New York State
Next Generation Learning Standards
and
The Common Core State Standards

In September 2017, New York State officially adopted the Next Generation Learning Standards. Schools in the state will be expected to have fully implemented the standards by 2020.

Much of the work of the Math Collective has the coherence of the Common Core State Standards at its core, so we were happy to find that the differences between the two sets of standards are minor.

Below you will find our notes on the differences between the two standards. Words in red highlight changes from the Common Core to the Next Generation Standards. **Bold sentences** indicate notes on what we consider significant changes that could have an impact on curricular decisions. *Only standards that have changed are included in this document.*

We have not included other changes, like "Within Grade Connections" or "Notes on Manipulatives," though we recommend that educators read and consider them, particularly the "Note on *Fluency* with Facts." In some places, definitions or explanations that had been included in glossaries in the Common Core are now located with the standards themselves in Next Generation standards. We have not included these changes in this document but have noted the positioning switch.

Kindergarten

Next Generation	Common Core	Significance
NY-K.CC.2 Count to 100 by ones beginning from any given number (instead of beginning at 1)	K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	Clarification of the standard, setting the limit of counting forward to 100.
NY-K.CC.4d Understand the concept of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers.	K.CC.4d Develop understanding of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers.	Clarification of expectation in the new standard. (Note: This standard is part of the changes New York was allowed to make before adoption of the Common Core.)
NY-K.CC.5a Answer counting questions using as many as 20 objects arranged in a line, a rectangular array, and a circle.	K.CC.5a Count to answer "how many?" questions about as many as 20 things arranged in a line, a	Grammatical clarification in the new standards. The second independent clause in

Answer counting questions using as many as 10 objects in a scattered configuration. e.g., “How many _____ are there?”	rectangular array, or a circle, or as many as 10 things in a scattered configuration.	the Common Core standard (“Given a number from 1–20, count out that many objects.”) is made into its own standard in the new standards.
NY-K.OA.1 Represent addition and subtraction using objects, fingers, pennies, drawings, sounds, acting out situations, verbal explanations, expressions, equations, or other strategies.	K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	**Removed mental images in the new standard and added "pennies," a concrete representation. This seems connected to the early-grade standards on coins that New York State added before its adoption of the Common Core, and that have been added to Kindergarten in the new standards.**
NY-K.OA.4 Find the number that makes 10 when given a number from 1 to 9. e.g., using objects or drawings Record the answer with a drawing or equation.	K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	Grammatical clarification in the new standards.
NY-K.OA.6 Duplicate, extend, and create simple patterns using concrete objects.	N/A	**New standard.**
NY-K.MD.1 Describe measurable attributes of an object(s), such as length or weight, using appropriate vocabulary.	K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Removes explicit idea that the same object can have different measurable attributes, though this is still an important question for students to consider.
NY-K.MD.4 Explore coins (pennies, nickels, dimes, and quarters) and begin identifying pennies and dimes.	N/A	**New standard. Coins are not present in the Common Core kindergarten standards and have been added to the Next Generation Learning Standards to connect with First Grade standard.**
NY-K.G (heading 1) Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	K.G (heading A) Identify and describe shapes.	**New standard heading clarifies which shapes.**
NY-K.G (heading 2) Analyze, compare, sort, and compose shapes.	K.G (heading B) Analyze, compare, create, and compose shapes.	**The new standard asks students to “sort” rather than “create” shapes.**

NY-K.G.5 Model objects in their environment by building and/or drawing shapes. e.g., using blocks to build a simple representation in the classroom	K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	**Change in emphasis from component parts of shapes to representation.**
NY-K.G.6 Compose larger shapes from simple shapes.	K.G.6 Compose simple shapes to form larger shapes.	Grammatical clarification in the new standards.

First Grade

Next Generation	Common Core	Significance
NY-1.OA.1 Use addition and subtraction within 20 to solve one step word problems involving situations of adding to, taking from, putting together, taking apart, and/or comparing, with unknowns in all positions. Note: Problems should be *represented* using objects, drawings, *and* equations with a symbol for the unknown number. Problems should be *solved* using objects *or* drawings, and equations.	1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Clarification in the new standard. Chart of problem types provided, highlighting level of difficulty and when different types should be mastered. This chart is from the Operations and Algebraic Thinking Progressions document and the last two columns are reversed from a similar (but non-highlighted) chart in the appendix of the original Common Core.
NY-1.OA.4 Understand subtraction as an unknown-addend problem within 20.	1.OA.4 Understand subtraction as an unknown-addend problem.	Clarification in the new standard.
NY-1.OA.6a Add and subtract within 20. Use strategies such as: counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; creating equivalent but easier or known sums.	1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship	Clarification in the new standard, including illustration. Fluency is made its own standard in the new standards.

6b. Fluently add and subtract within 10.	between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	
NY-1.OA.8 Determine the unknown whole number in an addition or subtraction equation with the unknown in all positions.	1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	Clarification, though some meaning around the mathematical relationships expressed may be lost in the change.
NY-1.MD.2 Measure the length of an object using same-size "length units" placed end to end with no gaps or overlaps. Express the length of an object as a whole number of "length units."	1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps*.	Clarification in the new standard, though some meaning around the mathematical relationships expressed may be lost in the change, by replacing the word "express" with "measure."
NY-1.MD.3a Tell and write time in hours and half-hours using analog and digital clocks. Develop an understanding of common terms, such as, but not limited to, o'clock and half past. 3b.Recognize and identify coins (penny, nickel, dime, and quarter) and their value and use the cent symbol (¢) appropriately. 3c. Count a mixed collection of dimes and pennies and determine the cent value (total not to exceed 100 cents).	1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks. Recognize and identify coins, their names, and their value.	**Time standard is given greater detail.** **Clarification of coins standards and additional standard on counting collection of coins. (Note: Coins are part of the changes New York State made before adoption of the Common Core.)**
NY-1.G.1 Distinguish between defining attributes for a wide variety of shapes versus non-defining attributes; build and/or draw shapes	1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation,	Clarification in the new standard; added "wide variety of shapes," perhaps to emphasize that triangles and rectangles come in many shapes, not just equilateral triangles

to possess defining attributes. e.g. • A defining attribute may include, but is not limited to: triangles are closed and three-sided. • Non-defining attributes include, but are not limited to: color, orientation, and overall size.	overall size); build and draw shapes to possess defining attributes.	and golden mean rectangle s (where the longer sides are about twice the shorter sides).
NY-1.GA.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. Note: Students do not need to learn formal names such as "right rectangular prism."	1.GA.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	Clarification in the new standard.

Second Grade

Next Generation	Common Core	Significance
Grade 2 Overview 4. Through their learning in the ***Geometry*** domain, students: • describe and classify shapes as polygons or non-polygons; • investigate, describe, and reason about decomposing and combining shapes to make other shapes; and • draw, partition, and analyze two-dimensional shapes to develop a foundation for understanding area, congruence, similarity, and fractions in later grades.	Grade 2 Introduction 4. Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.	**The language of polygons is new to second grade. Focus is clarified to two-dimensional shapes, so the volume connection is removed. Symmetry connection is removed and replaced with a connection to fractions. Examining sides and angles is removed because that idea is covered in first grade standards.**
NY-2.OA.1a Use addition and subtraction within 100 to solve one-step word problems	2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word	Clarification in the new standard. Chart of problem types provided,

involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions. e.g., using drawings and equations with a symbol for the unknown number to represent the problem. NY-2.OA.1b Use addition and subtraction within 100 to develop an understanding of solving two-step problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.	problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	highlighting level of difficulty and when different types should be mastered. This chart is from the Operations and Algebraic Thinking Progressions document and the last two columns are reversed from a similar (but non-highlighted) chart in the appendix of the Common Core document.
NY-2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Note on and/or: Students should be taught to use strategies based on place value, properties of operations, and the relationship between addition and subtraction; however, when solving any problem, students can choose any strategy.	2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Clarification in new standards, explaining that “and/or” does not indicate that it is acceptable to teach only one strategy.
NY-2.NBT.7a Add and subtract within 1000, using • concrete models or drawings, and • strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method. NY-2.NBT.7b Understand that in adding or subtracting up to three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes	2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	Grammatical/formatting clarification in the new standard. The note explains the reasoning behind the formatting clarification.

it is necessary to compose or decompose tens or hundreds. Note on and/or: Students should be taught to use concrete models and drawings; as well as strategies based on place value, properties of operations, and the relationship between addition and subtraction. When solving any problem, students can choose to use a concrete model or a drawing. Their strategy must be based on place value, properties of operations, and/or the relationship between addition and subtraction.		
NY-2.NBT.7b Understand that in adding or subtracting up to three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds.	2.NBT.7 Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	The addition makes clear that second grade students are not working above 1000, and makes clearer this general quality of our place value system. However, the language may make it seem like this quality is unique to numbers with 3 digits or fewer."
NY-2.MD.1 Measure the length of an object to the nearest whole by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Clarification regarding level of precision—whole numbers only.
NY-2.MD.7 Tell and write time from analog and digital clocks in five minute increments, using a.m. and p.m. Develop an understanding of common terms, such as, but not limited to, quarter past, half past, and quarter to.	2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	**Changed from "nearest five minutes" to "five minute increments," which we interpret to mean that students will not be asked to look at clock that says 10:03 and say "10:05." Rather, they will only see times on clocks that are multiples of 5 minutes.** **Added last sentence about common terms.**
NY-2.MD.8a Count a mixed collection of coins whose sum is less than or equal to one dollar.	2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols	**Work with coins builds from previous grades, but is limited to coins totaling one dollar or less. Amounts over a dollar—and the**

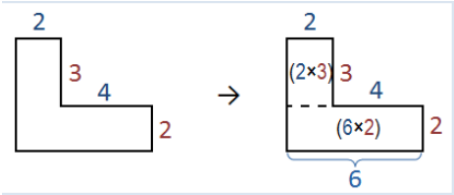
NY-2.MD.8b Solve real world and mathematical problems within one dollar involving quarters, dimes, nickels, and pennies, using the ¢ symbol appropriately. Note: Students are not introduced to decimals, and therefore the dollar symbol, until Grade 4.	appropriately.	**dollar symbol—are not introduced until decimals are in 4th grade.**
NY-2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a picture graph or a bar graph.	2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	Clarification of the standard.
NY-2.G.1 Classify two-dimensional figures as polygons or non-polygons.	2.G.1 Recognize and draw shapes having specified attributes, such as given number of angles or given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons and cubes.	**New standard replaces the Common Core standard. A form of the old standard has been moved to 3rd grade. Three-dimensional shapes are now omitted.**

Third Grade

Next Generation	Common Core	Significance
NY-3.OA.5 Apply properties of operations as strategies to multiply and divide. Note: A variety of representations can be used when applying the properties of operations, which may or may not include parentheses. The area model is a multiplication/division strategy that applies the distributive property.	3.OA.5 Apply properties of operations as strategies to multiply and divide.	Clarification in new standard.
NY-3.OA.7a Fluently solve single-digit	3.OA.7 Fluently multiply and divide within	Clarification in new standard to exclude products within 100 of

multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations. NY-3.OA.7b Know from memory all products of two one-digit numbers.	100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	1-digit by 2-digit factors.
NY3OA8 Solve two-step word problems posed with whole numbers and having whole number answers using the four operations. a. Represent these problems using equations with a letter standing for the unknown quantity. b. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. Note: Two-step problems need not be represented by a single expression or equation.	3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Moved "posed with whole numbers" from the footnote in Common Core into the standard in Next Generation. Also added clarifying note about representations for two-step problems.
NY-3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Note: a range of algorithms may be used. Note on and/or: Students should be taught to use strategies and algorithms based on place value, properties of operations, and the relationship between addition and subtraction; however, when solving any problem, students can choose any strategy	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	Clarification in new standards, explaining that "and/or" does not indicate that it is acceptable to teach only one strategy.
NY-3.NBT.4a Understand that the digits of a four-digit number represent	N/A	**These new standards are an extension into thousands of 2nd grade standards about hundreds**

amounts of thousands, hundreds, tens, and ones. NY-3.NBT.4b Read and write four digit numbers using base-ten numerals, number names, and expanded form.		**tens and ones.**
NY-3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	Clarification in new standard.
NY-3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes. e.g., by representing the problem on a number line or other visual model Note: This includes one-step problems that cross into a new hour.	3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	**Clarifies that the standard for time problems is "one-step."** **Allows for representations other than the number line.**
NY-3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in a scaled picture graph or a scaled bar graph.	3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	New standard requires that students solve problems with picture graphs as well as bar graphs.

NY-3.MD.7d Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems. e.g.,  Note: problems include no more than one unknown side length.	3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	New standards replace a description of the technique with a diagram. **Problem complexity is limited in the new standard.**
NY-3.G.1 Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals, pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories. Note: Include both regular and irregular polygons, however, students need not use the formal terms "regular" and "irregular," e.g., students should be able to classify an irregular pentagon as "a pentagon," but do not need to classify it as an "irregular pentagon."	3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	**The new standard focuses on the number of sides rather than qualities like angle measurement and side length. The new standards therefore omit the larger/smaller category aspect of the Common Core standard. (That is, a square is a rhombus (smaller category) and also a quadrilateral (larger category).)**

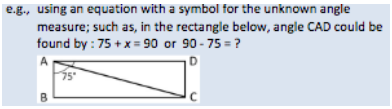
Fourth Grade

Next Generation	Common Core	Significance
NY-4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. a. Represent these problems using equations or expressions with a letter standing for the unknown	4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness	Clarification in new standard.

quantity. b. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	of answers using mental computation and estimation strategies including rounding.	
NY-4.OA.5 Generate a number or shape pattern that follows a given rule. Identify and informally explain apparent features of the pattern that were not explicit in the rule itself.	4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	Clarification in new standard.
NY-4.NBT.4 Fluently add and subtract multi-digit whole numbers using a standard algorithm.	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	**Unclear which algorithms are considered standard, so the likely course of action is to continue with the familiar U.S. standard algorithm. The change is likely intended to emphasize fluency over the learning of a specific procedure. Use of mental left to right algorithms can in fact increase fluency.**
NY-4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. Note on and/or: Students should be taught to use equations, rectangular arrays, and area models; however, when illustrating and explaining any calculation, students can choose any strategy.	4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Clarification in new standards, explaining that “and/or” does not indicate that it is acceptable to teach only one model.
NY-4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors,	4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors,	Clarification in new standards, explaining that “and/or” does not indicate that it is acceptable to teach only one model or strategy.

using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. Notes on and/or: • Students should be taught to use strategies based on place value, the properties of operations, *and* the relationship between multiplication and division; however, when solving any problem, students can choose any strategy. • Students should be taught to use equations, rectangular arrays, *and* area models; however, when illustrating and explaining any calculation, students can choose any strategy.	using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
NY-4.NF.1 Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{a \times n}{b \times n}$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	Ultimately the change is not significant to curriculum. The order of the factors in the expression is changed, though the meaning of the standard remains the same. The Common Core's version seems most accurate, as the first number in a multiplication sentence is conventionally the multiplier. The Next Generation may have made the change to conform to the way we might write the expression in common use; in other words, to calculate the equivalent fraction we would typically start with the fraction and then multiply the numerator and denominator by the same factor.
NY-4.NF.4 Apply and extend previous understandings of multiplication to multiply a whole number by a	4.NF.4 Apply and extend previous understandings of multiplication to	Ultimately the change is not significant to curriculum. The phrase "multiply a fraction by a

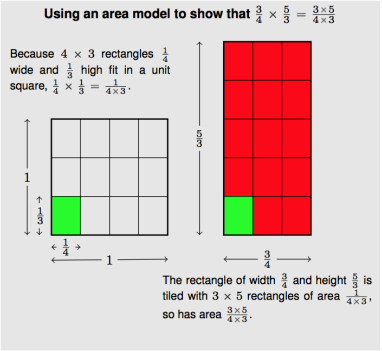
fraction. Note: This standard refers to *n* groups of a fraction (where n is a whole number), e.g., 4 groups of ⅓; which lends itself to being thought about as repeated addition. In grade 5 students will be multiplying a fraction by whole number, e.g., ⅓ of 4.	multiply a fraction by a whole number.	whole number" indicates a whole-number of copies of a fraction, though the word order is opposite of how we would conventionally write the expression (the whole number would come before the fraction, as in $4 \times \frac{1}{3}$ means 4 copies of $\frac{1}{3}$, which means a fraction multiplied by a whole number). The Next Generation standard changes the language, perhaps to clear this discrepancy up, but now provides incorrect language. The note confirms that the meaning of the standard has not changed.
NY-4.NF.4c Solve word problems involving multiplication of a whole number by a fraction.	4.NF.4c Solve word problems involving multiplication of a fraction by a whole number.	No significant change. See previous standard.
NY-4.MD.1 Know relative sizes of measurement units: ft., in.; km, m, cm. e.g., • An inch is about the distance from the tip of your thumb to your first knuckle. • A foot is the length of two dollar-bills. • A meter is about the height of a kitchen counter. • A kilometer is 2½ laps around most tracks. Know the conversion factor and use it to convert measurements in a larger unit in terms of a smaller unit: ft., in.; km, m, cm; hr., min., sec. e.g., Know that 1 ft. is 12 times as long as 1 in. and express the length of a 4 ft. snake as 48 in. Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*	**Significant clarification of the requirements of this standard. The only conversion factors students must know are for feet/inches, kilometers/meters/centimeters, and hours/minutes/seconds. However, students will be expected to convert larger measurement units to smaller when *given* the conversion factor.**

e.g., Given the conversion factors, convert kilograms to grams, pounds to ounces, or liters to milliliters. Record measurement equivalents in a two-column table. e.g., Generate a conversion table for feet and inches. Feet | Inches 1 | 12 2 | 24 3 | 36		
NY-4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems. e.g., using an equation with a symbol for the unknown angle measure; such as, in the rectangle below, angle CAD could be found by : 75 + x = 90 or 90 - 75 = ? 	4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	Clarification in the new standards.

Fifth Grade

Next Generation	Common Core	Significance
NY-5.OA.1 Apply the order of operations to evaluate numerical expressions. e.g., • 6 + 8 ÷ 2	5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	**New standards clarify the order of operation expectation, and they state that nested groupings are not included. This expectation was not clear in the Common Core.**

• $(6 + 8) \div 2$ Note: Exponents and nested grouping symbols are not included.		
NY-5.NBT.2 Use whole-number exponents to denote powers of 10. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.	5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	The order of sentences is shifted, perhaps to emphasize the notation to be taught.
NY-5.NBT.7 Using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations: • add and subtract decimals to hundredths; • multiply and divide decimals to hundredths. Relate the strategy to a written method and explain the reasoning used.	5.NBT.7 Add, subtract, multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Grammatical clarification in the new standards.
NY-5.NF Second Heading Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B Heading Apply and extend previous understandings of multiplication and division.	Clarification in new standard.
NY-5.NF.4a Interpret the product $\frac{a}{b} \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. e.g., Use a visual fraction model to show $\frac{2}{3} \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$.	5.NF.4.A a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = (ac)/(bd).*	New standard deletes general statement.
NY 5.NF.4b Find the area of a rectangle with	5.NF.4b	New standard corrects the Common Core by calling the tiling unit a

fractional side lengths by tiling it with rectangles of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	"rectangle" rather than a "square." See picture below. 
NY-5.MD.1 Convert among different-sized standard measurement units within a given measurement system when the conversion factor is given. Use these conversions in solving multi-step, real world problems.	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	**New standard states that students will be given the conversion factors.**
NY 5.MD 2 (example) Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. e.g., Given different measurements of liquid in identical beakers, make a line plot to display the data and find the total amount of liquid in all of the beakers.	5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	Example shifted to emphasize creation of a line plot and removes requirement to find the mean and instead asks for sum of all liquid.
NY-5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base.	5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	**Using volume to represent the associative property of multiplication is no longer a standard.**