Indiana Mathematics Content Connectors

Grade 5

Number Sense NS

1 Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using > , = , and < symbols. (E) 5.NS.1

- a Use a number line to compare two fractions with same or different denominators, two mixed numbers, or two decimals to the hundredths place. Record the comparisons using symbols >, <, or =. Limit denominators to 2, 3, 4, 5, 6, 8, 10 and 12. (E) 5.NS.1.A

2 Explain different interpretations of fractions, including as parts of a whole, parts of a set, and division of whole numbers by whole numbers. 5.NS.2

- a Represent fractions as parts of a whole, parts of a set, and division of whole numbers by whole numbers. (E) 5.NS.2.A

3 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. 5.NS.3

- a Use whole number exponents from one to three to denote powers of 10 from 10 to 1,000 and explain the relationship of the zeros in the base and product. 5.NS.3.A

4 Model percents as parts of 100 using pictures or diagrams and identify the equivalent fraction. 5.NS.4

- a Model percents as part of 100 using pictures or diagrams. (E) 5.NS.4A

Computation and Algebraic Thinking CA

1 Find whole-number quotients and remainders with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning used. (E) 5.CA.1

- a Find whole number quotients with and without remainders up to 200 with three-digit dividends and two-digit divisors using any strategy. Describe the strategy used such as place value strategies, properties of operations, and the relationship between multiplication and division. 5.CA.1A

2 Solve real-world problems involving multiplication and division of whole numbers (e.g., by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem. (E) 5.CA.2

Skip to main content

- a Solve real-world problems involving multiplication and division of whole numbers with or without remainders within 200. (E) 5.CA.2A

3 **Add and subtract fractions and mixed numbers with unlike denominators using strategies or the standard algorithm.** 5.CA.3

a Add and subtract fractions with unlike denominators limiting denominators to 2, 4, 5, and 10. 5.CA.3A

4 **Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable. (E)** 5.CA.4

a Solve real-world problems involving addition and subtraction of fractions with unlike denominators. Limit denominators to 2, 4, 5, and 10. (E) 5.CA.4A

5 **Use visual fraction models to multiply a fraction by a fraction or a whole number. (E)** 5.CA.5

a Use visual fraction models to multiply a fraction by a fraction or a whole number up to four. 5.CA.5A

6 **Use visual fraction models and numbers to divide a fraction by a fraction or a whole number. (E)** 5.CA.6

a Use visual fraction models to divide a fraction by a fraction or a whole number up to four. 5.CA.6A

7 **Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem). (E)** 5.CA.7

a Solve real-world problems involving multiplication of a fraction by a fraction or a whole number up to four using visual fraction models. (E) 5.CA.7A

8 **Solve real-world problems involving division of fractions and mixed numbers (e.g., by using visual fraction models and equations to represent the problem). (E)** 5.CA.8

a Solve real-world problems involving the division of a fraction by a fraction or a whole number up to four using visual fraction models. (E) 5.CA.8A

9 **Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.** 5.CA.9

a Add and subtract decimals to hundredths. Multiply, and divide decimals to hundredths using models or drawings and strategies based on place value or the properties of operations. 5.CA.9A

10 **Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths including problems that involve money in decimal notation (e.g., by using equations, models or drawings, and strategies**

Skip to main content

based on place value or properties of operations to represent the problem). (E) 5.CA.10

a Solve one-step real-world money problems involving addition, subtraction, multiplication, and division with decimals to hundredths place. (E) 5.CA.10A

11 **Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.** 5.CA.11

a Represent real-world problems by graphing ordered pairs in the first quadrant of the coordinate plane. (E) 5.CA.11A

Geometry G

1 **Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass, and technology). Define and model the relationship between radius and diameter.** 5.G.1

a Model right, acute, and obtuse triangles using appropriate tools (e.g., ruler or straightedge, compass, or technology) and identify the radius and diameter in circles. 5.G.1A

Measurement M

1 **Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real-world problems.** 5.M.1

a Given the conversions, convert among measurements of time (e.g., days in a week, hours in a day, minutes in an hour) and length (e.g., inches in a foot, feet in a yard, centimeters in a meter) in real-world problems. (E) 5.M.1A

2 **Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.** 5.M.2

a Find the area of rectangles and triangles with fractional side lengths limited to halves by modeling with unit squares or multiplying the side lengths. 5.M.2A

3 **Develop and use formulas for the area of triangles, parallelograms, and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms, and trapezoids, using appropriate units for measures. (E)** 5.M.3

a Solve real-world and other mathematical problems involving the perimeter of triangles, parallelograms, and trapezoids and area of triangles and parallelograms when given the formula. 5.M.3A

4 **Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base. (E)** 5.M.4

Skip to main content

a Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes. (E) 5.M.4A

5 Apply the formulas V = l × w × h and V = B × h for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems. (E) 5.M.5

a Find the volume of a right rectangular prism with whole number side lengths when given the formula V = l × w × h, a model, and all required measurements. 5.M.5A

Data Analysis DA

1 Formulate questions that can be addressed with categorical and numerical data and make predictions about the data. Collect, organize, and graph data from observations, surveys, and experiments using line plots with fractional intervals, histograms, or other graphical representations that appropriately represent the data set. (E) 5.DA.1

a Generate questions that can be answered with a given graph (e.g., line plots, bar graphs, and line graphs). Collect, organize, and graph data from observations, surveys, and experiments that appropriately represent the data set. (E) 5.DA.1A

2 Calculate measures of central tendency (mean, median, and mode) to describe a data set. Analyze data sets to determine which measure of central tendency appropriately describes the distribution of data. (E) 5.DA.2

a Calculate the mean, median, and mode to describe an ordered data set (mode does not require calculation, only observation and counting). 5.DA.2A