## Module 1: Place Value, Rounding, and Algorithms for Addition and Subtraction

**Standard: 4.NBT.A.1**
Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
*For example: Recognize that 700 ÷ 70 = 10 or 700 = 10 × 70 by applying concepts of place value and division.*

**Supporting Standards:** 4.NBT.A.2

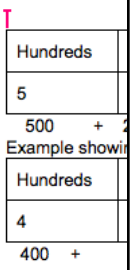
| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand that each digit's place value is ten times as great as the place to its immediate right<br>•understand place value concepts to 1,000,000 | •multiply and divide numbers by multiples of tens to one million<br>•model place value relationships showing how a digit in one place value represents ten times what it represents in the place value to its immediate right using manipulatives | •accurately explain the relationships between two adjacent place values<br>•apply place-value understanding to relationships between other digits in a multi-digit number (i.e. a digit in one place value represents 100 times what it represents two places to its right)<br>•decompose a number in multiple ways to better understand place-value relationships |

**Learning Targets:**
•I can model and explain the value of each digit as ten times the value to the right (connection to bundles of 10 and 100)

**Prerequisites:**
•understand 10 ones equals 1 ten, 10 tens equals 1 hundred, and 10 hundreds equal 1 thousand
•for numbers to 1,000, model place-value relationships showing how a digit in one place represents ten times what it represents in the place to its immediate right using manipulatives

Prompting Rigor

- What is the relationship between the digits in this number? (e.g., 777, etc.)
- How would adding a 0 to the end of a number affect the value of the digits? (e.g., 75 becoming 750)
- Ask students to show 523 in two different ways. Use base ten blocks or a place value chart to show examples. (See example to the right.)
- How do you think place value connects to other math operations? (e.g., Explore the relationship between place value and multiplication/division.)
- Jill created a number using 15 base ten blocks. Using the same number of blocks, what other numbers could Jill make?
- How many different ways can you use base ten blocks to show 293?



## Module 1: Place Value, Rounding, and Algorithms for Addition and Subtraction

**Standard: 4.OA.A.3**

- Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Supporting Standards:** 4.NBT.A.2, 4.NBT.B.4

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand that a symbol/letter can be used to represent an unknown number<br>•understand how to fluently add, subtract, multiply, and divide<br>•understand how to interpret the remainder in a division problem, based on the context of the problem | •draw an accurate model that matches the word problem (tape diagram, pictorial model)<br>•choose the correct operations to perform for all computations/steps<br>•write equations using a letter for the unknown numbers<br>•accurately solve one- and two-step word problems using the four operations | •use flexible strategies to solve real-world problems<br>•decide if an answer is reasonable using mental math, estimation, and/or the inverse operation |

**Learning Targets:**

•I can model the problem using a tape diagram or a pictorial model.
•I can choose the correct operations to solve a multi-step word problem.
•I can write equations that match the word problem using a letter for the unknown numbers.
•I can interpret the meaning of the remainder in a word problem.

**Prerequisites:**

•fluently add and subtract within 20 using mental strategies.
•using computational fluency, add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
•using computational fluency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
•Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
•Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem.

Prompting Rigor

- There are 583 students in Suzy's school. 99 third grade students left the school on a field trip. There are about 20 students in eac classrooms are being used today? Explain your answer.
- The school bought apples to give to students. They have 30 boxes with 8 apples in each box and they have 20 boxes with 10 app Each student needs 3 apples for the week. How many students can the school feed?
- Why is it important to consider the remainder when answering a problem? Give a real-life example of when it is important to dro Give a real-life example of when you need to round the remainder.
- Zoe is having a wedding. She has 178 guests attending. The party location can set up tables with 10 at each table OR tables with How many tables will Zoe need under each situation?
- Write a division problem that has 15 R2 as the quotient.
- Barry's family donated 11 cases of tomato soup to the local food kitchen. Each case has 12 cans of soup. The shelter already has soup. How many cans of tomato soup does the food kitchen have now? The food kitchen uses 20 cans of tomato soup each wee will go by before the food kitchen needs more tomato soup?

## Module 2: Unit Conversions

**Standard: 4.MD.A.2**

- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including the ability to make change; including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
- Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Note: This is a standard that may be addressed throughout the year focusing on different context.

**Supporting Standards:** 4.MD.A.1

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand how to add, subtract, multiply, and divide<br>•understand relative size and conversions within both the customary and metric measurement systems<br>•understand that measurement units (cm, inches, grams, pounds, etc.) are used to describe the numbers<br>•understand number-line diagrams feature a measurement scale and can represent measurement quantities | •use addition, subtraction, multiplication, and division to solve measurement word problems<br>•convert larger units into equivalent smaller units to solve a problem<br>•use pictures, manipulatives, and number lines to show measurement conversions and the solving of a problem | •decide if an answer is reasonable using mental math, estimation, or the inverse operation<br>•given an answer in a measurement unit (i.e. the answer is 32 inches), create a story problem involving conversions and operations to solve |

**Learning Targets:**

•I can use addition, subtraction, multiplication, and division to solve word problems.
•I can convert larger units into equivalent smaller units to solve a problem.
•I can use pictures, manipulatives, and number lines to show measurement conversions and the solving of a problem.

**Prerequisites:**

•fluently add and subtract within 20 using mental strategies.
•using computational fluency, add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
•using computational fluency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
•Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
•Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem.

Prompting Rigor

- There are 583 students in Suzy's school. 99 third grade students left the school on a field trip. There are about 20 students in eac classrooms are being used today? Explain your answer.
- The school bought apples to give to students. They have 30 boxes with 8 apples in each box and they have 20 boxes with 10 app Each student needs 3 apples for the week. How many students can the school feed?
- Why is it important to consider the remainder when answering a problem? Give a real-life example of when it is important to dro Give a real-life example of when you need to round the remainder.
- Zoe is having a wedding. She has 178 guests attending. The party location can set up tables with 10 at each table OR tables with How many tables will Zoe need under each situation?
- Write a division problem that has 15 R2 as the quotient.
- Barry's family donated 11 cases of tomato soup to the local food kitchen. Each case has 12 cans of soup. The shelter already has soup. How many cans of tomato soup does the food kitchen have now? The food kitchen uses 20 cans of tomato soup each wee will go by before the food kitchen needs more tomato soup?

## Module 3: Multi-digit Multiplication and Division

**Standard: 4.NBT.B.5**

- Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.
- Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Note: Properties of operations need to be referenced.

**Supporting Standards:** 4.NBT.A.1

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand the concept of multiplication<br>•understand the commutative, associative, and distributive properties<br>•understand there are multiple ways to multiply multi-digit numbers<br>•understand the role of place value in multiplication strategies | •use multiple strategies to solve multi-digit multiplication problems<br>•represent multi-digit multiplication with manipulatives, pictures, and equations | •solve the same multiplication problem using more than one strategy<br>•accurately explain the selected multiplication strategy<br>•solve real-world problems or use problem solving tasks involving multi-digit multiplication<br>•decide if an answer is reasonable using mental math, estimation, or the inverse operation |

**Learning Targets:**

•I can multiply a multi-digit number by a one-digit number.
•I can demonstrate multiplication of two two-digit numbers using rectangular arrays, place value, and the area model.

**Prerequisites:**

•using computational fluency, multiply within 100, using properties of operations.
•multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

Prompting Rigor

- How many different ways can you solve 289 x 8? 94 x 64?
- What two factors can be multiplied to result in a product of 126?
- Create two multiplication sentences that could create a product between 200 and 500?
- How does the order of the digits in the factors impact the product? (e.g., 452 x 7 compared to 425 x 7)
- Is the product of 29 x 34 over or under 900? Explain how you know.
- Think of an example in life when you might multiply two numbers? An example is, when might you multiply two two-digit numb number by a one digit number.

## Module 3: Multi-digit Multiplication and Division

**Standard: 4.NBT.B.6**
Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Note: Properties of operations need to be referenced.

**Supporting Standards:** 4.NBT.A.1

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand the concept of division<br>•understand that division can be partitive (finding the number in each group-equal sharing) or measurement (finding how many groups)<br>•understand the inverse relationship between multiplication and division<br>•understand there are multiple ways to divide multi-digit numbers<br>•understand the role of place value in division strategies<br>•understand how to interpret the remainder in a division problem based on the context of the problem | •use multiple strategies to solve multi-digit division problems<br>•represent multi-digit division with manipulatives, rectangular arrays, area models, and equations<br>•interpret the remainder in a division problem based on the context of the problem | •solve the same division problem using more than one strategy<br>•accurately explain the selected division strategy<br>•decide if an answer is reasonable using mental math, estimation, or the inverse operation<br>•solve real-world problems or use problem-solving tasks involving multi-digit division<br>•apply known strategies to larger numbers<br>•explain how changing the value of the divisor affects the quotient (i.e. 350 ÷ 5 vs 350 ÷ 50) |

**Learning Targets:**
•I can demonstrate division of a multi-digit number using place value, rectangular arrays, area models, and equations.
•I can use multiple strategies to solve multi-digit division problems.
•I can interpret the remainder in a division problem based on the context of the problem.

**Prerequisites:**
•using computational fluency, divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
•understand division as an unknown-factor problem. *For example: Find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*
•divide a multiple of ten by a single-digit factor of that number (i.e. 350 ÷ 7, 4,800 ÷ 8, etc.)

Prompting Rigor

- What is the relationship between multiplication and division? Provide examples to show your think
- How does knowing 5 x 5 help you to solve 75 ÷ 5? Explain.
- How many different ways can you solve 84 ÷ 6?
- If the quotient is 15, what could your possible dividend and divisor be?
- How does changing the value of your divisor affect the quotient? (e.g., 350 ÷ 5 vs. 350 ÷ 50?)
- Using the digits 4, 9, 7, and 5, create a division sentence with the greatest possible quotient.
- Which division strategy (partial quotients, rectangular array, area model) do you think is best? Justi

## Module 3: Multi-digit Multiplication and Division

**Standard: 4.OA.A.3**
- Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Supporting Standards:** 4.NBT.A.2, 4.NBT.B.4

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand that a symbol/letter can be used to represent an unknown number<br>•understand how to fluently add, subtract, multiply, and divide<br>•understand how to interpret the remainder in a division problem, based on the context of the problem | •draw an accurate model that matches the word problem (tape diagram, pictorial model)<br>•choose the correct operations to perform for all computations/steps<br>•write equations using a letter for the unknown numbers<br>•accurately solve one- and two-step word problems using the four operations | •use flexible strategies to solve real-world problems<br>•decide if an answer is reasonable using mental math, estimation, or the inverse operation |

**Learning Targets:**
•I can model the problem using a tape diagram or a pictorial model.
•I can choose the correct operations to solve a multi-step word problem.
•I can write equations that match the word problem using a letter for the unknown numbers.

| |
|---|
| •I can interpret the meaning of the remainder in a word problem. |
| **Prerequisites:**<br>•using computational fluency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.<br>•Use multiplication and division within 100 to solve one and two-step word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem. |
| Prompting Rigor<br>• There are 583 students in Suzy's school. 99 third grade students left the school on a field trip. There are about 20 students in eac classrooms are being used today? Explain your answer.<br>• The school bought apples to give to students. They have 30 boxes with 8 apples in each box and they have 20 boxes with 10 app Each student needs 3 apples for the week. How many students can the school feed?<br>• Why is it important to consider the remainder when answering a problem? Give a real-life example of when it is important to dro Give a real-life example of when you need to round the remainder.<br>• Zoe is having a wedding. She has 178 guests attending. The party location can set up tables with 10 at each table OR tables with How many tables will Zoe need under each situation?<br>• Write a division problem that has 15 R2 as the quotient.<br>• Barry's family donated 11 cases of tomato soup to the local food kitchen. Each case has 12 cans of soup. The shelter already has soup. How many cans of tomato soup does the food kitchen have now? The food kitchen uses 20 cans of tomato soup each wee will go by before the food kitchen needs more tomato soup? |

## Module 4: Angle Measure and Plane Figures

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|---|---|---|
| **Standard: 4.G.A.2**<br>● Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.<br>● Recognize right triangles as a category, and identify right triangles. | | |
| **Supporting Standards:** 4.G.A.1, 4.MD.C.5, 4.MD.C.6 | | |
| **Conceptual Understanding** | **Procedural Understanding** | **Application/Extension** |
| •understand specific characteristics of figures (including parallel lines/perpendicular lines, specific angles) and how to use those characteristics to sort and classify figures<br>•understand the definition of a right triangle | •identify parallel and perpendicular line segments in two-dimensional figures<br>•classify two-dimensional figures into categories (including those with/without parallel line segments and perpendicular line segments) using manipulatives and pictures<br>•classify shapes by their angles using manipulatives and pictures<br>•identify a right triangle using manipulatives and pictures | •solve word problems or use problem solving tasks involving two-dimensional figures with a variety of characteristics<br>•explain which shapes meet more than 1 condition (i.e. an equilateral triangle is also an acute triangle)<br>•explain special types of two-dimensional shapes (i.e. a square is a rectangle)<br>•explain if you can make a specified shape with a given number of a type of angle |

**Learning Targets:**
•I can identify parallel and perpendicular line segments in two-dimensional figures.
•I can classify two-dimensional shapes into categories (including those with/without parallel line segments and perpendicular line segments).
•I can classify shapes by their angles.
•I can identify a right triangle.

**Prerequisites:**
•recognize and draw shapes having specified attributes, (e.g., number of angles, number of sides). Identify triangles, quadrilaterals, pentagons, and hexagons.
•understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals).
•recognize rhombuses, rectangles, and squares as examples of quadrilaterals

Prompting Rigor

- Bobby says that all equilateral triangles must also be acute triangles. Is he correct? Justify your answer.
- Can you draw a right triangle with one of the other angles being obtuse? Try it. Why or why not?
- Do all quadrilaterals have to have two sets of parallel lines? Draw figures that would either prove this to be true or false.
- Can you draw a pentagon with two right angles? Can you draw a hexagon with two right angles? Compare your shapes wi
- What geometric shapes contain parallel lines? What shapes contain perpendicular lines? Draw examples to support your a
- Is a square a rectangle? Is a rhombus a parallelogram? Is a rhombus always a square? Why or why not?
- Can you draw a pentagon with two right angles? Can you draw a hexagon with two right angles? Compare your shapes wi
- Do 2 triangles always make a quadrilateral?
- Using two triangles, how many different polygons can you make? Sketch and name them.
- Using the seven tangram pieces, can you make a square? a rectangle? a parallelogram? a trapezoid? a triangle? (all are poss tangram pieces for each shape)

## Module 5: Fraction Equivalence, Ordering, and Operations

**Standard: 4.NF.A.1**

- By using visual fraction models, explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ 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.

*nple: 1/5 is equivalent to (2 × 1)/(2 × 5).*

**Supporting Standards:**

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand that although the number and size of the parts are different, the two fractions represent the same size<br>•understand that equivalent fractions represent the same value on a number line<br>•understand when discussing equivalent fractions, there is an underlying assumption that the wholes are the same size | •create equivalent fractions using visual models<br>•use models/pictures/number lines to explain why different fractions are equivalent<br>•explain why fractions are equivalent<br>•generate equivalent fractions numerically | •represent equivalent fractions in multiple ways<br>•solve real-world problems or use problem-solving tasks involving equivalent fractions<br>•make connections between equivalent fractions and comparing fractions<br>•make connections between equivalent fractions and adding/subtracting fractions |

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|---|---|---|
| **Learning Targets:**<br>•I can use models to explain why different fractions are equivalent.<br>•I can create equivalent fractions using visual models.<br>•I can explain why fractions are equivalent.<br>•I can create equivalent fractions numerically. | | |
| **Prerequisites:**<br>•understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts. *For example: Unit fractions are fractions with a numerator of 1 derived from a whole partitioned into equal parts and having 1 of those equal parts (*$\frac{1}{4}$ *is 1 part of 4 equal parts).*<br>•understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*. *For example: Unit fractions can be joined together to make non-unit fractions (*$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$*)*<br>•understand a fraction as a number on the number line; represent fractions on a number line diagram<br>•understand the denominator represents the number of equal parts in the whole<br>•understand as a whole is divided into more parts, the parts become smaller<br>•understand that as the number in the denominator increases, the parts become smaller since there are more of them<br>•recognize that equal shares of identical wholes need not have the same shape<br>•compare two fractions with the same numerator or the same denominator by reasoning about the size (i.e. $\frac{1}{4} < \frac{3}{4}$ because $\frac{3}{4}$ is equal to $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ and $\frac{1}{4} > \frac{1}{8}$ because there are fewer fourths in a whole than eighths, so the fourths are larger) | | |
| Prompting Rigor<br>• What are 3 fractions equivalent to 3/4?<br>• How can 4/5 and 8/10 be equivalent if the numerator and denominator in each is different?<br>• Represent the value of 1 ½ in 3 different ways.<br>• Andy, Lee, and Val each ate ½ of pizza. The pizzas were the same size, but Andy ate one piece, Lee ate three slices, and Val ate f this possible? (Andy cut his in halves, Lee cut his in sixths, and Val cut her pizza into eighths.)<br>• Show how 5/15 is equivalent to 1/3 rather than 1/5.<br>• Write the statement 10/12 is twice as large as 5/6 on the board. Ask students if they agree or disagree with the statement. Can defend their answer?<br>• Why is 3/5 the same as 6/10 when the two fractions have different numbers? | | |

## Module 5: Fraction Equivalence, Ordering, and Operations

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|---|---|---|
| **Standard: 4.NF.B.3c & d**<br>● Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each number with an equivalent fraction).<br>● Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators (e.g., by using visual fraction models and equations to represent the problem). | | |
| **Supporting Standards:** 4.NF.B.3a & b | | |
| **Conceptual Understanding** | **Procedural Understanding** | **Application/Extension** |
| •understand that the denominator is a label or unit for the fraction/mixed number and, just like with whole numbers, only like units can be added or subtracted<br>•understand that a fraction can be decomposed and there are many ways to decompose a fraction, similar to whole numbers<br>•understand the equivalent relationship between mixed numbers and fractions greater than one<br>•understand unit fractions | •use visual models to decompose a fraction<br>•use visual models to add and subtract fractions with like denominators<br>•add and subtract fractions with like denominators (including mixed numbers)<br>•solve word problems with fractions with like denominators | •write a fraction word problem for a given equation, sum, or difference<br>•add and subtract mixed numbers involving regrouping |

| | | |
|---|---|---|
| •understand the concept of addition and subtraction and when applying those concepts to fractions, it is referring to the same whole | | |

**Learning Targets:**
•I can use models to add and subtract fractions with like denominators.
•I can use visual models to decompose a fraction. For example, $75 = 55 + 25$.
•I can add and subtract fractions and mixed numbers with common denominators.
•I can solve word problems with fractions with like denominators.

**Prerequisites:**
•understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts. *For example: Unit fractions are fractions with a numerator of 1 derived from a whole partitioned into equal parts and having 1 of those equal parts (*$14$ *is 1 part of 4 equal parts).*
•understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*. *For example: Unit fractions can be joined together to make non-unit fractions (*$14 + 14 + 14 = 34$*)*
•understand a fraction as a number on the number line; represent fractions on a number line diagram
•understand a number greater than 1 can be represented in fractional form
•add and subtract within 20

- If the sum of two mixed numbers is 6, what could the two addends be?
- Is the sum of 4 ⅗ + 2 ⅘ over or under 7? Explain why or why not.
- Is the difference of 5 ⅔ - 3 ⅓ over or under 2? Explain why or why not.
- How can you demonstrate how 4 ½ is equal to 9/2? Use models, drawings and/or equations to explain your thinking.
- Write two problems that have a difference of 3 4/10?

- At noon, the bakery had 1 whole pumpkin pie and 5/12 of a pumpkin pie available to sell. At the end of the day, 3/12 of a pie was left. How much pumpkin pie did the bakery sell during the afternoon?
- Shelly needs 1 ⅝ cups of oats for a cookie recipe. How many cups of oats does Shelly need if she is tripling the recipe? (This question is not exclusive to multiplication of fractions, repeated addition can be used)
- The answer is 5 ¼, write a story problem involving addition and/or subtraction to result in this answer.

- Jashae has 3 ¾ foot of yarn. She uses 1 ¼ foot of the yarn to make a bracelet. Then she gave her sister 1 ¼ foot of yard for her bracelet. How much yarn does she have left? Represent this problem visually.
- Don came home and found a fraction of a large pizza on the counter. He eats 3/8 of the pizza and now there is 2/8 of a pizza left. What fraction of the pizza was on the counter when he got home?

## Module 6: Decimal Fractions

**Standard: 4.NF.C.6**
Use decimal notation for fractions with denominators 10 or 100.
*For example: Write 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*

**Supporting Standards:** 4.NF.C.5

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|
| •understand that decimals are an extension of our whole number base-ten system<br>•understand decimals and fractions both represent parts of a whole<br>•understand that the decimal point separates the whole number amount from a number that is less than one<br>•understand how to read and write decimals and fractions | •show the relationship between a fraction and a decimal with a model<br>•explain the relationship between a fraction and a decimal<br>•write a fraction with a denominator of 10 or 100 as a decimal | •write three decimals that are in between two fractions<br>•name two decimals that occupy the same point on a number line<br>•rewrite a decimal as the sum of two fractions<br>•use the idea of equivalent fractions to extend to other fractions with a denominator of 1,000 |

| | | |
|---|---|---|
| | •show a decimal on a number line | |

**Learning Targets:**
•I can use models to show the relationship between a fraction and a decimal.
•I can explain the relationship between a fraction and a decimal.
•I can write a fraction with a denominator of 10 or 100 as a decimal.
•I can identify the tenths and hundredths places.
•I can show a decimal on a number line.

**Prerequisites:**
•model fractions with a denominator of 10 or 100
•given a fraction model showing tenths or hundredths, write the fraction

Prompting Rigor

- What is the relationship between decimals and fractions?
- Is it easier to convert a fraction to a decimal when the denominator is a multiple of 10? An even number?
- Rewrite this number sentence using decimals : 40/100 + 2/100 = 42/100.
- Write three decimals that are in between ¼ and ¾? How do you know your answer is correct?
- Name two decimals that occupy the same point on a number line.

## Module 7: Exploring Multiplication

**Standard: 4.OA.A.3**

- Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Supporting Standards:** 4.NBT.A.2, 4.NBT.B.4

| Conceptual Understanding | Procedural Understanding | Application/Extension |
|---|---|---|

| | | |
|---|---|---|
| •understand that a symbol/letter can be used to represent an unknown number<br>•understand how to fluently add, subtract, multiply, and divide<br>•understand how to interpret the remainder in a division problem, based on the context of the problem | •draw an accurate model that matches the word problem (tape diagram, pictorial model)<br>•choose the correct operations to perform for all computations/steps<br>•write equations using a letter for the unknown numbers<br>•accurately solve one- and two-step word problems using the four operations | •use flexible strategies to solve real-world problems<br>•decide if an answer is reasonable using mental math, estimation, or the inverse operation |

**Learning Targets:**

•I can model the problem using a tape diagram or a pictorial model.
•I can choose the correct operations to solve a multi-step word problem.
•I can write equations that match the word problem using a letter for the unknown numbers.
•I can interpret the meaning of the remainder in a word problem.

**Prerequisites:**

•fluently add and subtract within 20 using mental strategies.
•using computational fluency, add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
•using computational fluency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
•Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
•Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem.

Prompting Rigor

- There are 583 students in Suzy's school. 99 third grade students left the school on a field trip. There are about 20 students in eac classrooms are being used today? Explain your answer.
- The school bought apples to give to students. They have 30 boxes with 8 apples in each box and they have 20 boxes with 10 app Each student needs 3 apples for the week. How many students can the school feed?
- Why is it important to consider the remainder when answering a problem? Give a real-life example of when it is important to drop Give a real-life example of when you need to round the remainder.
- Zoe is having a wedding. She has 178 guests attending. The party location can set up tables with 10 at each table OR tables with How many tables will Zoe need under each situation?
- Write a division problem that has 15 R2 as the quotient.
- Barry's family donated 11 cases of tomato soup to the local food kitchen. Each case has 12 cans of soup. The shelter already has soup. How many cans of tomato soup does the food kitchen have now? The food kitchen uses 20 cans of tomato soup each wee will go by before the food kitchen needs more tomato soup?