

# Grade 4 Yearlong Mathematics Map

**Resources:** Approved from Board of Education

**Assessments:** PARCC Assessments, Performance Series, District Benchmark Assessments

**Common Core State Standards – Standards for Mathematical Practice:**

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| 1. Make sense of problems and persevere in solving them.            | 2. Reason abstractly and quantitatively.                  |
| 3. Construct viable arguments and critique the reasoning of others. | 4. Model with mathematics.                                |
| 5. Use appropriate tools strategically.                             | 6. Attend to precision.                                   |
| 7. Look for and make use of structure.                              | 8. Look for and express regularity in repeated reasoning. |

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
OA	Use the four operations with whole numbers to solve problems.	4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ 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.	multiplication	4.OA.1- Compare multiplication equations	
OA	Use the four operations with whole numbers to solve problems.	4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ 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.	multiplication	4.OA.1- Represent verbal statements as multiplication equations	
OA	Use the four operations with whole numbers to solve problems.	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	multiplication	4.OA.2- multiply and divide word problems with a symbol for the unknown	unknown variable

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
OA	Use the four operations with whole numbers to solve problems.	4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	solving multi-step word problems	4.OA.3- Solve multi-step word problems with whole numbers.	unknown variable, remainders
OA	Use the four operations with whole numbers to solve problems.	4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	solving multi-step word problems	4.OA.3- Interpret remainders in multi-step word problems	remainders
OA	Use the four operations with whole numbers to solve problems.	4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	solving multi-step word problems	4.OA.3- Represent unknown quantity with a letter	remainders
OA	Use the four operations with whole numbers to solve problems.	4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	solving multi-step word problems	4.OA.3- Assess reasonableness of answers using estimation and rounding.	remainders

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OA	Gain familiarity with factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	factor pairs	4.OA.4- Find factors pairs from 1-100	<i>factor</i>
OA	Gain familiarity with factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	factor pairs	4.OA.4- Identify that a whole number is a multiple of each of its factors	<i>factor</i>
OA	Gain familiarity with factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	factor pairs	4.OA.4- Determine whether a whole number is a multiple of a given 1-digit number.	
OA	Gain familiarity with factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	factor pairs	4.OA.4- Determine whether a number 1-100 is prime or composite.	prime and composite

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OA	Generate and analyze patterns.	4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. 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.	patterns	4.OA.5- Generate a pattern that follows a rule.	
OA	Generate and analyze patterns.	4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. 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.	patterns	4.OA.5- Explain characteristics of the pattern	even, odd,
NBT	Generalize place value understanding for multi-digit whole numbers.	4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.	place value magnitude	4.NBT.1- Recognize that a digit in one place represents ten times its value in one place to the right	
NBT	Generalize place value understanding for multi-digit whole numbers.	4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	place value	4.NBT.2- Read and write whole numbers with numerals, numbers names, and expanded form.	<i>Expanded Form</i>
NBT	Generalize place value understanding for multi-digit whole numbers.	4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	place value	4.NBT.2- Compare two multi-digit numbers using symbols.	<i>greater than, less than, equal to.</i>

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
NBT	Generalize place value understanding for multi-digit whole numbers.	4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	place value	4.NBT.3- Round whole digit numbers to any place less than or equal to 1,000,000.	<i>Rounding</i>
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	addition, subtraction	4.NBT.4- Add or subtract whole numbers using the standard algorithms.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	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.	multiplication	4.NBT.5- Multiply up to four-digit numbers by one digit using strategies based on place value and the properties of operations.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	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.	multiplication	4.NBT.5- Multiply two-digit by two-digit numbers using strategies based on place value and the properties of operations.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	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.	multiplication	4.NBT.5- Illustrate and explain the calculation using equations, arrays, and/or area models	<i>area model, arrays</i>

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	division	4.NBT.6- Divide up to four-digit dividends by a one-digit divisor and explain strategies based on place value, properties of operations, and/or the relationship between multiplication and division.	<i>quotient, divisor, dividends, arrays, area models</i>
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	division	4.NBT.6- Illustrate and explain the calculations using equations, arrays, and/or area models.	<i>area model, arrays</i>
NF	Extend understanding of fraction equivalence and ordering.	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.	fractions	4.NF.1- Explain fraction equivalence using visual models.	<i>Equivalence</i>
NF	Extend understanding of fraction equivalence and ordering.	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.	fractions	4.NF.1 -Recognize and generate equivalent fractions.	

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NF	Extend understanding of fraction equivalence and ordering.	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 $\frac{1}{2}$ . 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.	fractions	4.NF.2- Compare fractions with different numerators and denominators by finding common numerators or common denominators, or by comparing to a benchmark.	<i>Numerators and Denominators</i>
NF	Extend understanding of fraction equivalence and ordering.	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 $\frac{1}{2}$ . 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.	fractions	4.NF.2- Recognize that comparisons are valid only when the two fractions refer to the same whole.	<i>Numerators and Denominators</i>
NF	Extend understanding of fraction equivalence and ordering.	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 $\frac{1}{2}$ . 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.	fractions	4.NF.2- Compare fractions with $>$ , $<$ , and $=$ ; prove using a visual model	<i>Numerators and Denominators</i>

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NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3 Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ .	fractions	4.NF.3- Recognize a fraction $a/b$ with a numerator greater than 1, is the sum of unit fraction $1/b$	
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	fractions	4.NF.3a- Identify addition and subtraction of fractions as joining and separating parts referring to the same whole.	
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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: $3/8 = 1/8 + 1/8 + 1/8$ ; $3/8 = 1/8 + 2/8$ ; $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$ .	additions and subtraction of fractions	4.NF.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: $3/8 = 1/8 + 1/8 + 1/8$ ; $3/8 = 1/8 + 2/8$ ; $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$ .	Common Denominator
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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 operations and the relationship between addition and subtraction.	addition and subtraction of fractions	4.NF.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 operations and the relationship between addition and subtraction.	Mixed Number

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NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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.	addition and subtraction of fractions	4.NF.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.	Common Denominator
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	multiplication of fractions	4.NF.4- Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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 $5/4 = 5 \times (1/4)$ .	multiplication of fractions	4.NF.4a- Identify 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 $5/4 = 5 \times (1/4)$ .	
NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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 $3 \times (2/5)$ as $6 \times (1/5)$ , recognizing this product as $6/5$ . (In general, $n \times (a/b) = (n \times a)/b$ .)	multiplication of fractions	4.NF.4b-Identify 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, $n \times (a/b) = (n \times a)/b$ .)	Improper Fraction

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NF	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.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 $\frac{3}{8}$ 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?	multiplication of fractions	4.NF.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.	
NF	Understand decimal notation for fractions, and compare decimal fractions.	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 100.2 For example, express $\frac{3}{10}$ as $\frac{30}{100}$ , and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$ .	fractions	4.NF.5- Convert a fraction with a denominator of ten to a fraction with a denominator of 100.	
NF	Understand decimal notation for fractions, and compare decimal fractions.	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 100.2 For example, express $\frac{3}{10}$ as $\frac{30}{100}$ , and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$ .	fractions	4.NF.5- Add fractions with 10 or 100 in the denominator.	
NF	Understand decimal notation for fractions, and compare decimal fractions.	4.NF.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$ ; describe a length as 0.62 meters; locate 0.62 on a number line diagram.	fractions with decimal notation	4.NF.6- Identify decimal notation for fractions with denominators 10 or 100	Decimal
NF	Understand decimal notation for fractions, and compare decimal fractions.	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 a visual model.	multiplication of fractions	4.NF.7- Recognize that comparisons are valid only when the two decimals refer to the same whole	tenths, hundredths

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NF	Understand decimal notation for fractions, and compare decimal fractions.	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 a visual model.	multiplication of fractions	4.NF.7- Compare two decimals to hundredths with $>$ , $<$ , and $=$ ; prove using a visual model.	
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1- Recognize relative sizes of length in metric measurement	km, m, cm
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and Data	4.MD.1- Recognize relative sizes of length in standard measurement	in., ft., yds.

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MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and Data	4.MD.1- Recognize relative sizes of capacity in standard measurement	<i>cups, pints, quarts, gallons</i>
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1- Recognize relative sizes of weight in metric measurement	<i>kg, g</i>
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1- Recognize relative sizes of capacity in metric measurement	<i>l, mL</i>

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MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1 -Recognize relative sizes of weight in standard measurement	lb, oz
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1 -Recognize relative sizes of time	hr, min, sec
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1- Express measurements in a larger unit in terms of a smaller unit	

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MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a 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), ...	Measurement and data	4.MD.1- Record measurement equivalence in a two column table	
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Measurement in problem solving	4.MD.2- Apply the four operations solving word problems involving distances, including problems involving simple fractions and decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Measurement in problem solving	4.MD.2- Apply the four operations solving word problems involving intervals of time including problems involving simple fractions and decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	

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

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MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Measurement in problem solving	4.MD.2- Represent measurement quantities using diagrams	
MD	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	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.	Measurement	4.MD.3- Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
MD	Represent and interpret data.	4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.	Measurement and data	4.MD.4- Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ).	
MD	Represent and interpret data.	4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.	Measurement and data	4.MD.4- Solve problems involving addition and subtraction of fractions by using information presented in line plots.	

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
MD	Geometric measurement: understand concepts of angle and measure angles.	4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:	Measurement in Geometry	4.MD.5- Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint	ray, point
MD	Geometric measurement: understand concepts of angle and measure angles.	4.MD.5a 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 $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.	Measurement in Geometry	4.MD.5a- Recognize 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.	
MD	Geometric measurement: understand concepts of angle and measure angles.	4.MD.5b An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	Measurement in Geometry	4.MD.5b- An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	
MD	Geometric measurement: understand concepts of angle and measure angles.	4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	Measurement in Geometry	4.MD.6- Measure angles in whole-number degrees using a protractor.	acute, right angle, obtuse angle
MD	Geometric measurement: understand concepts of angle and measure angles.	4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	Measurement in Geometry	4.MD.6- Sketch angles of specified measure.	

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
MD	Geometric measurement: understand concepts of angle and measure angles.	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.	Measurement in Geometry	4.MD.7- Recognize angle measure as additive.	
MD	Geometric measurement: understand concepts of angle and measure angles.	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.	Measurement in Geometry	4.MD.7- Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems	
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Geometry	4.G.1- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.	point, line, line segment,
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Geometry	4.G.1- Identify these in two-dimensional figures.	
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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.	Geometry	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.	parallel lines, perpendicular lines

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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.	Geometry	4.G.2- Recognize right triangles as a category, and identify right triangles.	
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Geometry	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.	symmetry
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Geometry	4.G.3- Draw and identify lines and angles,	
G	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Geometry	4.G.3- Classify shapes by properties of their lines and angles.	