

New York State Next Generation Mathematics Learning Standards

Grade 6 Crosswalk

Ratio and Proportional Reasoning

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Understand ratio concepts and use ratio reasoning to solve problems.</p>	<p>6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>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.” “For every vote candidate A received, candidate C received nearly three votes.”</i></p>	<p>NY-6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>e.g., “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.” “For every vote candidate A received, candidate C received three votes.”</p>
	<p>6.RP.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. <i>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.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”</i></p> <p><u>Note:</u> Expectations for unit rates in this grade are limited to non-complex fractions.</p>	<p>NY-6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$ (b not equal to zero), and use rate language in the context of a ratio relationship.</p> <p>e.g., “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there are $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”</p> <p><u>Note:</u> Expectations for unit rates in this grade are limited to non-complex fractions.</p>
	<p>6.RP.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.</p>	<p>NY-6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems.</p> <p><u>Note:</u> Strategies may include but are not limited to the following: tables of equivalent ratios, tape diagrams, double number lines, and equations.</p>

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<p>Understand ratio concepts and use ratio reasoning to solve problems.</p>	<p>6.RP.3a 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>NY-6.RP.3a 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>6.RP.3b 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>NY-6.RP.3b Solve unit rate problems.</p> <p>e.g., 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? What is the unit rate?</p> <p><u>Note:</u> Problems may include unit pricing and constant speed.</p>
	<p>6.RP.3c 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.</p>	<p>NY-6.RP.3c Find a percent of a quantity as a rate per 100. Solve problems that involve finding the whole given a part and the percent, and finding a part of a whole given the percent.</p> <p>e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity.</p>
	<p>6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	<p>NY-6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p><u>Note:</u> Conversion of units occur within a given measurement system, not across different measurement systems.</p>

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<p>Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</p>	<p>6.NS.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. <i>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 $3/4$ mi and area $1/2$ square mi?</i></p>	<p>NY-6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.</p> <p><u>Note:</u> Strategies may include but are not limited to the following: using visual fraction models, a standard algorithm, and equations to represent the problem.</p> <p>e.g., Create a story context for $(\frac{2}{3}) \div (\frac{3}{4})$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(\frac{2}{3}) \div (\frac{3}{4}) = \frac{8}{9}$ because $\frac{3}{4}$ of $\frac{8}{9}$ is $\frac{2}{3}$.</p> <p>In general, $(\frac{a}{b}) \div (\frac{c}{d}) = \frac{ad}{bc}$.</p> <p>e.g.,</p> <ul style="list-style-type: none"> • How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? • How many $\frac{3}{4}$ cup servings are in $\frac{2}{3}$ of a cup of yogurt? • How wide is a rectangular strip of land with length $\frac{3}{4}$ mi and area $\frac{1}{2}$ square mi?
<p>Compute fluently with multi-digit numbers and find common factors and multiples.</p>	<p>6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.</p>	<p>NY-6.NS.2 Fluently divide multi-digit numbers using a standard algorithm.</p>
	<p>6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>	<p>NY-6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.</p>

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<p>Compute fluently with multi-digit numbers and find common factors and multiples.</p>	<p>6.NS.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. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i></p>	<p>NY-6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100. 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 other than 1. Find the least common multiple of two whole numbers less than or equal to 12.</p> <p>e.g., Express $36 + 8$ as $4(9 + 2)$.</p>
<p>Apply and extend previous understandings of numbers to the system of rational numbers.</p>	<p>6.NS.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.</p>	<p>NY-6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge.</p>
	<p>6.NS.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.</p>	<p>NY-6.NS.6 Understand a rational number as a point on the number line. Use number lines and coordinate axes to represent points on a number line and in the coordinate plane with negative number coordinates.</p>

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<p>Apply and extend previous understandings of numbers to the system of rational numbers.</p>	<p>6.NS.6a 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.</p>	<p>NY-6.NS.6a 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, and that 0 is its own opposite.</p> <p>e.g., With the number 3, $-(-3) = 3$</p>
	<p>6.NS.6b 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>NY-6.NS.6b 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>6.NS.6c 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>	<p>NY-6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line. Find and position pairs of integers and other rational numbers on a coordinate plane.</p>
	<p>6.NS.7 Understand ordering and absolute value of rational numbers.</p>	<p>NY-6.NS.7 Understand ordering and absolute value of rational numbers.</p>

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<p>Apply and extend previous understandings of numbers to the system of rational numbers.</p>	<p>6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>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.</i></p>	<p>NY-6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line.</p> <p>e.g., Interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</p>
	<p>6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^\circ C > -7^\circ C$ to express the fact that $-3^\circ C$ is warmer than $-7^\circ C$.</i></p>	<p>NY-6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p>e.g., Write $-3^\circ C > -7^\circ C$ to express the fact that $-3^\circ C$ is warmer than $-7^\circ C$.</p>
	<p>6.NS.7c 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. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i></p>	<p>NY-6.NS.7c 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.</p> <p>e.g., For an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</p>
	<p>6.NS.7d Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i></p>	<p>NY-6.NS.7d Distinguish comparisons of absolute value from statements about order.</p> <p>e.g., Someone with a balance of \$100 in their bank account has more money than someone with a balance of $-\\$1000$, because $100 > -1000$. But, the second person's debt balance is much greater than the first person's credit balance because $-1000 > 100$.</p>

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Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Apply and extend previous understandings of numbers to the system of rational numbers.</p>	<p>6.NS.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.</p>	<p>NY-6.NS.8 Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>

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Expressions and Equations (Inequalities)

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Apply and extend previous understandings of arithmetic to algebraic expressions.</p>	<p>6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.</p>	<p>NY-6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.</p>
	<p>6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.</p>	<p>NY-6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.</p>
	<p>6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers. <i>For example, express the calculation “Subtract y from 5” as $5 - y$.</i></p>	<p>NY-6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers. e.g., Express the calculation “Subtract y from 5” as $5 - y$.</p>
	<p>6.EE.2b 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. <i>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.</i></p>	<p>NY-6.EE.2b Identify parts of an expression using mathematical terms (term, coefficient, sum, difference, product, factor, and quotient); view one or more parts of an expression as a single entity. 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>6.EE.2c 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). <i>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 $s = \frac{1}{2}$.</i></p>	<p>NY-6.EE.2c Evaluate expressions given specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order (Order of Operations). e.g., Use the formulas $V = s^3$ and $SA = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$. Note: Expressions may or may not include parentheses. Nested grouping symbols are not included.</p>

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Expressions and Equations (Inequalities)

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Apply and extend previous understandings of arithmetic to algebraic expressions.</p>	<p>6.EE.3 Apply the properties of operations to generate equivalent expressions. <i>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 $3y$.</i></p>	<p>NY-6.EE.3 Apply the properties of operations to generate equivalent expressions.</p> <p>e.g., 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>
	<p>6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i></p>	<p>NY-6.EE.4 Identify when two expressions are equivalent.</p> <p>e.g., The expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y represents.</p>
<p>Reason about and solve one-variable equations and inequalities.</p>	<p>6.EE.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.</p>	<p>NY-6.EE.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.</p>
	<p>6.EE.6 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>	<p>NY-6.EE.6 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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Expressions and Equations (Inequalities)

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<p>Reason about and solve one-variable equations and inequalities.</p>	<p>6.EE.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.</p>	<p>NY-6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$; $x - p = q$; $px = q$; and $\frac{x}{p} = q$ for cases in which p, q and x are all nonnegative rational.</p> <p><u>Note:</u> For the $\frac{x}{p} = q$ case, $p \neq 0$.</p>
	<p>6.EE.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.</p>	<p>NY-6.EE.8 Write an inequality of the form $x > c$, $x \geq c$, $x \leq c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on a number line.</p>
<p>Represent and analyze quantitative relationships between dependent and independent variables.</p>	<p>6.EE.9 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>	<p>NY-6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another.</p> <p>Given a verbal context and an equation, identify 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.</p> <p>e.g., In a problem involving motion at constant speed, list and graph ordered pairs of distances and times.</p> <p>e.g., Given the equation $d = 65t$ to represent the relationship between distance and time, identify t as the independent variable and d as the dependent variable.</p>

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Geometry

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Solve real-world and mathematical problems involving area, surface area and volume.</p>	<p>6.G.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.</p>	<p>NY-6.G.1 Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. Apply these techniques in the context of solving real-world and mathematical problems.</p> <p><u>Note:</u> 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.)</p>
	<p>6.G.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.</p>	<p>NY-6.G.2 Find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>
	<p>6.G.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.</p>	<p>NY-6.G.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.</p>

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Geometry

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Solve real-world and mathematical problems involving area, surface area and volume.</p>	<p>6.G.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.</p>	<p>NY-6.G.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.</p> <p><u>Note:</u> Three-dimensional figures include only right rectangular prisms, right rectangular pyramids, and right triangular prisms. When finding surface areas, all necessary measurements will be given.</p>
		<p>NY-6.G.5 Use area and volume models to explain perfect squares and perfect cubes.</p>

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Statistics and Probability

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Develop an understanding of statistical variability.</p>	<p>6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>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.</i></p>	<p>NY-6. SP.1a Recognize that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>e.g., “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.</p>
		<p>NY-6. SP.1b Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.</p> <p><u>Note:</u> Students need to understand that data are generated with respect to particular contexts or situations and can be used to answer questions about those contexts or situations.</p>
		<p>NY-6. SP.1c Understand that the method and sample size used to collect data for a particular question is intended to reduce the difference between a population and a sample taken from the population so valid inferences can be drawn about the population. Generate multiple samples (or simulated samples) of the same size to recognize the variation in estimates or predictions.</p> <p><u>Note:</u> Examples of acceptable methods to obtain a representative sample from a population include, but are not limited to, a simple random sample for a given population or a systematic random sample for an unknown population. Examples of unacceptable methods of sampling include, but are not limited to, online polls and convenience sampling because they introduce bias and are not representative of the population.</p>

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Statistics and Probability

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<p>Develop an understanding of statistical variability.</p>	<p>6.SP.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.</p>	<p>NY-6. SP.2 Understand that a set of quantitative data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> • Students need to determine and justify the most appropriate graph to display a given set of data (histogram, dot plot). • Students extend their knowledge of symmetric shapes, to describe data displayed in dot plots and histograms in terms of symmetry. They identify clusters, peaks and gaps, recognizing common shapes and patterns in these displays of data distributions, and ask why a distribution takes on a particular shape for the context of the variable being considered.
	<p>6.SP.3 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.</p>	<p>NY-6. SP.3 Recognize that a measure of center for a quantitative 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.</p> <p><u>Note:</u> Measures of center are mean, median, and mode. The measure of variation is the range.</p>
<p>Summarize and describe distributions.</p>	<p>6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p>	<p>NY-6. SP.4 Display quantitative data in plots on a number line, including dot plots and histograms.</p>
	<p>6.SP.5 Summarize numerical data sets in relation to their context, such as by:</p>	<p>NY-6. SP.5 Summarize quantitative data sets in relation to their context.</p>
	<p>6.SP.5a Reporting the number of observations.</p>	<p>NY-6. SP.5a Report the number of observations.</p>
	<p>6.SP.5b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.</p>	<p>NY-6. SP.5b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.</p>

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<p>Summarize and describe distributions.</p>	<p>6.SP.5c 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.</p>	<p>NY-6. SP.5c Calculate range and measures of center, as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.</p> <p><u>Note:</u> Measures of center are mean, median, and mode. The measure of variation is the range. Role of outliers should be discussed, but no formula required.</p>
	<p>6.SP.5d 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.</p>	<p>NY-6. SP.5d Relate the range and the choice of measures of center to the shape of the data distribution and the context in which the data were gathered.</p> <p><u>Note:</u> Measures of center are mean, median, and mode. The measure of variation is the range.</p>
<p>Investigate chance processes and develop, use and evaluate probability models.</p>		<p>NY-6. SP.6 Understand that the probability of a chance event is a number between 0 and 1 inclusive, that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p>
		<p>NY-6. SP.7 Approximate the probability of a simple event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.</p> <p>e.g., When rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</p> <p><u>Note:</u> Compound events are introduced in grade 7.</p>

New York State Next Generation Mathematics Learning Standards

Grade 6 Crosswalk

Statistics and Probability

Cluster	NYS P-12 CCLS	NYS Next Generation Learning Standard
<p>Investigate chance processes and develop, use and evaluate probability models.</p>		<p>NY-6. SP.8 Develop a probability model and use it to find probabilities of simple events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p>
		<p>NY-6. SP.8a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of simple events.</p> <p>e.g., The probability of rolling a six-sided fair number cube and landing on a 2 is $\frac{1}{6}$. The probability of landing on an even number is $\frac{3}{6}$.</p>
		<p>NY-6. SP.8b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p> <p>e.g., Find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?</p>