

5th Grade Mathematics - Number Corner

Curriculum/Content Area: Mathematics	Course Length: School Year
Course Title: 5th Grade Mathematics - Number Corner	Date last reviewed: February 2nd, 2016 Previous 5th 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		
<p>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.</p>		
Mathematical Practice Standards	Grade Level/Course Explanation	
Habits of Mind	MP.1 Make sense of problems and persevere in solving them	Mathematically proficient students in grade 5 should solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves such questions as: "What is the most efficient way to solve the problem?" "Does this answer make sense?" "Can I solve this problem in a different way?"
	MP.6 Attend to precision.	Mathematically proficient students in grade 5 continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and

		coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.
Reasoning & Explaining	MP.2 Reason abstractly and quantitatively.	Mathematically proficient 5th graders should recognize that a number represents a specific quantity. They connect quantities 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. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts.
	MP.3 Construct viable arguments and critique the reasoning of others.	In 5th grade, mathematically proficient students explain their thinking to others and respond to others' thinking. They may construct arguments using concrete referents such as objects, pictures, and drawings. They explain calculations based on models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions posing such questions as: "How did you get your answer?" "Why is that true?" "Why does it work that way?" "Do you think it will always work, or can we come up with an example that doesn't?"
Modeling & Using Tools	MP.4 Model with mathematics.	Mathematically proficient students in grade 5 experiment with representing problem situations in multiple ways including numbers, words (mathematical language), making labeled sketches, using objects, making a chart, list, or graph, creating equations, and so on. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve

		problems.
	MP.5 Use appropriate tools strategically.	Mathematically proficient fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real world data, or might elect to use spreadsheet software instead.
Seeing Structure & Generalizing	MP.7 Look for and make use of structure.	In 5th grade, mathematically proficient students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply, and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or graphical representation.
	MP.8 Look for and express regularity in repeated reasoning.	Mathematically proficient 5th graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.

Priority Standard Clusters

5.NBT.A Understand the place value system.

- 5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.
- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
- (a) Read and write decimals to thousandths using base 10 numerals, number names, and expanded form.
- (b) Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.
- 5.NBT.4 Use place value understanding to round decimals to any place.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- **5.NBT.5** Fluently multiply multi-digit whole numbers using the standard algorithm.
- **5.NBT.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.
- **5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- **5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)
- **5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- **5.NF.3** Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?
- **5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $\left(\frac{a}{b}\right) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $\left(\frac{2}{3}\right) \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\left(\frac{2}{3}\right) \times \left(\frac{4}{5}\right) = \frac{8}{15}$. (In general, $\left(\frac{a}{b}\right) \times \left(\frac{c}{d}\right) = \frac{ac}{bd}$.)
- (b.) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- **5.NF.5** Interpret multiplication as scaling (resizing), by:
- (a.) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
- (b.) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{(n \times a)}{(n \times b)}$ to the effect of multiplying $\frac{a}{b}$ by 1.
- **5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- **5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- (a.) Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $\left(\frac{1}{3}\right) \div 4$, and use a visual fraction model to

show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.

- (b.) Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.
- (c.) Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?

5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- **5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- (a.) A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
- (b.) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- **5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- **5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- (a.) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- (b.) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.
- (c.) Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Supporting Standard Clusters

5.MD.A Convert like measurement units within a given measurement system.

- **5.MD.1** Convert amount different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

5.MD.B Represent and interpret data.

- **5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

5.OA.A Write and interpret numerical expressions.

- **5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- **5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical

expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product

5.OA.B Analyze patterns and relationships.

- 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.G.B Classify two-dimensional figures into categories based on their properties.

- 5.G.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

September

Unit Overview: Skills taught in this month’s number corner will review, revisit and extend skills and concepts such as addition and subtraction of whole numbers, decimals and fractions, multiples and factors, and volume.

Unit Standards

Priority Standards

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- (a.) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the

edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

- (b.) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.
- (c.) Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Supporting Standards

5.OA.A Write and interpret numerical expressions.

- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product

Prior Grade/Course Priority Standards - Reviewed in Unit (some early units have review.

Delete if this does not apply)

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

- 4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \cdot a)/(n \cdot b)$ 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 $1/b$.

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 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.

Learning Targets

Required Workouts	Supplementary Workouts
Calendar Grid: <ul style="list-style-type: none"> • Activity 1, 2, 3 Problem Strings: <ul style="list-style-type: none"> • Activity 1 	Calendar Collector: <ul style="list-style-type: none"> • Activity 1-4 Computational Fluency: <ul style="list-style-type: none"> • Activity 1-3 Solving Problems <ul style="list-style-type: none"> • Activity 1-4 Problem Strings: <ul style="list-style-type: none"> • Activity 2

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> Solving Problems 	MP.6
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> Calendar Grid Calendar Collector 	MP.3 <ul style="list-style-type: none"> Calendar Grid Solving Problems Problem String
Modeling & Tools	MP.4 <ul style="list-style-type: none"> Calendar Collector Solving Problems Problem String 	MP.5 <ul style="list-style-type: none"> Computational Fluency
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> Calendar Collector Solving Problems 	MP.8 <ul style="list-style-type: none"> Computational Fluency Problem String

5th Grade Priority:

- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Calendar Grid
 - Problem String
- I measure volume by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units. (5.MD.4)
 - Calendar Collector
- I represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. (5.MD.5a)
 - Calendar Collector

5th Grade Supporting:

- I evaluate (solve) numerical expressions with parentheses, brackets and braces. (5.OA.1)
 - Calendar Collector
- I apply the Order of Operations to evaluate expressions with parentheses, solve number sentences, write a number sentence that matches a word problem, or insert parentheses to make a true number sentence. (5.OA.2)
 - Calendar Collector

4th Grade/Course Review:

- 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 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)

<ul style="list-style-type: none"> ○ Calendar Grid ● I convert fractions from tenths to hundredths and from hundredths to tenths (4.NF.5) <ul style="list-style-type: none"> ○ Calendar Grid ● I convert fractions to decimals and decimals to fractions (tenths and hundredths) (4.NF.6) <ul style="list-style-type: none"> ○ Calendar Grid 	
Assessment Evidence	
<p>Performance Assessment Options <i>May include, but are not limited to the following:</i></p> <ul style="list-style-type: none"> ● Bridges Baseline Assessment <ul style="list-style-type: none"> ○ Problems 1-6 	<p>Other assessment options <i>May include, but are not limited to the following:</i></p> <ul style="list-style-type: none"> ● Observational Assessments ● Student Work Samples
Digital Tools & Supplementary Resources	
<p>Bridges Intervention ALEKS and Dreambox</p>	

October
<p>Unit Overview: Students continue to work on volume, data collection and coordinate graphing, writing and evaluating expressions with grouping symbols, and addition and subtraction of decimals and fractions with unlike denominators.</p>
Unit Standards
<p>Priority Standards</p> <p>5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.</p> <ul style="list-style-type: none"> ● <u>5.NBT.7</u> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. <p>5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.</p> <ul style="list-style-type: none"> ● <u>5.NF.1</u> Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.) <p>5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p> <ul style="list-style-type: none"> ● <u>5.MD.4</u> Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. ● <u>5.MD.5</u> Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. ● (c.) Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.OA.A Write and interpret numerical expressions.

- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.B Analyze patterns and relationships.

- 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Learning Targets

Required Workouts	Supplementary Workouts
Calendar Grid: <ul style="list-style-type: none"> • Activity 1-4 Computational Fluency: <ul style="list-style-type: none"> • Activity 1 • Activity 2 & 3 Or Activity 4 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 	Calendar Collector: <ul style="list-style-type: none"> • Activity 1-4 Solving Problems: <ul style="list-style-type: none"> • Activity 3 & 4 Problem Strings: <ul style="list-style-type: none"> • Activity 1

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Computational Fluency • Solving Problems 	MP.6 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Calendar Grid • Computational Fluency 	MP.3 <ul style="list-style-type: none"> • Computational Fluency • Solving Problems
Modeling &	MP.4	MP.5

Tools	<ul style="list-style-type: none"> • Calendar Collector • Problem String 	<ul style="list-style-type: none"> • Problem String
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector 	MP.8 <ul style="list-style-type: none"> • Solving Problems • Problem String

5th Grade Priority:

- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Solving Problems
 - Problem String
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Problem String
- I name and describe equivalent fractions. (5.NF.1)
 - Problem String
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Computational Fluency
 - Problem String
- I measure volume by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units. (5.MD.4)
 - Calendar Grid
- I find the volume of a solid which is made up of two or more adjacent rectangular prisms. (5.MD.5c)
 - Calendar Grid

5th Grade Supporting:

- I evaluate (solve) numerical expressions with parentheses, brackets and braces. (5.OA.1)
 - Computational Fluency
- I solve rate number stories by creating and analyzing tables and graphs. (5.OA.3)
 - Solving Problems
- I use a pair of perpendicular number lines, called axes, to define a coordinate system with the origin being (0,0) (5.G.1)
 - Calendar Collector
- I represent real world and math problems by graphing points and can interpret coordinate values of the points, origin, and the coordinates of a defined coordinate system. (5.G.2)
 - Calendar Collector
- I interpret coordinate values of points in the context of the situation. (5.G.2)
 - Calendar Collector

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

- Bridges Check Up 1

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

November

Unit Overview: Students study a pattern of transforming triangles as well as classifying shapes according to attributes. They continue to strengthen place-value skills and converting units of measurement. Students use grouping symbols to simplify expressions and use logical reasoning to solve problems involving fractions.

Unit Standards

Priority Standards

5.NBT.A Understand the place value system.

- 5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.
- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
- (a) Read and write decimals to thousandths using base 10 numerals, number names, and expanded form.
- (b) Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.
- 5.NBT.4 Use place value understanding to round decimals to any place.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

- (a.) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)
- (b.) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.OA.A Write and interpret numerical expressions.

- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.G.B Classify two-dimensional figures into categories based on their properties.

- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

Learning Targets

Required Workouts	Supplementary Workouts
Calendar Grid: <ul style="list-style-type: none"> • Activity 1-3 Calendar Collector: <ul style="list-style-type: none"> • Activity 1-3 	Computational Fluency: <ul style="list-style-type: none"> • Activity 1-3 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 Problem Strings: <ul style="list-style-type: none"> • Activity 1-4

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Solving Problems 	MP.6

Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Calendar Collector • Computational Fluency • Solving Problems • Problem String 	MP.3 <ul style="list-style-type: none"> • Calendar Grid • Solving Problems
Modeling & Tools	MP.4 <ul style="list-style-type: none"> • Computational Fluency • Solving Problems • Problem String 	MP.5 <ul style="list-style-type: none"> • Calendar Collector • Problem String
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector 	MP.8 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector • Problem String

5th Grade Priority:

- I understand that each place value space is 10 times greater than the place to its right and 1/10th of the place to its left. (5.NBT.1)
 - Calendar Collector
- I explain patterns with multiplication with powers of 10 and explain patterns in the placement of the decimal point when it is multiplied or divided by power of 10. I use whole-number exponents to denote powers of 10. (5.NBT.2)
 - Calendar Collector
- I read and write numbers from the billions place to the thousandths place. (5.NBT.3a)
 - Calendar Collector
- I round numbers to any place. (5.NBT.4)
 - Calendar Collector
- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Problem String
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Solving Problems
 - Problem String
- I add and subtract fractions with unlike denominators, including those in number stories, and simplify my answers to lowest terms. (5.NF.2)
 - Solving Problems
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Solving Problems

5th Grade Supporting:

- I evaluate (solve) numerical expressions with parentheses, brackets and braces. (5.OA.1)
 - Computational Fluency
- I apply the Order of Operations to evaluate expressions with parentheses, solve number sentences, write a number sentence that matches a word problem, or insert parentheses to make a true number sentence. (5.OA.2)
 - Computational Fluency
- I use a pair of perpendicular number lines, called axes, to define a coordinate system with the origin being (0,0) (5.G.1)

- Calendar Grid
- I understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis. (5.G.1)
 - Calendar Grid
- I represent real world and math problems by graphing points and can interpret coordinate values of the points, origin, and the coordinates of a defined coordinate system. (5.G.2)
 - Calendar Grid
- I interpret coordinate values of points in the context of the situation. (5.G.2)
 - Calendar Grid

Assessment Evidence

<p>Performance Assessment Options <i>May include, but are not limited to the following:</i></p>	<p>Other assessment options <i>May include, but are not limited to the following:</i></p> <ul style="list-style-type: none"> ● Observational Assessments ● Student Work Samples
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Digital Tools & Supplementary Resources

Bridges Intervention
 ALEKS and Dreambox

December

Unit Overview: During the month of December, students will work with decimals and fractions as they measure each other’s height and foot length, work on computational fluency, solve problems involving an informed start, and work through problem strings that use the ratio table as a model of whole number and decimal multiplication and division.

Unit Standards

- Priority Standards**
- 5.NBT.A Understand the place value system.**
- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
 - 5.NBT.4 Use place value understanding to round decimals to any place.
- 5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.**
- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.
 - 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship

between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.MD.B Represent and interpret data.

- 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.G.B Classify two-dimensional figures into categories based on their properties.

- 5.G.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

Learning Targets

Required Workouts

Supplementary Workouts

Calendar Grid: <ul style="list-style-type: none"> • Activity 1 & 2 Calendar Collector: <ul style="list-style-type: none"> • Activity 1-4 Computational Fluency <ul style="list-style-type: none"> • Activity 1 & 2 	Calendar Grid: <ul style="list-style-type: none"> • Activity 3 Computational Fluency: <ul style="list-style-type: none"> • Activity 2 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 Problem Strings: <ul style="list-style-type: none"> • Activity 1-3
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5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Solving Problems 	MP.6 <ul style="list-style-type: none"> • Calendar collector • Computational fluency
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Calendar Grid • Computational Fluency • Solving Problems 	MP.3 <ul style="list-style-type: none"> • Solving problems
Modeling & Tools	MP.4 <ul style="list-style-type: none"> • Calendar collector • Solving problems 	MP.5 <ul style="list-style-type: none"> • Calendar collector • Problems strings
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar collector • Solving problems • Problem strings 	MP.8

5th Grade Priority:

- I explain patterns with multiplication with powers of 10 and explain patterns in the placement of the decimal point when it is multiplied or divided by power of 10. I use whole-number exponents to denote powers of 10. (5.NBT.2)
 - Problem String
- I round numbers to any place. (5.NBT.4)
 - Solving Problems
- I divide a 4 digit whole number by up to a 2-digit divisor, generate an answer in the form of a whole number or mixed number, and check my calculation using multiplication. (5.NBT.6)
 - Problem String
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Problem String
- I name and describe equivalent fractions. (5.NF.1)
 - Computational Fluency
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Computation Fluency
- I add and subtract fractions with unlike denominators, including those in number stories, and

simplify my answers to lowest terms. (5.NF.2)

- Computational Fluency
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Solving Problems

5th Grade Supporting:

- I make and interpret line plots, including those representing fractional measurements (halves, fourths, eighths). (5.MD.2)
 - Calendar Collector
- I use a pair of perpendicular number lines, called axes, to define a coordinate system with the origin being (0,0) (5.G.1)
 - Calendar Collector
- I understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis. (5.G.1)
 - Calendar Collector
- I represent real world and math problems by graphing points and can interpret coordinate values of the points, origin, and the coordinates of a defined coordinate system. (5.G.2)
 - Calendar Collector
- I describe and compare attributes of polygons and classify polygons based on those attributes. (5.G.3)
 - Calendar Grid
- I classify two-dimensional figures in a hierarchy based on properties. (5.G.4)
 - Calendar Grid

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

- Bridges Check Up 1

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

January

Unit Overview: Students will work on adding, subtracting, and multiplying fractions and decimals. Students will analyze and compare patterns, graph ordered pairs based on those patterns and write expressions and equations to represent the patterns. Students will find the volume of figures composed of rectangular prisms.

Unit Standards

Priority Standards

5.NBT.A Understand the place value system.

- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
- (a) Read and write decimals to thousandths using base 10 numerals, number names, and expanded form.
- (b) Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.
- 5.NBT.4 Use place value understanding to round decimals to any place.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.
- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $(\frac{a}{b}) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(\frac{2}{3}) \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$. (In general, $(\frac{a}{b}) \times (\frac{c}{d}) = \frac{ac}{bd}$.)

5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- (a.) A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.
- (b.) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and

- mathematical problems involving volume.
- (a.) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- (c.) Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.OA.A Write and interpret numerical expressions.

- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product

5.OA.B Analyze patterns and relationships.

- 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Learning Targets

Required Workouts	Supplementary Workouts
Computational Fluency: <ul style="list-style-type: none"> Activity 1-3 Solving Problems: <ul style="list-style-type: none"> Activity 1 & 2 or Activity 3 & 4 Problem Strings: <ul style="list-style-type: none"> Activity 1 & 3 	Calendar Grid: <ul style="list-style-type: none"> Activity 1-4 Calendar Collector: <ul style="list-style-type: none"> Activity 1-4 Problem Strings: <ul style="list-style-type: none"> Activity 2

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> Solving Problems 	MP.6 <ul style="list-style-type: none"> Calendar collector
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> Solving problems 	MP.3
Modeling & Tools	MP.4 <ul style="list-style-type: none"> Calendar collector 	MP.5 <ul style="list-style-type: none"> Problem strings

Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> ● Calendar grid ● Computational fluency ● Solving problems ● Problem strings 	MP.8 <ul style="list-style-type: none"> ● Calendar grid ● Computational fluency
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5th Grade Priority:

- I explain patterns with multiplication with powers of 10 and explain patterns in the placement of the decimal point when it is multiplied or divided by power of 10. I use whole-number exponents to denote powers of 10. (5.NBT.2)
 - Problem Strings
- I divide a 4 digit whole number by up to a 2-digit divisor, generate an answer in the form of a whole number or mixed number, and check my calculation using multiplication. (5.NBT.6)
 - Problem String
- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Calendar Collector
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Problem String
- I name and describe equivalent fractions. (5.NF.1)
 - Calendar Collector
 - Computational Fluency
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Calendar Collector
 - Computational Fluency
- I add and subtract fractions with unlike denominators, including those in number stories, and simplify my answers to lowest terms. (5.NF.2)
 - Calendar Collector
 - Computational Fluency
- I use benchmark fractions to estimate the sum or difference of fractions and determine if an answer is reasonable. (5.NF.2)
 - Calendar Collector
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Calendar collector
 - Computational Fluency
- I recognize that a cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. (5.MD.3a)
 - Solving Problems
- I recognize a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. (5.MD.3b)
 - Solving Problems
- I measure volume by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units. (5.MD.4)
 - Solving Problems
- I represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. (5.MD.5a)

- Solving problems
- I find the volume of a solid which is made up of two or more adjacent rectangular prisms. (5.MD.5c)
 - Solving problems

5th Grade Supporting:

- I apply the Order of Operations to evaluate expressions with parentheses, solve number sentences, write a number sentence that matches a word problem, or insert parentheses to make a true number sentence. (5.OA.2)
 - Calendar Grid
- I generate two numerical patterns given two given rules. (5.OA.3)
 - Calendar Grid
- I identify relationships between corresponding terms. (5.OA.3)
 - Calendar Grid

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

- Bridges Check Up 2

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

February

Unit Overview: Students will use the area model to make sense of multiplication with fractions. They will explore patterns in the number of 0s and in the placement of the decimal point when multiplying and dividing by powers of 10. Students will also focus on multiplying a fraction by a whole number.

Unit Standards

Priority Standards

5.NBT.A Understand the place value system.

- 5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.
- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)
- (b.) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.5 Interpret multiplication as scaling (resizing), by:
- (b.) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.MD.A Convert like measurement units within a given measurement system.

- 5.MD.1 Convert amount different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Learning Targets

Required Workouts	Supplementary Workouts
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Computational Fluency: <ul style="list-style-type: none"> • Activity 1 & 2 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 • Activity 3 & 4 	Calendar Grid: <ul style="list-style-type: none"> • Activity 1-4 Calendar Collector: <ul style="list-style-type: none"> • Activity 1-3 Computational Fluency: <ul style="list-style-type: none"> • Activity 2 Problem Strings: <ul style="list-style-type: none"> • Activity 1-4
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5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Computational Fluency 	MP.6 <ul style="list-style-type: none"> • Solving Problems
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Calendar Collector 	MP.3
Modeling & Tools	MP.4 <ul style="list-style-type: none"> • Computational Fluency 	MP.5 <ul style="list-style-type: none"> • Calendar Grid • Problem String
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Solving Problems • Problem String 	MP.8 <ul style="list-style-type: none"> • Calendar Collector

5th Grade Priority:

- I understand that each place value space is 10 times greater than the place to its right and 1/10th of the place to its left. (5.NBT.1)
 - Solving problems
- I explain patterns with multiplication with powers of 10 and explain patterns in the placement of the decimal point when it is multiplied or divided by power of 10. I use whole-number exponents to denote powers of 10. (5.NBT.2)
 - Calendar collector
 - Solving problems
- I fluently multiply multi-digit whole numbers using the standard algorithm. (5.NBT.5)
 - Computational fluency
- I divide a 4 digit whole number by up to a 2-digit divisor, generate an answer in the form of a whole number or mixed number, and check my calculation using multiplication. (5.NBT.6)
 - Computational Fluency
- I illustrate the division calculation by rectangular arrays and/or area models. (5.NBT.6)
 - Computational Fluency
- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Computational Fluency
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)

- Computational Fluency
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Problem String
- I find the area of a rectangle with fractional dimensions. (5.NF.4b)
 - Calendar Grid
- I find the area of a rectangle with fractional sides by tiling (grid paper). (5.NF.4b)
 - Calendar Grid
- I explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number. (5.NF.5b)
 - Problem String
- I explain why, when creating an equivalent fraction, multiplying a numerator and denominator by the same number is multiplying by one. (5.NF.5b)
 - Problem String

5th Grade Supporting:

- I convert measurements within the US Customary and the Metric system to find equivalent amounts, including those in multi-step word problems. (5.MD.1)
 - Calendar Collector
 - Solving Problems
- I use a pair of perpendicular number lines, called axes, to define a coordinate system with the origin being (0,0) (5.G.1)
 - Calendar Grid
- I understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis. (5.G.1)
 - Calendar Grid
- I represent real world and math problems by graphing points and can interpret coordinate values of the points. origin, and the coordinates of a defined coordinate system. (5.G.2)
 - Calendar Grid
- I interpret coordinate values of points in the context of the situation. (5.G.2)
 - Calendar Grid

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

March

Unit Overview: This month gives students practice with the standard algorithm for multiplying multi digit whole numbers and helps them apply the associative property with place value patterns. They also create line plots with data collected, practice division problem solving as well as addition and subtraction of fractions and mixed numbers.

Unit Standards

Priority Standards

5.NBT.A Understand the place value system.

- 5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
- (b) Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.
- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- (a.) A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.

- (b.) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- (a.) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- (b.) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.MD.B Represent and interpret data.

- 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

Learning Targets

Required Workouts	Supplementary Workouts
Calendar Grid: <ul style="list-style-type: none"> • Activity 1-3 Calendar Collector: <ul style="list-style-type: none"> • Activity 3 	Calendar Collector: <ul style="list-style-type: none"> • Activity 1-2 Computational Fluency: <ul style="list-style-type: none"> • Activity 1-3 Solving Problems: <ul style="list-style-type: none"> • Activity 1 Problem Strings: <ul style="list-style-type: none"> • Activity 1-4

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Solving Problems 	MP.6 <ul style="list-style-type: none"> • Calendar Collector
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Computational Fluency 	MP.3
Modeling &	MP.4	MP.5

Tools	<ul style="list-style-type: none"> • Calendar Grid • Calendar Collector • Solving Problems 	<ul style="list-style-type: none"> • Problem String
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Computational Fluency • Problem Solving 	MP.8

5th Grade Priority:

- I understand that each place value space is 10 times greater than the place to its right and 1/10th of the place to its left. (5.NBT.1)
 - Calendar Grid
- I read, write, and compare decimals to the thousandths place using $>$, $<$, and $=$. (5.NBT.3b)
 - Computational Fluency
- I fluently multiply multi-digit whole numbers using the standard algorithm. (5.NBT.5)
 - Calendar Grid
 - Solving Problems
- I divide a 4 digit whole number by up to a 2-digit divisor, generate an answer in the form of a whole number or mixed number, and check my calculation using multiplication. (5.NBT.6)
 - Solving Problems
- I illustrate the division calculation by rectangular arrays and/or area models. (5.NBT.6)
 - Solving Problems
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Calendar Collector
- I name and describe equivalent fractions. (5.NF.1)
 - Calendar Collector
 - Problem Solving
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Calendar Collector
 - Problem Solving
- I add and subtract fractions with unlike denominators, including those in number stories, and simplify my answers to lowest terms. (5.NF.2)
 - Calendar Collector
- I use benchmark fractions to estimate the sum or difference of fractions and determine if an answer is reasonable. (5.NF.2)
 - Calendar Collector
- I interpret a fraction as division of the numerator by the denominator. (5.NF.3)
 - Computational Fluency
- I solve word problems involving division of whole numbers resulting in answers in the form of fractions or mixed numbers. (5.NF.3)
 - Computational Fluency
- I recognize that a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. (5.MD.3a)
 - Calendar Grid
- I recognize a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. (5.MD.3b)

- Calendar Grid
- I measure volume by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units. (5.MD.4)
 - Calendar Grid
- I represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. (5.MD.5a)
 - Calendar Grid
- I identify the length, width and height of a rectangular prism to calculate the area of its base, and then find its volume. (5.MD.5b)
 - Calendar Grid

5th Grade Supporting:

- I make and interpret line plots, including those representing fractional measurements (halves, fourths, eighths). (5.MD.2)
 - Calendar Collector

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

- Bridges Checkup 3
 - Problems 1, 2, 3, 9

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

April

Unit Overview: This month features practice finding volume of rectangular solids as well as workouts involving calculating with fractions.

Unit Standards

Priority Standards

5.NBT.A Understand the place value system.

- 5.NBT.3 Read, write, and compare decimals to thousandths.
- (b) Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.
- 5.NBT.4 Use place value understanding to round decimals to any place.

5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the

reasoning used.

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- **5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)
- **5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- **5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)
- (b.) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- **5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- **5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- (a.) Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.
- (b.) Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.

5.MD.C Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- **5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- (a.) A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
- (b.) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- **5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- **5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- (a.) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- (b.) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of

right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.MD.A Convert like measurement units within a given measurement system.

- 5.MD.1 Convert amount different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

5.OA.A Write and interpret numerical expressions.

- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product

Learning Targets

Required Workouts	Supplementary Workouts
Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 (Banana Bread Problem) Problem Strings: <ul style="list-style-type: none"> • Activity 2, 3, 4 	Calendar Grid: <ul style="list-style-type: none"> • Activity 1-4 Calendar Collector: <ul style="list-style-type: none"> • Activity 1-4 Computational Fluency: <ul style="list-style-type: none"> • Activity 1 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 (Cookies Problem)

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Solving Problems 	MP.6 <ul style="list-style-type: none"> • Calendar Collector • Computational Fluency
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Computational Fluency 	MP.3
Modeling & Tools	MP.4 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector • Solving Problems 	MP.5 <ul style="list-style-type: none"> • Problem solving
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Problem Solving 	MP.8

5th Grade Priority:

- I read, write, and compare decimals to the thousandths place using $>$, $<$, and $=$. (5.NBT.3b)
 - Computational Fluency
- I round numbers to any place. (5.NBT.4)
 - Computational Fluency
- I add and subtract decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Computational Fluency
 - Calendar Collector
- I multiply and divide decimals to hundredths using a variety of strategies (models, drawings and properties of operations). (5.NBT.7)
 - Computational Fluency
 - Calendar Collector
- I name and describe equivalent fractions. (5.NF.1)
 - Computational Fluency
 - Calendar Collector
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Computational Fluency
 - Calendar Collector
- I add and subtract fractions with unlike denominators, including those in number stories, and simplify my answers to lowest terms. (5.NF.2)
 - Solving Problems
- I use benchmark fractions to estimate the sum or difference of fractions and determine if an answer is reasonable. (5.NF.2)
 - Solving Problems
- I multiply a fraction by a fraction, including those in word problems, and write a word problem that matches a situation. (5.NF.4a)
 - Computational Fluency
 - Calendar Collector
 - Problem Strings
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Computational Fluency
 - Calendar Collector
 - Problem Strings
- I find the area of a rectangle with fractional dimensions. (5.NF.4b)
 - Calendar Grid
 - Problem Strings
- I find the area of a rectangle with fractional sides by tiling (grid paper). (5.NF.4b)
 - Calendar Grid
 - Problem Strings
- I multiply a fraction by a whole number and mixed numbers, including those in word problems. (5.NF.6)
 - Problem Strings
- I interpret a fraction as division of the numerator by the denominator. (5.NF.7a)
 - Solving Problems
 - Problem Strings
- I interpret division of a whole number by a unit fraction ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{5}$) using models and the relationship between multiplication and division. (5.NF.7b)

- Solving Problems
- Problem Strings
- I recognize that a cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. (5.MD.3a)
 - Calendar Grid
- I recognize a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. (5.MD.3b)
 - Calendar Grid
- I represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. (5.MD.5a)
 - Calendar Grid
- I identify the length, width and height of a rectangular prism to calculate the area of its base, and then find its volume. (5.MD.5b)
 - Calendar Grid

5th Grade Supporting:

- I convert measurements within the US Customary and the Metric system to find equivalent amounts, including those in multi-step word problems. (5.MD.1)
 - Calendar Collector
- I apply the Order of Operations to evaluate expressions with parentheses, solve number sentences, write a number sentence that matches a word problem, or insert parentheses to make a true number sentence. (5.OA.2)
 - Calendar Grid

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox

May

Unit Overview: This month focuses on coordinate grids and customary units of measure. As well as computations with fractions.

Unit Standards

Priority Standards

5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)

5.NF.B Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- (a.) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)
- (b.) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.5 Interpret multiplication as scaling (resizing), by:
 - (a.) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
 - (b.) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
- 5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
 - (a.) Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.
 - (b.) Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.

Supporting Standards

Standard number (space) Supporting Standard Cluster that is taught IN THIS UNIT.

5.MD.A Convert like measurement units within a given measurement system.

- 5.MD.1 Convert amount different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

5.G.A Graph points on the coordinate plane to solve real-world and mathematical problems.

- 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant

of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Learning Targets

Required Workouts	Supplementary Workouts
Calendar Collector <ul style="list-style-type: none"> • Activity 1 Solving Problems: <ul style="list-style-type: none"> • Activity 1 & 2 Problem Strings: <ul style="list-style-type: none"> • Activity 3 & 4 	Calendar Grid: <ul style="list-style-type: none"> • Activity 1-4 Calendar Collector: <ul style="list-style-type: none"> • Activity 2 & 3 Computational Fluency: <ul style="list-style-type: none"> • Activity 1-3 Problem Strings: <ul style="list-style-type: none"> • Activity 1 & 2

5th Grade Priority:

Mathematical Practice Standard Connections		
Habits of Mind	MP.1 <ul style="list-style-type: none"> • Solving Problems 	MP.6
Reasoning & Explaining	MP.2 <ul style="list-style-type: none"> • Calendar Grid • Calendar Collector • Computational Fluency • Solving Problems 	MP.3 <ul style="list-style-type: none"> • Solving Problems
Modeling & Tools	MP.4 <ul style="list-style-type: none"> • Solving Problems 	MP.5 <ul style="list-style-type: none"> • Calendar Grid • Problem String
Seeing Structure & Generalizing	MP.7 <ul style="list-style-type: none"> • Calendar Grid • Problem String 	MP.8 <ul style="list-style-type: none"> • Calendar Collector

5th Grade Priority:

- I name and describe equivalent fractions. (5.NF.1)
 - Computational Fluency
- I add and subtract fractions and mixed numbers with unlike denominators. (5.NF.1)
 - Computational Fluency
- I multiply a fraction by a fraction, including those in word problems, and write a word problem that matches a situation. (5.NF.4a)
 - Computational Fluency
 - Problem String
- I interpret the product of a fraction multiplied by a whole number. (5.NF.4a)
 - Computational Fluency
 - Problem String

- I find the area of a rectangle with fractional dimensions. (5.NF.4b)
 - Problem String
- I find the area of a rectangle with fractional sides by tiling (grid paper). (5.NF.4b)
 - Problem String
- I compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication (5X4 is twice as big as 5X2). (5.NF.5a)
 - Computational Fluency
- I explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number. (5.NF.5b)
 - Computational Fluency
- I explain why, when creating an equivalent fraction, multiplying a numerator and denominator by the same number is multiplying by one. (5.NF.5b)
 - Computational Fluency
- I multiply a fraction by a whole number and mixed numbers, including those in word problems. (5.NF.6)
 - Problem String
- I interpret a fraction as division of the numerator by the denominator. (5.NF.7a)
 - Problem String
- I interpret division of a whole number by a unit fraction ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$) using models and the relationship between multiplication and division. (5.NF.7b)
 - Problem String

5th Grade Supporting:

- I convert measurements within the US Customary and the Metric system to find equivalent amounts, including those in multi-step word problems. (5.MD.1)
 - Calendar Collector
- I use a pair of perpendicular number lines, called axes, to define a coordinate system with the origin being (0,0) (5.G.1)
 - Calendar Grid
- I understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis. (5.G.1)
 - Calendar Grid
- I represent real world and math problems by graphing points and can interpret coordinate values of the points, origin, and the coordinates of a defined coordinate system. (5.G.2)
 - Calendar Grid
- I interpret coordinate values of points in the context of the situation. (5.G.2)
 - Calendar Grid

Assessment Evidence

Performance Assessment Options

May include, but are not limited to the following:

- Bridges Check Up 4

Other assessment options

May include, but are not limited to the following:

- Observational Assessments
- Student Work Samples

Digital Tools & Supplementary Resources

Bridges Intervention
ALEKS and Dreambox