



**Content Connectors aligned to the
Indiana Academic Standards
Mathematics Grade 6**

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.6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.	MA.6.NS.1.a.1: Select the appropriate meaning of a positive or negative number in a real world situation.
MA.6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite.	MA.6.NS.2.a.1: Locate positive and negative numbers on a number line.
	MA.6.NS.2.a.2: Locate the opposite of an integer on a number line.
MA.6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	MA.6.NS.3.a.1: Plot positive and negative integers on a number line.
	MA.6.NS.3.a.2: Compare/order a given set of integers.
MA.6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.	MA.6.NS.4.a.1: Determine the meaning of absolute value.
MA.6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percent's) of positive rational numbers without the use of a calculator.	MA.6.NS.5.a.1: Identify equivalent fractions, decimals, and percents.
MA.6.NS.6: Identify and explain prime and composite numbers.	MA.6.NS.6.a.1: Identify a prime and composite integer.
MA.6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.	MA.6.NS.7.a.1: Find the least common multiple.
	MA.6.NS.7.a.2: Find the greatest common factor.
MA.6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b , a to b , $a:b$.	MA.6.NS.8.a.1: Complete a statement that describes the ratio relationship between two quantities.



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MA.6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.	MA.6.NS.9.a.1: Determine the unit rate in a variety of contextual situations.
MA.6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).	MA.6.NS.10.a.1: Solve one step real world problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours).
Computation	
MA.6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach.	MA.6.C.1.a.1: Divide multi-digit whole numbers.
MA.6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.	MA.6.C.2.a.1: Solve one-step, addition or subtraction problems with decimals. MA.6.C.2.a.2: Solve one step, addition or subtraction problems with fractions.
MA.6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.	MA.6.C.3.a.1: Solve one step real world, addition or subtraction problems with decimals or fractions.
MA.6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.	MA.6.C.4.a.1: Solve one step division problems with fractions.
MA.6.C.5: Evaluate positive rational numbers with whole number exponents.	MA.6.C.5.a.1: Identify what an exponent represents (e.g., $8^3 = 8 \times 8 \times 8$) and evaluate.
MA.6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.	MA.6.C.6.a.1: Apply the order of operations.
Algebra & Functions	
MA.6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems.	MA.6.AF.1.a.1: Given a real world problem evaluate the expressions for the specific values of their variables.
MA.6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.	MA.6.AF.2.a.1: Use properties to produce equivalent expressions.
MA.6.AF.3: Define and use multiple variables when writing expressions to	MA.6.AF.3.a.1: Given a real-world problem evaluate the expressions for the



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represent real-world and other mathematical problems, and evaluate them for given values.	specific values of two variables.
MA.6.AF.4: Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	MA.6.AF.4.a.1: Use substitution to determine validity of an equation.
MA.6.AF.5: Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ fluently for cases in which p , q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.	MA.6.AF.5.a.1: Solve real-world, single step linear equations.
MA.6.AF.6: Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.	MA.6.AF.6.a.1: Given a real world problem, write an inequality.
MA.6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.	MA.6.AF.7.a.1: Graph a point on a coordinate plane.
MA.6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	MA.6.AF.8.a.1: Contingent on understanding AF 7, and content is not relevant to measure on assessment.
MA.6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.	MA.6.AF.9.a.1: Analyze a table for ordered pairs.
MA.6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	MA.6.AF.10.a.1: Analyze the relationships between the dependent and independent variables using graphs and tables, and relate to the equation.
Geometry & Measurement	
MA.6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in	MA.6.GM.1.a.1: Complete a conversion table for length and time.



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solving real-world problems.	
MA.6.GM.2: Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360° . Use this information to solve real-world and mathematical problems.	MA.6.GM.2.a.1: Know the sum of the interior angles of a triangle is 180 degrees in a real world situation.
MA.6.GM.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.	MA.6.GM.3.a.1: Know the attributes of a polygon.
MA.6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.	MA.6.GM.4.a.1: Find area of quadrilaterals.
MA.6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.	MA.6.GM.5.a.1: Understand the concept of volume and how it fills space.
MA.6.GM.6: Construct right prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.	MA.6.GM.6.a.1: Identify a three dimensional shape.
Data Analysis & Statistics	
MA.6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	MA.6.DS.1.a.1: Identify statistical questions and the data that corresponds.
MA.6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.	MA.6.DS.2.a.1: Name different graphical representations of data.
MA.6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).	MA.6.DS.3.a.1: Collect and graph data: bar graph, line plots.
MA.6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units	MA.6.DS.4.a.1: Select statement that matches mean, mode, and spread of data for 1 measure of central tendency for a given data set.



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of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.	