

**The
University of
Chicago
School
Mathematics
Project**



Algebra



Correlated to
Pennsylvania Mathematics
Assessment Anchors and
Eligible Content



Grade 8



Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	Wright Group/McGraw-Hill Algebra
ASSESSMENT ANCHOR	
M8.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.	
M8.A.1.1 Represent numbers in equivalent forms.	
M8.A.1.1.1 Represent numbers using scientific notation and/or exponential forms.	PE: 398, 460, 474 TE: 398, 460, 474
M8.A.1.1.2 Find the square or cube of a whole number (single digit) and/or the square root of a perfect square (without a calculator) and explain the relationship between the two (i.e. square and square root).	PE: 488–495 TE: 488–495, 497–503 LM: 8-6A, 8-6B, 8-7A, 8-7B RM: 121, 122, 123, 124, 125 AR: 103–108
ASSESSMENT ANCHOR	
M8.A.2 Understand the meanings of operations, use operations and understand how they relate to each other.	
M8.A.2.1 Complete calculations by applying the order of operations.	
M8.A.2.1.1 Simplify numeric expressions involving integers, using the order of operations. (May include all types of grouping symbols. No combining negatives with exponents [4^{-3}] or compound exponents.)	PE: 6–11 TE: 6–11 LM: 1-1A, 1-1B RM: 8 AR: 3–10
M8.A.2.2 Represent or solve problems using rates, ratios, proportions and/or percents.	
M8.A.2.2.1 Solve problems involving percents (e.g., tax, discounts, etc) Do not include percent increase or decrease.	PE: 182–186 TE: 182–186 LM: 4-1A, 4-1B RM: 45, 46 AR: 44–51
M8.A.2.2.2 Represent or solve rate problems (e.g., unit rates, simple interest, distance, etc.) Students may be asked to solve for any term (formulas provided on the reference sheet for distance and interest).	PE: 263–267, 269–272 TE: 263–267, 269–272 LM: 5-3A, 5-3B, 5-4A, 5-4B RM: 62, 63, 64 AR: 57–64

PE: Pupil's Edition
TE: Teacher's Edition

RM: Resource Master
AR: Assessment Resources

LM: Lesson Master

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
ASSESSMENT ANCHOR	
M8.A.3 Compute accurately and fluently and make reasonable estimates.	
M8.A.3.1 Determine the appropriateness of overestimating, underestimating or calculating an exact answer in problem-solving situations.	
M8.A.3.1.1 Identify, use and/or explain when it is appropriate to round up or round down.	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 97–102 TE: 97–102
M8.A.3.1.2 Identify, apply and/or explain when an exact answer is needed or when estimation is appropriate.	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 78, 97–102, 367 TE: 78, 97–102, 367
M8.A.3.2 Use estimation strategies in problem-solving situations.	
M8.A.3.2.1 Estimate answers to problems involving percents (percents will be limited to: 1%, 10%, 15%, 20%, 25%, 50% or 75%).	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 367 TE: 367
M8.A.3.3 Compute and/or explain operations with integers, fractions and/or decimals.	
M8.A.3.3.1 Add, subtract, multiply and/or divide integers, fractions and/or decimals with and without a calculator (straight computation or word problems).	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 71–75, 77–81, 184–189, 191–194, 243–247, 335–339, 355–359, 377–382, 401–404, 408–409, 417–421, 425, 429–430, 438–441 TE: 71–75, 77–81, 184–189, 191–194, 243–247, 335–339, 355–359, 377–382, 401–404, 408–409, 417–421, 425, 429–430, 438–441

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
ASSESSMENT ANCHOR	
M8.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.	
M8.B.1.1 Convert measurements.	
M8.B.1.1.1 Convert among metric measurements (milli, centi, kilo using meter, liter and gram) (table of equivalency provided on the reference sheet).	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 83–88 TE: 83–88
M8.B.1.1.2 Convert customary measurements up to 2 units above or below the given unit (e.g., inches to yards, pints to gallons) (table of equivalency provided on the reference sheet).	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 26–30 TE: 26–30
M8.B.1.1.3 Convert time up to 2 units above or below given unit (e.g., seconds to hours).	This skill is taught in <i>Wright Group/McGraw-Hill Pre-Transition Mathematics</i> . PE: 27 TE: 27
M8.B.1.1.4 Convert from Fahrenheit to Celsius or Celsius to Fahrenheit (formulas provided on the reference sheet).	PE: 221–222 TE: 221–222
ASSESSMENT ANCHOR	
M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.	
M8.B.2.1 Determine the measurement of a missing side(s) or angle(s) in a polygon.	
M8.B.2.1.1 Determine the total number of degrees in the interior angles of a polygon in 3 - 8 sided figures (formula provided on the reference sheet).	PE: 307 TE: 307
M8.B.2.1.2 Determine the measurement of one interior angle of a regular polygon (3-8 sided polygons, formula provided on the reference sheet).	PE: 307 TE: 307
M8.B.2.1.3 Determine the number of sides of a polygon given the total number of degrees in the interior angles (3-8 sided polygons, formula provided on the reference sheet).	PE: 307 TE: 307
M8.B.2.2 Use, describe and/or develop procedures to	

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
determine measures of perimeter, circumference, area, surface area and/or volume.	
M8.B.2.2.1 Calculate the surface area of cubes and rectangular prisms (formula provided on the reference sheet).	This skill taught in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 696–702, 703–708 TE: 696–702, 703–708 LM: 11-5A, 11-5B, 11-6A, 11-6B RM: 161, 162, 163 AR: 147–154
M8.B.2.2.2 Calculate the volume of cubes and rectangular prisms (formulas provided on the reference sheet).	PE: 32, 484 TE: 32, 484
M8.B.2.2.3 Determine the appropriate type of measurement (circumference, perimeter, area, surface area, volume) for a given situation (e.g., which measurement is needed to determine the amount of carpeting for a room).	This skill is practiced in application problems in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 86, 436–437, 468–70, 700–701 TE: 436, 468, 701 LM: 7-6A, 7-6B
ASSESSMENT ANCHOR	
M8.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.	
M8.C.1.1 Identify, use, and/or describe properties of angles, triangles, quadrilaterals, circles, pyramids, cubes, prisms, spheres, cones and/or cylinders.	
M8.C.1.1.1 Match the three-dimensional figure with its net (cube, cylinder, cone, prism, pyramid). Any measurements used should be consistent in the stem and answer choices.	This skill is taught in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 686–690, 691–696, 700 TE: 686–690, 691–696, 700 LM: 11-3A, 11-3B, 11-4A, 11-4B RM: 158–159, 160 AR: 147–154
M8.C.1.1.2 Define, identify and/or use properties of angles formed by intersecting lines (complementary, supplementary, adjacent and/or vertical angles).	PE: 278 TE: 278
M8.C.1.1.3 Define, identify and/or use properties of angles formed when two parallel lines are cut by a transversal (alternate interior, alternate exterior, vertical corresponding).	This skill is taught in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 393–400 TE: 393–400

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
	LM: 6-6A, 6-6B RM: 94, 95 AR: 71–80
M8.C.1.2 Compute measures of sides of right triangles using the Pythagorean Theorem	
M8.C.1.2.1 Use the Pythagorean Theorem to find the measure of a missing side of a right triangle (formula provided on the reference sheet – whole numbers only).	PE: 488, 491–492, 823–828 TE: 488, 491–492, 823–828 LM: 8-6A, 8-6B, 13-8A, 13-8B RM: 121 AR: 103–108
ASSESSMENT ANCHOR	
M8.C.2 Identify and/or apply concepts of transformations or symmetry.	
Not assessed at Grade 8.	
ASSESSMENT ANCHOR	
M8.C.3 Locate points or describe relationships using the coordinate plane.	
M8.C.3.1 Plot and/or identify ordered pairs on a coordinate plane.	
M8.C.3.1.1 Plot, locate or identify ordered pairs on a coordinate plane (the point may be a vertex of a polygon).	PE: 506–507 TE: 506–507 LM: 8-6A, 8-6B RM: 123 AR: 103–108

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	Wright Group/McGraw-Hill Algebra
ASSESSMENT ANCHOR	
M8.D.1 Demonstrate an understanding of patterns, relations and functions.	
M8.D.1.1 Analyze, extend or develop descriptions of patterns or functions.	
M8.D.1.1.1 Continue a numeric or algebraic pattern (pattern must show 3 repetitions – may include up to 2 operations, squares and square roots).	PE: 13–19, 130–133, 396–397, 425–431, 432, 439–446, 488–495 TE: 13–19, 130–133, 396–397, 425–431, 432, 439–446, 488–495 LM: 1-2A, 1-2B, 3-1A, 3-1B, 7-5A, 7-5B, 7-6A, 7-6B, 7-7A, 7-7B, 8-6A, 8-6B RM: 9, 35, 36, 108, 109, 110, 111, 113, 114, 121 AR: 3–10, 26–33, 89–100, 103–108
M8.D.1.1.2 Find missing elements in numeric or geometric patterns and/or functions (may be given a table or rule – pattern must show 3 repetitions).	PE: 13–19, 130–133 TE: 13–19, 130–133 LM: 1-2A, 1-2B, 3-1A, 3-1B RM: 9, 10, 11, 35 AR: 3–10, 26–33
M8.D.1.1.3 Determine the rule of a function (given elements in an input-output table, chart or list – limit to linear functions).	PE: 16–18, 425–431, 432–437 TE: 16–18, 425–431, 432–437 LM: 7-5A, 7-5B, 7-6A, 7-6B RM: 106 AR: 89–100
ASSESSMENT ANCHOR	
M8.D.2 Represent and/or analyze mathematical situations using numbers, symbols, words, tables and/or graphs.	
M8.D.2.1 Select and/or use a strategy to simplify an expression, solve an equation or inequality and/or check the solution for accuracy.	
M8.D.2.1.1 Solve one- or two-step equations and inequalities (should not include absolute values – one variable only).	PE: 128–129, 130–134, 135–138, 139–143, 144–148, 156–161, 162–166, 182–187, 188–195, 202–209, 210–215, 348–355, 356–360, 361–367, 381–386, 532–536, 537–543 TE: 128–129, 130–134, 135–138, 139–143, 144–148, 156–161, 162–166, 182–187, 188–195, 202–209, 210–215, 348–355, 356–360, 361–367, 381–386, 532–536, 537–543 LM: 3-1A, 3-1B, 3-2A, 3-2B, 3-3A, 3-3B, 3-4A,

PE: Pupil’s Edition
TE: Teacher’s Edition

RM: Resource Master
AR: Assessment Resources

LM: Lesson Master

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
	3-4B, 3-6A, 3-6B, 3-7A, 3-7B, 4-1A, 4-1B, 4-2A, 4-2B, 4-4A, 4-4B, 4-5A, 4-5B, 6-4A, 6-4B, 6-5A, 6-5B, 6-6A, 6-6B, 6-9A, 6-9B, 9-2A, 9-2B, 9-3A, 9-3B RM: 35, 36, 37, 38, 39, 41, 42, 43, 45, 46, 47, 49, 50, 51, 86, 87, 88, 89, 90, 91, 96, 97 AR: 26-33, 44-51, 70-77, 114-121
M8.D.2.1.2 Use substitution to check the accuracy of a given value for an equation or inequality (simple inequalities with one variable).	PE: 144-148, 202-209 TE: 144-148, 202-209 LM: 3-4A, 3-4B, 4-4A, 4-4B RM: 39, 49, 50 AR: 26-33, 44-51
M8.D.2.1.3 Determine the value of an algebraic expression by simplifying and/or substituting a number for the variable.	PE: 144-148, 202-209 TE: 144-148, 202-209 LM: 3-4A, 3-4B, 4-4A, 4-4B RM: 39, 49, 50 AR: 26-33, 44-51
M8.D.2.2 Create and/or interpret expressions, equations or inequalities that model problem situations.	
M8.D.2.2.1 Match a written situation to its numeric and/or algebraic expression, equation or inequality (up to two variables in equations or expressions – one variable with inequalities).	PE: 128-129, 130-134, 135-138, 139-143, 182-187, 188-195, 348-355, 356-360, 361-367 TE: 128-129, 130-134, 135-138, 139-143, 182-187, 188-195, 348-355, 356-360, 361-367 LM: 3-1A, 3-1B, 3-2A, 3-2B, 3-3A, 3-3B, 3-6A, 3-6B, 6-4A, 6-4B, 6-5A, 6-5B, 6-6A, 6-6B RM: 35, 36, 37, 38, 41, 42, 86, 87, 88, 89, 90, 91 AR: 26-33, 70-77
M8.D.2.2.2 Write and/or solve an equation for a given problem situation (one variable only).	PE: 128-129, 130-134, 135-138, 139-143, 182-187, 188-195, 348-355, 356-360, 361, 367 TE: 128-129, 130-134, 135-138, 139-143, 182-187, 188-195, 348-355, 356-360, 361-367 LM: 3-1A, 3-1B, 3-2A, 3-2B, 3-3A, 3-3B, 3-6A, 3-6B, 6-4A, 6-4B, 6-5A, 6-5B, 6-6A, 6-6B RM: 35, 36, 37, 38, 41, 42, 86, 87, 88, 89, 90, 91 AR: 26-33, 70-77
ASSESSMENT ANCHOR	
M8.D.3 Analyze change in various contexts.	
Not assessed at grade 8	

PE: Pupil's Edition
 TE: Teacher's Edition

RM: Resource Master
 AR: Assessment Resources

LM: Lesson Master

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
ASSESSMENT ANCHOR	
M8.D.4 Describe or use models to represent quantitative relationships.	
M8.D.4.1 Represent relationships with tables or graphs on the coordinate plane.	
M8.D.4.1.1 Graph a linear function based on an x/y table (integers only).	PE: 432–437 TE: 432–437 LM: 7-6A, 7-6B RM: 112 AR: 89–100
M8.D.4.1.2 Match the graph of a linear function to its x/y table (integers only).	PE: 436 TE: 436
M8.D.4.1.3 Match the linear equation ($y = mx + b$ form) to the x/y table (integers only in the table).	PE: 350–352 TE: 350–352
ASSESSMENT ANCHOR	
M8.E.1 Formulate or answer questions that can be addressed with data and/or organize, display, interpret or analyze data.	
M8.E.1.1 Choose, display or interpret data (tables, charts, graphs, etc.).	
M8.E.1.1.1 Choose and/or explain the correct representation (graph) for a set of data.	PE: 27–32, 37, 39, 368–373, 419–424 TE: 27–32, 37, 39, 368–373, 419–424 LM: 1-4A, 1-4B, 6-7A, 6-7B, 7-4A, 7-4B RM: 14, 92, 93, 105, 106, 107 AR: 3–10, 70–77, 89–100
M8.E.1.1.2 Analyze data and/or answer questions pertaining to data shown in multiple line graphs, circle graphs or histograms.	This skill is taught in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 741, 743, 745–751 TE: 741–743, 745–751 LM: 12-1A, 12-1B, 12-2A, 12-2B RM: 170, 171, 172 AR: 161–168
M8.E.1.1.3 Interpret data shown in stem-and-leaf or box-and-whisker plots.	This skill is taught in <i>Wright Group/McGraw-Hill Transition Mathematics</i> . PE: 745–751, 763–771 TE: 745–751, 763–771 LM: 12-2A, 12-2B, 12-5A, 12-5B RM: 172, 175–177 AR: 161–168

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
 correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
ASSESSMENT ANCHOR	
M8.E.2 Select and/or use appropriate statistical methods to analyze data.	
Not assessed at grade 8.	
ASSESSMENT ANCHOR	
M8.E.3 Understand and/or apply basic concepts of probability or outcomes.	
M8.E.3.1 Calculate the probability of an event.	
M8.E.3.1.1 Find the probability for a mutually exclusive or an independent event (written as a fraction in simplest form).	PE: 280–288 TE: 280–288 LM: 5-6A, 5-6B RM: 67, 68 AR: 57–64

Wright Group/McGraw-Hill Algebra ©2008
Grade 8
correlated to
Pennsylvania Assessment Anchors and Eligible Content

Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Algebra</i>
M8.E.3.2 Determine the number of combinations and/or permutations for an event.	
M8.E.3.2.1 Determine/show the number of permutations and/or combinations for an event using up to four choices (e.g., organized list, etc.).	PE: 458–462 TE: 458–462 LM: 8-1A, 8-1B RM: 115 AR: 103–108
ASSESSMENT ANCHOR	
M8.E.4 Develop and/or evaluate inferences and predictions or draw conclusions based on data or data displays.	
M8.E.4.1 Draw conclusions, make inferences and/or evaluate hypotheses based on statistical and data displays.	
M8.E.4.1.1 Fit a line to a scatter plot and/or describe any correlation between the two variables (positive, negative, strong, weak or none).	PE: 27–29, 37 TE: 27–29, 37 LM: 1-4B RM: 14
M8.E.4.1.2 Make predictions based on survey results or graphs (bar, line, circle, scatterplots, etc.).	PE: 27–32, 37, 303, 368–373, 419–424 TE: 27–32, 37, 303, 368–373, 419–424 LM: 1-4A, 1-4B, 6-7A, 6-7B, 7-4A, 7-7B RM: 14, 92, 93, 105, 106, 107 AR: 3–10, 70–77, 89–100