# 4th Grade Mathematics-Number Corner

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| **Curriculum/Content Area: Mathematics** | **Course Length: School Year** |
| **Course Title: 4th Grade Mathematics** | **Date last reviewed: February 2nd, 2016** <br> **Previous 4th Grade UBD** |
| **Prerequisites: NA** | **Board approval date: TBD** |
| **Primary Resource:** Bridges in Mathematics | |

## Desired Results

**Course description and purpose:** This framework for improving student learning focuses on high-quality math standards.  It provides teachers with a clear set of math concepts and skills for students to understand and be able to do by the end of the school year.

| Mathematical Practice Standards | | |
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| The Standards for Mathematical Practice are central to the teaching and learning of mathematics. These practices describe the behaviors and habits of mind that are exhibited by students who are mathematically proficient. Mathematical understanding is the intersection of these practices and mathematics content. It is critical that the Standards for Mathematical Practice are embedded in daily mathematics instruction. | | |

| Mathematical Practice Standards | | Grade Level Explanation |
|---|---|---|
| **Habits of Mind** | MP.1 Make sense of problems and persevere in solving them | Fourth graders know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. |
| | MP.6 Attend to precision. | Fourth graders develop their mathematical communication skills, use clear and precise language in their discussions with others and in their own reasoning, are careful about specifying units of measure and state the meaning of the symbols they choose. |
| **Reasoning & Explaining** | MP.2 Reason abstractly and quantitatively. | Fourth graders recognize that a number represents a specific quantity. They connect the quantity to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. |

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| | MP.3 Construct viable arguments and critique the reasoning of others. | Fourth graders construct arguments using concrete referents, such as objects, pictures, and drawings. They explain their thinking and make connections between models and equations. They refine their mathematical communication skills as they participate in mathematical Discussions. They explain their thinking to others and respond to others' thinking. |
| **Modeling & Using Tools** | MP.4 Model with mathematics. | Fourth graders experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They evaluate their results in the context of the situation and reflect on whether the results make sense. |
| | MP.5 Use appropriate tools strategically. | Fourth graders consider the available tools when solving a problem and decide when certain tools might be helpful. For instance, they may use graph paper or a number line to represent and compare decimals and protractors to measure angles. |
| **Seeing Structure & Generalizing** | MP.7 Look for and make use of structure. | Fourth graders look closely to discover a pattern or structure. For instance, students use properties of operations to explain calculations. They relate representations of counting problems such as tree diagrams and arrays to the multiplication principle of counting. They generate number or shape patterns that follow a given rule. |
| | #8 Look for and express regularity in repeated reasoning. | Fourth graders notice repetitive actions in computation to make generalizations. They use models to explain calculations and understand how algorithms work. They also use models to examine patterns and generate their own algorithms. |

## Priority Standard Clusters

**4.OA.A Use the four operations with whole numbers to solve problems.**
- _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.
- _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.
- *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.

**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**
- *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.
- *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 greater than, less than, and equal symbols to record the results of comparisons.
- *4.NBT.3* Use place value understanding to round multi-digit whole numbers to any place.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *4.NBT.4* Fluently add and subtract multi digit whole numbers using the standard algorithm.
- *4.NBT.5* Multiply a whole number (up to) a 4-digit number by a 1-digit number using strategies based on place value and the properties of operations, and multiply two 2-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the multiplication calculation using equations, rectangular arrays, and/or area models.
- *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, arrays, and/or area models.

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- (b) 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.
- (c) Add and subtract mixed numbers with like denominators eg by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction.
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- (a) Understand a fraction as a/b as a multiple of 1/b.
- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number.
- (c) Solve word problems involving multiplication of a fraction by a whole number eg by using visual fraction models and equations to represent the problem.

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- *4.NF.5* Express a fraction with a denominator 10 as an equivalent fraction with a denominator of 100, and use this technique to add two fractions with respective denominators 10 and 100.
- *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.
- *4.NF.7* 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 >, =, < and justify the conclusions by using a visual model.

## Supporting Standard Clusters

**4.OA.B Gain familiarity with factors and multiples.**
- *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.

**4.MD.A Solve problems involving measurement and conversion of measurements 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 2-column table.
- *4.MD.2* 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.
- *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.

**4.MD.B Represent and interpret data.**
- *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.

**4.OA.C Generate and analyze patterns.**
- *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.

**4.MD.C Geometric measurement: understand concepts of angle and measure angles.**
- *4.MD.5* Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
- *4.MD.6* Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
- *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.

**4.G.A Draw and identify lines and angles, and classify shapes by properties of their lines and angles. Cluster Number (space) Name of supporting math cluster.**
- *4.G.1* Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in 2 dimensional figures.

- *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.
- *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.

## September

**Unit Overview:** Skills addressed in third grade are reviewed, revisited and extended.  The primary emphasis this month is multiplication.  Students will review multiplication facts, work with multiples of 10, factors and multiples and will develop strategies for multiplication with larger numbers.

### Unit Standards

**Priority Standards**
**4.OA.A Use the four operations with whole numbers to solve problems.**
- *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.
- *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.

**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**
- *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.
- *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 greater than, less than, and equal symbols to record the results of comparisons.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *4.NBT.5* Multiply a whole number (up to) a 4-digit number by a 1-digit number using strategies based on place value and the properties of operations, and multiply two 2-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the multiplication calculation using equations, rectangular arrays, and/or area models.

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number.

**Supporting Standards**
**4.OA.B Gain familiarity with factors and multiples.**
- *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.

**4.MD.A Solve problems involving measurement and conversion of measurements 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 2-column table.
- *4.MD.2* 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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Solving Problems | **MP.6**<br>● Calendar Collector<br>● Problem Strings |
| **Reasoning & Explaining** | **MP.2**<br>● Solving Problems<br>● Calendar Collector | **MP.3**<br>● Calendar Grid<br>● Problem Strings |
| **Modeling & Tools** | **MP.4**<br>● Solving Problems<br>● Computational Fluency | **MP.5** |
| **Seeing Structure & Generalizing** | **MP.7**<br>● Calendar Grid | **MP.8**<br>● Computational Fluency |

**4th Grade Priority:**
- I compare factors and products in a multiplication number sentence. (4.OA.1)
  - Problem Strings
  - Solving Problems
- I multiply or divide to solve word problems involving multiplicative comparison by using drawings or writing equations with a variable. (4.OA.2)

- - ○ Solving Problems
- I demonstrate that each place value space is 10 times greater than the place to its right. (4.NBT.1)
    - ○ Calendar Grid
    - ○ Computational Fluency
    - ○ Problem Strings
- I write whole numbers in expanded form (4.NBT.2)
    - ○ Calendar Grid
- I use basic fact knowledge to solve extended multiplication facts (4.NBT.5)
    - ○ Problem Strings
    - ○ Solving Problems
- I multiply (up to) a 4-digit number by a 1-digit number using words, equations, arrays, and/or number models (4.NBT.5)
    - ○ Computational Fluency
    - ○ Problem Strings
    - ○ Solving Problems
- I can 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. (4.NF.1)
    - ○ Calendar Collector
- I understand the addition and subtraction of fractions as joining and separating parts referring to the same whole (4.NF.3a)
    - ○ Calendar Collector
- I show more than one way to break apart a fraction into the sum of two or more fractions using an equation or a visual fraction model. (4.NF.3d)
    - ○ Calendar Collector
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
    - ○ Calendar Collector

**4th Grade Supporting:**
- I find factor pairs and write a list of factors for any number up to 100. (4.OA.4)
    - ○ Solving Problems
- I write multiples of single digit numbers, determine whether a given number is a multiple of a one-digit number, and recognize and determine that a whole number is a multiple of each of its factors. (4.OA.4)
    - ○ Computational Fluency
- I find equivalent measurement conversions in the US Customary System, including those with fractions and those in a number stories. (4.MD.1)
    - ○ Calendar Collector
- I find equivalent measurement conversions in the Metric System, including those with decimals and those in number stories. (4.MD.1)
    - ○ Calendar Collector
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)

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| ○ Calendar Collector | |

## Assessment Evidence

**Performance Assessment Options**
*May include, but are not limited to the following:*

- Bridges Unit Pre Assessment
- Bridges Unit Checkpoints
- Bridges Unit Post Assessment

**Other assessment options**
*May include, but are not limited to the following:*

- Bridges Unit Observational Assessments
- Student Work Samples
- Classroom Exit Tickets

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

## October

**Unit Overview:** This unit focuses on a variety of skills that include analyzing patterns, measurement and fractions, numbers in base ten, multi-digit multiplication and multi-step story problems.

## Unit Standards

**Priority Standards**
**4.OA.A Use the four operations with whole numbers to solve problems.**
- *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.

**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**
- *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.
- *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 greater than, less than, and equal symbols to record the results of comparisons.
- *4.NBT.3* Use place value understanding to round multi-digit whole numbers to any place.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *4.NBT.5* Multiply a whole number (up to) a 4-digit number by a 1-digit number using strategies based on place value and the properties of operations, and multiply two 2-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the multiplication calculation using equations, rectangular arrays, and/or area models.

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- *4.NF.5* Express a fraction with a denominator 10 as an equivalent fraction with a denominator of 100, and use this technique to add two fractions with respective denominators 10 and 100.
- *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.

## Supporting Standards
**4.OA.B Gain familiarity with factors and multiples.**
- *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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1** <br> • Solving Problems | **MP.6** <br> • Calendar Collector |
| **Reasoning & Explaining** | **MP.2** <br> • Calendar Grid | **MP.3** <br> • Solving Problems <br> • Computational Fluency |
| **Modeling & Tools** | **MP.4** <br> • Calendar Grid <br> • Calendar Collector | **MP.5** <br> • Problem Strings |
| **Seeing Structure & Generalizing** | **MP.7** | **MP.8** <br> • Computational Fluency <br> • Problem Strings |

**4th Grade Priority:**
- I solve multi-step word problems using all operations and write a corresponding number sentence using a variable for the unknown. (4.OA.3)
  - Computational Fluency
  - Solving Problems
- I assess the reasonableness of answers using mental computation and estimation strategies including rounding (all operations). (4.OA.3)

- - Computational Fluency
    - Solving Problems
- I demonstrate that each place value space is 10 times greater than the place to its right. (4.NBT.1)
    - Calendar Collector
    - Computational Fluency
- I write whole numbers in expanded form (4.NBT.2)
    - Calendar Collector
    - Computational Fluency
- I compare multi digit numbers. (4.NBT.2)
    - Calendar Collector
- I round numbers to the billions places. (4.NBT.3)
    - Calendar Grid
    - Solving Problems
    - Problem Strings
- I use basic fact knowledge to solve extended multiplication facts (4.NBT.5)
    - Solving Problems
    - Problem Strings
- I multiply (up to) a 4-digit number by a 1-digit number using words, equations, arrays, and/or number models (4.NBT.5)
    - Solving Problems
    - Problem Strings
- I can 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. (4.NF.1)
    - Calendar Grid
- I can order and compare fractions with unlike numerators and denominators using >, <, or = by thinking about benchmark fractions or creating equivalent fractions and can recognize that comparisons are valid only when the two fractions refer to the same whole. (4.NF.2)
    - Calendar Grid
- I convert fractions from tenths to hundredths and from hundredths to tenths  (4.NF.5)
    - Calendar Grid

**4th Grade/Course Supporting:**
- I write multiples of single digit numbers, determine whether a given number is a multiple of a one-digit number, and recognize and determine that a whole number is a multiple of each of its factors. (4.OA.4)
    - Computational Fluency

## Assessment Evidence

| Performance Assessment Options<br>*May include, but are not limited to the following:* | Other assessment options<br>*May include, but are not limited to the following:* |
| --- | --- |
| ● Bridges Unit Pre Assessment<br>● Bridges Unit Checkpoints | ● Bridges Unit Observational Assessments |

| ● Bridges Unit Post Assessment | ● Student Work Samples<br>● Classroom Exit Tickets |
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| **Digital Tools & Supplementary Resources** |
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| Bridges Intervention<br>ALEKS and Dreambox |

| **November** |
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| **Unit Overview:** In this unit, the focus is on skills relating to measuring, calculating with time, making conversions, identifying patterns, multiples and factors, ordering and comparing numbers, adding multi-digit numbers, and making multiplicative comparisons. Students will play games, engage in discussions and practice these skills. |
| **Unit Standards** |
| **Priority Standards**<br>**4.OA.A Use the four operations with whole numbers to solve problems.**<br>● *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.<br>● *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.<br>**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**<br>● *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.<br>● *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 greater than, less than, and equal symbols to record the results of comparisons.<br>● *4.NBT.3* Use place value understanding to round multi-digit whole numbers to any place.<br>**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**<br>● *4.NBT.4* Fluently add and subtract multi digit whole numbers using the standard algorithm.<br>**4.NF.A Extend understanding of fraction equivalence and ordering.**<br>● *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.<br>**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**<br>● *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b<br>● (a) Understand addition and subtraction of fractions as joining and separating parts referring to |

the same whole.
- (b) 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.

## Supporting Standards
**4.OA.B Gain familiarity with factors and multiples.**
- *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.

**4.MD.A Solve problems involving measurement and conversion of measurements 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 2-column table.
- *4.MD.2* 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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Solving Problems | **MP.6**<br>● Solving Problems<br>● Computational Fluency |
| **Reasoning & Explaining** | **MP.2** | **MP.3**<br>● Solving Problems<br>● Problem Strings<br>● Calendar Grid |
| **Modeling & Tools** | **MP.4**<br>● Problem Strings<br>● Computational Fluency | **MP.5**<br>● Calendar Grid<br>● Calendar Collector |
| **Seeing Structure & Generalizing** | **MP.7**<br>● Computational Fluency | **MP.8**<br>● Calendar Collector |

**4th Grade Priority:**
- I compare factors and products in a multiplication number sentence. (4.OA.1)
  - Calendar Collector
- I solve multi-step word problems using all operations and write a corresponding number sentence using a variable for the unknown. (4.OA.3)

- - Solving Problems
- I assess the reasonableness of answers using mental computation and estimation strategies including rounding (all operations). (4.OA.3)
  - Solving Problems
- I demonstrate that each place value space is 10 times greater than the place to its right. (4.NBT.1)
  - Solving Problems
- I write whole numbers in expanded form (4.NBT.2)
  - Computational Fluency
  - Problem Strings
- I compare multi digit numbers. (4.NBT.2)
  - Computational Fluency
  - Solving Problems
- I round numbers to the billions places. (4.NBT.3)
  - Solving Problems
- I add and/or subtract multi-digit numbers using the standard algorithm. (4.NBT.4)
  - Problem Strings
- I can 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. (4.NF.1)
  - Calendar Collector
- I understand the addition and subtraction of fractions as joining and separating parts referring to the same whole (4.NF.3a)
  - Calendar Collector
- I add and subtract fractions and mixed numbers with like denominators (4NF.3b)
  - Calendar Collector
- I show more than one way to break apart a fraction into the sum of two or more fractions using an equation or a visual fraction model. (4.NF.3d)
  - Calendar Collector

**4th Grade Supporting:**
- I write multiples of single digit numbers, determine whether a given number is a multiple of a one-digit number, and recognize and determine that a whole number is a multiple of each of its factors. (4.OA.4)
  - Computational Fluency
- I find equivalent measurement conversions in the US Customary System, including those with fractions and those in a number stories. (4.MD.1)
  - Calendar Grid
  - Calendar Collector
- I record measurement equivalents in a 2-column table. (4.MD.1)
  - Calendar Grid
  - Calendar Collector
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)
  - Calendar Grid

| | |
|---|---|
| ○ Calendar Collector | |
| ○ Problem Strings | |

## Assessment Evidence

| **Performance Assessment Options**<br>*May include, but are not limited to the following:* | **Other assessment options**<br>*May include, but are not limited to the following:* |
|---|---|
| ● Bridges Unit Pre Assessment<br>● Bridges Unit Checkpoints<br>● Bridges Unit Post Assessment | ● Bridges Unit Observational Assessments<br>● Student Work Samples<br>● Classroom Exit Tickets |

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

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## December

**Unit Overview:** In this unit, students study: congruence, line symmetry, and parallel and perpendicular lines in figures; numbers and operations in base ten, especially adding and subtracting 2-, 3-, and 4-digit numbers; and, add multiples of whole numbers to the number line.

## Unit Standards

**Priority Standards**
**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**
- *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 greater than, less than, and equal symbols to record the results of comparisons.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *4.NBT.4* Fluently add and subtract multi digit whole numbers using the standard algorithm.

**Supporting Standards**
**4.OA.B Gain familiarity with factors and multiples.**
- *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.

**4.MD.A Solve problems using measurement and conversion of measurements from a larger unit to a smaller unit.**
- *4.MD.2* 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.
- *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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Computational Fluency | **MP.6**<br>● Solving Problems |
| **Reasoning & Explaining** | **MP.2** | **MP.3**<br>● Calendar Collector<br>● Computational Fluency |
| **Modeling & Tools** | **MP.4** | **MP.5**<br>● Calendar Collector<br>● Problem Strings |
| **Seeing Structure & Generalizing** | **MP.7**<br>● Calendar Grid<br>● Problem Strings | **MP.8**<br>● Calendar Grid<br>● Solving Problems |

**4th Grade Priority:**
- I demonstrate that each place value space is 1/10 of the place to its left (4.NBT.2)
  - Calendar Collector
- I write whole numbers in expanded form (4.NBT.2)
  - Calendar Collector
- I compare multi digit numbers. (4.NBT.2)
  - Calendar Collector
- I add and/or subtract multi-digit numbers using the standard algorithm. (4.NBT.4)
  - Calendar Collector
  - Problem Strings

**4th Grade Supporting:**
- I find factor pairs and write a list of factors for any number up to 100. (4.OA.4)
  - Computational Fluency
- I determine whether a whole number up to 100 is prime or composite. (4.OA.4)
  - Computational Fluency
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)
  - Problem Strings
- I use a formula to calculate the perimeter and the area of a rectangle, including those in

number stories. (4.MD.3)
- ○ Calendar Grid
- ○ Computational Fluency

## Assessment Evidence

### Performance Assessment Options
*May include, but are not limited to the following:*

- Bridges Unit Pre Assessment
- Bridges Unit Checkpoints
- Bridges Unit Post Assessment

### Other assessment options
*May include, but are not limited to the following:*

- Bridges Unit Observational Assessments
- Student Work Samples
- Classroom Exit Tickets

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

## January

**Unit Overview:** In this unit, students study: division strategies and consider division situations and contexts; geometric shapes and scaling; and fractions.

## Unit Standards

**Priority Standards**
**4.OA.A Use the four operations with whole numbers to solve problems.**
- *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.
- *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.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *4.NBT.5* Multiply a whole number (up to) a 4-digit number by a 1-digit number using strategies based on place value and the properties of operations, and multiply two 2-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the multiplication calculation using equations, rectangular arrays, and/or area models.
- *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, arrays, and/or area models

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- (b) 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.
- (d) Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, eg by using visual fraction models and equations to represent the problem
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- (a) Understand a fraction as a/b as a multiple of 1/b
- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number

## Supporting Standards
**4.MD.A Solve problems using measurement and conversion of measurements from a larger unit to a smaller unit.**
- *4.MD.2* 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.
- *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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>- Solving Problems | **MP.6**<br>- Computational Fluency<br>- Problem Strings |
| **Reasoning & Explaining** | **MP.2**<br>- Calendar Grid | **MP.3**<br>- Solving Problems |

| Modeling & Tools | MP.4<br>● Calendar Collector<br>● Computational Fluency | MP.5<br>● Solving Problems |
|---|---|---|
| Seeing Structure & Generalizing | MP.7<br>● Calendar Collector | MP.8<br>● Calendar Grid<br>● Problem Strings |

**4th Grade Priority:**
- I compare factors and products in a multiplication number sentence. (4.OA.1)
  - Calendar Grid
- I solve multi-step word problems using all operations and write a corresponding number sentence using a variable for the unknown. (4.OA.3)
  - Solving Problems
- I interpret remainders in a division story problem. (4.OA.3)
  - Solving Problems
- I assess the reasonableness of answers using mental computation and estimation strategies including rounding (all operations). (4.OA.3)
  - Solving Problems
- I multiply (up to) a 4-digit number by a 1-digit number using words, equations, arrays, and/or number models (4.NBT.5)
  - Problem Strings
- I divide a 4-digit whole number by a 1-digit divisor (4.NBT.6)
  - Computational Fluency
  - Problem Strings
  - Solving Problems
- I generate a quotient in the form of a whole number, mixed number and decimal (4.NBT.6)
  - Computational Fluency
  - Problem Strings
  - Solving Problems
- I can 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. (4.NF.1)
  - Computational Fluency
- I can order and compare fractions with unlike numerators and denominators using >, <, or = by thinking about benchmark fractions or creating equivalent fractions and can recognize that comparisons are valid only when the two fractions refer to the same whole. (4.NF.2)
  - Computational Fluency
- I understand the addition and subtraction of fractions as joining and separating parts referring to the same whole (4.NF.3a)
  - Calendar Collector
- I add and subtract fractions and mixed numbers with like denominators (4NF.3b)
  - Calendar Collector
- I show more than one way to break apart a fraction into the sum of two or more fractions using an equation or a visual fraction model. (4.NF.3d)

- ○ Calendar Collector
- I understand a fraction a/b as a multiple of 1/b (5/4 = 5 * (1/4)) (4.NF.4a)
  - ○ Calendar Collector
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
  - ○ Calendar Collector

**4th Grade Supporting:**
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)
  - ○ Calendar Collector
- I use a formula to calculate the perimeter and the area of a rectangle, including those in number stories. (4.MD.3)
  - ○ Calendar Grid

## Assessment Evidence

### Performance Assessment Options
*May include, but are not limited to the following:*

- Bridges Unit Pre Assessment
- Bridges Unit Checkpoints
- Bridges Unit Post Assessment

### Other assessment options
*May include, but are not limited to the following:*

- Bridges Unit Observational Assessments
- Student Work Samples
- Classroom Exit Tickets

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

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## February

**Unit Overview:** In this unit, students: identify, draw, compare, and analyze angles; work with lines, polygons, and circles; decompose/ compose fractions; add and subtract fractions; explore decimal and fraction/ decimal equivalency; and write equations for multi-step problems.

## Unit Standards

**Priority Standards**
**4.OA.A Use the four operations with whole numbers to solve problems.**
- *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.

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- (b) 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.
- (c) Add and subtract mixed numbers with like denominators eg by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction.
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- *4.NF.5* Express a fraction with a denominator 10 as an equivalent fraction with a denominator of 100, and use this technique to add two fractions with respective denominators 10 and 100.
- *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.
- *4.NF.7* 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 >, =, < and justify the conclusions by using a visual model.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Computational Fluency<br>● Problem Strings | **MP.6**<br>● Calendar Collector<br>● Problem Strings |
| **Reasoning & Explaining** | **MP.2**<br>● Computational Fluency | **MP.3**<br>● Computational Fluency<br>● Problem Strings |
| **Modeling & Tools** | **MP.4**<br>● Problem Strings | **MP.5**<br>● Calendar Grid |

| | | | |
|---|---|---|---|
| | | ● Calendar Collector | |
| **Seeing Structure & Generalizing** | **MP.7** | **MP.8**<br>● Calendar Grid | |

**4th Grade Priority:**
- I solve multi-step word problems using all operations and write a corresponding number sentence using a variable for the unknown. (4.OA.3)
  - Solving Problems
- I interpret remainders in a division story problem. (4.OA.3)
  - Solving Problems
- I assess the reasonableness of answers using mental computation and estimation strategies including rounding (all operations). (4.OA.3)
  - Solving Problems
- I can 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. (4.NF.1)
  - Computational Fluency
  - Problem Strings
- I can order and compare fractions with unlike numerators and denominators using >, <, or = by thinking about benchmark fractions or creating equivalent fractions and can recognize that comparisons are valid only when the two fractions refer to the same whole. (4.NF.2)
  - Computational Fluency
- I understand the addition and subtraction of fractions as joining and separating parts referring to the same whole (4.NF.3a)
  - Problem Strings
- I add and subtract fractions and mixed numbers with like denominators (4NF.3b)
  - Problem Strings
- I solve word problems involving fractions with like denominators using addition and subtraction. (4.NF.3c)
  - Computational Fluency
  - Problem Strings
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
  - Computational Fluency
- I convert fractions from tenths to hundredths and from hundredths to tenths  (4.NF.5)
  - Problem Strings
- I add fractions containing both tenths and hundredths (4.NF.5)
  - Computational Fluency
  - Problem Strings
- I convert fractions to decimals and decimals to fractions (tenths and hundredths) (4.NF.6)
  - Computational Fluency
- I compare decimals to the hundredths place using <, > and =.  (4.NF.7)
  - Computational Fluency

- I read and write numbers to the hundredths place (4.NF.7)
  - Computational Fluency

## Assessment Evidence

### Performance Assessment Options
*May include, but are not limited to the following:*

- Bridges Unit Pre Assessment
- Bridges Unit Checkpoints
- Bridges Unit Post Assessment

### Other assessment options
*May include, but are not limited to the following:*

- Bridges Unit Observational Assessments
- Student Work Samples
- Classroom Exit Tickets

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

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## March

**Unit Overview:** In this unit, students will study fractions/ decimals and patterns/functions.

## Unit Standards

**Priority Standards**
**4 .OA.A Use the four operations with whole numbers to solve problems.**
- *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.

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole
- (c) Add and subtract mixed numbers with like denominators eg by replacing each mixed

number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction.
- (d) Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, eg by using visual fraction models and equations to represent the problem
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- (a) Understand a fraction as a/b as a multiple of 1/b
- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- *4.NF.5* Express a fraction with a denominator 10 as an equivalent fraction with a denominator of 100, and use this technique to add two fractions with respective denominators 10 and 100.
- *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.
- *4.NF.7* 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 >, =, < and justify the conclusions by using a visual model.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Story Problems | **MP.6** |
| **Reasoning & Explaining** | **MP.2**<br>● Calendar Collector<br>● Problem Strings<br>● Story Problems | **MP.3**<br>● Calendar Collector<br>● Computational Fluency<br>● Story Problems |
| **Modeling & Tools** | **MP.4**<br>● Calendar Grid<br>● Calendar Collector<br>● Computational Fluency<br>● Problem Strings<br>● Story Problems | **MP.5** |
| **Seeing Structure & Generalizing** | **MP.7**<br>● Calendar Grid | **MP.8**<br>● Calendar Grid<br>● Computational Fluency<br>● Problem Strings |

**4th Grade Priority:**
- I can 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. (4.NF.1)
  - Calendar Collector

- - Computational Fluency
  - Problem Strings
- I can order and compare fractions with unlike numerators and denominators using >, <, or = by thinking about benchmark fractions or creating equivalent fractions and can recognize that comparisons are valid only when the two fractions refer to the same whole. (4.NF.2)
  - Calendar Collector
- I understand the addition and subtraction of fractions as joining and separating parts referring to the same whole (4.NF.3a)
  - Calendar Collector
- I solve word problems involving fractions with like denominators using addition and subtraction. (4.NF.3c)
  - Calendar Collector
- I show more than one way to break apart a fraction into the sum of two or more fractions using an equation or a visual fraction model. (4.NF.3d)
  - Calendar Collector
- I understand a fraction a/b as a multiple of 1/b (5/4 = 5 * (1/4)) (4.NF.4a)
  - Story Problems
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
  - Story Problems
- I solve a world problem involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problems (4.NF.4c)
  - Story Problems
- I convert fractions from tenths to hundredths and from hundredths to tenths (4.NF.5)
  - Computational Fluency
  - Problem Strings
- I add fractions containing both tenths and hundredths (4.NF.5)
  - Computational Fluency
- I convert fractions to decimals and decimals to fractions (tenths and hundredths) (4.NF.6)
  - Computational Fluency
- I compare decimals to the hundredths place using <, > and =. (4.NF.7)
  - Computational Fluency

## Assessment Evidence

| **Performance Assessment Options** | **Other assessment options** |
|---|---|
| *May include, but are not limited to the following:* | *May include, but are not limited to the following:* |
| <ul><li>Bridges Unit Pre Assessment</li><li>Bridges Unit Checkpoints</li><li>Bridges Unit Post Assessment</li></ul> | <ul><li>Bridges Unit Observational Assessments</li><li>Student Work Samples</li><li>Classroom Exit Tickets</li></ul> |

## Digital Tools & Supplementary Resources

Bridges Intervention

| ALEKS and Dreambox |
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## April

**Unit Overview:** In this unit, students will extend their understanding by: exploring fractions and decimals on the number line, computing with fractions, calculating area and perimeter, exploring geometric shapes and their properties, practicing division facts, developing division strategies for multi-digit numbers, and creating and analyzing line plots.

## Unit Standards

### Priority Standards
**4.OA.A Use the four operations with whole numbers to solve problems.**
- *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.
- *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.

**4.NBT.A Generalize place value understanding for multi-digit whole numbers.**
- *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.

**4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.**
- *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, arrays, and/or area models

**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.3* Understand a fraction a/b with a a > 1 as a sum of fractions 1/b
- (c) Add and subtract mixed numbers with like denominators eg by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction.
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- (a) Understand a fraction as a/b as a multiple of 1/b

- (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.

## Supporting Standards

**4.MD.A Solve problems using measurement and conversion of measurements 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 2-column table.
- *4.MD.2* 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.
- *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.

**4.MD.B Represent and interpret data.**
- *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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>• Calendar Grid | **MP.6**<br>• Solving Problem |
| **Reasoning & Explaining** | **MP.2**<br>• Calendar Collector | **MP.3** |
| **Modeling & Tools** | **MP.4**<br>• Computational Fluency<br>• Problem Strings<br>• Solving Problems | **MP.5** |
| **Seeing Structure & Generalizing** | **MP.7**<br>• Calendar Grid<br>• Calendar Collector | **MP.8**<br>• Computational Fluency<br>• Problem Strings |

**4th Grade Priority:**
- I compare factors and products in a multiplication number sentence. (4.OA.1)
  - Calendar Collector
- I multiply or divide to solve word problems involving multiplicative comparison by using

drawings or writing equations with a variable. (4.OA.2)
  - ○ Calendar Collector
- I demonstrate that each place value space is 10 times greater than the place to its right. (4.NBT.1)
  - ○ Calendar Collector
- I divide a 4-digit whole number by a 1-digit divisor (4.NBT.6)
  - ○ Problem Strings
- I generate a quotient in the form of a whole number, mixed number and decimal (4.NBT.6)
  - ○ Problem Strings)
- I illustrate and explain division using words, equations, arrays, and/or numbers (4.NBT.6)
  - ○ Problem Strings
- I can 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. (4.NF.1)
  - ○ Computational Fluency
- I can order and compare fractions with unlike numerators and denominators using >, <, or = by thinking about benchmark fractions or creating equivalent fractions and can recognize that comparisons are valid only when the two fractions refer to the same whole. (4.NF.2)
  - ○ Computational Fluency
- **I** understand a fraction a/b with a a > 1 as a sum of fractions 1/b. (4.NF.3)
  - ○ Computational Fluency
- I solve word problems involving fractions with like denominators using addition and subtraction. (4.NF.3c)
  - ○ Computational Fluency
- I understand a fraction a/b as a multiple of 1/b (5/4 = 5 * (1/4)) (4.NF.4a)
  - ○ Computational Fluency
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
  - ○ Computational Fluency
- I convert fractions to decimals and decimals to fractions (tenths and hundredths) (4.NF.6)
  - ○ Calendar Collector

**4th Grade/Course Supporting:**
- I find equivalent measurement conversions in the US Customary System, including those with fractions and those in a number stories. (4.MD.1)
  - ○ Calendar Collector
- I find equivalent  measurement conversions in the Metric System, including those with decimals and those in number stories. (4.MD.1)
  - ○ Calendar Collector
- I record measurement equivalents in a 2-column table. (4.MD.1)
  - ○ Calendar Collector
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)
  - ○ Calendar Collector
  - ○ Solving Problems

- I use a formula to calculate the perimeter and the area of a rectangle, including those in number stories. (4.MD.3)
  - Calendar Grid
- I make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). (4.MD.4)
  - Solving Problems
- I solve problems involving addition and subtraction of fractions by using information presented in line plots. (4.MD.4)
  - Solving Problems

## Assessment Evidence

### Performance Assessment Options
*May include, but are not limited to the following:*

- Bridges Unit Pre Assessment
- Bridges Unit Checkpoints
- Bridges Unit Post Assessment

### Other assessment options
*May include, but are not limited to the following:*

- Bridges Unit Observational Assessments
- Student Work Samples
- Classroom Exit Tickets

## Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

## May

**Unit Overview:** In this unit, students will deepen their understanding of skills and concepts from the year. They will also have the opportunity to preview fifth grade concepts, including the use of coordinate graphing to create line graphs, multiplying whole numbers by fractions, and adding decimals to hundredths.

## Unit Standards

**Priority Standards**
**4.NF.A Extend understanding of fraction equivalence and ordering.**
- *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.

**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**
- *4.NF.4* Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- (a) Understand a fraction as a/b as a multiple of 1/b

- ● (b) Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number
- ● (c) Solve word problems involving multiplication of a fraction by a whole number eg by using visual fraction models and equations to represent the problem

**4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**
- ● *4.NF.5* Express a fraction with a denominator 10 as an equivalent fraction with a denominator of 100, and use this technique to add two fractions with respective denominators 10 and 100
- ● *4.NF.6* Use decimal notation for fractions with denominators of 10 and 100.
- ● *4.NF.7* 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 >, =, < and justify the conclusions by using a visual model

**Supporting Standards**
**4.MD.A Solve problems using measurement and conversion of measurements 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 2-column table.
- ● *4.MD.2* 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.

## Learning Targets

**4th Grade Priority:**

| Mathematical Practice Standard Connections | | |
|---|---|---|
| **Habits of Mind** | **MP.1**<br>● Calendar Grid | **MP.6**<br>● Calendar Collector<br>● Solving Problems |
| **Reasoning & Explaining** | **MP.2**<br>● Calendar Collector | **MP.3**<br>● Calendar Grid |
| **Modeling & Tools** | **MP.4**<br>● Computational Fluency<br>● Problem Strings | **MP.5**<br>● Calendar Collector |
| **Seeing Structure & Generalizing** | **MP.7**<br>● Problem Strings<br>● Solving Problems | **MP.8**<br>● Calendar Grid<br>● Computational Fluency<br>● Problem Strings |

**4th Grade Priority:**
- ● I can 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. (4.NF.1)
- ○ Problem Strings
- I understand a fraction a/b as a multiple of 1/b (5/4 = 5 * (1/4)) (4.NF.4a)
  - ○ Problem Strings
- I use multiples, a number line, or a visual model to multiply a fraction by a whole number, including those in number stories (4.NF.4b)
  - ○ Problem Strings
- I convert fractions to decimals and decimals to fractions (tenths and hundredths) (4.NF.6)
  - ○ Computational Fluency
- I compare decimals to the hundredths place using <, > and =.  (4.NF.7)
  - ○ Computational Fluency

**4th Grade/Course Supporting:**
- I find equivalent  measurement conversions in the Metric System, including those with decimals and those in number stories. (4.MD.1)
  - ○ Calendar Collector
  - ○ Solving Problems
- I record measurement equivalents in a 2-column table. (4.MD.1)
  - ○ Solving Problems
- I use the four operations to solve number stories involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2)
  - ○ Calendar Collector
  - ○ Solving Problems

## Assessment Evidence

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