# Bridging the [NYS Mathematics Common Core Learning Standards](https://www.engageny.org/resource/new-york-state-p-12-common-core-learning-standards-for-mathematics) ~ Transition from Grade 4 to Grade 5 The intention of this tool is to provide a template for discussion and planning as students transition from the 2019-2020 school year to the 2020-2021 school year. In this instance, the 4th grade mathematics teacher will comment on the 2019-2020 mathematics common core curriculum relating to that year’s instruction; the 5th grade mathematics teacher will use this information to plan/teach all standards within their mathematics course and meet the needs of all learners for the 2020-2021 school year.

**Key:** Each standard includes an image of an instructor () and an image of a laptop () to indicate whether the standard was taught in the classroom or remotely. Circling or deleting the appropriate image will best indicate the method of instruction for that standard during the 2019-2020 school year. Deleting both images would mean the standard was not addressed during the 2019-2020 school year.

 The major content emphases.

 The supporting content emphases.

 The additional content emphases.

## Domain: Operations and Algebraic Thinking

### Cluster: Use the four operations with whole numbers to solve problems.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.OA.1** | Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. | Classroom Internet |  | 5.NF.35.NF.55.NF.6 |  |
| **4.OA.2** | Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. | Classroom Internet |  | 5.NF.35.NF. 55.NF.6 |  |
| **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 of answers using mental computation and estimation strategies including rounding. | Classroom Internet |  |  |  |

## Domain: Operations and Algebraic Thinking

### Cluster: Gain familiarity with factors and multiples.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.OA.4** | Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. | Classroom Internet |  |  |  |

## Domain: Operations and Algebraic Thinking

### Cluster: Generate and analyze patterns.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **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. *For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.* | Classroom Internet |  | 5.OA.3 |  |

## Domain: Number and Operations in Base Ten

### Cluster: Generalize place value understanding for multi-digit whole numbers.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.NBT.1** | Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.***Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.1 |  |
| **4.NBT.2** | Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.**Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.3 |  |
| **4.NBT.3** | Use place value understanding to round multidigit whole numbers to any place.**Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.4 |  |

## Domain: Number and Operations in Base Ten

### Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.NBT.4****Fluency** | Fluently add and subtract multi-digit whole numbers using the standard algorithm.**Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.55.NBT.65.NBT.7 |  |
| **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: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.5 |  |
| **4.NBT.6** | Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, 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.**Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.** | Classroom Internet |  | 5.NBT.6 |  |

## Domain: Number and Operations - Fractions

### Cluster: Extend understanding of fraction equivalence and ordering.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.NF.1** | Explain why a fraction *a/b* is equivalent to a fraction *(n × a)/(n × 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.**Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NF.15.NF.5 |  |
| **4.NF.2** | Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.**Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NF.2 |  |

## Domain: Number and Operations - Fractions

### Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.NF.3** | Understand a fraction *a/b* with *a > 1* as a sum of fractions *1/b*.1. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
2. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8;*

*3/8 = 1/8 + 2/8;* *2*$\frac{1}{8}$ *= 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*1. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
2. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

**Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NF.15.NF.2 |  |
| **4.NF.4** | Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.1. Understand a fraction *a/b* as a multiple of *1/b*. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).*
2. Understand a multiple of *a/b* as a multiple of *1/b*, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)*
3. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*

**Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NF.45.NF.65.NF.7 |  |

## Domain: Number and Operations - Fractions

### Cluster: Understand decimal notation for fractions, and compare decimal fractions.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.NF.5****Post** | Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.* Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade. **Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NF.25.NBT.15.NBT.7 |  |
| **4.NF.6****Post** | Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.***Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NBT.35.NBT.1 |  |
| **4.NF.7****Post** | Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.**Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.** | Classroom Internet |  | 5.NBT.15.NBT.3 |  |

## Domain: Measurement and Data

### Cluster: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.MD.1****Post** | 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), ...* | Classroom Internet |  | 5.MD.1 |  |
| **4.MD.2****Post** | Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. | Classroom Internet |  | 5.MD.15.NF.35.NF.55.NF.6 |  |
| **4.MD.3** | Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.* | Classroom Internet |  | 5.MD.5 |  |

## Domain: Measurement and Data

### Cluster: Represent and interpret data.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.MD.4** | Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.* | Classroom Internet |  | 5.MD.2 |  |

## Domain: Measurement and Data

### Cluster: Geometric measurement: understand concepts of angle and measure angles.

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|  | Grade 4 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.MD.5** | Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: 1. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles.
2. An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.
 | Classroom Internet |  |  |  |
| **4.MD.6** | Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. | Classroom Internet |  |  |  |
| **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. | Classroom Internet |  |  |  |

## Domain: Geometry

### Cluster: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

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|  | Grade 5 Learning Standard | Instruction Provided | Grade 4Comments & Considerations | Connects with Standards in Grade 5 | Grade 5Reflection & Planning2020 – 2021 |
| **4.G.1** | Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. | Classroom Internet |  |  |  |
| **4.G.2** | Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. | Classroom Internet |  | 5.G.3 |  |
| **4.G.3** | Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. | Classroom Internet |  |  |  |