

ACCESS MATH © 2005
correlated to
Michigan
Mathematics Grade Level
Content Expectations
Grades 6-8



YOUR MICHIGAN GREAT SOURCE REPRESENTATIVES

BARBARA BATDORFF

(Barry, Clinton, Eaton, Genesee, Gratiot, Huron, Ingham, Ionia,
Lapeer, Macomb, Montcalm, Saginaw, Sanilac, Shiawassee, St. Clair,
Tuscola, & Wayne Counties)

800-289-4490, OPTION 4

Barbara_Batdorff@hmco.com

JANICE BRATEL

(Upper Peninsula)

800-289-4490, OPTION 4

Janice_Bratel@hmco.com

JERRY SUDDETH-LOTT

(All other counties except those listed above & the Upper Peninsula)

800-289-4490, OPTION 4

Jerry_Suddeth-Lott@hmco.com



ACCESS Math © 2005

correlated to

Michigan Mathematics Grade Level Content Expectations Sixth Grade

NUMBER AND OPERATIONS

Multiply and divide fractions

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>N.MR.06.01 Understand division of fractions as the inverse of multiplication, e.g., if $4/5 \div 2/3 = \sim$, then $2/3 \times _ = 4/5$, so $\sim = 4/5 \times 3/2 = 12/10$.</p>	<p>Student Book: 129, 131, 133</p>
<p>N.FL.06.02 Given an applied situation involving dividing fractions, write a mathematical statement to represent the situation.</p>	<p>Student Book: 129, 131-132</p>
<p>N.MR.06.03 Solve for the unknown in equations such as: $_ \div \sim = 1$, $3/4 \div \sim = 1/4$ and $1/2 = 1 \times \sim$.</p>	<p>Student Book: 55, 279</p>
<p>N.FL.06.04 Multiply and divide any two fractions, including mixed numbers, fluently.</p>	<p>Student Book: 129, 130, 131-132, 133</p>

Represent rational numbers as fractions or decimals

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>N.ME.06.05 Order rational numbers and place them on the number line.</p>	<p>Student Book: 20, 67, 68, 69, 114, 115, 116, 117, 118, 258-259, 260</p>
<p>N.ME.06.06 Represent rational numbers as fractions or terminating decimals when possible, and translate between these representations.</p>	<p>Student Book: 60, 61, 64, 104, 105, 143</p>

Grade Level Content Expectations, Sixth Grade	ACCESS Math
N.ME.06.07 Understand that a fraction or a negative fraction is a quotient of two integers, e.g., $-8/3$ is -8 divided by 3 .	Student Book: 105, 137, 143-144, 145

Add and subtract integers and rational numbers

Grade Level Content Expectations, Sixth Grade	ACCESS Math
N.MR.06.08 Understand integer subtraction as the inverse of integer addition; add and subtract integers using integers from 10 to -10 .	Student Book: 261, 262, 263, 265
N.FL.06.09 Add, subtract, multiply, and divide integers between -10 and 10 ; use number line and strip models for addition and subtraction.	Student Book: 261, 262, 263-264, 265, 266, 267, 268, 270
N.FL.06.10 Add, subtract, multiply and divide positive rational numbers fluently.	Student Book: 26, 27, 30, 31, 32, 33-34, 35, 38, 39, 40-41, 43, 44, 45-46, 70, 71, 72-73, 74, 75, 76, 77-78, 119, 120, 121-122, 124, 125, 126-127, 128, 129, 130, 131-132, 133

Find equivalent ratios

Grade Level Content Expectations, Sixth Grade	ACCESS Math
N.ME.06.11 Find equivalent ratios by scaling up or scaling down.	Student Book: 137, 138-139, 140

Solve decimal, percentage and rational number problems

Grade Level Content Expectations, Sixth Grade	ACCESS Math
N.FL.06.12 Calculate part of a number given the percentage and the number.	Student Book: 146, 147, 148-149, 150
N.FL.06.13 Solve word problems involving percentages in such contexts as sales taxes and tips, and involving positive rational numbers.	Student Book: 151, 152, 153-154, 155

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>N.FL.06.14 For applied situations, estimate the answers to calculations involving operations with rational numbers.</p>	<p>Student Book: 79, 121, 214, 221</p>
<p>N.FL.06.15 Solve applied problems that use the four operations with appropriate decimal numbers.</p>	<p>Student Book: 71, 72-73, 76, 78, 79, 147, 148, 152, 153-154, 155</p>

Use exponents

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>N.ME.06.16 Understand and use integer exponents, excluding powers of negative numbers; express numbers in scientific notation.</p>	<p>Student Book: 26, 27, 28-29, 30, 39, 291</p>

Understand rational numbers and their location on the number line

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>N.ME.06.17 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.</p>	<p>Student Book: 257, 258-259, 260</p>
<p>N.ME.06.18 Understand that rational numbers are quotients of integers (non-zero denominators), e.g., a rational number is either a fraction or a negative fraction.</p>	<p>Student Book: 105, 260</p>
<p>N.ME.06.19 Understand that 0 is an integer that is neither negative nor positive.</p>	<p>Student Book: 256, 257</p>
<p>N.ME.06.20 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.</p>	<p>Student Book: 257, 260</p>

ALGEBRA

Calculate rates

Grade Level Content Expectations, Sixth Grade	ACCESS Math
A.PA.06.01 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?	Student Book: 152, 153-154

Understand the coordinate plane

Grade Level Content Expectations, Sixth Grade	ACCESS Math
A.RP.06.02 Plot ordered pairs of integers and use ordered pairs of integers to identify points in all four quadrants of the coordinate plane.	Student Book: 271, 272, 273-274, 275

Use variables, write expressions and equations, and combine like terms

Grade Level Content Expectations, Sixth Grade	ACCESS Math
A.FO.06.03 Use letters, with units, to represent quantities in a variety of contexts, e.g., y lbs., k minutes, x cookies.	Student Book: 44, 46
A.FO.06.04 Distinguish between an algebraic expression and an equation.	Student Book: 43, 44, 48, 49
A.FO.06.05 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).”	Student Book: 43, 44, 45, 47
A.FO.06.06 Represent information given in words using algebraic expressions and equations.	Student Book: 40-41, 43, 44, 45-46, 47, 51, 54, 55-56, 279, 280-281
A.FO.06.07 Simplify expressions of the first degree by combining like terms, and evaluate using specific values.	Student Book: 41, 44, 45-46

Represent linear functions using tables, equations, and graphs

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>A.RP.06.08 Understand that relationships between quantities can be suggested by graphs and tables.</p>	<p>Student Book: 45, 273-274</p>
<p>A.PA.06.09 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?</p>	<p>Student Book: 273-274, 275</p>
<p>A.RP.06.10 Represent simple relationships between quantities, using verbal descriptions, formulas or equations, tables, and graphs, e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches.</p>	<p>Student Book: 170, 213, 214, 218, 219, 221, 224, 228</p>

Solve equations

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>A.FO.06.11 Relate simple linear equations with integer coefficients to particular contexts, and solve, e.g., $3x = 8$ or $x + 5 = 10$.</p>	<p>Student Book: 48, 49, 50, 52, 53, 54, 55, 57</p>
<p>A.FO.06.12 Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same solution.</p>	<p>Student Book: 48, 49, 50, 52</p>
<p>A.FO.06.13 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.</p>	<p>Student Book: 53, 54, 55, 57</p>
<p>A.FO.06.14 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.</p>	<p>Student Book: 278, 279, 282</p>

MEASUREMENT

Find volume and surface area

Grade Level Content Expectations, Sixth Grade	ACCESS Math
M.PS.06.02 Draw patterns (of faces) for a cube and rectangular prism that, when cut, will cover the solid exactly (nets).	Student Book: 223, 224, 226
M.TE.06.03 Compute the volume and surface area of cubes and rectangular prisms given the lengths of their sides using formulas.	Student Book: 223, 228, 231

GEOMETRY

Understand and apply basic properties

Grade Level Content Expectations, Sixth Grade	ACCESS Math
G.GS.06.01 Understand and apply basic properties of lines, angles, and triangles, including: <ul style="list-style-type: none">• 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°.	Student Book: 185, 186, 187, 192

Understand the concept of congruence and basic transformations

Grade Level Content Expectations, Sixth Grade	ACCESS Math
G.GS.06.02 Understand that for polygons, congruence means corresponding sides and angles have equal measures.	Student Book: 195, 196, 197, 199
G.TR.06.03 Understand the basic rigid motions in the plane (reflections, rotations, translations), relate these to congruence, and apply them to solve problems.	Student Book: 205, 206, 207, 209

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>G.TR.06.04 Understand and use simple compositions of basic rigid transformations, e.g., a translation followed by a reflection.</p>	<p>Student Book: 209</p>

DATA AND PROBABILITY

Understand the concept of probability and solve problems

Grade Level Content Expectations, Sixth Grade	ACCESS Math
<p>D.PR.06.01 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.</p>	<p>Student Book: 234, 235, 236-237, 238, 240, 241, 243, 245, 246</p>
<p>D.PR.06.02 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.</p>	<p>Student Book: 234, 235, 236-237, 238, 243, 245, 246</p>



ACCESS Math © 2005

correlated to

Michigan Grade Level Content Expectations Seventh Grade

NUMBER AND OPERATIONS

Understand and solve problems involving rates, ratios, and proportions

Grade Level Content Expectations, Seventh Grade	ACCESS Math
N.FL.07.05 Solve simple proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $a/b = c/d$; know how to see patterns about proportional situations in tables.	Student Book: 138-139, 140, 147, 148, 202-203, 204

Recognize irrational numbers

Grade Level Content Expectations, Seventh Grade	ACCESS Math
N.MR.07.06 Understand the concept of square root and cube root, and estimate using calculators.	Student Book: 260

Compute with rational numbers

Grade Level Content Expectations, Seventh Grade	ACCESS Math
N.FL.07.07 Solve problems involving operations with integers.	Student Book: 264, 265, 269
N.FL.07.08 Add, subtract, multiply and divide negative rational numbers.	Student Book: 261, 262, 263-264, 265, 266, 267, 268-269, 270
N.FL.07.09 Estimate results of computations with rational numbers.	Student Book: 79, 121, 214, 221

ALGEBRA

Understand and apply directly proportional relationships and relate to linear relationships

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>A.PA.07.01 Recognize when information given in a table, graph, or formula suggests a proportional or linear relationship.</p>	<p>Student Book: 45, 273</p>
<p>A.RP.07.02 Represent directly proportional and linear relationships using verbal descriptions, tables, graphs, and formulas, and translate among these representations.</p>	<p>Student Book: 138, 147, 148, 202, 204, 273</p>
<p>A.PA.07.03 Given a directly proportional or linear situation, graph and interpret the slope and intercept(s) in terms of the original situation; evaluate $y = kx$ for specific x values, given k, e.g., weight vs. volume of water, base cost plus cost per unit.</p>	<p>Student Book: 273-274</p>
<p>A.PA.07.04 For directly proportional or linear situations, solve applied problems using graphs and equations, e.g., the heights and volume of a container with uniform cross-section, height of water in a tank being filled at a constant rate, degrees Celsius and degrees Fahrenheit, distance and time under constant speed.</p>	<p>Student Book: 273-274</p>
<p>A.PA.07.05 Understand and use directly proportional relationships of the form $y = mx$, and distinguish from linear relationships of the form $y = mx + b$, b non-zero; understand that in a directly proportional relationship between two quantities one quantity is a constant multiple of the other quantity.</p>	<p>Student Book: 275</p>

Understand and represent linear functions

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>A.PA.07.07 Represent linear functions in the form $y = x + b$, $y = mx$, and $y = mx + b$, and graph, interpreting slope and y-intercept.</p>	<p>Student Book: 273-274</p>

Understand and solve problems about inversely proportional relationships

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>A.PA.07.09 Recognize inversely proportional relationships in contextual situations; know that quantities are inversely proportional if their product is constant, e.g., the length and width of a rectangle with fixed area, and that an inversely proportional relationship is of the form $y = k/x$ where k is some non-zero number.</p>	<p>Student Book: 216</p>

Apply basic properties of real numbers in algebraic contexts

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>A.PA.07.11 Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, commutativity, associativity, and the distributive property of multiplication over addition.</p>	<p>Student Book: 32, 33-34, 35, 48, 49, 50-51, 52, 53, 54, 55-56, 57, 278, 279, 280-281, 282</p>

Combine algebraic expressions and solve equations

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>A.FO.07.13 From applied situations, generate and solve linear equations of the form $ax + b = c$ and $ax + b = cx + d$, and interpret solutions.</p>	<p>Student Book: 278, 279, 280-281, 282</p>

GEOMETRY

Draw and construct geometric objects

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>G.SR.07.01 Use a ruler and other tools to draw squares, rectangles, triangles and parallelograms with specified dimensions.</p>	<p>Student Book: 187, 189, 191, 192, 194, 197, 199, 201, 204, 213, 216, 217, 221, 226, 228</p>

Understand the concept of similar polygons, and solve related problems

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>G.TR.07.03 Understand that in similar polygons, corresponding angles are congruent and the ratios of corresponding sides are equal; understand the concepts of similar figures and scale factor.</p>	<p>Student Book: 200, 201, 202-203, 204</p>
<p>G.TR.07.04 Solve problems about similar figures and scale drawings.</p>	<p>Student Book: 202-203, 204</p>
<p>G.TR.07.05 Show that two triangles are similar using the criteria: corresponding angles are congruent (AAA similarity); the ratios of two pairs of corresponding sides are equal and the included angles are congruent (SAS similarity); ratios of all pairs of corresponding sides are equal (SSS similarity); use these criteria to solve problems and to justify arguments.</p>	<p>Student Book: 200, 201</p>

DATA AND PROBABILITY

Represent data and interpret

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>D.RE.07.01 Represent and interpret data using circle graphs, stem and leaf plots, histograms, and box-and-whisker plots, and select appropriate representation to address specific questions.</p>	<p>Student Book: 142, 145, 163, 164, 165-166, 167</p>

Compute statistics about datasets

Grade Level Content Expectations, Seventh Grade	ACCESS Math
<p>D.AN.07.03 Calculate and interpret relative frequencies and cumulative frequencies for given data sets.</p>	<p>Student Book: 159, 160-161, 162</p>
<p>D.AN.07.04 Find and interpret the median, quartiles, and interquartile range of a given set of data.</p>	<p>Student Book: 165</p>



ACCESS Math © 2005
 correlated to
Michigan Grade Level Content Expectations
Eighth Grade

NUMBER AND OPERATIONS

Understand real numbers concepts

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>N.ME.08.03 Understand that in decimal form, rational numbers either terminate or eventually repeat, and that calculators truncate or round repeating decimals; locate rational numbers on the number line; know fraction forms of common repeating decimals, e.g., $0.1111\dots = 1/9$; $0.3333\dots = 1/3$.</p>	<p>Student Book: 143, 145, 260</p>
<p>N.ME.08.04 Understand that irrational numbers are those that cannot be expressed as the quotient of two integers, and cannot be represented by terminating or repeating decimals; approximate the position of familiar irrational numbers, (e.g., $\sqrt{2}$, $\sqrt{3}$, π) on the number line.</p>	<p>Student Book: 218, 260</p>

Solve problems

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>N.MR.08.07 Understand percent increase and percent decrease in both sum and product form, e.g., 3% increase of a quantity x is $x + .03x = 1.03x$.</p>	<p>Student Book: 152</p>
<p>N.MR.08.08 Solve problems involving percent increases and decreases.</p>	<p>Student Book: 152</p>

ALGEBRA

Understand the concepts of non-linear functions using basic examples

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>A.RP.08.01 Identify and represent linear functions, quadratic functions, and other simple functions including inverse functions ($y = k/x$), cubics ($y = ax^3$) roots, ($y = \sqrt{x}$), and exponentials ($y = a^x$, $a > 0$), using tables, graphs, and equations.</p>	<p>Student Book: 273</p>
<p>A.PA.08.02 For basic functions, e.g., simple quadratics, direct and indirect variation, and population growth, describe how changes in one variable affect the others.</p>	<p>Student Book: 273</p>
<p>A.PA.08.03 Recognize basic functions in problem context, e.g., area of a circle is πr^2, volume of a sphere is $4/3 \pi r^3$, and represent them using tables, graphs, and formulas.</p>	<p>Student Book: 213, 214, 216, 218, 218, 221, 223, 224, 228, 229, 231</p>

Understand solutions and solve equations, simultaneous equations, and linear inequalities

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>A.FO.08.10 Understand that to solve the equation $f(x) = g(x)$ means to find all values of x for which the equation is true, e.g., determine whether a given value, or values from a given set, is a solution of an equation (0 is a solution of $3x^2 + 2 = 4x + 2$, but 1 is not a solution).</p>	<p>Student Book: 48, 49, 50-51, 52, 53, 54, 55-56, 57, 278, 279, 282</p>
<p>A.FO.08.12 Solve linear inequalities in one and two variables, and graph the solution sets.</p>	<p>Student Book: 283, 284, 285, 287</p>
<p>A.FO.08.13 Set up and solve applied problems involving simultaneous linear equations and linear inequalities.</p>	<p>Student Book: 285, 287</p>

GEOMETRY

Solve problems about geometric figures

Grade Level Content Expectations, Eighth Grade	ACCESS Math
G.SR.08.03 Understand the definition of a circle; know and use the formulas for circumference and area of a circle to solve problems.	Student Book: 217, 218, 221
G.SR.08.04 Find area and perimeter of complex figures by subdividing them into basic shapes (quadrilaterals, triangles, circles).	Student Book: 223, 224
G.SR.08.05 Solve applied problems involving areas of triangles, quadrilaterals, and circles.	Student Book: 214-215, 216, 220, 221

Understand concepts of volume and surface area, and apply formulas

Grade Level Content Expectations, Eighth Grade	ACCESS Math
G.SR.08.06 Know the volume formulas for generalized cylinders ((area of base) x height), generalized cones and pyramids ($\frac{1}{3}$ (area of base) x height) and spheres ($\frac{4}{3}\pi(\text{radius})^3$) and apply them to solve problems.	Student Book: 229-230, 231
G.SR.08.07 Understand the concept of surface area, and find the surface area of prisms, cones, spheres, pyramids, and cylinders.	Student Book: 223, 224-225, 226

Visualize solids

Grade Level Content Expectations, Eighth Grade	ACCESS Math
G.SR.08.08 Sketch a variety of two-dimensional representations of three-dimensional solids including orthogonal views (top, front, and side), picture views (projective or isometric), and nets, use such two-dimensional representations to help solve problems.	Student Book: 223, 224, 226

Understand and apply concepts of transformation and symmetry

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>G.TR.08.10 Understand and use reflective and rotational symmetries of two-dimensional shapes, and relate them to transformations to solve problems.</p>	<p>Student Book: 205, 206, 207-208, 209</p>

DATA AND PROBABILITY

Draw, explain, and justify conclusions based on data

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>D.AN.08.01 Determine which measure of central tendency (mean, median, mode) best represents a data set, e.g., salaries, home prices for answering certain questions; justify the choice made.</p>	<p>Student Book: 165-166, 167</p>
<p>D.AN.08.02 Recognize practices of collecting and displaying data that may bias the presentation or analysis.</p>	<p>Student Book: 175</p>

Understand probability concepts for simple and compound events

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>D.PR.08.03 Compute relative frequencies from a table of experimental results for a repeated event, and be able to answer questions about the result, using relationship of probability to relative frequency.</p>	<p>Student Book: 240, 241-242, 243</p>
<p>D.PR.08.04 Apply the Basic Counting Principle to find total number of outcomes possible for independent and dependent events, and calculate the probabilities using organized lists or tree diagrams.</p>	<p>Student Book: 246-247, 248</p>
<p>D.PR.08.05 Understand the relationship of probability to relative frequency.</p>	<p>Student Book: 240, 241-242, 243</p>

Grade Level Content Expectations, Eighth Grade	ACCESS Math
<p>D.PR.08.06 Understand the difference between independent and dependent events, and recognize common misconceptions involving probability, e.g., Alice rolls a 6 on a die three times in a row; she is just as likely to roll a 6 on the fourth roll as she was on any previous roll.</p>	<p>Student Book: 234, 235, 236-237, 238, 240, 241-242, 243, 245, 246</p>
<p>D.AN.08.07 Compute relative frequencies from a table of experimental results for a repeated event; understand the relationship of experimental probability to relative frequency; answer questions regarding the results.</p>	<p>Student Book: 240, 241-242, 243</p>



TOLL FREE: **800-289-4490**

VISIT OUR WEB SITE: **WWW.GREATSOURCE.COM**
