



Math - Grade 5

Course Description:

The Indian Community School cultivates an enduring cultural identity and critical thinking by weaving indigenous teachings with a distinguished learning environment. The curriculum for this course is developed from the [Common Core State Standards for Mathematics](#) and the framework of the [ICS Our Ways Cultural Calendar](#). In this course, fifth grade students will make sense of problems and persevere in solving them by extending on foundational knowledge of addition, subtraction, multiplication and division in order to apply it to real world problem solving with whole numbers, decimals, and fractions. Students will attend to precision in measuring, recording and representing data and further analyzing the data to look for patterns.

Enduring Understandings:

- Mathematical expressions are written to help support making sense of problems and persevere in solving them.
- Generating numerical patterns develops a mathematicians ability to reason abstractly and quantitatively.
- Reading, writing, comparing, and rounding decimals supports mathematicians ability to solve everyday math problems.
- Adding, subtracting, multiplying and dividing whole numbers and with decimals to hundredths helps in solving and modeling everyday problems with mathematics.
- Using the four operations to compute fractions with unlike denominators promotes looking for and making use of structure.
- Converting like measurement units within a given measurement system supports the use of tools in solving problems.
- Representing and interpreting data supports mathematicians in reasoning abstractly and quantitatively.
- Graphing points on the coordinate plane helps in solving real-world problems and mathematical problems.
- Classifying two-dimensional figures into categories based on their properties grows a mathematicians ability to look for and make use of structure.

OPERATIONS AND ALGEBRAIC THINKING

- I can use parentheses, brackets, or braces in numerical expressions. (5.OA.A.1)
- I can evaluate expressions with parentheses, brackets, or braces. (5.OA.A.1)
- I can write simple expressions that record calculations with numbers. (5.OA.A.2)
- I can interpret numerical expressions without evaluating them. (5.OA.A.2)
- I can generate two numerical patterns using two given rules. (5.OA.B.3)
- I can identify apparent relationships between corresponding terms. (5.OA.B.3)
- I can form ordered pairs consisting of corresponding terms from two patterns. (5.OA.B.3)
- I can graph ordered pairs on a coordinate plane. (5.OA.B.3)



NUMBER AND OPERATIONS IN BASE TEN

- I can express that a digit in one place represents $\frac{1}{10}$ of what it represents in the place to its left. (5.NBT.A.1)
- I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10. (5.NBT.A.2)
- I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. (5.NBT.A.2)
- I can use whole-number exponents to denote powers of 10. (5.NBT.A.2)
- I can read, write, and compare decimals to thousandths using base-ten numerals, number names and expanded form. (5.NBT.A.3.A)
- I can compare two decimals to thousandths based on the meanings of the digits in each place using $>$, $=$, and $<$ symbols to record the results of comparisons. (5.NBT.A.3.B)
- I can apply place value understanding to round decimals to any place. (5.NBT.A.4)
- I can fluently multiply multi-digit whole numbers using the standard algorithm. (5.NBT.B.5)
- I can find whole number quotients of whole numbers 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. (5.NBT.B.6)
- I can illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (5.NBT.B.6)
- I can add and subtract decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (5.NBT.B.7)
- I can multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (5.NBT.B.7)
- I can relate the strategy used to solve problems with decimals to a written method and explain the reasoning used. (5.NBT.B.7)

NUMBER AND OPERATIONS - FRACTIONS

- I can add and subtract fractions with unlike denominators using equivalent fractions. (5.NF.A.1)
- I can solve word problems involving addition and subtraction of fractions with unlike denominators. (5.NF.A.2)
- I can apply benchmark fractions and number sense of fractions to estimate mentally and assess reasonableness of answers. (5.NF.A.2)
- I can interpret a fraction as a division of the numerator by the denominator. (5.NF.B.3)
- I can solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. (5.NF.B.3)
- I can multiply a fraction by a whole number or a fraction. (5.NF.B.4.A)
- I can find the area of a rectangle with fractional side lengths. (5.NF.B.4.B)



NUMBER AND OPERATIONS - FRACTIONS (continued)

- I can explain why multiplying a number by a fraction greater than 1 results in a product greater than the given number. (5.NF.B.5.A)
- I can explain why multiplying a number by a fraction less than 1 results in a product smaller than the given number. (5.NF.B.5.B)
- I can solve real world problems involving multiplication of fractions and mixed numbers. (5.NF.B.6)
- I can divide unit fractions by whole numbers. (5.NF.B.7)
- I can divide whole numbers by unit fractions. (5.NF.B.7)
- I can solve real world problems involving division of unit fractions by non-zero whole numbers. (5.NF.B.7.A)

MEASUREMENT AND DATA

- I can convert standard measurements within a given measurement system. (5.MD.A.1)
- I can use measurement conversions to solve multi-step, real world problems. (5.MD.A.1)
- I can make a line plot to display a data set of measurements in fractions of a unit. (5.MD.B.2)
- I can use operations on fractions to solve problems involving information presented in line plots. (5.MD.B.2)
- I can recognize volume as an attribute of solid figures. (5.MD.C.3)
- I can represent a solid figure packed without gaps or overlaps using n unit cubes as having a volume of n cubic units. (5.MD.C.3.B)
- I can measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. (5.MD.C.4)
- I can relate volume to the operations of multiplication and addition. (5.MD.C.5)
- I can solve real world and mathematical problems involving volume. (5.MD.C.5)
- I can find the volume of a right rectangular prism with whole-number side lengths. (5.MD.C.5.A)
- I can represent threefold whole-number products as volumes. (5.MD.C.5.A)
- I can use the formulas $v = l \times w \times h$ and $v = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths. (5.MD.C.5.B)
- I can find the volume of irregular rectangular prisms by adding their separated parts. (5.MD.C.5.C)

GEOMETRY

- I can use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line. (5.G.A.1)
- I can identify a given point in the plane located by using an ordered pair of numbers, called its coordinates. (5.G.A.1)



GEOMETRY (continued)

- I can represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane. (5.G.A.2)
- I can interpret coordinate values of points in the context of the situation. (5.G.A.2)
- I can explain that attributes of two-dimensional figures also belong to subcategories of that category. (5.G.B.3)
- I can classify two-dimensional figures in a hierarchy based on properties. (5.G.B.4)