Content Connectors aligned to the
Indiana Academic Standards
Mathematics Grade 3

Content Connectors (CCs) identify the most salient grade-level, core academic content in math found in the Indiana Academic Standards. CCs focus on the core content, knowledge and skills needed at each grade to promote success at the next, and identify priorities in each content area to guide the instruction for students in this population and for the alternate assessment.

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Number Sense	
MA.3.NS.1: Read and write whole numbers up to 10,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 10,000.	MA.3.NS.1.a.1: Read, demonstrate, and write whole numbers up to 200.
MA.3.NS.2: Compare two whole numbers up to 10,000 using >, =, and < symbols.	MA.3.NS.2.a.1: Compare two whole numbers up to 200 (tier 2 up to 50) using symbols (>, =, <) and words (greater than, less than, or equal to)
MA.3.NS.3: Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]	MA.3.NS.3.a.1: Identify the number of shaded parts (numerator) of a given representation [Limit to rectangles and circles].
	MA.3.NS.3.a.2: Identify the total number of parts (denominator) of a given representation [Limit to rectangles and circles].
	MA.3.NS.3.a.3: Identify a part of a whole as a fraction (a/b). [Limit denominators to 2, 3, and 4.]
MA.3.NS.4: Represent a fraction, 1/b, on a number line by defining the interval from 0 to 1 as the whole, and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.	MA.3.NS.4.a.1: Locate given common unit fractions (i.e., ½, ¼) on a ruler that has a value between 0 and 1.
MA.3.NS.5: Represent a fraction, a/b, on a number line by marking off lengths 1/b from 0. Recognize that the resulting interval has size a/b, and that its endpoint locates the number a/b on the number line.	MA.3.NS.5.a.1: Ruler to mark fourths and halves; identify the location of 1/2 and 1/4 points on a ruler between 0 and 1.
MA.3.NS.6: Understand two fractions as equivalent (equal) if they are the same size, based on the same whole or the same point on a number line.	MA.3.NS.6.a.1: Compare two fractions with the same numerator or denominator using symbols (>, =, <).
MA.3.NS.7: Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent (e.g., by using a visual fraction model).	MA.3.NS.7.a.1: Recognize equivalent fractions using models to show equivalence (looking at visual to make decisions).
MA.3.NS.8: Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).	MA.3.NS.8.a.1: Use =, <, or > and words/explanations to compare two fractions with the same denominator use a model.
MA.3.NS.9: Use place value understanding to round 2- and 3-digit whole numbers to the nearest 10 or 100.	MA.3.NS.9.a.1: Use place value to round to the nearest 10 up to 100.

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Computation	
MA.3.C.1: Add and subtract whole numbers fluently within 1000.	MA.3.C.1.a.1: Add and subtract whole numbers within 1000 without regrouping.
MA.3.C.2: Represent the concept of multiplication of whole numbers with the following models: equal-sized groups, arrays, area models, and equal "jumps" on a number line. Understand the properties of 0 and 1 in multiplication.	MA.3.C.2.a.1: Solve multiplication problems with manipulatives, number lines, and arrays [Limit to 1 x n, 2 x n, 5 x n, or 10 x n.]
MA.3.C.3: Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Understand the properties of 0 and 1 in division.	MA.3.C.3.a.1: Represent division by sorting a set number of objects into a set number of groups. No more than 20 objects into no more than 5 groups.
MA.3.C.4: Interpret whole-number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each).	MA.3.C.4.a.1: Use representations of division (by sorting a set number of objects into a set number of groups) to find how many in one group. No more than 20 objects into no more than 5 groups.
MA.3.C.5: Multiply and divide within 100 using strategies, such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8), or properties of operations.	MA.3.C.5.a.1: Apply properties of operations as strategies to multiply and divide. (Fact families 1 & 5)
MA.3.C.6: Demonstrate fluency with multiplication facts and corresponding division facts of 0 to 10.	MA.3.C.6.a.1: Demonstrate ability to know multiplication facts.
Algebraic Thinking	
MA.3.AT.1: Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number).	MA.3.AT.1.a.1: Solve one-step real-world problems involving addition or subtraction of whole numbers within 1000 using pictures and/or manipulatives.
MA.3.AT.2: Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	MA.3.AT.2.a.1: Use pictures, manipulatives, arrays to solve real world one step multiplication and division word problems.
MA.3.AT.3: Solve two-step real-world problems using the four operations of addition, subtraction, multiplication and division (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	MA.3.AT.3.a.1: Use pictures, manipulatives, and tables to solve real-world two-step addition word problems.
MA.3.AT.4: Interpret a multiplication equation as equal groups (e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.	MA.3.AT.4.a.1: Create an array of sets (e.g., 5 rows of 5)
MA.3.AT.5: Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	MA.3.AT.5.a.1: Apply properties of operations as strategies to addition. (Fact families 1 & 5)

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MA.3.AT.6: Create, extend, and give an appropriate rule for number patterns using multiplication within 1000.	MA.3.AT.6.a.1: Identify multiplication patterns in a real world setting.
Geometry	
MA.3.G.1: Identify and describe the following: cube, sphere, prism, pyramid, cone, and cylinder.	MA.3.G.1.a.1: Identify the following: cube, sphere, cylinder, cone
MA.3.G.2: Understand that shapes (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.	MA.3.G.2.a.1: Identify shared attributes of shapes based on the models provided.
MA.3.G.3: Identify, describe and draw points, lines and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.	MA.3.G.3.a.1: Use points to create a straight line with a ruler.
MA.3.G.4: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (1/2, 1/3, 1/4, 1/6, 1/8).	MA.3.G.4.a.1: Partition rectangles into equal parts with equal area.
Measurement	
MA.3.M.1: Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step real-world problems involving masses or volumes that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem).	MA.3.M.1.a.1: Add to solve one-step real-world problems using pounds, gallons, quarts, liters, and grams.
MA.3.M.2: Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.	MA.3.M.2.a.1: Select appropriate tool for measurement length, weight, and temperature.
MA.3.M.3: Tell and write time to the nearest minute from analog clocks, using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.	MA.3.M.3.a.1: Tell time to the half hour from analog clocks. Solve real-world word problems involving the addition and subtraction of time intervals to whole hours or within an hour by 30 minute increments (e.g., whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) using manipulatives/pictures of a clock.
MA.3.M.4: Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase.	MA.3.M.4.a.1: Find the value of a collection of coins and bills that includes bills of different denominations, quarters, and dimes [For Tier 2, limit to dollars and quarters]. Solve real-world problems to determine whether there is enough money to make a purchase.
MA.3.M.5: Find the area of a rectangle with whole-number side lengths by	MA.3.M.5.a.1: Measure area of rectangles by counting squares.

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modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.	
MA.3.M.6: Multiply side lengths to find areas of rectangles with whole-number side lengths to solve real-world problems and other mathematical problems involving shapes, and represent whole-number products as rectangular areas in mathematical reasoning.	MA.3.M.6.a.1: Use tiling and addition to determine area.
MA.3.M.7: Find perimeters of polygons given the side lengths or by finding an unknown side length.	MA.3.M.7.a.1: Identify a figure as getting larger or smaller when the dimensions of the figure change.
	MA.3.M.7.a.2: Use addition to find the perimeter of a rectangle, (triangle for tier 2).
Data Analysis	
MA.3.DA.1: Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step "how many more" and "how many less" problems regarding the data and make predictions based on the data.	MA.3.DA.1.a.1: Organize given data into picture or bar graph.
	MA.3.DA.1.a.2: Select a statement that describes the data in a given picture graph or bar graph. Answer simple questions using data from a bar graph or picture graph.
MA.3.DA.2: Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a line plot, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.	MA.3.DA.2.a.1: Organize measurement data into a line plot.