linear Expressions—pp. 150-157</p>

Solve real-life and mathematical problems using numerical and algebraic expressions, equations, and inequalities.

<p>NY-7.EE.3 Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools</p> <p style="text-align: right;"><i>continued</i></p>	<p>Lesson 18 Problem Solving: Multi-step Problems with Rational Numbers—pp. 158-165</p>
--	--

NY-7.EE EXPRESSIONS, EQUATIONS, AND INEQUALITIES	
Grade 7 Content Standards	<i>New York Progress Mathematics, Grade 7</i>
<p>strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>e.g.,</p> <ul style="list-style-type: none"> • If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. • If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation. 	
<p>NY-6.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>Note: Solving equations that contain variables on both sides is not an expectation in grade 7.</p>	
<p>NY-7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p>e.g., 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>Lesson 19 Solve Linear Equations—pp. 166-173</p> <p>Lesson 20 Problem Solving: Linear Equations—pp. 174-181</p>

NY-7.EE EXPRESSIONS, EQUATIONS, AND INEQUALITIES

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
<p>NY-7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q \leq r$, or $px + q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality on the number line and interpret it in the context of the problem.</p> <p>e.g., As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p> <p>Note: The words <i>leading to</i> in the standard may require students to simplify or combine like terms on the same side of the equation before it is in the form stated in the standard.</p>	<p>Lesson 21 Solve Linear Inequalities—pp. 182–189</p> <p>Lesson 22 Problem Solving: Linear Inequalities—pp. 190–197</p>

NY-7.G GEOMETRY

Grade 7 Content Standards	New York Progress Mathematics, Grade 7
---------------------------	--

Draw, construct, and describe geometrical figures and describe the relationships between them.

<p>NY-7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	<p>Lesson 23 Use Scale Drawings to Solve Problems—pp. 204–211</p> <p>Lesson 31 Find Areas of Parallelograms and Triangles—pp. 268–275</p> <p>Lesson 32 Find Areas of Polygons—pp. 276–283</p>
<p>NY-7.G.2 Draw triangles when given measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>Note: Create triangles through the use of freehand drawings, materials (scaffolds may include: pipe cleaners, Legos®, and toothpicks), rulers, protractors, and/or technology.</p>	<p>Lesson 24 Draw Shapes that Meet Given Conditions—pp. 212–219</p> <p>Lesson 25 Construct Triangles Using Both Side Lengths and Angle Measures—pp. 220–227</p>

S and Sadlier® are registered trademarks of William H. Sadlier, Inc. All rights reserved. May be reproduced for educational use (not commercial use).

NY-7.G GEOMETRY	
Grade 7 Content Standards	<i>New York Progress Mathematics, Grade 7</i>
<p>NY-7.G.3 Describe the two-dimensional shapes that result from slicing three-dimensional solids parallel or perpendicular to the base.</p> <p>Note: Focus of standard is on plane sections resulting from the slicing of right rectangular prisms and right rectangular pyramids.</p>	<p>Lesson 26 Slice Three-Dimensional Figures—pp. 228–235</p>
<p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</p>	
<p>NY-7.G.4 Apply the formulas for the area and circumference of a circle to solve problems.</p> <p>Note: Students in grade 7 are not expected to calculate the radius of a circle given its area.</p>	<p>Lesson 27 Use Formulas for Area and Circumference of Circles—pp. 236–243</p>
<p>NY-7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p> <p>Note: Students in grade 7 are limited to solving equations that involve linear expressions on one side of the equation.</p>	<p>Lesson 28 Use Equations to Find Unknown Angle Measures—pp. 244–251</p>
<p>NY-7.G.6 Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles and trapezoids.</p> <p>Solve surface area problems involving right prisms and right pyramids composed of triangles and trapezoids.</p> <p>Note: The inclusive definition of a trapezoid will be utilized, which defines a trapezoid as “A quadrilateral with at least one pair of parallel sides.” (This definition includes parallelograms and rectangles.)</p> <p>Find the volume of right triangular prisms, and solve volume problems involving three-dimensional objects composed of right rectangular prisms.</p> <p>Note: Right prisms include cubes.</p>	<p>Lesson 29 Problem Solving: Area, Volume, and Surface Area—pp. 252–259</p>

NY-7.SP STATISTICS AND PROBABILITY

Grade 7 Content Standards	<i>New York Progress Mathematics, Grade 7</i>
---------------------------	---

Draw informal comparative inferences about two populations.

<p>NY-7.SP.1</p> <p>NY-7.SP.1 Construct and interpret box-plots, find the interquartile range, and determine if a data point is an outlier.</p> <p>Note: Students in grade 7 are <i>not</i> expected to <i>construct</i> box-plots that include outliers in the data, but students <i>are</i> expected to <i>interpret</i> box-plots that may contain outliers.</p>	<p>Lesson 32 Use Visual Overlap to Compare Distributions (Using box plots to compare data sets)—pp. 282–289</p> <p><i>See also Grade 6</i></p> <p>Lesson 37 Find the Median and Interquartile Range—pp. 322–329</p> <p>Lesson 39 Display Numerical Data (Box plots)—pp. 338–345</p>
<p>NY-7.SP.3 Informally assess the degree of visual overlap of two quantitative data distributions.</p>	<p>Lesson 32 Use Visual Overlap to Compare Distributions—pp. 282–289</p>
<p>NY-7.SP.4 Use measures of center and measures of variability for quantitative data from random samples or populations to draw informal comparative inferences about the populations.</p> <p>Note: Measures of center are mean, median, and mode. The measures of variation include range and the interquartile range.</p>	<p>Lesson 33 Use Sample Statistics to Compare Populations (measures of center and variability/compare random samples)—pp. 290–297</p> <p><i>See also Grade 6</i></p> <p>Lesson 38 Find the Mean and Mean Absolute Deviation (measure of center)—pp. 330–337</p> <p>Lesson 40 Summarize Numerical Data (measures of center)—pp. 346–353</p>

NY-7.SP STATISTICS AND PROBABILITY

Grade 7 Content Standards	<i>New York Progress Mathematics, Grade 7</i>
---------------------------	---

Investigate chance processes and develop, use, and evaluate probability models.

<p>NY-7.SP.8 Find probabilities of compound events using organized lists, sample space tables, tree diagrams, and simulation.</p>	
<p>NY-7.SP.8a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p>	<p>Lesson 38 Find Probabilities of Compound Events—pp. 330–337</p>
<p>NY-7.SP.8b Represent sample spaces for compound events using methods such as organized lists, sample space tables, and tree diagrams.</p> <p>For an event described in everyday language, identify the outcomes in the sample space which compose the event.</p> <p>Note: “rolling double sixes”</p>	<p>Lesson 39 Represent Sample Spaces for Compound Events—pp. 338–345</p>
<p>NY-7.SP.8c Design and use a simulation to generate frequencies for compound events.</p> <p>Note: Use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</p>	<p>Lesson 40 Simulate Compound Events—pp. 346– 353</p>