

4th Grade Mathematics Learning Targets By Unit

INSTRUCTIONAL UNIT	PSSA ELIGIBLE CONTENT	LEARNING TARGETS
UNIT 1: WORKING WITH WHOLE NUMBERS	<p>M04.A-T.1.1.1 Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right. Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.</p> <p>M04.A-T.1.1.2 Read and write whole numbers in expanded, standard, and word form through 1,000,000.</p> <p>M04.A-T.1.1.3 Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols. M04.A-T.1.1.4 Round multi-digit whole numbers (through 1,000,000) to any place.</p>	<p><i>I can.....</i></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 the rule in a number pattern. • 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. • Generate a number or shape pattern that follows a given rule.
UNIT 2: ESTIMATION AND NUMBER THEORY	<p>M04.A-T.2.1.2 Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.</p> <p>M04.A-T.2.1.3 Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.</p> <p>M04.B-O.1.1.1 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Example 1: Interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8 can be represented by the equation $24 = 3 \times 8$ or $24 = 8 \times 3$.</p> <p>M04.B-O.1.1.2 Multiply or divide to solve word problems</p>	<p><i>I can...</i></p> <ul style="list-style-type: none"> • 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. • Find the common factors and greatest common factor of two whole numbers. • Identify prime and composite numbers. • Find multiples of a whole number. • Find common multiples and least common multiple of two or more numbers. • Multiply a 2-digit number by a 1 digit number using an array model and an area model. • Use problem solving strategies to eliminate options. • Use problem solving to make a systematic list.

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	<p>involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Example: Know that 3×4 can be used to represent that Student A has 4 objects and Student B has 3 times as many objects not just 3 more objects.</p>	
<p>UNIT 3: WHOLE NUMBER MULTIPLICATION AND DIVISION</p>	<p>M04.A-T.2.1.1 Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).</p> <p>M04.A-T.2.1.2 Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.</p> <p>M04.A-T.2.1.3 Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.</p> <p>M04.A-T.2.1.4 Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits \times 1 digit, excluding powers of 10)</p> <p>M04.B-O.1.1.1 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Example 1: Interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8 can be represented by the equation $24 = 3 \times 8$ or $24 = 8 \times 3$.</p> <p>M04.B-O.1.1.2 Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Example: Know that 3×4 can be used to represent that Student A has 4 objects and Student B has 3 times as many objects not just 3 more objects.</p> <p>M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.</p>	<p><i>I can....</i></p> <ul style="list-style-type: none"> • 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 numbers with regrouping. • Divide up to a 4 digit number by a 1 –digit number with regrouping, and without remainders. • Estimate quotients. • Solve real world problems. • Solve multi-step real world problems using the four operations. • Represent real-world problems with a letter standing for an unknown quantity. • Problem solve using a diagram and/or model.

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	M04.B-O.1.1.4 Identify the missing symbol (+, −, ×, ÷, =,) that makes a number sentence true (single-digit divisor only).	
UNIT 4: TABLES AND LINE GRAPHS	<p>M04.D-M.2.1.1 Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{8}$).</p> <p>M04.D-M.2.1.2 Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$).</p> <p>M04.D-M.2.1.3 Translate information from one type of display to another (table, chart, bar graph, or pictograph).</p>	<p><i>I can...</i></p> <ul style="list-style-type: none"> • Collect, organize, and interpret data in a table. • Create a table from data in a tally chart and a bar graph. • Read and interpret data in a table using rows, columns and intersections. • Make, read, and interpret line graphs. • Choose an appropriate graph to display a given set of data. • Use thinking skills to compare and identify relationships.
UNIT 5: FRACTIONS AND MIXED NUMBERS	<p>M04.A-F.1.1.1 Recognize and generate equivalent fractions.</p> <p>M04.A-F.1.1.2 Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols $>$, $=$, or $<$ and justify the conclusions.</p> <p>M04.A-F.2.1.1 Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be simplified; and no improper fractions as the final answer).</p> <p>M04.A-F.2.1.2 Decompose a fraction or a mixed number into a sum of fractions with the same denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (e.g., by using a visual fraction model). Example 1: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ OR $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$ Example 2: $2\frac{1}{12} = 1 + 1 + \frac{1}{12} = \frac{12}{12} + \frac{12}{12} + \frac{1}{12}$</p> <p>M04.A-F.2.1.3 Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be simplified; and no improper fractions as the final answers).</p> <p>M04.A-F.2.1.4 Solve word problems involving addition and</p>	<p><i>I can....</i></p> <ul style="list-style-type: none"> • Find equivalent fractions. • Add unlike fractions. • 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. • 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. • 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.

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	<p>subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</p> <p>M04.A-F.2.1.5 Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number). Example: $5 \times (1/4) = 5/4$</p> <p>M04.A-F.2.1.6 Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number). Example: $3 \times (5/6) = 15/6$</p> <p>M04.A-F.2.1.7 Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</p>	
<p>UNIT 6: DECIMALS</p>	<p>M04.A-F.3.1.2 Use decimal notation for fractions with denominators 10 or 100. Example: Rewrite 0.62 as 62/100 and vice versa.</p> <p>M04.A-F.3.1.3 Compare two decimals to hundredths using the symbols $>$, $=$, or $<$ and justify the conclusions.</p>	<p>I can...</p> <ul style="list-style-type: none"> • Read and write tenths in decimal and fractional forms. • Represent and interpret tenths models. • Read and write hundredths in decimal and fractional forms. • Represent and interpret hundredths models. • Compare and order decimals. • Complete number patterns. • Round decimals to the nearest whole number or tenth • Express a fraction as a decimal and a decimal as a fraction. • Compare two decimals to the hundredths by reasoning about their size.
<p>UNIT 7: ADDING AND SUBTRACTING DECIMALS</p>		<p>I can....</p> <ul style="list-style-type: none"> • Add decimals up to two decimal places. • Subtract decimals up to two decimal places. • Solve real world problems involving addition and subtraction of decimals.

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<p>UNIT 8: ANGLES</p>	<p>M04.D-M.3.1.1 Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure.</p> <p>M04.D-M.3.1.2 Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.)</p>	<p><i>I can...</i></p> <ul style="list-style-type: none"> • 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. • Relate $\frac{1}{4}$-, $\frac{1}{2}$-, $\frac{3}{4}$-, and full turns to the number of right angles (90 degrees) • Understand what an angle of 1 degree represents. • Find unknown angle measures using addition or subtraction. • Solve real-world problems by finding unknown angle measures.
<p>UNIT 9: PERPENDICULAR AND PARALLEL LINES</p>	<p>M04.C-G.1.1.1 Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two dimensional figures.</p> <p>M04.C-G.1.1.2 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> <p>M04.C-G.1.1.3- Recognize a line of symmetry for two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).</p>	<p><i>I can...</i></p> <ul style="list-style-type: none"> • Draw perpendicular line segments. • Draw parallel line segments. • Identify horizontal and vertical lines.
<p>UNIT 10: SQUARE AND RECTANGLES</p>	<p>M04.C-G.1.1.1- Draw points, lines, line segments, rays, angles, (right, acute and obtuse) and perpendicular and parallel lines. Identify these in two-dimensional figures</p> <p>M04.C-G.1.1.2- 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>	

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	<p>M04.C-G.1.1.3- Recognize a line of symmetry for two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).</p>	
<p>UNIT 11: MEASUREMENT</p>	<p>M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.</p> <p>M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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.</p>	<p>I can...</p> <ul style="list-style-type: none"> • Understand the relative sizes of measurement units. • Convert metric units of length. • Convert customary units of length. • Understand the relative sizes of measurement units. • Convert metric units of mass and volume. • Convert customary units of 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 use line diagrams. • Make sense of problems and persevere in solving them.
<p>UNIT 12: AREA AND PERIMETER</p>	<p>M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided.</p>	<p>I can...</p> <ul style="list-style-type: none"> • Estimate the area of a rectangle by counting grid squares. • Find the area of a rectangle using a formula. • Solve problems involving the area and perimeter of squares and rectangles. • 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. • Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

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<p>UNIT 13: SYMMETRY</p>	<p>M04.C-G.1.1.3 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 mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).</p>	<p><i>I can...</i></p> <ul style="list-style-type: none"> • Identify a line of symmetry of a figure. • Relate rotational symmetry to turns. • Trace a figure to determine whether it has rotational symmetry. • Draw a shape or pattern about a line of symmetry and check for rotational symmetry. • Complete s symmetric shape or pattern. • Create symmetric patterns on grid paper. • Recognize a line of symmetry for a two-dimensional figure such that the figure can be folded along the line into matching parts.
<p>UNIT 14: ENRICHING 4TH GRADE MATH WITH TESSELLATIONS AND DATA AND PROBABILITY</p>	<p>Chapter 5 CC.2.4.4.A.2 Translate information from one type of data display to another.</p> <p>Chapter 15 CC.2.2.4.A.4 Generate and analyze patterns using one rule.</p>	<p>Chapter 5</p> <p><i>I can....</i></p> <ul style="list-style-type: none"> • Describe a data set using an average or mean. • Find the mean, median, mode, and range for a set of data. • Make and interpret line plots. • Organize and represent data in a stem-and-leaf plot. • Use a stem-and-leaf plot to find median, mean and range. • Decide whether an outcome is more likely, equally likely, less likely or impossible. • Determine the probability of an event. • Express probability as a fraction. • Solve real-world problems involving probability and measures of central tendency. <p>Chapter 15</p> <p><i>I can...</i></p> <ul style="list-style-type: none"> • Recognize and make tessellations. • Identify the unit shape used in a tessellation. • Tessellate shapes in different ways.