



## Michigan Grade Level Content Expectations: Grade 6 Correlated to *Mathematics: Applications and Concepts*, Course 2

Grade Level Content Expectation		Student Edition Lesson(s)		
		Introduce	Develop/Master	Extend
<b>Strand N</b>		<b>NUMBER AND OPERATIONS</b>		
<i>Multiply and divide fractions</i>				
<b>N.MR.06.01</b>	Understand division of fractions as the inverse of multiplication, e.g., if $\frac{4}{5} \div \frac{2}{3} =$ , then $\frac{2}{3} \times = \frac{4}{5}$ , so $=$ $\frac{4}{5} \cdot \frac{3}{2} = \frac{12}{10}$ .	6-6	6-6	6-6; MAC 7: 2-4
<b>N.FL.06.02</b>	Given an applied situation involving dividing fractions, write a mathematical statement to represent the situation.	6-6	6-6	6-6
<b>N.MR.06.03</b>	Solve for the unknown in equations such as: $\frac{1}{4} \div = 1$ , $\frac{3}{4} \div = \frac{1}{4}$ and $\frac{1}{2} = 1 \cdot$ .		6-5	MAC 7: 2-4, 2-7
<b>N.FL.06.04</b>	Multiply and divide any two fractions, including mixed numbers, fluently.	6-4, 6-6	6-4, 6-6	6-5, 6-7, 6-8, 6-9
<i>Represent rational numbers as fractions or decimals</i>				
<b>N.ME.06.05</b>	Order rational numbers and place them on the number line.	3-2, 5-8, PS3	5-8, PS3	6-1
<b>N.ME.06.06</b>	Represent rational numbers as fractions or terminating decimals when possible, and translate between these representations.	5-4	5-4	5-6, 5-8
<b>N.ME.06.07</b>	Understand that a fraction or a negative fraction is a quotient of two integers, e.g., $-\frac{8}{3}$ is -8 divided by 3.	5-4	5-4	5-4
<i>Add and subtract integers and rational numbers</i>				
<b>N.MR.06.08</b>	Understand integer subtraction as the inverse of integer addition; add and subtract integers using integers from 10 to -10.	3-4a, 3-5a	3-4, 3-5	4-2a, 4-2, 4-4, 4-5
<b>N.FL.06.09</b>	Add, subtract, multiply, and divide integers between -10 and 10; use number line and strip models for addition and subtraction.	3-4a, 3-5a	3-4, 3-5, 3-6, 3-7	4-2a, 4-2, 4-3, 4-4a, 4-4, 4-5
<b>N.FL.06.10</b>	Add, subtract, multiply and divide positive rational numbers fluently.	3-4a, 3-5a, 6-1, PS5	3-4, 3-5, 3-6, 3-7, 6-2, 6-3, 6-4, 6-6, PS6, PS7, PS9	4-2a, 4-2, 4-3, 4-4a, 4-4, 4-5, 6-3b, 6-5, 6-7, 6-8, 6-9
<i>Find equivalent ratios</i>				
<b>N.ME.06.11</b>	Find equivalent ratios by scaling up or scaling down.	5-3	7-1, 7-3	7-3b, 7-4, 7-4b

MAC 7 = Glencoe *Mathematics: Applications and Concepts*, Michigan Edition Grade 7  
PS = Prerequisite Skill Lessons (pp. 554-563)

Grade Level Content Expectation		Student Edition Lesson(s)		
		Introduce	Develop/Master	Extend
<b><i>Solve decimal, percentage and rational number problems</i></b>				
<b>N.FL.06.12</b>	Calculate part of a number given the percentage and the number.	7-7, 7-8a, 7-8	7-7, 7-8a, 7-8, 8-2	8-1, 8-1b, 8-3, 8-4, 8-5, 8-6, 8-6b
<b>N.FL.06.13</b>	Solve word problems involving percentages in such contexts as sales taxes and tips, and involving positive rational numbers.	7-7, 7-8	7-7, 7-8, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-6b	8-6b
<b>N.FL.06.14</b>	For applied situations, estimate the answers to calculations involving operations with rational numbers.	6-1, 6-3b	6-1, 6-3b, 6-8, 8-1	6-2, 6-3, 6-4, 6-6, 7-4, 7-5, 8-2, 11-4, 11-5, 12-2
<b>N.FL.06.15</b>	Solve applied problems that use the four operations with appropriate decimal numbers.	PS6, PS7, PS9	1-3, 1-5, 1-8, 1-9, 4-2, 4-3, 4-4a, 6-9, PS6, PS7, PS9	1-7, 4-5, 7-3, 7-4, 7-4b
<b><i>Use exponents</i></b>				
<b>N.ME.06.16</b>	Understand and use integer exponents, excluding powers of negative numbers; express numbers in scientific notation.	1-2, 1-9,	1-2, 1-3, 1-4, 1-9	5-1, 5-2
<b><i>Understand rational numbers and their location on the number line</i></b>				
<b>N.ME.06.17</b>	Locate negative rational numbers (including integers) on the number line; know that numbers and their negatives add to 0, and are on opposite sides and at equal distance from 0 on a number line.	3-1	3-1, 3-2, 3-4, 6-1	
<b>N.ME.06.18</b>	Understand that rational numbers are quotients of integers (non-zero denominators), e.g., a rational number is either a fraction or a negative fraction.	5-4	5-4	5-8
<b>N.ME.06.19</b>	Understand that 0 is an integer that is neither negative nor positive.	3-1	3-1	
<b>N.ME.06.20</b>	Know that the absolute value of a number is the value of the number, ignoring the sign, or is the distance of the number from 0.	3-1	3-1	
<b>Strand A</b>		<b>ALGEBRA</b>		
<b><i>Calculate rates</i></b>				
<b>A.PA.06.01</b>	Solve applied problems involving rates including speed, e.g., if a car is going 50 mph, how far will it go in $3\frac{1}{2}$ hours?	1-9, 4-3	1-9, 4-3, 7-2	7-2b, 10-7a
<b><i>Understand the coordinate plane</i></b>				
<b>A.RP.06.02</b>	Plot ordered pairs of integers and use ordered pairs of integers to identify points in all four quadrants of the coordinate plane.	3-3	3-3	4-6, 4-7

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		Introduce	Develop/Master	Extend
<i>Use variables, write expressions and equations, and combine like terms</i>				
<b>A.FO.06.03</b>	Use letters, with units, to represent quantities in a variety of contexts, e.g., $y$ lbs., $k$ minutes, $x$ cookies.	1-4	1-4, 1-5, 3-7, 4-1, 4-2, 4-3, 4-4, 4-5	3-7, 4-2, 4-3, 4-4, 4-5, 6-5, 6-8, 6-9, 7-3, 7-4, 11-3, 11-4, 11-5a, 11-5, 11-6, 11-7a, 11-7, 11-8, 12-2, 12-2b, 12-3, 12-4, 12-5
<b>A.FO.06.04</b>	Distinguish between an algebraic expression and an equation.	1-4, 1-5	1-4, 1-5, 4-1	4-1
<b>A.FO.06.05</b>	Use standard conventions for writing algebraic expressions, e.g., $2x + 1$ means “two times $x$ , plus 1” and $2(x + 1)$ means “two times the quantity $(x + 1)$ .”	4-1	4-1	4-2, 4-3, 4-4, 4-5, 4-6
<b>A.FO.06.06</b>	Represent information given in words using algebraic expressions and equations.	1-5, <b>4-1</b>	1-5, 4-1, 4-2, 4-3, 4-4	8-2, 8-3, 8-5
<b>A.FO.06.07</b>	Simplify expressions of the first degree by combining like terms, and evaluate using specific values.	1-4, 1-6	1-4, 1-6, 3-4, 3-6	MAC 7: 10-1
<i>Represent linear functions using tables, equations, and graphs</i>				
<b>A.RP.06.08</b>	Understand that relationships between quantities can be suggested by graphs and tables.	4-6a	4-6a, 4-6	4-7
<b>A.PA.06.09</b>	Graph and write equations for linear functions of the form $y = mx$ , and solve related problems, e.g., given $n$ chairs, the “leg function” is $f(n) = 4n$ ; if you have 5 chairs, how many legs?; if you have 12 legs, how many chairs?	4-6	4-6	MAC 7: 11-3
<b>A.RP.06.10</b>	Represent simple relationships between quantities, e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches; use verbal descriptions, formulas or equations, tables, and graphs.	1-8	1-8, 2-2, 2-7b, 4-6, 6-7, 6-8	2-8, 4-7
<i>Solve equations</i>				
<b>A.FO.06.11</b>	Relate simple linear equations with integer coefficients to particular contexts, and solve, e.g., $3x = 8$ or $x + 5 = 10$ .	1-5, 4-1	1-5, 4-1, 4-2, 4-3, 4-4	4-6
<b>A.FO.06.12</b>	Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same solution.	4-2a	4-2	4-4

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<b>A.FO.06.13</b>	Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same solutions.	4-3	4-3, 6-5	4-4
<b>A.FO.06.14</b>	Solve equations of the form $ax + b = c$ , e.g., $3x + 8 = 15$ by hand for positive integer coefficients less than 20, using calculators otherwise, and interpret the results.	4-4a, 4-4	4-4	4-4
<b>Stand M MEASUREMENT</b>				
<b>Convert within measurement systems</b>				
<b>M.UN.06.01</b>	Convert between basic units of measurement within a single measurement system, e.g., square inches to square feet.	1-8, 6-7	1-8, 6-7	6-8
<b>Find volume and surface area</b>				
<b>M.PS.06.02</b>	Draw patterns (of faces) for a cube and rectangular prism that, when cut, will cover the solid exactly (nets).	12-1a, 12-1, 12-2	12-4a, 12-4	12-5
<b>M.TE.06.03</b>	Compute the volume and surface area of cubes and rectangular prisms given the lengths of their sides using formulas.	12-1b, 12-4a	12-2, 12-4a, 12-4, 12-4b	12-2b, 12-3, 12-5
<b>Strand G GEOMETRY</b>				
<b>Understand and apply basic properties</b>				
<b>G.GS.06.01</b>	Understand and apply basic properties of lines, angles, and triangles, including: — triangle inequality — relationships of vertical angles, complementary angles, supplementary angles — congruence of corresponding and alternate interior angles when parallel lines are cut by a transversal, and that such congruencies imply parallel lines — locate interior and exterior angles of any triangle, and use the property that an exterior angle of a triangle is equal to the sum of the remote (opposite) interior angles — know that the sum of the exterior angles of a convex polygon is $360^\circ$ .	10-1a, 10-1	10-3, 10-3b, 10-4, 10-5	10-3b
<b>Understand the concept of congruence and basic transformations</b>				

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<b>G.GS.06.02</b>	Understand that for polygons, congruence means corresponding sides and angles have equal measures.	10-8	10-8	
<b>G.TR.06.03</b>	Understand the basic rigid motions in the plane (reflections, rotations, translations), relate these to congruence, and apply them to solve problems.	10-8, 10-9, 10-9b	10-8, 10-9, 10-9b	
<b>G.TR.06.04</b>	Understand and use simple compositions of basic rigid transformations, e.g., a translation followed by a reflection.	10-9	10-9	
<b>Construct geometric shapes</b>				
<b>G.SR.06.05</b>	Use paper folding to perform basic geometric constructions of perpendicular lines, midpoints of line segments and angle bisectors; justify informally.	10-4	10-4	10-1b
<b>Strand D DATA AND PROBABILITY</b>				
<b>Understand the concept of probability and solve problems</b>				
<b>D.PR.06.01</b>	Express probabilities as fractions, decimals or percentages between 0 and 1; know that 0 probability means an event will not occur and that probability 1 means an event will occur.	9-1	9-1	9-2, 9-6a, 9-6, 9-6b, 9-7
<b>D.PR.06.02</b>	Compute probabilities of events from simple experiments with equally likely outcomes, e.g., tossing dice, flipping coins, spinning spinners, by listing all possibilities and finding the fraction that meets given conditions.	9-2, 9-6	9-2, 9-6, 9-6b	9-7