Mathematics (B.E.S.T.) Standards
GRADE: 4

Strand: NUMBER SENSE AND OPERATIONS	
Standard 1: Understand place value for multi-digit numbers.	
BENCHMARK CODE	**BENCHMARK**
MA.4.NSO.1.1	Express how the value of a digit in a multi-digit whole number changes if the digit moves one place to the left or right. **Related Access Point(s)** MA.4.NSO.1.AP.1 Explore how the value of a digit in a multi-digit whole number changes if the digit moves one place to the left. *Date Adopted or Revised*: 03/23
MA.4.NSO.1.2	Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form. *Examples*: The number two hundred seventy-five thousand eight hundred two written in standard form is 275,802 and in expanded form is 200,000+70,000+5,000+800+2 or (2×100,000)+(7×10,000)+(5×1,000)+(8×100)+(2×1). **Related Access Point(s)** MA.4.NSO.1.AP.2 Read and generate numbers from 0 to 10,000 using standard form and expanded form. *Date Adopted or Revised*: 03/23
MA.4.NSO.1.3	Plot, order and compare multi-digit whole numbers up to 1,000,000. *Examples*: The numbers 75,421; 74,241 and 74,521 can be arranged in ascending order as 74,241; 74,521 and 75,421. *Clarifications*: *Clarification 1:* When comparing numbers, instruction includes using an appropriately scaled number line and using place values of the hundred thousands, ten thousands, thousands, hundreds, tens and ones digits. *Clarification 2:* Scaled number lines must be provided and can be a representation of any range of numbers. *Clarification 3:* Within this benchmark, the expectation is to use symbols (<, > or =). **Related Access Point(s)**

	MA.4.NSO.1.AP.3 Plot, order and compare multi-digit whole numbers up to 10,000. *Date Adopted or Revised*: 03/23
MA.4.NSO.1.4	Round whole numbers from 0 to 10,000 to the nearest 10, 100 or 1,000. *Examples*: *Example:* The number 6,325 is rounded to 6,300 when rounded to the nearest 100. *Example:* The number 2,550 is rounded to 3,000 when rounded to the nearest 1,000. **Related Access Point(s)** MA.4.NSO.1.AP.4 Round whole numbers from 100 to 10,000 to the nearest 1,000 with visual support. *Date Adopted or Revised*: 03/23
MA.4.NSO.1.5	Plot, order and compare decimals up to the hundredths. *Examples*: The numbers 3.2; 3.24 and 3.12 can be arranged in ascending order as 3.12; 3.2 and 3.24. *Clarifications*: *Clarification 1:* When comparing numbers, instruction includes using an appropriately scaled number line and using place values of the ones, tenths and hundredths digits. *Clarification 2:* Within the benchmark, the expectation is to explain the reasoning for the comparison and use symbols (<, > or =). *Clarification 3:* Scaled number lines must be provided and can be a representation of any range of numbers. **Related Access Point(s)** MA.4.NSO.1.AP.5 Using visual models, compare decimals less than one up to the hundredths. *Date Adopted or Revised*: 03/23

Standard 2: Build an understanding of operations with multi-digit numbers including decimals.

BENCHMARK CODE	BENCHMARK
MA.4.NSO.2.1	Recall multiplication facts with factors up to 12 and related division facts with automaticity. **Related Access Point(s)** MA.4.NSO.2.AP.1 Recall multiplication facts of one-digit whole numbers multiplied by 1, 2, 5 and 10. *Date Adopted or Revised*: 03/23
MA.4.NSO.2.2	Multiply two whole numbers, up to three digits by up to two digits, with procedural reliability. *Clarifications*: *Clarification 1:* Instruction focuses on helping a student choose a method they can use reliably. *Clarification 2:* Instruction includes the use of models or equations based on place value and the distributive property. **Related Access Point(s)**

	MA.4.NSO.2.AP.2 Explore multiplication of two whole numbers, up to two digits by one digit. *Date Adopted or Revised*: 03/23
MA.4.NSO.2.3	Multiply two whole numbers, each up to two digits, including using a standard algorithm with procedural fluency. **Related Access Point(s)** MA.4.NSO.2.AP.3 Apply a strategy to multiply two whole numbers up to two digits by one digit. *Date Adopted or Revised*: 03/23
MA.4.NSO.2.4	Divide a whole number up to four digits by a one-digit whole number with procedural reliability. Represent remainders as fractional parts of the divisor. *Clarifications*: *Clarification 1:* Instruction focuses on helping a student choose a method they can use reliably. *Clarification 2:* Instruction includes the use of models based on place value, properties of operations or the relationship between multiplication and division. **Related Access Point(s)** MA.4.NSO.2.AP.4 Explore division of two whole numbers up to two digits by one digit with and without remainders. Represent remainders as whole numbers. *Date Adopted or Revised*: 03/23
MA.4.NSO.2.5	Explore the multiplication and division of multi-digit whole numbers using estimation, rounding and place value. *Examples*: *Example:* The product of 215 and 460 can be estimated as being between 80,000 and 125,000 because it is bigger than 200×400 but smaller than 250×500. *Example:* The quotient of 1,380 and 27 can be estimated as 50 because 27 is close to 30 and 1,380 is close to 1,500. 1,500 divided by 30 is the same as 150 tens divided by 3 tens which is 5 tens, or 50. *Clarifications*: *Clarification 1:* Instruction focuses on previous understanding of multiplication with multiples of 10 and 100, and seeing division as a missing factor problem. *Clarification 2:* Estimating quotients builds the foundation for division using a standard algorithm. *Clarification 3:* When estimating the division of whole numbers, dividends are limited to up to four digits and divisors are limited to up to two digits. **Related Access Point(s)** MA.4.NSO.2.AP.5 Explore the estimation of products and quotients of two whole numbers up to two digits by one digit. *Date Adopted or Revised*: 03/23
MA.4.NSO.2.6	Identify the number that is one-tenth more, one-tenth less, one-hundredth more and one-hundredth less than a given number. *Examples*: *Example:* One-hundredth less than 1.10 is 1.09.

	Example: One-tenth more than 2.31 is 2.41. **Related Access Point(s)** MA.4.NSO.2.AP.6 Identify the number that is one-tenth more and one-tenth less than a given number (i.e., 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9). *Date Adopted or Revised*: 03/23
MA.4.NSO.2.7	Explore the addition and subtraction of multi-digit numbers with decimals to the hundredths. *Clarifications*: *Clarification 1:* Instruction includes the connection to money and the use of manipulatives and models based on place value. **Related Access Point(s)** MA.4.NSO.2.AP.7 Explore the addition and subtraction of decimals less than one to the tenths (e.g., 0.3 + 0.5) and hundredths (e.g., 0.25 − 0.12). *Date Adopted or Revised*: 03/23

Strand: ALGEBRAIC REASONING

Standard 1: Represent and solve problems involving the four operations with whole numbers and fractions.

BENCHMARK CODE	BENCHMARK
MA.4.AR.1.1	Solve real-world problems involving multiplication and division of whole numbers including problems in which remainders must be interpreted within the context. *Examples*: A group of 243 students is taking a field trip and traveling in vans. If each van can hold 8 students, then the group would need 31 vans for their field trip because 243 divided by 8 equals 30 with a remainder of 3. *Clarifications*: *Clarification 1:* Problems involving multiplication include multiplicative comparisons. Refer to Situations Involving Operations with Numbers (Appendix A). *Clarification 2:* Depending on the context, the solution of a division problem with a remainder may be the whole number part of the quotient, the whole number part of the quotient with the remainder, the whole number part of the quotient plus 1, or the remainder. *Clarification 3:* Multiplication is limited to products of up to 3 digits by 2 digits. Division is limited to up to 4 digits divided by 1 digit. **Related Access Point(s)** MA.4.AR.1.AP.1 Solve one-step real-world problems involving multiplication and division of whole numbers. Multiplication may not exceed two-digit by one-digit and division must be related to one-digit by one-digit multiplication facts. *Date Adopted or Revised*: 03/23
MA.4.AR.1.2	Solve real-world problems involving addition and subtraction of fractions with like denominators, including mixed numbers and fractions greater than one. *Examples*:

	Example: Megan is making pies and uses the equation $1\frac{3}{4}+3\frac{1}{4}=x$ when baking. Describe a situation that can represent this equation. *Example:* Clay is running a 10K race. So far, he has run $6\frac{1}{5}$ kilometers. How many kilometers does he have remaining? *Clarifications*: *Clarification 1:* Problems include creating real-world situations based on an equation or representing a real-world problem with a visual model or equation. *Clarification 2:* Fractions within problems must reference the same whole. *Clarification 3:* Within this benchmark, the expectation is not to simplify or use lowest terms. *Clarification 4:* Denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. **Related Access Point(s)** MA.4.AR.1.AP.2 Solve one-step real-world problems involving addition and subtraction of fractions less than one with like denominators. Denominators limited to 2, 3, 4, 6, 8 or 10. *Date Adopted or Revised*: 03/23
MA.4.AR.1.3	Solve real-world problems involving multiplication of a fraction by a whole number or a whole number by a fraction. *Examples*: Ken is filling his garden containers with a cup that holds $\frac{2}{5}$ pounds of soil. If he uses 8 cups to fill his garden containers, how many pounds of soil did Ken use? *Clarifications*: *Clarification 1:* Problems include creating real-world situations based on an equation or representing a real-world problem with a visual model or equation. *Clarification 2:* Fractions within problems must reference the same whole. *Clarification 3:* Within this benchmark, the expectation is not to simplify or use lowest terms. *Clarification 4:* Fractions limited to fractions less than one with denominators of 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. **Related Access Point(s)** MA.4.AR.1.AP.3 Solve one-step real-world problems involving multiplication of a unit fraction by a whole number (e.g., $3 \times \frac{1}{4}$, $2 \times \frac{1}{6}$, $5 \times \frac{1}{2}$). Denominators limited to 2, 3, 4, 6, 8 or 10. *Date Adopted or Revised*: 03/23

Standard 2: Demonstrate an understanding of equality and operations with whole numbers.

BENCHMARK CODE	BENCHMARK
MA.4.AR.2.1	Determine and explain whether an equation involving any of the four operations with whole numbers is true or false. *Examples*: The equation 32÷8=32-8-8-8-8 can be determined to be false because the expression on the left side of the equal sign is not equivalent to the expression on the right side of the equal sign. *Clarifications*: *Clarification 1:* Multiplication is limited to whole number factors within 12 and related division facts. **Related Access Point(s)** MA.4.AR.2.AP.1 Determine whether an equation (with no more than three terms) involving any of the four operations with whole numbers is true or false. Sums may not exceed 100 and their related subtraction facts. Multiplication may not exceed two-digit by one-digit and division must be related to one-digit by one-digit multiplication facts. *Date Adopted or Revised*: 03/23
MA.4.AR.2.2	Given a mathematical or real-world context, write an equation involving multiplication or division to determine the unknown whole number with the unknown in any position. *Examples*: The equation 96=8×t can be used to determine the cost of each movie ticket at the movie theatre if a total of $96 was spent on 8 equally priced tickets. Then each ticket costs $12. *Clarifications*: *Clarification 1:* Instruction extends the development of algebraic thinking skills where the symbolic representation of the unknown uses a letter. *Clarification 2:* Problems include the unknown on either side of the equal sign. *Clarification 3:* Multiplication is limited to factors within 12 and related division facts. **Related Access Point(s)** MA.4.AR.2.AP.2 Given a real-world context, identify or generate an equation involving multiplication or division to determine the unknown product or quotient. Multiplication may not exceed two-digit by one-digit and division must be related to one-digit by one-digit multiplication facts. *Date Adopted or Revised*: 03/23

Standard 3: Recognize numerical patterns, including patterns that follow a given rule.

BENCHMARK CODE	BENCHMARK
MA.4.AR.3.1	Determine factor pairs for a whole number from 0 to 144. Determine whether a whole number from 0 to 144 is prime, composite or neither. *Clarifications*: *Clarification 1:* Instruction includes the connection to the relationship between multiplication and division and patterns with divisibility rules. *Clarification 2:* The numbers 0 and 1 are neither prime nor composite. **Related Access Point(s)**

	MA.4.AR.3.AP.1 Explore factor pairs for a whole number. Factors may not exceed single-digit whole numbers. *Date Adopted or Revised*: 03/23
MA.4.AR.3.2	Generate, describe and extend a numerical pattern that follows a given rule. *Examples*: Generate a pattern of four numbers that follows the rule of adding 14 starting at 5. *Clarifications*: *Clarification 1:* Instruction includes patterns within a mathematical or real-world context. **Related Access Point(s)** MA.4.AR.3.AP.2 Generate a numerical pattern when given a starting term and a one-step addition rule (e.g., starting at the number 5 use the rule add 5 and generate the pattern). *Date Adopted or Revised*: 03/23

Strand: MEASUREMENT

Standard 1: Measure the length of objects and solve problems involving measurement.

BENCHMARK CODE	BENCHMARK
MA.4.M.1.1	Select and use appropriate tools to measure attributes of objects. *Clarifications*: *Clarification 1:* Attributes include length, volume, weight, mass and temperature. *Clarification 2:* Instruction includes digital measurements and scales that are not linear in appearance. *Clarification 3:* When recording measurements, use fractions and decimals where appropriate. **Related Access Point(s)** MA.4.M.1.AP.1a Select and use appropriate tools to measure length (i.e., inches, feet, yards), liquid volume (i.e., gallons, quarts, pints, cups) and temperature (i.e., degrees Fahrenheit). *Date Adopted or Revised*: 03/23 MA.4.M.1.AP.1b Explore selecting and using appropriate tools to measure weight (i.e., ounces, pounds). *Date Adopted or Revised*: 03/23
MA.4.M.1.2	Convert within a single system of measurement using the units: yards, feet, inches; kilometers, meters, centimeters, millimeters; pounds, ounces; kilograms, grams; gallons, quarts, pints, cups; liter, milliliter; and hours, minutes, seconds. *Examples*: *Example:* If a ribbon is 11 yards 2 feet in length, how long is the ribbon in feet? *Example:* A gallon contains 16 cups. How many cups are in $3\frac{1}{2}$ gallons? *Clarifications*: *Clarification 1:* Instruction includes the understanding of how to convert from smaller to larger units or from larger to smaller units.

	Clarification 2: Within the benchmark, the expectation is not to convert from grams to kilograms, meters to kilometers or milliliters to liters. *Clarification 3:* Problems involving fractions are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100.
	Related Access Point(s)
	MA.4.M.1.AP.2a Explore relative sizes of measurement units within one system of units including yards, feet, inches; pounds, ounces; gallons, quarts, pints, cups; and hours, minutes. *Date Adopted or Revised*: 03/23
	MA.4.M.1.AP.2b Using a conversion sheet, convert from a larger to a smaller unit within a single system of measurement using the units: yards, feet, inches; pounds, ounces; gallons, quarts, pints, cups; and hours, minutes. Only whole number measurements may be used. *Date Adopted or Revised*: 03/23

Standard 2: Solve problems involving time and money.	
BENCHMARK CODE	**BENCHMARK**
MA.4.M.2.1	Solve two-step real-world problems involving distances and intervals of time using any combination of the four operations. *Clarifications*: *Clarification 1:* Problems involving fractions will include addition and subtraction with like denominators and multiplication of a fraction by a whole number or a whole number by a fraction. *Clarification 2:* Problems involving fractions are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. *Clarification 3:* Within the benchmark, the expectation is not to use decimals.
	Related Access Point(s)
	MA.4.M.2.AP.1a Solve one- and two-step real-world problems involving distances (i.e., inches, feet, yards, miles) in whole numbers using any combination of the four operations. *Date Adopted or Revised*: 03/23
	MA.4.M.2.AP.1b Solve one-step real-world problems involving intervals of time in whole numbers using any of the four operations. *Date Adopted or Revised*: 03/23
MA.4.M.2.2	Solve one- and two-step addition and subtraction real-world problems involving money using decimal notation. *Examples*: *Example:* An item costs $1.84. If you give the cashier $2.00, how much change should you receive? What coins could be used to give the change? *Example:* At the grocery store you spend $14.56. If you do not want any pennies in change, how much money could you give the cashier?
	Related Access Point(s)
	MA.4.M.2.AP.2 Solve one- and two-step addition and subtraction real-world problems involving money using decimal notation. Sums not to exceed $0.99 and their related subtraction facts. *Date Adopted or Revised*: 03/23

Strand: FRACTIONS

Standard 1: Develop an understanding of the relationship between different fractions and the relationship between fractions and decimals.

BENCHMARK CODE	BENCHMARK
MA.4.FR.1.1	Model and express a fraction, including mixed numbers and fractions greater than one, with the denominator 10 as an equivalent fraction with the denominator 100. *Clarifications*: *Clarification 1:* Instruction emphasizes conceptual understanding through the use of manipulatives, visual models, number lines or equations. **Related Access Point(s)** MA.4.FR.1.AP.1 Using a visual model, recognize fractions less than one, with the denominator 10 as an equivalent fraction with the denominator 100 (e.g., $\frac{2}{10}$ is equivalent to $\frac{20}{100}$). *Date Adopted or Revised*: 03/23
MA.4.FR.1.2	Use decimal notation to represent fractions with denominators of 10 or 100, including mixed numbers and fractions greater than 1, and use fractional notation with denominators of 10 or 100 to represent decimals. *Clarifications*: *Clarification 1:* Instruction emphasizes conceptual understanding through the use of manipulatives visual models, number lines or equations. *Clarification 2:* Instruction includes the understanding that a decimal and fraction that are equivalent represent the same point on the number line and that fractions with denominators of 10 or powers of 10 may be called decimal fractions. **Related Access Point(s)** MA.4.FR.1.AP.2 Use decimal notation to represent fractions less than one with denominators of 10 or 100 and use fractional notation with denominators of 10 or 100 to represent decimals less than one. *Date Adopted or Revised*: 03/23
MA.4.FR.1.3	Identify and generate equivalent fractions, including fractions greater than one. Describe how the numerator and denominator are affected when the equivalent fraction is created. *Clarifications*: *Clarification 1:* Instruction includes the use of manipulatives, visual models, number lines or equations. *Clarification 2:* Instruction includes recognizing how the numerator and denominator are affected when equivalent fractions are generated. **Related Access Point(s)** MA.4.FR.1.AP.3 Using a visual model, generate fractions less than a whole that are equivalent to fractions with denominators 2, 3, 4, 6, 8 or 10. Explore how the numerator and denominator are affected when the equivalent fraction is created. *Date Adopted or Revised*: 03/23
MA.4.FR.1.4	Plot, order and compare fractions, including mixed numbers and fractions greater than one, with different numerators and different denominators. *Examples*:

	$1\frac{2}{3} > 1\frac{1}{4}$ because $\frac{2}{3}$ is greater than $\frac{1}{2}$ and $\frac{1}{2}$ is greater than $\frac{1}{4}$. *Clarifications*: *Clarification 1:* When comparing fractions, instruction includes using an appropriately scaled number line and using reasoning about their size. *Clarification 2:* Instruction includes using benchmark quantities, such as 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1, to compare fractions. *Clarification 3:* Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. *Clarification 4:* Within this benchmark, the expectation is to use symbols (<, > or =).

Related Access Point(s)
MA.4.FR.1.AP.4a Explore mixed numbers and fractions greater than one. *Date Adopted or Revised*: 03/23
MA.4.FR.1.AP.4b Using visual models, compare fractions less than one with different numerators and different denominators. Denominators limited to 2, 3, 4, 6, 8 or 10. *Date Adopted or Revised*: 03/23

Standard 2: Build a foundation of addition, subtraction and multiplication operations with fractions.

BENCHMARK CODE	BENCHMARK
MA.4.FR.2.1	Decompose a fraction, including mixed numbers and fractions greater than one, into a sum of fractions with the same denominator in multiple ways. Demonstrate each decomposition with objects, drawings and equations. *Examples*: $\frac{9}{8}$ can be decomposed as $\frac{8}{8}+\frac{1}{8}$ or as $\frac{3}{8}+\frac{3}{8}+\frac{3}{8}$. *Clarifications*: *Clarification 1:* Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100.

Related Access Point(s)
MA.4.FR.2.AP.1 Decompose a fraction less than one into a sum of unit fractions with the same denominator (e.g., $\frac{3}{4}=\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$). Denominators limited to 2, 3, 4, 6, 8 or 10. Demonstrate each decomposition with objects, drawings or equations. *Date Adopted or Revised*: 03/23

MA.4.FR.2.2	Add and subtract fractions with like denominators, including mixed numbers and fractions greater than one, with procedural reliability. *Examples*: The difference $\frac{9}{5}-\frac{4}{5}$ can be expressed as 9 fifths minus 4 fifths which is 5 fifths, or one. *Clarifications*:

	Clarification 1: Instruction includes the use of word form, manipulatives, drawings, the properties of operations or number lines. *Clarification 2:* Within this benchmark, the expectation is not to simplify or use lowest terms. *Clarification 3:* Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. **Related Access Point(s)** MA.4.FR.2.AP.2 Explore adding and subtracting fractions less than one with like denominators. Denominators limited to 2, 3, 4, 6, 8 or 10. *Date Adopted or Revised*: 03/23
MA.4.FR.2.3	Explore the addition of a fraction with denominator of 10 to a fraction with denominator of 100 using equivalent fractions. *Examples*: $\frac{9}{100}+\frac{3}{10}$ is equivalent to $\frac{9}{100}+\frac{30}{100}$ which is equivalent to $\frac{39}{100}$. *Clarifications*: *Clarification 1:* Instruction includes the use of visual models. *Clarification 2:* Within this benchmark, the expectation is not to simplify or use lowest terms. **Related Access Point(s)** MA.4.FR.2.AP.3 Explore the addition of a fraction with denominator of 10 to a fraction with denominator of 100 using visual models to find equivalent fractions. *Date Adopted or Revised*: 03/23
MA.4.FR.2.4	Extend previous understanding of multiplication to explore the multiplication of a fraction by a whole number or a whole number by a fraction. *Examples*: *Example:* Shanice thinks about finding the product $\frac{1}{4}\times 8$ by imagining having 8 pizzas that she wants to split equally with three of her friends. She and each of her friends will get 2 pizzas since $\frac{1}{4}\times 8=2$. *Example:* Lacey thinks about finding the product $8\times\frac{1}{4}$ by imagining having 8 pizza boxes each with one-quarter slice of a pizza left. If she put them all together, she would have a total of 2 whole pizzas since $8\times\frac{1}{4}=\frac{8}{4}$ which is equivalent to 2. *Clarifications*: *Clarification 1:* Instruction includes the use of visual models or number lines and the connection to the commutative property of multiplication. Refer to Properties of Operation, Equality and Inequality (Appendix D).

	Clarification 2: Within this benchmark, the expectation is not to simplify or use lowest terms. *Clarification 3:* Fractions multiplied by a whole number are limited to less than 1. All denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16, 100. **Related Access Point(s)** MA.4.FR.2.AP.4 Explore the multiplication of a unit fraction by a whole number (e.g., 3 × $\frac{1}{4}$, 2 × $\frac{1}{6}$, 5 × $\frac{1}{2}$). Denominators limited to 2, 3, 4, 6, 8 or 10. *Date Adopted or Revised*: 03/23

Strand: GEOMETRIC REASONING

Standard 1: Draw, classify and measure angles.

BENCHMARK CODE	BENCHMARK
MA.4.GR.1.1	Informally explore angles as an attribute of two-dimensional figures. Identify and classify angles as acute, right, obtuse, straight or reflex. *Clarifications*: *Clarification 1:* Instruction includes classifying angles using benchmark angles of 90° and 180° in two-dimensional figures. *Clarification 2:* When identifying angles, the expectation includes two-dimensional figures and real-world pictures. **Related Access Point(s)** MA.4.GR.1.AP.1 Informally explore angles as an attribute of two-dimensional figures. Limit angles to acute, obtuse and right. *Date Adopted or Revised*: 03/23
MA.4.GR.1.2	Estimate angle measures. Using a protractor, measure angles in whole-number degrees and draw angles of specified measure in whole-number degrees. Demonstrate that angle measure is additive. *Clarifications*: *Clarification 1:* Instruction includes measuring given angles and drawing angles using protractors. *Clarification 2:* Instruction includes estimating angle measures using benchmark angles (30°, 45°, 60°, 90° and 180°). *Clarification 3:* Instruction focuses on the understanding that angles can be decomposed into non-overlapping angles whose measures sum to the measure of the original angle. **Related Access Point(s)** MA.4.GR.1.AP.2 Using a tool with a square angle, identify angles as acute, right or obtuse and construct angles that are acute, right or obtuse. *Date Adopted or Revised*: 03/23
MA.4.GR.1.3	Solve real-world and mathematical problems involving unknown whole-number angle measures. Write an equation to represent the unknown.

	Examples: A 60° angle is decomposed into two angles, one of which is 25°. What is the measure of the other angle? *Clarifications*: *Clarification 1:* Instruction includes the connection to angle measure as being additive.
	Related Access Point(s)
	MA.4.GR.1.AP.3 Recognize that angle measure is additive by exploring when an angle is decomposed into two non-overlapping parts the angle measure of the whole is the sum of the angle measures of the parts. *Date Adopted or Revised*: 03/23

Standard 2: Solve problems involving the perimeter and area of rectangles.	
BENCHMARK CODE	**BENCHMARK**
MA.4.GR.2.1	Solve perimeter and area mathematical and real-world problems, including problems with unknown sides, for rectangles with whole-number side lengths. *Clarifications*: *Clarification 1:* Instruction extends the development of algebraic thinking where the symbolic representation of the unknown uses a letter. *Clarification 2:* Problems involving multiplication are limited to products of up to 3 digits by 2 digits. Problems involving division are limited to up to 4 digits divided by 1 digit. *Clarification 3:* Responses include the appropriate units in word form.
	Related Access Point(s)
	MA.4.GR.2.AP.1 Solve perimeter and area mathematical and real-world problems for rectangles with given whole-number side lengths. *Date Adopted or Revised*: 03/23
MA.4.GR.2.2	Solve problems involving rectangles with the same perimeter and different areas or with the same area and different perimeters. *Examples*: Possible dimensions of a rectangle with an area of 24 square feet include 6 feet by 4 feet or 8 feet by 3 feet. This can be found by cutting a rectangle into unit squares and rearranging them. *Clarifications*: *Clarification 1:* Instruction focuses on the conceptual understanding of the relationship between perimeter and area. *Clarification 2:* Within this benchmark, rectangles are limited to having whole-number side lengths. *Clarification 3:* Problems involving multiplication are limited to products of up to 3 digits by 2 digits. Problems involving division are limited to up to 4 digits divided by 1 digit. *Clarification 4:* Responses include the appropriate units in word form.
	Related Access Point(s)
	MA.4.GR.2.AP.2 Explore the relationship between perimeter and area using rectangles with the same

	perimeter and different areas or with the same area and different perimeters. *Date Adopted or Revised*: 03/23

Strand: DATA ANALYSIS AND PROBABILITY

Standard 1: Collect, represent and interpret data and find the mode, median and range of a data set.

BENCHMARK CODE	BENCHMARK
MA.4.DP.1.1	Collect and represent numerical data, including fractional values, using tables, stem-and-leaf plots or line plots. *Examples*: A softball team is measuring their hat size. Each player measures the distance around their head to the nearest half inch. The data is collected and represented on a line plot. *Clarifications*: *Clarification 1:* Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100.
	Related Access Point(s)
	MA.4.DP.1.AP.1 Sort and represent numerical data, including fractional values using tables or line plots (when given a scaled number line). Data set to include only whole numbers and halves. *Date Adopted or Revised*: 03/23
MA.4.DP.1.2	Determine the mode, median or range to interpret numerical data including fractional values, represented with tables, stem-and-leaf plots or line plots. *Examples*: Given the data of the softball team's hat size represented on a line plot, determine the most common size and the difference between the largest and the smallest sizes. *Clarifications*: *Clarification 1:* Instruction includes interpreting data within a real-world context. *Clarification 2:* Instruction includes recognizing that data sets can have one mode, no mode or more than one mode. *Clarification 3:* Within this benchmark, data sets are limited to an odd number when calculating the median. *Clarification 4:* Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100.
	Related Access Point(s)
	MA.4.DP.1.AP.2 Determine the mode or range to interpret numerical data including fractional values, represented with tables or line plots. Data set to include only whole numbers and halves. Limit the greatest and least number in a data set to a whole number. *Date Adopted or Revised*: 03/23
MA.4.DP.1.3	Solve real-world problems involving numerical data. *Examples*: Given the data of the softball team's hat size represented on a line plot, determine the fraction of the team that has a head size smaller than 20 inches. *Clarifications*: *Clarification 1:* Instruction includes using any of the four operations to solve problems.

	Clarification 2: Data involving fractions with like denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, 16 and 100. Fractions can be greater than one. *Clarification 3:* Data involving decimals are limited to hundredths.
	Related Access Point(s)
	MA.4.DP.1.AP.3 Solve one-step real-world problems involving numerical data represented with tables or line plots. Data set to include only whole numbers and halves. Required operations to involve only the whole number data points in the data set. *Date Adopted or Revised*: 03/23