Main Criteria: Common Core State Standards

Secondary Criteria: California Content Standards, Pennsylvania Core and Academic Standards

Subject: Mathematics Grade: 4

Correlation Options: Show Correlated

Main Criteria Standards	California Content Standards	Pennsylvania Core and Academic Standards
Mathematics		
Grade 4		
CATEGORY / CLUSTER: CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them.	MP.1 Make sense of problems and persevere in solving them.	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically. CC.MP.4 Look for and make use of structure. CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
CATEGORY / CLUSTER: CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively.	MP.2 Reason abstractly and quantitatively.	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure. CC.MP.5 Reason abstractly and quantitatively. CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.

CATEGORY / CLUSTER:	MP.3 Construct viable arguments and critique	CC.MP.1 Make sense of problems and
CCSS.Math.Practice.MP3 - Construct viable	the reasoning of others.	persevere in solving them.
arguments and critique the reasoning of others.		CC.MP.2 Construct viable arguments and
		critique the reasoning of others.
		CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics.
		CC.MP.7 Attend to precision.
		CC.MP.8 Look for and express regularity in
		repeated reasoning.
CATEGORY / CLUSTER:	MP.4 Model with mathematics.	CC.MP.1 Make sense of problems and
CCSS.Math.Practice.MP4 - Model with		persevere in solving them.
mathematics.		CC.MP.2 Construct viable arguments and
		critique the reasoning of others.
		CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics.
		CC.MP.7 Attend to precision.
		CC.MP.8 Look for and express regularity in
		repeated reasoning.
CATEGORY / CLUSTER:	MP.5. - Use appropriate tools strategically.	CC.MP.1 Make sense of problems and
CCSS.Math.Practice.MP5 - Use appropriate		persevere in solving them.
tools strategically.		CC.MP.2 Construct viable arguments and
		critique the reasoning of others.
		CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.

		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision.
		CC.MP.8. - Look for and express regularity in repeated reasoning.
CATEGORY / CLUSTER: CCSS.Math.Practice.MP6 - Attend to precision.	MP.6 Attend to precision.	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and
		critique the reasoning of others. CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision.
		CC.MP.8 Look for and express regularity in repeated reasoning.
CATEGORY / CLUSTER: CCSS.Math.Practice.MP7 - Look for and make use of structure.	MP.7 Look for and make use of structure.	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and
add of directors.		critique the reasoning of others. CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in
		repeated reasoning.
CATEGORY / CLUSTER: CCSS.Math.Practice.MP8 - Look for and	MP.8. - Look for and express regularity in repeated reasoning.	CC.MP.1 Make sense of problems and persevere in solving them.
express regularity in repeated reasoning.		CC.MP.2. - Construct viable arguments and critique the reasoning of others.

		CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision.
		CC.MP.8. - Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.OA.A.1 - Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	CC.MP.1 Make sense of problems and persevere in solving them.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.	CC.MP.3 Use appropriate tools strategically.

- **4.NBT.5.** Multiply a whole number of up to four **CC.MP.4.** Look for and make use of structure. 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.
- 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 \times (1/4), recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- 4.NF.4.b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- 4.NF.4.c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.0A.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- **4.OA.4.** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

STANDARD: CCSS.Math.Content.4.OA.A.2 -Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

CC.MP.1. - Make sense of problems and persevere in solving them.

4.MD.3. - Apply the area and perimeter formulas **CC.MP.2.** - Construct viable arguments and for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

critique the reasoning of others.

4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

CC.MP.3. - Use appropriate tools strategically.

4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

CC.MP.4. - Look for and make use of structure.

- **4.NBT.6.** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

4.OA.2. - Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **4.OA.3.** - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4.OA.4. - Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

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

4.MD.2. - Use the four operations to solve word liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

CC.MP.1. - Make sense of problems and persevere in solving them.

- **4.MD.3.** Apply the area and perimeter formulas **CC.MP.2.** Construct viable arguments and for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.
- **4.NBT.1.** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
- **4.NBT.5.** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NBT.6.** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 \times (1/4), recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

critique the reasoning of others.

CC.MP.3. - Use appropriate tools strategically.

ICC.MP.4. - Look for and make use of structure.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.0A.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

CC.MP.7. - Attend to precision.

	4.0A.3. - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.OA.B.4 - Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.	·	CC.2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.1 Make sense of problems and persevere in solving them.

- 4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
- **4.NBT.5.** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area

models.

- 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.1.** Explain why a fraction a/b is equivalent **CC.MP.5.** Reason abstractly and quantitatively. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

- CC.MP.2. Construct viable arguments and critique the reasoning of others.
- **CC.MP.3.** Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

- **4.NF.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- **4.NF.3.a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- **4.NF.3.b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
- **4.NF.3.c.** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- **4.NF.3.d.** 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.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.OA.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.OA.C.5 - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically. CC.MP.4 Look for and make use of structure. CC.MP.5 Reason abstractly and quantitatively. CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.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 by applying concepts of place value and division.	·	CC.2.1.4.B.1 Apply place-value concepts to show an understanding of multi-digit whole numbers.

4.M	D.3. - Apply the area and perimeter formulas
for r	ectangles in real world and mathematical
prob	plems. For example, find the width of a
rect	angular room given the area of the flooring
and	the length, by viewing the area formula as a
mult	tiplication equation with an unknown factor.

CC.MP.1. - Make sense of problems and persevere in solving them.

4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

4.NBT.2. - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

CC.MP.3. - Use appropriate tools strategically.

4.NBT.3. - Use place value understanding to round multi-digit whole numbers to any place.

CC.MP.4. - Look for and make use of structure.

4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

CC.MP.5. - Reason abstractly and quantitatively.

- **4.NBT.6.** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

4.OA.2. - Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
4.OA.3. - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

STANDARD: **CCSS.Math.Content.4.NBT.A.2** - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and <. symbols to record the results of comparisons.

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

4.NBT.2. - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

CC.MP.1. - Make sense of problems and persevere in solving them.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

	4.NBT.3. - Use place value understanding to round multi-digit whole numbers to any place.	CC.MP.3 Use appropriate tools strategically.
	4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	CC.MP.4 Look for and make use of structure.
	4.NBT.6. - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.NBT.A.3 - Use place value understanding to round multidigit whole numbers to any place.	4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.	CC.MP.1 Make sense of problems and persevere in solving them.
	4.NBT.2. - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

	4.NBT.3. - Use place value understanding to round multi-digit whole numbers to any place.	CC.MP.3 Use appropriate tools strategically.
	4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	CC.MP.4 Look for and make use of structure.
	4.NBT.6. - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.NBT.B.4 - Fluently add and subtract multi-digit whole numbers using the standard algorithm.	4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multidigit arithmetic.
	4.NBT.4. - Fluently add and subtract multi-digit whole numbers using the standard algorithm.	CC.MP.1. - Make sense of problems and persevere in solving them.

	4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. 4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.	CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically.
	4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	CC.MP.4 Look for and make use of structure.
	4.NF.3.d. - 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.	CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.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.	4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multidigit arithmetic.

4.M	D.3. - Apply the area and perimeter formulas
for r	ectangles in real world and mathematical
prob	plems. For example, find the width of a
rect	angular room given the area of the flooring
and	the length, by viewing the area formula as a
mult	tiplication equation with an unknown factor.

CC.MP.1. - Make sense of problems and persevere in solving them.

4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

4.NBT.2. - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

CC.MP.3. - Use appropriate tools strategically.

4.NBT.3. - Use place value understanding to round multi-digit whole numbers to any place.

CC.MP.4. - Look for and make use of structure.

4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

CC.MP.5. - Reason abstractly and quantitatively.

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

4.NF.1. - Explain why a fraction a/b is equivalent **CC.MP.7.** - Attend to precision. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 \times (1/4), recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

CC.MP.6. - Model with mathematics.

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.0A.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.OA.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.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.	· ·	CC.MP.1 Make sense of problems and persevere in solving them.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.	CC.MP.3 Use appropriate tools strategically.

- 4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multidigit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
- **4.NBT.3.** Use place value understanding to round multi-digit whole numbers to any place.
- **4.NBT.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.
- 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.1.** Explain why a fraction a/b is equivalent **CC.MP.8.** Look for and express regularity in to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

CC.MP.4. - Look for and make use of structure.

CC.MP.5. - Reason abstractly and quantitatively.

ICC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

repeated reasoning.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.0A.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

STANDARD: CCSS.Math.Content.4.NF.A.1 - Explain why a fraction a/b is equivalent to a	problems involving distances, intervals of time,	CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.
fraction (n x a)/(n x 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.	liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	
		CC.MP.1 Make sense of problems and persevere in solving them.

4.NBT.6. - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	CC.MP.2. - Construct viable arguments and critique the reasoning of others.
4.NF.1. - Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.3 Use appropriate tools strategically.
4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	CC.MP.4 Look for and make use of structure.
4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	CC.MP.5 Reason abstractly and quantitatively.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 21/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3.d. - 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.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

ICC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA

STANDARD: CCSS.Math.Content.4.NF.A.2 - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by	problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing	CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.
using a visual fraction model.	4.NF.1. - Explain why a fraction a/b is equivalent	CC.MP.1 Make sense of problems and persevere in solving them.
	4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.3. - Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3.d. - 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.

CC.MP.7. - Attend to precision.

CC.MP.6. - Model with mathematics.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

CC.MP.8. - Look for and express regularity in repeated reasoning.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
EXPECTATION: CCSS.Math.Content.4.NF.B.3a - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	· ·	CC.MP.1 Make sense of problems and persevere in solving them.
	 4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm. 4.NF.1 Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x 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. 	CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 = 3/8 + 3/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CC.MP.7. - Attend to precision.

4.NF.3.d. - 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

4.NF.7. - Compare two decimals to hundredths
by reasoning about their size. Recognize that
comparisons are valid only when the two
decimals refer to the same whole. Record the
results of comparisons with the symbols >, =, or
<, and justify the conclusions, e.g., by using the
number line or another visual model. CA

4.OA.4. - Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

EXPECTATION:

CCSS.Math.Content.4.NF.B.3b - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 =1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

4.NBT.4. - Fluently add and subtract multi-digit whole numbers using the standard algorithm.

4.NF.1. - Explain why a fraction a/b is equivalent CC.MP.2. - Construct viable arguments and to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

CC.2.1.4.C.2. - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

CC.MP.1. - Make sense of problems and persevere in solving them.

critique the reasoning of others.

CC.MP.3. - Use appropriate tools strategically.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.4. - Look for and make use of structure.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

CC.MP.6. - Model with mathematics.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CC.MP.7. - Attend to precision.

4.NF.3.d. - 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

EXPECTATION: CCSS.Math.Content.4.NF.B.3c - Add and subtract mixed numbers with like denominators e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of	problems involving distances, intervals of time,	CC.MP.1 Make sense of problems and persevere in solving them.
operations and the relationship between additionand subtraction.	measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	
	4.NBT.4. - Fluently add and subtract multi-digit whole numbers using the standard algorithm.	CC.MP.2. - Construct viable arguments and critique the reasoning of others.
	4.NF.1. - Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.3 Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 = 3/8 + 3/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CC.MP.7. - Attend to precision.

4.NF.3.d. - 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

EXPECTATION: CCSS.Math.Content.4.NF.B.3d - 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.	problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line	CC.MP.1 Make sense of problems and persevere in solving them.
models and equations to represent the problem.	a smaller unit. Represent measurement	
	4.NBT.4. - Fluently add and subtract multi-digit whole numbers using the standard algorithm.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NF.1. - Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.3 Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 = 3/8 + 3/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CC.MP.7. - Attend to precision.

4.NF.3.d. - 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

	4.NF.7. - Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA 4.OA.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit	
	number. Determine whether a given whole number in the range 1–100 is prime or composite.	
EXPECTATION: CCSS.Math.Content.4.NF.B.4a - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.	4.MD.2. - Use the four operations to solve word	CC.MP.1 Make sense of problems and persevere in solving them.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

CC.MP.3. - Use appropriate tools strategically.

4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

ICC.MP.4. - Look for and make use of structure.

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

CC.MP.5. - Reason abstractly and quantitatively.

4.NF.1. - Explain why a fraction a/b is equivalent **CC.MP.6.** - Model with mathematics. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

- **4.NF.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- CC.MP.8. Look for and express regularity in

CC.MP.7. - Attend to precision.

repeated reasoning.

- **4.NF.3.a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- **4.NF.3.b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
- **4.NF.3.c.** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- **4.NF.3.d.** 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.OA.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
EXPECTATION: CCSS.Math.Content.4.NF.B.4b - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express 3 x (2/5) as 6 x (1/5), recognizing this product as 6/5. (In general, n x (a/b) = (n x a)/b.)	4.MD.2. - Use the four operations to solve word	CC.MP.1 Make sense of problems and persevere in solving them.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.	CC.MP.3 Use appropriate tools strategically.

4.NBT.5. - Multiply a whole number of up to four **CC.MP.4.** - Look for and make use of structure. 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.

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

4.NF.1. - Explain why a fraction a/b is equivalent **CC.MP.6.** - Model with mathematics. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.7. - Attend to precision.

- **4.NF.3.b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 21/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
- **4.NF.3.c.** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- **4.NF.3.d.** 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.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA
- **4.0A.1.** Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

4.OA.2 Multiply or divide to solve word
problems involving multiplicative comparison,
e.g., by using drawings and equations with a
symbol for the unknown number to represent the
problem, distinguishing multiplicative
comparison from additive comparison.
4.OA.3. - Solve multistep word problems posed
with whole numbers and having whole-number
answers using the four operations, including
problems in which remainders must be
nterpreted. 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.

A O A O Multiply or divide to polye yeard

4.OA.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

EXPECTATION:

CCSS.Math.Content.4.NF.B.4c - Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

CC.MP.1. - Make sense of problems and persevere in solving them.

4.MC	D.3. - Apply the area and perimeter formulas
for re	ectangles in real world and mathematical
probl	lems. For example, find the width of a
recta	ingular room given the area of the flooring
and t	the length, by viewing the area formula as a
multi	plication equation with an unknown factor.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

CC.MP.3. - Use appropriate tools strategically.

4.NBT.5. - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

ICC.MP.4. - Look for and make use of structure.

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

CC.MP.5. - Reason abstractly and quantitatively.

4.NF.1. - Explain why a fraction a/b is equivalent **CC.MP.6.** - Model with mathematics. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

- **4.NF.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- CC.MP.8. Look for and express regularity in

CC.MP.7. - Attend to precision.

repeated reasoning.

- **4.NF.3.a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- **4.NF.3.b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
- **4.NF.3.c.** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- **4.NF.3.d.** 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.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.OA.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

STANDARD: CCSS.Math.Content.4.NF.C.5 -	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. 4.MD.2 Use the four operations to solve word	CC.2.1.4.C.3 Connect decimal notation to
Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.	·	fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).
	4.NF.1. - Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.1 Make sense of problems and persevere in solving them.
	4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.3. - Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3.d. - 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.

CC.MP.7. - Attend to precision.

CC.MP.6. - Model with mathematics.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

CC.MP.8. - Look for and express regularity in repeated reasoning.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
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- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.NF.C.6 - Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.	<u>'</u>	CC.2.1.4.C.3. - Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).
	4.NF.1. - Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.1 Make sense of problems and persevere in solving them.
	4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.3. - Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3.d. - 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.

CC.MP.7. - Attend to precision.

CC.MP.6. - Model with mathematics.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

CC.MP.8. - Look for and express regularity in repeated reasoning.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA

	4.OA.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.NF.C.7 - Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.	4.MD.2. - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	CC.MP.1 Make sense of problems and persevere in solving them.
	4.NF.1. - Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NF.2. - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	CC.MP.3 Use appropriate tools strategically.

4.NF.3.a. - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b. - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 21/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

4.NF.3.c. - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3.d. - 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.

4.NF.4.a. - Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

4.NF.4.b. - Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)

CC.MP.4. - Look for and make use of structure.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA

	4.OA.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.MD.A.1 - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),	units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents	CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.
(3, 30),		CC.MP.1 Make sense of problems and persevere in solving them.
		CC.MP.2 Construct viable arguments and critique the reasoning of others. CC.MP.3 Use appropriate tools strategically. CC.MP.4 Look for and make use of structure.

STANDARD: CCSS.Math.Content.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 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.		CC.MP.5 Reason abstractly and quantitatively. CC.MP.6 Model with mathematics. CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning. CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.
	 4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. 4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. 	CC.MP.1 Make sense of problems and persevere in solving them. CC.MP.2 Construct viable arguments and critique the reasoning of others.

- 4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
- 4.NBT.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- **4.NBT.5.** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.1.** Explain why a fraction a/b is equivalent **CC.MP.7.** Attend to precision. to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

CC.MP.3. - Use appropriate tools strategically.

CC.MP.4. - Look for and make use of structure.

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

- **4.NF.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- **4.NF.3.a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- **4.NF.3.b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.
- **4.NF.3.c.** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- **4.NF.3.d.** 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.

CC.MP.8. - Look for and express regularity in repeated reasoning.

- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- **4.NF.4.b.** Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- **4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
- **4.NF.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
- **4.NF.6.** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

- **4.NF.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA
- **4.OA.1.** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- **4.OA.2.** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- **4.OA.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

	4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
STANDARD: CCSS.Math.Content.4.MD.A.3 - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	· ·	CC.MP.1 Make sense of problems and persevere in solving them.
	4.MD.3. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	4.NBT.1. - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.	CC.MP.3 Use appropriate tools strategically.

- **4.NBT.5.** Multiply a whole number of up to four **CC.MP.4.** Look for and make use of structure. 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.
- 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **4.NF.4.a.** Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 \times (1/4), recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- 4.NF.4.b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as 6/5. (In general, $n \times (a/b) = (n \times a)/b$.)
- 4.NF.4.c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

CC.MP.5. - Reason abstractly and quantitatively.

CC.MP.6. - Model with mathematics.

CC.MP.7. - Attend to precision.

CC.MP.8. - Look for and express regularity in repeated reasoning.

4.OA.1. - Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

4.OA.2. - Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.0A.3. - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4.0A.4. - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

STANDARD: **CCSS.Math.Content.4.MD.B.4** - Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length

4.MD.4. - Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in

CC.2.4.4.A.4. - Represent and interpret data involving fractions using information provided in a line plot.

CC.MP.1. - Make sense of problems and persevere in solving them.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

between the longest and shortest specimens in an insect collection.	an insect collection.	CC.MP.3 Use appropriate tools strategically.
		CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics.
		CC.MP.7 Attend to precision.
		CC.MP.8 Look for and express regularity in
		repeated reasoning.
EXPECTATION:	4.G.1. - Draw points, lines, line segments, rays,	CC.MP.1 Make sense of problems and
CCSS.Math.Content.4.MD.C.5a - An angle is	angles (right, acute, obtuse), and perpendicular	persevere in solving them.
measured with reference to a circle with its	and parallel lines. Identify these in two-	
center at the common endpoint of the rays, by	dimensional figures.	<u> </u>
considering the fraction of the circular arc	4.G.2. - Classify two-dimensional figures based	CC.MP.2 Construct viable arguments and
between the points where the two rays intersect	on the presence or absence of parallel or	critique the reasoning of others.
the circle. An angle that turns through 1/360 of a	1	
circle is called a "one-degree angle," and can be		
used to measure angles.	triangles as a category, and identify right	
	triangles. (Two dimensional shapes should	
	include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals,	
	e.g., rhombus, square, rectangle, parallelogram,	
	trapezoid.) CA	
	litapezoid.) OA	
	4.G.3. - Recognize a line of symmetry for a two-	CC.MP.3 Use appropriate tools strategically.
	dimensional figure as a line across the figure	Transition of appropriate tools strategistally.
	such that the figure can be folded along the line	
	into matching parts. Identify line-symmetric	
	figures and draw lines of symmetry.	
	, ,	

	4.MD.5.a. - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	CC.MP.4 Look for and make use of structure.
	4.MD.5.b. - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	CC.MP.5 Reason abstractly and quantitatively.
		CC.MP.6 Model with mathematics.
	I :	CC.MP.7 Attend to precision.
		CC.MP.8. - Look for and express regularity in repeated reasoning.
CCSS.Math.Content.4.MD.C.5b - An angle that urns through n one-degree angles is said to	4.G.1. - Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.

4.G.2. - Classify two-dimensional figures based	
on the presence or absence of parallel or	
perpendicular lines, or the presence or absence	
of angles of a specified size. Recognize right	
triangles as a category, and identify right	
triangles. (Two dimensional shapes should	
include special triangles, e.g., equilateral,	
isosceles, scalene, and special quadrilaterals,	
e.g., rhombus, square, rectangle, parallelogram,	
trapezoid.) CA	

CC.MP.1. - Make sense of problems and persevere in solving them.

4.G.3. - Recognize a line of symmetry for a twodimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

CC.MP.2. - Construct viable arguments and critique the reasoning of others.

4.MD.5.a. - An angle is measured with reference **CC.MP.3.** - Use appropriate tools strategically. to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.

4.MD.5.b. - An angle that turns through n onedegree angles is said to have an angle measure of n degrees.

CC.MP.4. - Look for and make use of structure.

4.MD.6. - Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

CC.MP.5. - Reason abstractly and quantitatively.

STANDARD: CCSS.Math.Content.4.MD.C.6 - Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. 4.G.2 Classify two-dimensional figures based	CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems. CC.MP.1 Make sense of problems and persevere in solving them.
		CC.MP.2. - Construct viable arguments and critique the reasoning of others.

	4.MD.5.a. - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	CC.MP.3 Use appropriate tools strategically.
	4.MD.5.b. - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	CC.MP.4 Look for and make use of structure.
		CC.MP.5 Reason abstractly and quantitatively.
	4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	CC.MP.6 Model with mathematics.
		CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.MD.C.7 - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of	angles (right, acute, obtuse), and perpendicular	CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.

the angle measures of the parts. Solve addition 4.G.2. - Classify two-dimensional figures based CC.MP.1. - Make sense of problems and and subtraction problems to find unknown on the presence or absence of parallel or persevere in solving them. perpendicular lines, or the presence or absence angles on a diagram in real world and mathematical problems, e.g., by using an of angles of a specified size. Recognize right equation with a symbol for the unknown angle triangles as a category, and identify right triangles. (Two dimensional shapes should measure. include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.) CA 4.G.3. - Recognize a line of symmetry for a two-CC.MP.2. - Construct viable arguments and dimensional figure as a line across the figure critique the reasoning of others. such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. **4.MD.5.a.** - An angle is measured with reference **CC.MP.3**. - Use appropriate tools strategically. to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. **4.MD.5.b.** - An angle that turns through n one-**CC.MP.4.** - Look for and make use of structure. degree angles is said to have an angle measure of n degrees. **4.MD.6.** - Measure angles in whole-number **CC.MP.5.** - Reason abstractly and quantitatively.

degrees using a protractor. Sketch angles of

specified measure.

	4.MD.7. - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	
		CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.G.A.1 - Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	 4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. 4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (Two dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.) CA 	CC.2.3.4.A.1 Draw lines and angles and identify these in two-dimensional figures. CC.MP.1 Make sense of problems and persevere in solving them.
	4.G.3. - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	CC.MP.2. - Construct viable arguments and critique the reasoning of others.

	4.MD.5.a. - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	CC.MP.3 Use appropriate tools strategically.
	4.MD.5.b. - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	CC.MP.4 Look for and make use of structure.
	1	CC.MP.5 Reason abstractly and quantitatively.
	4.MD.7. - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	CC.MP.6 Model with mathematics.
		CC.MP.7 Attend to precision. CC.MP.8 Look for and express regularity in repeated reasoning.
STANDARD: CCSS.Math.Content.4.G.A.2 - Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a	angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-	CC.MP.1 Make sense of problems and persevere in solving them.

specified size. Recognize right triangles as a category, and identify right triangles.	on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (Two dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals,	CC.MP.2 Construct viable arguments and critique the reasoning of others.
	e.g., rhombus, square, rectangle, parallelogram, trapezoid.) CA 4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	CC.MP.3 Use appropriate tools strategically.
	4.MD.5.a. - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	CC.MP.4 Look for and make use of structure.
	 4.MD.5.b An angle that turns through n one-degree angles is said to have an angle measure of n degrees. 4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. 	CC.MP.5 Reason abstractly and quantitatively. CC.MP.6 Model with mathematics.

	4.MD.7. - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	
STANDARD: CCSS.Math.Content.4.G.A.3 - Recognize a line of symmetry for a two- dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	CC.2.3.4.A.3 Recognize symmetric shapes and draw lines of symmetry. CC.MP.1 Make sense of problems and persevere in solving them.
	4.G.3. - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	CC.MP.2 Construct viable arguments and critique the reasoning of others.

4.MD.5.a. - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	CC.MP.3 Use appropriate tools strategically.
4.MD.5.b. - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	CC.MP.4 Look for and make use of structure.
4.MD.6. - Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	CC.MP.5 Reason abstractly and quantitatively
4.MD.7. - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown	CC.MP.6 Model with mathematics.

CC.MP.7. - Attend to precision.
CC.MP.8. - Look for and express regularity in

repeated reasoning.

angle measure.