4th Grade Mathematics Curriculum Year-At-A-Glance

Unit 1: Place Value and Number Sense

Essential Standard

4_M_1: Students will understand, extend, analyze, and apply the properties of the base-ten number system (grade 4 expectations in this standard are limited to whole numbers less than or equal to 1,000,000).

Learning Targets

- 4_M_1_A: Read and write multi-digit whole numbers using standard, word, and expanded form. (R) (4.NBT.2)
- 4_M_1_B: 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 and 1/10 of what it represents to its left. (K) (4.NBT.1/5.NBT.1)
- 4_M_1_C: Compare two multi-digit numbers using >, =, and < symbols. (R) (4.NBT.2)
- 4_M_1_D: Use place value and number line understanding to round multi-digit whole numbers to any place. (R) (4.NBT.3)

Unit 2: Multiplication

Essential Standard

4_M_2: Students will understand and apply the properties of the four operations and determine the relationship between them to solve problems with whole numbers.

Learning Targets

- 4_M_2_A: Generate all the multiples of a one-digit number up to 100. (R) (4.OA.4)
- 4_M_2_B: Find all factor pairs for a whole number in the range 1-100 and recognize that a whole number is a multiple of each of its factors. (K) (4.OA.4)
- 4_M_2_C: Determine whether a given whole number in the range 1-100 is prime or composite. (K) (4.OA.4)
- 4_M_2_D: Use mental math or estimation strategies (including rounding) to check if an answer is reasonable. (R) (4.OA.3)
- 4_M_2_E: Solve and explain multiplication of four-digit by one-digit whole numbers using rectangular arrays, place value, the area model, equations, and properties of multiplication. (R) (4.NBT.5)
- 4_M_2_F: Solve and explain multiplication of two two-digit whole numbers using rectangular arrays, place value, the area model, equations, and properties of multiplication. (R) (4.NBT.5)

Unit 3: Division

Essential Standard

4_M_2: Students will understand and apply the properties of the four operations and determine the relationship between them to solve problems with whole numbers.

Learning Targets

- 4_M_2_D: Use mental math or estimation strategies (including rounding) to check if an answer is reasonable. (R) (4.OA.3)
- 4_M_2_G: Find whole number quotients and remainders with up to 4-digit dividends and 1-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. (R) (4.NBT.6)
- 4_M_2_H: Interpret remainders in word problems. (R) (4.OA.3)

Unit 4: Applying the Four Operations

Essential Standard

4_M_2: Students will understand and apply the properties of the four operations and determine the relationship between them to solve problems with whole numbers.

Learning Targets

- 4_M_2_D: Use mental math or estimation strategies (including rounding) to check if an answer is reasonable. (R) (4.OA.3)
- 4_M_2_I: Fluently add and subtract multi-digit whole numbers using the standard algorithm. (R) (4.NBT.4)
- 4_M_2_J: Distinguish between multiplicative (as many times as) and additive (more) comparisons. (R) (4.OA.2)
- 4_M_2_K: Solve a multiplication or division word problem involving multiplicative comparisons using drawings and equations. (R) (4.OA.2)
- 4_M_2_L: Choose the correct operation to perform at each step of a multi-step word problem. (R) (4.OA.3)
- 4_M_2_M: Write equations using a variable to represent the unknown when solving a word problem. (R) (4.OA.3)

Unit 5: Fractions

Essential Standard

4_M_3: Students will demonstrate an understanding of fractions and decimals (grade 4 expectations in this standard are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100).

Learning Targets

- 4_M_3_A: Recognize and generate equivalent fractions. Explain why a fraction *a/b* is equivalent to a fraction *(n • a) / (n • 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. (R) (4.NF.1)
- 4_M_3_B: Compare two fractions with different numerators and different denominators by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or < and justify the conclusion by using a visual fraction model. (R) (4.NF.2)
- 4_M_3_C: Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (R) (4.NF.3a)
- 4_M_3_D: Decompose a fraction or mixed number into a sum of fractions with the same denominator in more than one way, recording each decomposition with an equation. Justify decompositions. (R) (4.NF.3b)
- 4_M_3_E: Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction. (R) (4.NF.3c)
- 4_M_3_F: Solve word problems involving addition and subtraction of fractions and mixed numbers with like denominators by using visual fraction models and equations to represent the problem. (R) (4.NF.3d)
- 4_M_3_G: Solve problems involving addition and subtraction of fractions by using information presented in line plots. (R) (4.MD.4)
- 4_M_3_H: Understand a fraction *a/b* as a multiple of *1/b.* (R) (4.NF.4a)
- 4_M_3_I: Decompose a fraction (*a/b*) into a multiple of unit fractions (*a • 1/b*) in order to show why multiplying a whole number by a fraction (*n • a/b*) results in *(n • a)/b.* (R) (4.NF.4b)
- 4_M_3_J: Solve word problems involving multiplication of fractions by a whole number with visual models and equations. (R) (4.NF.4c)

Unit 6: Decimals

Essential Standard

4_M_3: Students will demonstrate an understanding of fractions and decimals (grade 4 expectations in this standard are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100).

Learning Targets

- 4_M_3_K: 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. (R) (4.NF.5)
- 4_M_3_L: Use decimal notation for fractions with denominators 10 or 100. (K) (4.NF.6)
- 4_M_3_M: Compare two decimals (to hundredths place) using >, =, or < and justify the conclusion. (R) (4.NF.7)

Unit 7: Measurement

Essential Standard

4_M_4: Students will understand and apply concepts of measurement.

Learning Targets

- 4_M_4_A: Know relative size of linear measurement units within one system (km, m, cm, mm, ft, yd, in, and mile). (K) (4.MD.1)
- 4_M_4_B: Convert linear units within one system (larger to smaller) and display the equivalent measures in a two-column table. (R) (4.MD.1)
- 4_M_4_C: Know relative size of time measurement units (day, hours, minutes, and seconds). (R) (4.MD.1)
- 4_M_4_D: Convert time measurements (larger to smaller). (R) (4.MD.1)
- 4_M_4_E: Use the four operations to solve word problems involving distance, intervals of time (elapsed time to nearest minute), and money including simple fractions or decimals, and problems that require converting measurements (larger to smaller). (R) (4.MD.2)

Unit 8: Lines and Angles

Essential Standard

4_M_5: Students will draw and identify lines and angles to classify shapes.

Learning Targets

- 4_M_5_A: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. (R) (4.G.1)
- 4_M_5_B: Recognize and draw a line of symmetry for a two-dimensional shape. (K) (4.G.3)
- 4_M_5_C: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint (vertex). (R) (4.MD.5)
- 4_M_5_D: Recognize an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees as related to the 360 degrees in a circle. (R) (4.MD.5a/b)
- 4_M_5_E: Measure and sketch angles in whole number degrees using a protractor (does not include formal construction of angles). (R) (4.MD.6)
- 4_M_5_F: Explain that the angle measurement of a larger angle is the sum of the angle measures of its decomposed parts. (R) (4.MD.7)
- 4_M_5_G: Solve addition and subtraction problems to find unknown angles in real world and mathematical problems. (R) (4.MD.7)

Unit 9: Classifying Two-Dimensional Shapes

Essential Standard

4_M_5: Students will draw and identify lines and angles to classify shapes.

Learning Targets

- 4_M_5_H: Classify two-dimensional shapes, including quadrilaterals and triangles, by the properties of their lines and angles. (R) (4.G.2)
- 4_M_5_I: Understand that attributes belonging to a category of two-dimensional shapes also belong to all sub-categories of that category. (R) (5.G.3)
- 4_M_5_J: Classify two-dimensional shapes in a hierarchy based on their properties. (R) (5.G.4)