

Fourth Grade Report Card - Parent Support
MATH
Marking Period Expectations Standards Based Report Card

Report Card Indicators	Common Core Standards	4th Grade Level Expectations (1st MP =Q 2nd MP=R 3rd MP=S)
Mathematical Practices	Standards	Students will be able to...
<p>Makes sense of problems and perseveres in solving them</p>	<p>CCSS.Math.Practice.MP1- Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Justify answers by using a place-value chart. - Explain how to use multiplication to find multiples of a number. - Justify which digit to use when rounding a number. - Explain how to use multiplication to find multiples of a number. - Explain how to use a bar model to map the relationship between numbers when solving a problem. - Identify important quantities in a practical situation and map their relationships using tables. - Analyze the relationships in a table before drawing conclusions. - Justify interpretation of data in a line graph to solve a problem and justify that the answer makes sense. - Explain how to analyze a problem and decide what number sentence to write to find the average of a data set. - Explain median, mode, and range and use them to solve problems. - Understand how a stem-and-leaf plot organizes data so it can be used to solve problems. - Make and justify conjectures about quantities and their relationships when solving problems about data and probability. - Explain the definitions of horizontal and vertical lines to other students so they can identify such lines. <p>MP2:</p> <ul style="list-style-type: none"> - Evaluate the reasonableness of results when finding a fractional part of a number. - Justify thinking by using pictures to help conceptualize and solve

	<p>approaches of others to solving complex problems and identify correspondences between different approaches.</p>	<p>a problem involving fractions.</p> <ul style="list-style-type: none"> - Identify important quantities in a practical situation and map their relationships using such tools as tables and line plots. - Verify comparisons of decimals by using place value. - Evaluate the reasonableness of answers when solving problems with decimals. - Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn. <p>MP3:</p> <ul style="list-style-type: none"> - Evaluate the reasonableness of the answer for each part of a composite figure before adding to find the final area. - Justify the choice of formula and units when solving problems about area and perimeter. - Evaluate the reasonableness of the answer for each part of a composite figure before adding to find the final area. - Explain to others how to make a symmetric shape or pattern using grid paper. - Justify that a drawn shape tessellates.
<p>Explains mathematical thinking and problem solving strategies</p>	<p>CCSS.MATH.PRACTICE.MP2 - Reason abstractly and quantitatively.</p> <p>Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to <i>decontextualize</i>—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to <i>contextualize</i>, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Justify which digit to use when rounding a number. - Explain how knowing how to multiply by a 1-digit number helps when multiplying by a 2-digit number. - Evaluate the reasonableness of the intermediate results used to find the quotients and remainder in a division problem. - Explain how to use a bar model to map the relationship between numbers when solving a problem. - Justify interpretation of data in a line graph to solve a problem and justify that the answer makes sense. <p>MP2:</p> <ul style="list-style-type: none"> - Explain how to use equivalent fractions to add and subtract fractions. - Verify the reasonableness of an answer when renaming an improper fraction in simplest form. - Evaluates the reasonableness of results when finding a fractional

quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

part of a number.

- Justify thinking by using pictures to help conceptualize and solve a problem involving fractions.
- Verify comparisons of decimals by using place value.
- Explain the relationships between fractions and decimals to help change from one form to the other.
- Make conjectures about the measure of an angle based on it's size.
- Explain how to use a protractor to draw angles.
- Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn.

MP3:

- Calculate and express numerical answers with a degree of precision that is appropriate in converting units of length.
- Make sense of metric units of mass and customary units of weight and their relationships and can explain the relationships to others.
- Explain to other students the mathematics used in converting units of time.
- Apply known mathematics to solve measurement problems involving distance, time, volume, mass, and money.
- Justify what number sentence and what units to use when finding the area of a rectangle.
- Evaluate the reasonableness of the answer for each part of a composite figure before adding to find the final area.

Constructs viable arguments and critiques the reasoning of others

CCSS.MATH.PRACTICE.MP3- Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

MP1:

- Explain how to use a tool, such as place-value chips, to show large numbers.
- Justify answers by using a place-value chart.
- Explain how to use factors to decide whether a number is prime or composite.
- Make and justify conjectures about the answer to a multiplication problem before attempting to complete the multiplication.
- Explain how knowing how to multiply by a 1-digit number helps when multiplying by a 2-digit number.
- Identify important quantities in a practical situation and map their relationships using tables.
- Analyze the relationships in a table before drawing conclusions.
- Justify interpretation of data in a line graph to solve a problem and justify that the answer makes sense.
- Explain how to analyze a problem and decide what number sentence to write to find the average of a data set.
- Explain median, mode, and range and use them to solve problems.
- Understand how a stem-and-leaf plot organizes data so it can be used to solve problems.
- Compare the effectiveness of various models or drawings when showing outcomes.
- Verify another student's explanation of how to express a probability as a fraction.
- Compare the effectiveness of real-life objects and tools that can be used to draw perpendicular lines.

MP2:

- Explain how to use tools, such as fraction strips or circles, to understand mixed numbers.
- Compare the effectiveness of drawings and number lines when changing improper fractions to mixed numbers.
- Justify rounding decimals by using number lines.
- Make conjectures about the measure of an angle based on its size.

		<ul style="list-style-type: none"> - Explain how to use a protractor to draw angles. - Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn. <p>MP3:</p> <ul style="list-style-type: none"> - Communicate precisely to others, using correct vocabulary words, a description of a square or rectangle and its properties. - Justify what number sentence and what units to use when finding the area of a rectangle. - Evaluate the reasonableness of the answer for each part of a composite figure before adding to find the final area. - Fold a figure to verify whether it has a line of symmetry. - Explain how to use figures drawn on grid paper to verify whether they have rotational symmetry. - Explain to others how to make a symmetric shape or pattern using grid paper. - Compare the meanings of slide, flip, and rotate and use them to identify tessellations. - Justify that a drawn shape tessellates.
<p>Models with mathematics</p>	<p>CCSS.MATH.PRACTICE.MP4- Model with mathematics. Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Use clear definitions and vocabulary when discussing the steps for adding and subtracting multi-digit numbers. - Explain how to use factors to decide whether a number is prime or composite. - Justify thinking and ask “Does this make sense?” when discussing using a model to multiply multi-digit numbers. - Make and justify conjectures about the answer to a multiplication problem before attempting to complete the multiplication. - Explain how knowing how to multiply by a 1-digit number helps when multiplying by a 2-digit number. - Explain how to use a bar model to map the relationship between numbers when solving a problem. - Identify important quantities in a practical situation and map their relationships using tables. - Justify interpretation of data in a line graph to solve a problem and justify that the answer makes sense.

relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

- Explain how to analyze a problem and decide what number sentence to write to find the average of a data set.
- Explain median, mode, and range and use them to solve problems.
- Compare the effectiveness of various models or drawings when showing outcomes.
- Make and justify conjectures about quantities and their relationships when solving problems about data and probability.

MP2:

- Explain how to use equivalent fractions to add and subtract fractions.
- Explain how to use tools, such as fraction strips or circles, to understand mixed numbers.
- Compare the effectiveness of drawings and number lines when changing improper fractions to mixed numbers.
- Notice if calculations repeat and look for general methods and shortcuts when renaming mixed numbers and improper fractions.
- Verify the reasonableness of an answer when renaming an improper fraction in simplest form.
- Verify the reasonableness of an answer when renaming an improper fraction in simplest form.
- Evaluate the reasonableness of results when finding a fractional part of a number.
- Justify thinking by using pictures to help conceptualize and solve a problem involving fractions.
- Identify important quantities in a practical situation and map their relationships using such tools as tables and line plots.
- Explain the relationship between fractions and decimals to help understand tenths and hundredths.
- Verify comparisons of decimals by using place value.
- Justify rounding decimals by using number lines.
- Explain the relationships between fractions and decimals to help change from one form to the other.
- Explain how to use place-value chips to help add, subtract and rename decimals.
- Evaluate the reasonableness of answers when solving problems

		<p>with decimals.</p> <ul style="list-style-type: none"> - Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn. <p>MP3:</p> <ul style="list-style-type: none"> - Apply known mathematics to solve measurement problems involving distance, time, volume, mass, and money.
<p>Uses appropriate tools strategically</p>	<p>CCSS.MATH.PRACTICE.MP5- Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Explain how to use a tool, such as place-value chips, to show large numbers. - Make and justify conjectures about the answer to a multiplication problem before attempting to complete the multiplication. - Explain how knowing how to multiply by a 1-digit number helps when multiplying by a 2-digit number. - Justify the way place-value chips are used when dividing. - Identify important quantities in a practical situation and map their relationships using tables. - Analyze the relationships in a table before drawing conclusions. - Compare the effectiveness of various models or drawings when showing outcomes. <p>MP2:</p> <ul style="list-style-type: none"> - Make conjectures about the measure of an angle based on it's size. - Explain how to use a protractor to draw angles. - Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn. - Compare the effectiveness of real-life objects and tools that can be used to draw perpendicular lines. - Explain the definitions of horizontal and vertical lines to other students so they can identify such lines. <p>MP3:</p> <ul style="list-style-type: none"> - Communicate precisely to others, using correct vocabulary words, a description of a square or rectangle and its properties. - Estimate the area of a rectangle by counting grid squares.

		<ul style="list-style-type: none"> - Find the area of rectangles using a formula. - Justify what number sentence and what units to use when finding the area of a rectangle. - Explain which operation, numbers, and units are used when finding area and perimeter.
<p>Attends to precision</p>	<p>CCSS.MATH.PRACTICE.MP6- Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Explain how to use a tool, such as place-value chips, to show large numbers. - Justify answers by using a place-value chart. - Justify which digit to use when rounding a number. - Explain how to use factors to decide whether a number is prime or composite. - Make and justify conjectures about the answer to a multiplication problem before attempting to complete the multiplication. - Evaluate the reasonableness of the intermediate results used to find the quotients and remainder in a division problem. - Explain how knowing how to multiply by a 1-digit number helps when multiplying by a 2-digit number. - Explain how to use a bar model to map the relationship between numbers when solving a problem. - Identify important quantities in a practical situation and map their relationships using tables. - Analyze the relationships in a table before drawing conclusions. - Justify interpretation of data in a line graph to solve a problem and justify that the answer makes sense. - Explain how to analyze a problem and decide what number sentence to write to find the average of a data set. - Explain median, mode, and range and use them to solve problems. - Understand how a stem-and-leaf plot organizes data so it can be used to solve problems. - Compare the effectiveness of various models or drawings when showing outcomes. - Verify another student’s explanation of how to express a

probability as a fraction.

MP2:

- Explain how to use tools, such as fraction strips or circles, to understand mixed numbers.
- Compare the effectiveness of drawings and number lines when changing improper fractions to mixed numbers.
- Verify comparisons of decimals by using place value.
- Justify rounding decimals by using number lines.
- Make conjectures about the measure of an angle based on it's size.
- Explain how to use a protractor to draw angles.
- Use the relationship between 90 degrees and $\frac{1}{4}$ turn to verify the number of degrees in $\frac{1}{2}$, $\frac{3}{4}$, and 1 full turn.
- Compare the effectiveness of real-life objects and tools that can be used to draw perpendicular lines.

MP3:

- Communicate precisely to others, using correct vocabulary words, a description of a square or rectangle and its properties.
- Calculate and express numerical answers with a degree of precision that is appropriate in converting units of length.
- Make sense of metric units of mass and customary units of weight and their relationships and can explain the relationships to others.
- Explain to other students the mathematics used in converting units of time.
- Apply known mathematics to solve measurement problems involving distance, time, volume, mass, and money.
- Estimate the area of a rectangle by counting grid squares.
- Find the area of rectangles using a formula.
- Justify what number sentence and what units to use when finding the area of a rectangle.
- Explain which operation, numbers, and units are used when finding area and perimeter.
- Evaluate the reasonableness of the answer for each part of a composite figure before adding to find the final area.

		<ul style="list-style-type: none"> -Justify the choice of formula and units when solving problems about area and perimeter. -Identify a line of symmetry of a figure. -Explain how to use figures drawn on grid paper to verify whether they have rotational symmetry. -Explain to others how to make a symmetric shape or pattern using grid paper. -Compare the meanings of slide, flip, and rotate and use them to identify tessellations. -Justify that a drawn shape tessellates.
Operations and Algebraic Thinking		
Uses the four operations with whole numbers to solve problems	<p>4.OA.A.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.</p> <p>4.OA.A.2- Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <p>4.OA.A.3 - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimating strategies including rounding.</p>	<p>MP1 :</p> <ul style="list-style-type: none"> - Recognize when two factors are multiplies, the product is a multiple of both numbers. - Know that factors and multiples of numbers can help in estimating products and quantities. - Round numbers to estimate sums, differences, products, and quotients. - Estimate to check that an answer is reasonable - Decide whether an estimate or an exact answer is needed. - Use different methods to multiply up to 4-digit numbers by 1-digit numbers, with or without regrouping. - Solve multi-step real-world problems using the four operations. - Represent real-word problems with a letter standing for the unknown quantity. <p>MP2:</p> <ul style="list-style-type: none"> - Solve real-world problems involving fractions. <p>MP3:</p> <ul style="list-style-type: none"> - Find unknown angle measures and side lengths of squares and

		<p>rectangles.</p> <ul style="list-style-type: none"> - Find the perimeter and area of a composite figure. - Solve word problems involving estimating area of figures. - Solve word problems involving area and perimeter of composite figures.
Understands factors and multiples	<p>4.OA.B.4 - Find all factor pairs for a whole number in the range 1 - 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1 - 100 is prime or composite.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Find the common factors and greatest common factor of two whole numbers. - Identify prime numbers and composite numbers. - Find multiples of whole numbers. - Find common multiples and the least common multiple of two or more numbers. <p>MP2:</p> <ul style="list-style-type: none"> - N/A <p>MP3:</p> <ul style="list-style-type: none"> - N/A
Generates and analyzes patterns and relationships	<p>4.OA.C.5 - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Find the rule in a number pattern. <p>MP2:</p> <ul style="list-style-type: none"> - Complete number patterns. <p>MP3:</p> <ul style="list-style-type: none"> - Complete a symmetric shape or pattern. - Create symmetric patterns on grid paper. - Recognize and make tessellations. - Identify the unit shape used in a tessellation. - Tessellate shapes in different ways.

Numbers and Operations - Base Ten		
<p>Understands the place value system</p>	<p>4.NBT.A.1 - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700/70 = 10$ by applying concepts of place value and division.</p> <p>4.NBT.A.2 - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Write numbers to 100,000 in standard form, word form, and expanded form. - Compare and order numbers to 100,000. - Identify how much greater or less one number is than another number. - Find multiples of whole numbers. - Find common multiples and the least common multiple of two or more numbers. - Understand that place value is used to multiply and divide multi-digit numbers. - Understand that estimation can be used to check the reasonableness of an answer. - Use different methods to multiply up to 4-digit numbers by 1-digit numbers, with or without regrouping. - Model regrouping in division. - Divide a 3-digit number by a 1-digit number with regrouping. <p>MP2:</p> <ul style="list-style-type: none"> - Add and subtract decimals up to two decimal places. <p>MP3:</p> <ul style="list-style-type: none"> - N/A
<p>Performs operations with multi-digit whole numbers.</p>	<p>4.NBT.B.3 - Use place value understanding to round multi-digit whole numbers to any place.</p> <p>4.NBT.B.4 - Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>4.NBT.B.5 - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-different</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Add whole numbers to 100,000 using the standard algorithm. - Add multi-digit numbers with and without regrouping. - Subtract whole numbers to 100,000 using the standard algorithm. - Subtract multi-digit numbers with and without regrouping. - Multiply a 2-digit number by a 1-digit number using an array model and an area model. - Understand that place value is used to multiply and divide

	<p>numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>4.NBT.B.6- Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>multi-digit numbers.</p> <ul style="list-style-type: none"> - Understand that estimation can be used to check the reasonableness of an answer. - Use different methods to multiply up to 4-digit numbers by 1-digit numbers, with or without regrouping. - Multiply by 2-digit numbers, with or without regrouping. - Estimate products. - Model regrouping in division. - Divide a 3-digit number by a 1-digit number with regrouping. - Divide up to a 4-digit number by a 1-digit number with regrouping, and with or without remainders. - Estimate quotients. <p>MP2:</p> <ul style="list-style-type: none"> - Add and subtract decimals up to two decimal places. <p>MP3:</p> <ul style="list-style-type: none"> - Understand that measurement is a way of assigning number to objects, such as by their length, weight, or volume and that they can be compared.
<p>Number and Operations - Fractions</p>		
<p>Extends understanding of fraction equivalence and ordering</p>	<p>4.NF.A.1 - Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - Determine the probability of an event. - Express probability as a fraction. - Solve real-world problems involving probability and measures of central tendency.

	<p>4.NF.A.2 - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p>	<p>MP2:</p> <ul style="list-style-type: none"> - Find equivalent fractions. - Add and subtract unlike fractions. - Add fractions to get mixed-number sums. - Subtract fractions from whole numbers. - Express a fraction as a decimal and a decimal as a fraction. <p>MP3:</p> <ul style="list-style-type: none"> - N/A
<p>Adds, subtracts and decomposes fractions</p>	<p>4.NF.B3 - Understand a fraction a/b with $a > 1$ as a sum of fraction $1/b$.</p> <ul style="list-style-type: none"> - 4.NF.B.3a - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. - 4.NF.B.3b- Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{2}{8} + \frac{1}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$ - 4.NF.B.3c - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. - 4.NF.B.3d - Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem 	<p>MP1:</p> <ul style="list-style-type: none"> - N/A <p>MP2:</p> <ul style="list-style-type: none"> - Understand that fractions and mixed numbers are used to name wholes and parts of a whole. - Understand that fractions and mixed numbers can be added and subtracted. - Find equivalent fractions. - Add and subtract unlike fractions. - Write a mixed number for a model. - Draw models to represent mixed numbers. - Write an improper fraction for a model. - Express mixed numbers as improper fractions. - Use multiplication and division to rename improper fractions and mixed numbers. - Add fractions to get mixed-number sums. - Subtract fractions from whole numbers. - Solve real-world problems involving fractions. - Express a fraction as a decimal and a decimal as a fraction. <p>MP3:</p> <ul style="list-style-type: none"> - Understand that measurement is a way of assigning number to objects, such as by their length, weight, or volume and that they can be compared.

<p>Multiplies fractions by a whole number</p>	<p>4.NF.B.4 - Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <ul style="list-style-type: none"> - 4.NF.B.4a - Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$. - 4.NF.B.4b - Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$) - 4.NF.B.4c - Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? 	<p>MP1:</p> <ul style="list-style-type: none"> - N/A <p>MP2:</p> <ul style="list-style-type: none"> - Write an improper fraction for a model. - Express mixed numbers as improper fractions. - Use multiplication and division to rename improper fractions and mixed numbers. - Use a bar model to represent a fraction of a set. - Find a fractional part of a number. - Multiply a fraction and a whole number. - Solve real-world problems involving fractions. - Add decimals up to two decimal places. <p>MP3:</p> <ul style="list-style-type: none"> - Understand that measurement is a way of assigning number to objects, such as by their length, weight, or volume and that they can be compared.
<p>Builds fractions from unit fractions</p>	<p>4.NF.C.5 - Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$</p>	<p>MP1:</p> <ul style="list-style-type: none"> -N/A <p>MP2:</p> <ul style="list-style-type: none"> - Read and write tenths and hundredths. in decimal and fractional forms. - Represent and interpret tenths and hundredths models. - Add decimals up to two decimal places. <p>MP3:</p> <ul style="list-style-type: none"> -N/A

<p>Uses decimal notation for fractions with denominators of 10 or 100</p>	<p>4.NF.C.6 - Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</p>	<p>MP1: -N/A</p> <p>MP2:</p> <ul style="list-style-type: none"> - Read and write tenths and hundredths in decimal and fractional forms. - Represent and interpret tenths and hundredths models. - Express a fraction as a decimal and a decimal as a fraction. <p>MP3: - N/A</p>
<p>Compares two decimal numbers to hundredths (>, =, or <)</p>	<p>4.NF.C.7 - Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.</p>	<p>MP1: - N/A</p> <p>MP2:</p> <ul style="list-style-type: none"> - Compare and order decimals. - Express a fraction as a decimal and a decimal as a fraction. <p>MP3: -N/A</p>
<p>Measurement and Data</p>		
<p>Understands the relative sizes of measurement units</p>	<p>4.MD.A.1 - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1ft is 12 times as long as 1 in. Express the length of a 4ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1,12), (2,24), (3, 36),...</p>	<p>MP1: -N/A</p> <p>MP2:</p> <ul style="list-style-type: none"> - Write a mixed number for a model. - Draw models to represent mixed numbers - Round decimals to the nearest whole number or tenth. - Solve real-world problems involving addition and subtraction of decimals. <p>MP3:</p> <ul style="list-style-type: none"> - Understand and apply the properties of squares and rectangles. - Find unknown angle measures and side lengths of squares and rectangles

		<ul style="list-style-type: none"> - Understand that measurement is a way of assigning number to objects, such as by their length, weight, or volume and that they can be compared. - Understand the relative sizes of measurement units. - Convert metric units of length, mass and volume. - Convert customary units of length, weight and volume. - Understand the relative sizes of units of time. - Convert units of time. - Use the four operations to solve word problems involving distance, time, volume, mass, and money. - Represent measurement quantities using line diagrams.
<p>Solves problems involving measurement and estimation</p>	<p>4.MD.A.2 - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>4.MD.A.3 - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room give the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</p>	<p>MP1:</p> <ul style="list-style-type: none"> - N/A <p>MP2:</p> <ul style="list-style-type: none"> - Solve real-world problems involving addition and subtraction of decimals. <p>MP3:</p> <ul style="list-style-type: none"> - Understand and apply the properties of squares and rectangles. - Find unknown angle measures and side lengths of squares and rectangles - Estimate the area of a rectangle by counting grid squares. - Find the area of rectangles using a formula. - Find the perimeter and area of a composite figure. - Solve word problems involving estimating area of figures. - Solve word problems involving area and perimeter of composite figures.

<p>Represents and interprets data</p>	<p>4.MD.B.4 - Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p>	<p>MP1: - N/A</p> <p>MP2: - Show measurements in a line plot with a scale of fractions of a unit. - Solve problems by adding and subtracting fractions using data in a line plot.</p> <p>MP3: - N/A</p>
<p>Understands geometric measurement</p>	<p>4.MD.C.5 - Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <p>4.MD.C.5a - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle” and can be used to measure angles.</p> <p>4.MD.C.5b - An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p> <p>4.MD.C.6 - Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>4.MD.C.7-Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real word and mathematical problems, eg., by using</p>	<p>MP1 - N/A</p> <p>MP2 - Understand that angles can be seen and measured when two rays or sides of a shape meet. - Understand that angles can be seen and measured when two rays or sides of a shape meet. - Estimate and measure angles with a protractor. - Estimate whether the measure of an angle is less than or greater than a right angle. - Explain how to use a protractor to draw angles. - Relate $\frac{1}{4}$-, $\frac{1}{2}$-, $\frac{3}{4}$-, and full turns to the number of right angles. - Understand what an angle measure of 1 degree represents. - Find unknown angle measures using addition or subtraction. - Solve real-world problems by finding unknown angle measures.</p> <p>MP3 - Find unknown angle measures and side lengths of squares and rectangles</p>

	an equation with a symbol for the unknown angle measure.	
Geometry		
Draws and identifies lines and angles	4.G.A.1 - Draw points, lines, line segments, rays, angles (right, acute, obtuse) and perpendicular and parallel lines.	<p>MP1: -N/A</p> <p>MP2:</p> <ul style="list-style-type: none"> - Understand that angles can be seen and measured when two rays or sides of a shape meet. - Estimate and measure angles with a protractor. - Estimate whether the measure of an angle is less than or greater than a right angle. - Use a protractor to draw acute and obtuse angles. - Understand that line segments can go up and down, from side to side, and in every direction. - Draw perpendicular line segments. - Identify horizontal and vertical lines. <p>MP3:</p> <ul style="list-style-type: none"> - Understand and apply the properties of squares and rectangles
Classifies shapes by their properties	4.G.A.2 - Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	<p>MP1: - N/A</p> <p>MP2:</p> <ul style="list-style-type: none"> - Draw perpendicular line segments. <p>MP3:</p> <ul style="list-style-type: none"> - Understand and apply the properties of squares and rectangles - Understand that figures can have line and rotational symmetry.

<p>Recognizes lines of symmetry</p>	<p>4.G.A.3 - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.</p>	<p>MP1: - N/A</p> <p>MP2: -N/A</p> <p>MP3:</p> <ul style="list-style-type: none"> - Understand that figures can have line and rotational symmetry. - Identify a line of symmetry of a figure. - Draw a shape or pattern about a line of symmetry and check for rotational symmetry. - Complete a symmetric shape or pattern. - Create symmetric patterns on grid paper.