## Grade 4 PI+ Yearlong Mathematics Map

| Resources: Approved from Board of Education |  |  | Assessments: District Benchmark Assessments |  |  |
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| Common Core State Standards - Standards for Mathematical Practice: <br> 1. Make sense of problems and persevere in solving them. <br> 2. Reason abstractly and quantitatively. <br> 3. Construct viable arguments and critique the reasoning of others. <br> 4. Model with mathematics. <br> 5. Use appropriate tools strategically. <br> 6. Attend to precision. <br> 7. Look for and make use of structure. <br> 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 |


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


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| OA | Write and interpret numerical expressions. | 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7 , then multiply by 2 " as $2 \times(8+$ 7). Recognize that $3 \times(18932+921)$ is three times as large as $18932+921$, without having to calculate the indicated sum or product. | Numerical Expressions | 5.OA. 2 Interpret numerical expressions without evaluating them. | Evaluate=solve |
| OA | Analyze patterns and relationships. | 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3 " and the starting number 0 , and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. | Numerical Patterns | 5.OA.3 Generate two numerical patterns using two given rules. |  |
| OA | Analyze patterns and relationships. | 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3 " and the starting number 0 , and given the rule "Add 6" and the starting number 0 , generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. | Numerical Patterns | 5.OA.3. Describe the relationships between corresponding terms. |  |


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| OA | Analyze patterns and relationships. | 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3 " and the starting number 0 , and given the rule "Add 6" and the starting number 0 , generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. | Ordered Pairs | 5.OA.3. Form ordered pairs consisting of corresponding terms from the two patterns. | Ordered Pairs |
| OA | Analyze patterns and relationships. | 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3 " and the starting number 0 , and given the rule "Add 6" and the starting number 0 , generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. | Ordered Pairs | 5.OA.3 Graph the ordered pairs on a coordinate plane. | Ordered Pairs |
| NBT | Understand the place value system. | 5.NBT. 1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1 / 10$ of what it represents in the place to its left. | Place Value | 5.NBT. 1 Recognize that in a multi-digit number, a digit in any place represents 10 times as much as it represents in the place to its right and $1 / 10$ of what it represents in the place to its left. |  |
| NBT | Understand the place value system. | 5.NBT. 2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 , and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10 . Use whole-number exponents to denote powers of 10. | Mulitplication Place Value Number Patterns | 5.NBT. 2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 . | Powers of 10 |


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| NBT | Understand the place value system. | 5.NBT. 2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 , and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. | Multipication Division Number Patterns | 5.NBT.2. Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10 . | Powers of 10 |
| NBT | Understand the place value system. | 5.NBT. 2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 , and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. | Whole-Number Exponents | 5.NBT.2. Write whole number exponenets to denote powers of 10 (Scientific Notation) | Exponents |
| NBT | Understand the place value system. | 5.NBT. 3 Read, write, and compare decimals to thousandths. |  |  |  |
| NBT | Understand the place value system. | 5.NBT.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, $\begin{aligned} & \text { e.g., } 347.392=3 \times 100+4 \times 10+7 \times 1+3 \times(1 / 10)+9 \times \\ & (1 / 100)+2 \times(1 / 1000) . \end{aligned}$ | Decimal Place Value | 5.NBT.3a Read decimals to thousandths using standard form, written form, and expanded form. |  |
| NBT | Understand the place value system. | 5.NBT.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, $\begin{aligned} & \text { e.g., } 347.392=3 \times 100+4 \times 10+7 \times 1+3 \times(1 / 10)+9 \times \\ & (1 / 100)+2 \times(1 / 1000) . \end{aligned}$ | Decimal Place Value | 5.NBT.3a Write decimals to thousandths using standard form, written form, and expanded form. |  |
| NBT | Understand the place value system. | 5.NBT.3b Compare two decimals to thousandths based on meanings of the digits in each place, using $>,=$, and < symbols to record the results of comparisons. | Decimal Place Value | 5.NBT.3b Compare two decimals to thousandths using $>,=$, < |  |
| NBT | Understand the place value system. | 5.NBT.4. Use place value understanding to round decimals to any place. | Decimal Place Value | 5.NBT.4. Round decimals to a given place value. |  |
| NBT | Perform operations with multi-digit whole numbers and with decimals to hundredths. | 5.NBT. 5 Fluently multiply multi-digit whole numbers using the standard algorithm. | Multiplication | 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm. |  |


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| NBT | Perform operations with multi-digit whole numbers and with decimals to hundredths. | 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | Division | 5.NBT. 6 Compute whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors by applying various strategies. |  |
| NBT | Perform operations with multi-digit whole numbers and with decimals to hundredths. | 5.NBT. 6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | Division | 5.NBT.6 Illustrate the calculation by using equations, rectangular arrays, and/or area models. | Rectangular Arrays |
| NBT | Perform operations with multi-digit whole numbers and with decimals to hundredths. | 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | Division | 5.NBT. 6 Explain the calculation by using equations, rectangular arrays, and/or area models. | Rectangular Arrays |
| 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 $1 / 2$. 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. | Numerators and Denominators |


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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 $1 / 2$. 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. | Numerators and Denominators |
| 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 $1 / 2$. 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 | Numerators and Denominators |
| 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. |  | 4.NF.3a- Identify addition and subtraction of fractions as joining and separating parts referring to the same whole. |  |


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| NF | Build fractions from <br> unit fractions by <br> applying and <br> 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: $3 / 8=1 / 8+1 / 8+1 / 8 ; 3 / 8=1 / 8+2 / 8 ; 21 / 8=$ $1+1+1 / 8=8 / 8+8 / 8+1 / 8$. | addtions 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: $3 / 8=1 / 8+1 / 8+1 / 8 ; 3 / 8=1 / 8+2 / 8 ; 2$ $1 / 8=1+1+1 / 8=8 / 8+8 / 8+1 / 8$. |  |
| 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 |
| NF | Build fractions from <br> unit fractions by <br> applying and <br> 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. |  |
| 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 of multiplication to multiply a fraction by a whole number. |  |


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| NF | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | 4.NF.4a Understand a fraction $\mathrm{a} / \mathrm{b}$ as a multiple of $1 / \mathrm{b}$. 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 $1 / \mathrm{b}$, 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, $n \times(a / b)=(n \times a) / b$.) |  |
| 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 $3 / 8$ 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 $3 / 10$ as $30 / 100$, and add $3 / 10+4 / 100=34 / 100$. | 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 $3 / 10$ as $30 / 100$, and add $3 / 10+4 / 100=34 / 100$. | fractions | 4.NF.5- Add fractions with 10 or 100 in the denominator. |  |


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| 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 $62 / 100$; 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 deominators 10 or 100 |  |
| 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, hundreths |
| 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.7Compare decimals with $>,<$, and $=$; prove using a visual model |  |
| NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF. 3 Interpret a fraction as division of the numerator by the denominator ( $a / b=a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3 / 4$ as the result of dividing 3 by 4 , noting that $3 / 4$ multiplied by 4 equals 3 , and that when 3 wholes are shared equally among 4 people each person has a share of size $3 / 4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? | Multiply/Divide Fractions | 5.NF. 3 Interpret a fraction as division of the numerator by the denominator. |  |


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| NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF. 3 Interpret a fraction as division of the numerator by the denominator ( $a / b=a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3 / 4$ as the result of dividing 3 by 4 , noting that $3 / 4$ multiplied by 4 equals 3 , and that when 3 wholes are shared equally among 4 people each person has a share of size $3 / 4$. If 9 people want to share a 50 -pound sack of rice equally by weight, how many pounds of rice should each person get? <br> Between what two whole numbers does your answer lie? | Multiply/Divide Fractions | 5.NF.3 Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers using visual fraction models or equations. |  |
| 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 twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4.MD.1- Recognize relative sizes of length in metric measurement | km, m, cm |


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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, $\mathrm{ml} ; \mathrm{hr}, \mathrm{min}$, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and Data | 4.MD.1- Recognize relative sizes of length in standard measurement | in., ft., yds. |
| 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, $\mathrm{ml} ; \mathrm{hr}, \mathrm{min}$, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and Data | 4. MD. 1Recognize relative sizes of capacity in standard measurement | cups, pints, quarts, gallons |
| 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, $\mathrm{ml} ; \mathrm{hr}, \mathrm{min}, \mathrm{sec}$. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4.MD. 1 -Recognize relative sizes of weight in metric measurement | kg, g |


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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 twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4. MD. 1Recognize relative sizes of capacity in metric measurement | I, ml |
| 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 twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4.MD. 1 -Recognize relative sizes of weight in standard measurement | 1b, 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 twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4.MD.1-Recognize relative sizes of time | hr, min, sec |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
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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 twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | Measurement and data | 4.MD.1- Express measurements 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. 1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, $\mathrm{ml} ; \mathrm{hr}, \mathrm{min}$, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a twocolumn 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 $(1,12),(2,24),(3,36), \ldots$ | 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 |  |


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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 intervals of time |  |
| 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 |  |
| 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 |  |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic <br> Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 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 |  |
| 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 ( $1 / 2,1 / 4,1 / 8$ ). 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 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 ( $1 / 2,1 / 4,1 / 8$ ). |  |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic <br> Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| MD | Represent and interpret data. | 4.MD. 4 Make a line plot to display a data set of measurements in fractions of a unit ( $1 / 2,1 / 4,1 / 8$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots. 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. |  |
| MD | Convert like measurement units within a given measurement system. | 5.MD. 1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m ), and use these conversions in solving multi-step, real world problems. | Measurement | 5.MD. 1 Convert among different-sized standard measurement units within a given measurement system |  |
| MD | Convert like measurement units within a given measurement system. | 5.MD. 1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m ), and use these conversions in solving multi-step, real world problems. | Measurement | 5.MD. 1 Apply conversions in solving multi-step, real world problems. |  |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD. 3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. | Measurement | 5.MD. 3 |  |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.3a A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. | Volume | Recognize that a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, can be used to measure volume. | Volume |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.3b A solid figure which can be packed without gaps or overlaps using $n$ unit cubes is said to have a volume of n cubic units. | Volume | 5.MD.3b Recognize that a solid figure which can be packed without gaps or overlaps using $n$ unit cubes is said to have a volume of $n$ cubic units. | Volume |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD. 4 Measure volumes by counting unit cubes, using cubic cm , cubic in, cubic ft , and improvised units. | Volume | 5.MD. 4 Measure volumes by counting unit cubes, using cubic cm , cubic in, cubic ft , and improvised units. | Improvised= non-standard unit ex, paper clips, unifix cubes, etc. |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. | Volume | 5.MD. 5 | Volume |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. | Volume | 5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes | Volume with Rectangular Prism |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. | Volume | 5.MD.5a Show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. |  |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. | Volume | 5.MD.5a Represent threefold whole-number products as volumes. | Volume |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5b Apply the formulas $\mathrm{V}=\mathrm{I} \times \mathrm{w} \times \mathrm{h}$ and $\mathrm{V}=\mathrm{b} \times \mathrm{h}$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. | Volume | 5.MD.5b Apply the formulas $\mathrm{V}=\mathrm{I} \times \mathrm{w} \times \mathrm{h}$ and $\mathrm{V}=\mathrm{b} \times \mathrm{h}$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. | Volume |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the nonoverlapping parts, applying this technique to solve real world problems. | Volume | 5.MD.5c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the nonoverlapping parts | Volume |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic <br> Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the nonoverlapping parts, applying this technique to solve real world problems. | Volume | 5.MD.5c Apply the technique that volume is additive to solve real world problems. |  |
| G | Graph points on the coordinate plane to solve real-world and mathematical problems. | 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., $x$-axis and $x$-coordinate, $y$-axis and $y$-coordinate). | Coordinate Geometry | 5.G. 1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. | Origin, Ordered Pair, Coordinate Plane, Axes |
| G | Graph points on the coordinate plane to solve real-world and mathematical problems. | 5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., $x$-axis and $x$-coordinate, $y$-axis and $y$-coordinate). | Coordinate Geometry | 5.G. 1 Recognize that the first number indicates how far to travel from the origin in the direction of the $x$ axis. The second number indicates how far to travel in the direction of the $y$ axis. | X - axis is horizontal, Y -axis is vertical |


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| :---: | :---: | :---: | :---: | :---: | :---: |
| G | Graph points on the coordinate plane to solve real-world and mathematical problems. | 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. | Coordinate Geometry | 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane | Quadrant (Chocolate Algebra \& Spreading Out) |
| G | Graph points on the coordinate plane to solve real-world and mathematical problems. | 5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. | Coordinate Geometry | 5.G.2 Interpret coordinate values of points in the context of the situation |  |
| G | Classify twodimensional figures into categories based on their properties. | 5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. | Two-Dimensional Geometry | 5.G.3 Recognize that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. |  |
| G | Classify twodimensional figures into categories based on their properties. | 5.G.4 Classify two-dimensional figures in a hierarchy based on properties. | Two-Dimensional Geometry | 5.G.4 Classify two-dimensional figures in a hierarchy based on properties. |  |
| G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. | Polygons Coordinate Graphing | 6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices |  |
| G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. | Polygons Coordinate Graphing | 6.G.3 Find the length of a side joining points with the same first coordinate or the same second coordinate |  |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. | Polygons Coordinate Graphing | 6.G.3 Find the length of a side joining points with the same first coordinate or the same second coordinate in a real-world situation |  |
| G | Draw construct, and describe geometrical figures and describe the relationships between them. | 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Two dimensional shapes | 7.G.2 Draw, with a ruler, geometric shapes with given conditions. |  |
| G | Draw construct, and describe geometrical figures and describe the relationships between them. | 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Two dimensional shapes | 7.G.2 Draw, with a protractor, geometric shapes with given conditions. |  |
| G | Draw construct, and describe geometrical figures and describe the relationships between them. | 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Two dimensional shapes | 7.G. 2 Draw, freehand or with technology geometric shapes with given conditions. |  |
| G | Draw construct, and describe geometrical figures and describe the relationships between them. | 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Two dimensional shapes | 7.G.2 Determine if measures of three angles or sides create a unique triangle, more than one triangle, or no triangle. |  |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| G | Draw construct, and describe geometrical figures and describe the relationships between them. | 7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Two dimensional shapes | 7.G.2 Construct triangles from three measures of angles or sides. | Two dimensional shapes |
| G | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | 7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. | Angle Relationships | 7.G.5 Write and solve simple equations for an unknown angle in a figure using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem. | Supplementary Complementary Vertical angles Adjacent angles |
|  | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | Area | 7.G. 6 Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles, quadrilaterals, and polygons. | Triangles Quadrilaterals Polygons Area |
|  | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | Volume | 7.G.6 Solve real-world and mathematical problems involving volume of three-dimensional objects composed of cubes and right prisms. | Cubes <br> Right prism Volume |
|  | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | 7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | Surface Area | 7.G.6 Solve real-world and mathematical problems involving surface area of three-dimensional objects composed of cubes and right prisms. | Surface area |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| NS | Compute fluently with multi-digit numbers and find common factors and multiples. | 6.NS. 2 Fluently divide multi-digit numbers using the standard algorithm. | Measurement | 6.NS. 2 Divide multi-digit numbers | Quotient Divisor Dividend |
| NS | Compute fluently with multi-digit numbers and find common factors and multiples. | 6.NS. 4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36+8$ as $4(9+2)$. Apply and extend previous understandings of numbers to the system of rational numbers. | GCF <br> LCM <br> Distributive <br> Property | 6.NS.4 Identify GCF of two whole numbers 1-100 | $\mathrm{GCF}$ <br> LCM <br> Distributive Property |
| NS | Compute fluently with multi-digit numbers and find common factors and multiples. | 6.NS. 4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36+8$ as $4(9+2)$. Apply and extend previous understandings of numbers to the system of rational numbers. | GCF <br> LCM <br> Distributive <br> Property | 6.NS.4 Identify LCM of two whole numbers 1-12 |  |
| NS | Compute fluently with multi-digit numbers and find common factors and multiples. | 6.NS. 4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36+8$ as $4(9+2)$. Apply and extend previous understandings of numbers to the system of rational numbers. | GCF <br> LCM <br> Distributive <br> Property | 6.NS. 4 Apply the distributive property of addition of two whole numbers 1-100 |  |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic <br> Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS. 6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. | Rational Numbers | 6.NS. 6 Plot rational numbers on a number line, including negative number coordinates | Number line Axes Coordinate Plane |
| NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. | Coordinate Plane | 6.NS.6b Distinguish the quadrant in the coordinate plane based on the signs of numbers in the ordered pairs; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes | Ordered Pairs Quadrants Reflections |
| NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS. 8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. | Coordinate Plane Absolute Value | 6.NS. 8 Solve mathematical problems by graphing points in all four quadrants of the coordinate plane | Quadrants Coordinate Plane |
| NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS. 8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. | Coordinate Plane Absolute Value | 6.NS. 8 Solve real-world problems by graphing points in all four quadrants of the coordinate plane |  |
| NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS. 8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. | Coordinate Plane Absolute Value | 6.NS. 8 Find distances between points with the same first coordinate or the same second coordinate using absolute value | Distance |


| Domain | Cluster | Common Core Standard | Content | Skills | Academic <br> Vocabulary |
| :---: | :---: | :---: | :---: | :---: | :---: |
| EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE. 2 Write, read, and evaluate expressions in which letters stand for numbers. | Expressions | 6.EE. 2 Write and read expressions in which letters stand for numbers | Expression Variable |
| EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE. 2 Write, read, and evaluate expressions in which letters stand for numbers. | Expressions | 6.EE.2 Evaluate expressions in which letters stand for numbers |  |
| EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8+7)$ as a product of two factors; view ( $8+$ 7) as both a single entity and a sum of two terms. | Expressions | 6.EE.2b Identify parts of an expression using mathematical terms | Sum <br> Term <br> Product <br> Factor <br> Quotient <br> Coefficient |
| EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8+7)$ as a product of two factors; view $(8+$ 7) as both a single entity and a sum of two terms. | Expressions | 6.EE.2b Identify one or more parts of an expression as a single entity |  |

