Colorado Extended Evidence Outcomes: Mathematics

Grade 4

Number & Operations in Base Ten: Generalize place value understanding for multi-digit whole numbers. 4.NBT.A

1 **Recognize that in a two-digit whole number, a digit in the tens place represents ten times what it represents in the place to its right.** 4.NBT.A.1

- a For example, in the number 55 the five in the tens place (50) is ten times the value of the five in the ones place (5). 4.NBT.A.1.A

2 **Indicate an understanding of two-digit whole numbers using base-ten numerals, number names, and expanded form** 4.NBT.A.2

- a Compare two two-digit whole numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of the comparisons 4.NBT.A.2.A

3 **Use place value understanding to round whole numbers 1-100 to the nearest 10.** 4.NBT.A.3

Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic. 4.NBT.B

4 **Add and subtract within 100 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.** 4.NBT.B.4

5 **Multiply one-digit whole numbers using models and illustrations using equations, rectangular arrays, and/or area models.** 4.NBT.B.5

- a Products should include values up to at least 25. 4.NBT.B.5.A

6 **Find whole-number quotients with dividends up to at least 25 and one-digit divisors, using strategies based on the concept of division using fair and equal shares.** 4.NBT.B.6

- a Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 4.NBT.B.6.A

Number & Operations—Fractions: Extend understanding of fraction equivalence and ordering. 4.NF.A

1 **Explain why fraction aa is equivalent to a fraction $nn \times aa$ by using visual fraction bb $nn \times bb$ models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size.** 4.NF.A.1

- a Equivalent fractions should include 1 = 2 and 1 = 2 . 2 4 3 6 4.NF.A.1.A

2 **Differentiate between whole and half.** 4.NF.A.2

Number & Operations—Fractions: Build fractions from unit fractions. 4.NF.B

3 **Understand the following additive fraction relationships: 2 as a sum or 1 and 2 2 1 ; 2 as a sum of 1 and 1 ; 3 as a sum of 1 , 1 , and 1 ; 2 as a sum of 1 and 1 ; 3 as a 2 3 3 3 3 3 3 4 4 4 4 sum of 1 , 1 , and 1 ; and 4 as a sum of 1 , 1 , 1 , and 1 .** 4.NF.B.3

- a Compose and decompose visual fraction models to illustrate these relationships. 4.NF.B.3.A
- b Solve word problems involving addition and subtraction of these fractions by using visual fraction models to represent the problem. 4.NF.B.3.B

4 **Apply and extend previous understandings of multiplication to understand the following multiplicative relationships involving fractions and whole numbers: 1 x 2, 1 x 2, and 1 x 3. 1 x 2, 1 x 3, and 1 x 4.** 4.NF.B.4

- a Compose and decompose visual fraction models to illustrate these relationships. 4.NF.B.4.A
- b Solve word problems involving multiplication of these fractions by using visual fraction models to represent the problem. For example, if two people equally share 2 of a pizza, how much of the pizza will each 3 person get? 4.NF.B.4.B

Number & Operations—Fractions: Use decimal notation for fractions, and compare decimal fractions. 4.NF.C

5 **Add two fractions with denominators of 10. For example, 2 + 4 = 6 . 10 10 10** 4.NF.C.5

6 **Represent a fraction <1 with a denominator of 10 as a decimal number. For example, 2 = 0.2. Locate 0.2 on a number line diagram.** 4.NF.C.6

7 **Compare two visual representations of decimals to tenths by reasoning about their size.** 4.NF.C.7

- a Recognize that comparisons are valid only when the two decimals refer to the same whole. 4.NF.C.7.A

Operations & Algebraic Thinking: Use the four operations with whole numbers to solve problems. 4.OA.A

1 **Interpret a multiplication equation (with a product up to at least 15) as a comparison, e.g., interpret 12 = 3 x 4 as a statement that 12 is 3 times as many and 4 and 4 times as many as 3.** 4.OA.A.1

- a Match verbal statements of multiplicative comparisons to multiplication equations and models. 4.OA.A.1.A

2 **Multiply or divide to solve one-step word problems involving multiplicative comparison for products up to at least 25.** 4.OA.A.2

- a Examples: If it takes you 3 minutes to drink your milk and takes your friend 2 times as long, how long does it take your friend to drink their milk? 4.OA.A.2.A

3 **Solve one- and two-step addition and subtraction problems within 100 with whole numbers and having whole-number answers.** 4.OA.A.3

- a Solve one-step multiplication and division problems within 25 with whole numbers and having whole number answers. 4.OA.A.3.A

Operations & Algebraic Thinking: Gain familiarity with factors and multiples. 4.OA.B

4 **Find all factor pairs for a whole number in the range 1-12. Recognize that a whole number is a multiple of each of its factors.** 4.OA.B.4

- a Determine whether a number in the range 1-12 is a multiple of a given one-digit number. 4.OA.B.4.A

Operations & Algebraic Thinking: Generate and analyze patterns. 4.OA.C

5 **Use an arithmetic pattern to predict what terms are next in the sequence.** 4.OA.C.5

- a For example, in the pattern 4, 8, 12, 16, generate the next terns 20 and 24. 4.OA.C.5.A

Measurement & Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 4.MD.A

1 **Within a single system of measurement, identify the smaller measurement unit (e.g., an inch is smaller than a foot, a minute is shorter than an hour).** 4.MD.A.1

2 **Tell time using a digital clock.** 4.MD.A.2

- a Tell time to the nearest quarter hour using an analog clock. 4.MD.A.2.A
- b Measure mass or volume using standard tools. 4.MD.A.2.B
- c Use standard measurements to compare lengths of objects. 4.MD.A.2.C
- d Identify coins (penny, nickel, dime, quarter) and their values. 4.MD.A.2.D

3 **Apply repeated addition or multiplication to find area of rectangles up to at least 25 square units in real-world and mathematical problems for which unit squares are given or defined.** 4.MD.A.3

- a For example, find the area of the floor of a room that has been drawn on graph paper. 4.MD.A.3.A

Measurement & Data: Represent and interpret data. 4.MD.B

4 **Make a line plot displaying a data set of measurements in whole units** 4.MD.B.4

- a Solve problems involving addition and subtraction by using information presented in line plots. 4.MD.B.4.A

Measurement & Data: Geometric measurement: Understand concepts of angle and measure angles. 4.MD.C

5 **Recognize angles as geometric shapes that are formed whenever two rays share a common endpoint (EE.4.MD.C.5.b).** 4.MD.C.5

6 **Identify right angles.** 4.MD.C.6

7 **Compare angles, using >, =, and < symbols to record the results of comparisons.** 4.MD.C.7

- a Example, given obviously obtuse angle A and obviously obtuse angle B, A > B. 4.MD.C.7.A

Geometry: Draw and identify lines and angles, and classify shapes by properties of

1 **Identify points, lines, line segments, intersecting lines, and parallel lines in two-dimensional figures.** 4.G.A.1

their lines and angles. 4.G.A

2 **Identify and sort two-dimensional figures based on the presence or absence of parallel lines and/or right angles.** 4.G.A.2

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.** 4.G.A.3

a Identify line-symmetric figures and indicate lines of symmetry by drawing or folding. 4.G.A.3.A