Michigan State Standards for Mathematics

State	Standards	Description	Grade Level
Michigan	K.CC.A.1	Count to 100 by ones and by tens.	Kindergarten
Michigan	K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of beginning at 1).	Kindergarten
Michigan	K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Kindergarten
Michigan	K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.	Kindergarten
Michigan	K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.	Kindergarten
Michigan	K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	Kindergarten
Michigan	K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.	Kindergarten
Michigan	K.CA.A.1	Correctly name shapes regardless of their orientations or overall size.	Kindergarten
Michigan	K.MG.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	Kindergarten
Michigan	K.MG.B.2	Correctly name shapes regardless of their orientations or overall size.	Kindergarten
Michigan	K.MG.B.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	Kindergarten
Michigan	K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Kindergarten
Michigan	K.MD.A.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	Kindergarten
Michigan	K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	Kindergarten
Michigan	K.OA.A.1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	Kindergarten
Michigan	K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	Kindergarten
Michigan	K.OA.A.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	Kindergarten
Michigan	K.OA.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	Kindergarten
Michigan	K.OA.A.5	Fluently add and subtract within 5.	Kindergarten
Michigan	1.G.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	Grade 1
Michigan	1.MD.A.1	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Grade 1
Michigan	1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	Grade 1
Michigan	1.MD.B.3	Tell and write time in hours and half hours using analog and digital clocks.	Grade 1
Michigan	1.MD.C.4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	Grade 1
Michigan	1.MD.C.5	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	Grade 1
Michigan	1.MD.C.6	Understand that the digits of a two-digit number represent amounts of tens and ones.	Grade 1
Michigan	1.OA.A.1	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	Grade 1
Michigan	1.OA.A.2	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand and apply properties of operations and the relationship between addition and subtraction.	Grade 1
Michigan	1.OA.B.3	Apply properties of operations as strategies to add and subtract.	Grade 1
Michigan	1.OA.B.4	Understand subtraction as an unknown-addend problem.	Grade 1
Michigan	1.OA.C.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	Grade 1
Michigan	1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equal sum $6 + 6 + 1 = 12 + 1 = 13$).	Grade 1
Michigan	1.OA.D.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	Grade 1
Michigan	1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	Grade 1
Michigan	2.G.A.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Grade 2
Michigan	2.G.A.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Grade 2
Michigan	2.G.A.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	Grade 2
Michigan	2.MG.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Grade 2
Michigan	2.MG.A.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	Grade 2
Michigan	2.MG.A.3	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	Grade 2
Michigan	2.MG.C.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Grade 2
Michigan	2.MD.D.8	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the scale is marked off in whole-number units.	Grade 2
Michigan	2.MD.D.9	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	Grade 2
Michigan	2.MD.D.10	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.	Grade 2
Michigan	2.NBT.A.1	Count within 1000; skip-count by 5s, 10s, and 100s.	Grade 2
Michigan	2.NBT.A.2	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	Grade 2
Michigan	2.NBT.A.3	Compare three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	Grade 2
Michigan	2.NBT.A.4	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Grade 2
Michigan	2.NBT.B.5	Add up to four two-digit numbers using strategies based on place value and properties of operations.	Grade 2
Michigan	2.NBT.B.6	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	Grade 2
Michigan	2.NBT.B.7	Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	Grade 2
Michigan	2.NBT.B.8	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Grade 2
Michigan	2.OA.A.1	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Grade 2
Michigan	2.OA.A.2	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	Grade 2
Michigan	3.G.A.1	Understand that shapes in different categories (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 rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	Grade 3
Michigan	3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	Grade 3
Michigan	3.MD.A.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Grade 3
Michigan	3.MD.B.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	Grade 3
Michigan	3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of a unit. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or fourths.	Grade 3
Michigan	3.MG.A.1	Recognize area as an attribute of plane figures and understand concepts of area measurement.	Grade 3
Michigan	3.MG.A.2	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	Grade 3
Michigan	3.MG.C.7	Relate area to the operations of multiplication and addition.	Grade 3
Michigan	3.MG.D.8	Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	Grade 3
Michigan	3.NBT.A.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	Grade 3
Michigan	3.NBT.A.2	Fluently add and subtract within 1000 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Grade 3
Michigan	3.NBT.A.3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.	Grade 3
Michigan	3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.	Grade 3
Michigan	3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ 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.	Grade 3
Michigan	3.OA.A.3	Use multiplication and division within 100 to solve word problems 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.	Grade 3
Michigan	3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	Grade 3
Michigan	3.OA.B.5	Apply properties of operations as strategies to multiply and divide.	Grade 3
Michigan	3.OA.B.6	Understand division as an unknown-factor problem.	Grade 3
Michigan	3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Grade 3
Michigan	3.OA.C.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Grade 3
Michigan	3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	Grade 3
Michigan	4.G.A.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Grade 4
Michigan	4.G.A.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	Grade 4
Michigan	4.G.A.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. Identify line-symmetric figures and draw lines of symmetry.	Grade 4
Michigan	4.MG.A.2	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	Grade 4
Michigan	4.MG.A.3	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Grade 4
Michigan	4.MD.A.1	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	Grade 4
Michigan	4.MD.A.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Grade 4
Michigan	4.MD.A.3	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:	Grade 4
Michigan	4.MD.B.4	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	Grade 4
Michigan	4.MD.C.5	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	Grade 4
Michigan	4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents 10 times what it represents in the place to its right.	Grade 4
Michigan	4.NBT.A.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Grade 4
Michigan	4.NBT.A.3	Use place value understanding to round multi-digit whole numbers to any place.	Grade 4
Michigan	4.NBT.B.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Grade 4
Michigan	4.NBT.B.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Grade 4
Michigan	4.NBT.B.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Grade 4
Michigan	4.OA.A.1	Interpret a multiplication equation as a comparison, i.e., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	Grade 4
Michigan	4.OA.A.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	Grade 4
Michigan	4.OA.A.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Grade 4
Michigan	4.OA.B.4	Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number.	Grade 4
Michigan	4.OA.C.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	Grade 4
Michigan	5.G.A.1	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 and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	Grade 5
Michigan	5.G.A.2	Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	Grade 5
Michigan	5.G.B.3	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	Grade 5
Michigan	5.G.B.4	Classify two-dimensional figures in a hierarchy based on properties.	Grade 5
Michigan	5.MG.A.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	Grade 5
Michigan	5.MG.A.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	Grade 5
Michigan	5.MG.C.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	Grade 5
Michigan	5.MG.C.4	Measure volume by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Grade 5
Michigan	5.MG.C.5	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	Grade 5
Michigan	5.NBT.A.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Grade 5
Michigan	5.NBT.A.2	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.	Grade 5
Michigan	5.NBT.A.3	Read, write, and compare decimals to thousandths.	Grade 5
Michigan	5.NBT.A.4	Use place value understanding to round decimals to any place.	Grade 5
Michigan	5.NBT.B.5	Fluently multiply multi-digit whole numbers using the standard algorithm.	Grade 5
Michigan	5.NBT.B.6	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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Grade 5
Michigan	5.NBT.B.7	Add, subtract, 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; relate the strategy to a written method and explain the reasoning used.	Grade 5
Michigan	5.NF.A.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	Grade 5
Michigan	5.NF.A.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	Grade 5
Michigan	5.NF.B.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Grade 5
Michigan	5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	Grade 5
Michigan	5.NF.B.5	Interpret multiplication as scaling (resizing).	Grade 5
Michigan	5.NF.B.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Grade 5
Michigan	5.NF.B.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	Grade 5
Michigan	6.EE.A.1	Use exponents, bases, or roots in numerical expressions, and evaluate expressions that include exponents.	Grade 6
Michigan	6.NS.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	Grade 6
Michigan	6.NS.A.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	Grade 6
Michigan	6.EE.A.1	Write and evaluate numerical expressions involving whole-number exponents.	Grade 6
Michigan	6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers.	Grade 6
Michigan	6.EE.A.3	Apply the properties of operations to generate equivalent expressions.	Grade 6
Michigan	6.EE.A.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).	Grade 6
Michigan	6.EE.B.5	Understand solving an equation or inequality as a process of answering a 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.	Grade 6
Michigan	6.EE.B.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	Grade 6
Michigan	6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	Grade 6
Michigan	6.EE.B.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Grade 6
Michigan	6.EE.C.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	Grade 6
Michigan	6.G.A.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	Grade 6
Michigan	6.G.A.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.	Grade 6
Michigan	6.RP.A.2	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	Grade 6
Michigan	6.RP.A.3	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.	Grade 6
Michigan	6.NS.B.2	Fluently divide multi-digit numbers using the standard algorithm.	Grade 6
Michigan	6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	Grade 6
Michigan	6.NS.B.4	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 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.	Grade 6
Michigan	6.NS.C.5	Understand that positive and negative numbers are used together 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 quantities in real-world contexts, explaining the meaning of 0 in each situation.	Grade 6
Michigan	6.NS.C.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.	Grade 6
Michigan	6.NS.C.7	Understand ordering and absolute value of rational numbers.	Grade 6

Michigan	6.NS.C.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Grade 6
Michigan	7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Grade 7
Michigan	7.EE.A.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	Grade 7
Michigan	7.EE.B.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	Grade 7
Michigan	7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	Grade 7
Michigan	7.G.A.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Grade 7
Michigan	7.G.A.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Grade 7
Michigan	7.G.B.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	Grade 7
Michigan	7.RP.A.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	Grade 7
Michigan	7.RP.A.2	Recognize and represent proportional relationships between quantities.	Grade 7
Michigan	7.RP.A.3	Use proportional relationships to solve multistep ratio and percent problems.	Grade 7
Michigan	7.NS.A.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	Grade 7
Michigan	7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	Grade 7
Michigan	7.NS.A.3	Solve real-world and mathematical problems involving the four operations with rational numbers.	Grade 7
Michigan	8.EE.A.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions.	Grade 8
Michigan	8.EE.A.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	Grade 8
Michigan	8.EE.A.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	Grade 8
Michigan	8.EE.A.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	Grade 8
Michigan	8.EE.B.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	Grade 8
Michigan	8.EE.B.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	Grade 8
Michigan	8.EE.C.7	Solve linear equations in one variable.	Grade 8
Michigan	8.EE.C.8	Analyze and solve pairs of simultaneous linear equations.	Grade 8
Michigan	8.F.A.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	Grade 8
Michigan	8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Grade 8
Michigan	8.F.A.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	Grade 8
Michigan	8.F.B.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Grade 8
Michigan	8.F.B.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Grade 8
Michigan	8.G.A.1	Verify experimentally the properties of rotations, reflections, and translations.	Grade 8
Michigan	8.G.A.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	Grade 8
Michigan	8.G.A.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Grade 8
Michigan	8.G.A.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	Grade 8
Michigan	8.G.A.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	Grade 8
Michigan	8.G.B.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	Grade 8
Michigan	8.G.B.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Grade 8
Michigan	8.SP.A.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Grade 8
Michigan	8.SP.A.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	Grade 8
Michigan	A-APR.B.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	High School
Michigan	A-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	High School
Michigan	A-SSE.A.2	Use the structure of an expression to identify ways to rewrite it.	High School
Michigan	A-SSE.B.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	High School
Michigan	F-BF.A.1	Write a function that describes a relationship between two quantities.	High School
Michigan	F-IF.A.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	High School
Michigan	F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	High School
Michigan	F-IF.C.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	High School
Michigan	S-ID.B.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	High School

Hi! 👋 I'm Stella. How can I help you?