

New York State Mathematics Content Strands, Grade 8, Correlated to *Glencoe MathScape, Course 3* and *Quick Review Math Handbook Book 3*

The lessons that address each Performance Indicator are listed, and those in which the Performance Indicator is the primary focus are indicated in **bold**.

Strands and Performance Indicators		Student Edition Pages
Strand Number Sense and Operations		
<i>Students will understand meanings of operations and procedures, and how they relate to one another.</i>		
Operations		
8.N.1	Develop and apply the laws of exponents for multiplication and division	296-301, 311-313 Quick Review Math Handbook Book 3 166, 168, 170, 172, 173, 183
8.N.2	Evaluate expressions with integral exponents	296-301, 311-313 Quick Review Math Handbook Book 3 169, 170, 171, 185, 186
8.N.3	Read, write, and identify percents less than 1% and greater than 100%	Course 1: 238-240, 268-269
8.N.4	Apply percents to: Tax Percent increase/decrease Simple interest Sale price Commission Interest rates Gratuities	167, See also Course 1: 240, 267, 269 See also Course 2: 30-31, 44-45 Quick Review Math Handbook Book 3 147-152, 153
<i>Students will compute accurately and make reasonable estimates.</i>		
Estimation		
8.N.5	Estimate a percent of quantity, given an application	Course 1: 236, 267 Course 2: 26-27, 30, 42 Quick Review Math Handbook Book 3 151, 153
8.N.6	Justify the reasonableness of answers using estimation	16, 52, 99, 227-228, 242, 257 Quick Review Math Handbook Book 3 139 #29, 151, 153
Strand Algebra		
<i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i>		
Variables and Expressions		
8.A.1	Translate verbal sentences into algebraic inequalities	Course 2: 187, 213
8.A.2	Write verbal expressions that match given mathematical expressions	Course 2: 184, 212 Quick Review Math Handbook Book 3 276-281, 283
8.A.3	Describe a situation involving relationships that matches a given graph	20-23

Strands and Performance Indicators		Student Edition Pages
8.A.4	Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship	23, 60-75
8.A.5	Use physical models to perform operations with polynomials	202, 205-206, 210, 212, 215
<i>Students will perform algebraic procedures accurately.</i>		
Variables and Expressions		
8.A.6	Multiply and divide monomials	Opportunity to address the objective: 186-187, 212 Quick Review Math Handbook Book 3 276, 280
8.A.7	Add and subtract polynomials (integer coefficients)	202-203, 218
8.A.8	Multiply a binomial by a monomial or a binomial (integer coefficients)	186-187, 212-213
8.A.9	Divide a polynomial by a monomial (integer coefficients) <i>Note: The degree of the denominator is less than or equal to the degree of the numerator for all variables.</i>	Opportunity to address the objective: 186-187, 212
8.A.10	Factor algebraic expressions using the GCF	Opportunity to address the objective: 186-187, 212 Quick Review Math Handbook Book 3 288, 291
8.A.11	Factor a trinomial in the form $ax^2 + bx + c$; $a=1$ and c having no more than three sets of factors	Opportunity to address the objective: 186-187, 212
Equations and Inequalities		
8.A.12	Apply algebra to determine the measure of angles formed by or contained in parallel lines cut by a transversal and by intersecting lines	This indicator is outside the scope of the course.
8.A.13*	Solve multi-step inequalities and graph the solution set on a number line	Course 2: 207, 221
8.A.14*	Solve linear inequalities by combining like terms, using the distributive property, or moving variables to one side of the inequality (include multiplication or division of inequalities by a negative number)	Opportunity to address the objective: 204-209, 219-221
<i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i>		
Patterns, Relations, and Functions		
8.A.15	Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically	272-277, 288-293, 296-297, 302-304, 308-310 Quick Review Math Handbook Book 3 65-67
8.A.16	Find a set of ordered pairs to satisfy a given linear numerical pattern (expressed algebraically); then plot the ordered pairs and draw the line	282 Quick Review Math Handbook Book 3 319-321, 323

Strands and Performance Indicators		Student Edition Pages
8.A.17*	Define and use correct terminology when referring to function (domain and range)	Opportunity to address the objective: 272-273, 302
8.A.18*	Determine if a relation is a function	273, 302
8.A.19*	Interpret multiple representations using equation, table of values, and graph	272, 274-277, 282-285, 288-293, 296-297, 303-304, 306-311
Strand Geometry		
<i>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</i>		
Constructions		
8.G.0*	Construct the following using a straight edge and compass: Segment congruent to a segment Angle congruent to an angle Perpendicular bisector Angle bisector	Course 2: 152-153, 173 Quick Review Math Handbook Book 3 447 Construction Problem
<i>Students will identify and justify geometric relationships, formally and informally.</i>		
Geometric Relationships		
8.G.1	Identify pairs of vertical angles as congruent	Opportunity to address the objective: Course 2: 274-275, 302
8.G.2	Identify pairs of supplementary and complementary angles	Opportunity to address the objective: Course 2: 274-275, 302
8.G.3	Calculate the missing angle in a supplementary or complementary pair	Opportunity to address the objective: Course 2: 274-275, 302
8.G.4	Determine angle pair relationships when given two parallel lines cut by a transversal	This indicator is outside the scope of the course.
8.G.5	Calculate the missing angle measurements when given two parallel lines cut by a transversal	This indicator is outside the scope of the course.
8.G.6	Calculate the missing angle measurements when given two intersecting lines and an angle	Opportunity to address the objective: Course 2: 274-275, 302
<i>Students will apply transformations and symmetry to analyze problem solving situations.</i>		
Transformational Geometry		
8.G.7	Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations)	Course 2: 289, 291, 308 Quick Review Math Handbook Book 3 360-365
8.G.8	Draw the image of a figure under rotations of 90 and 180 degrees	Opportunity to address the objective: Course 2: 289 Quick Review Math Handbook Book 3 363

Strands and Performance Indicators		Student Edition Pages
8.G.9	Draw the image of a figure under a reflection over a given line	Opportunity to address the objective: Course 2: 289 <i>Quick Review Math Handbook Book 3</i> 360, 361
8.G.10	Draw the image of a figure under a translation	Course 2: 289 <i>Quick Review Math Handbook Book 3</i> 364
8.G.11	Draw the image of a figure under a dilation	Opportunity to address the objective: Course 2: 289
8.G.12	Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation	Course 2: 308
<i>Students will apply coordinate geometry to analyze problem solving situations.</i>		
Coordinate Geometry		
8.G.13*	Determine the slope of a line from a graph and explain the meaning of slope as a constant rate of change	280-283, 305-306 <i>Quick Review Math Handbook Book 3</i> 324-327
8.G.14*	Determine the y-intercept of a line from a graph and be able to explain the y-intercept	282-283, 306 <i>Quick Review Math Handbook Book 3</i> 328-329
8.G.15*	Graph a line using a table of values	282
8.G.16*	Determine the equation of a line given the slope and the y-intercept	284-285, 306 <i>Quick Review Math Handbook Book 3</i> 331-334
8.G.17*	Graph a line from an equation in slope-intercept form ($y = mx + b$)	306 <i>Quick Review Math Handbook Book 3</i> 330
8.G.18*	Solve systems of equations graphically (only linear, integral solutions, $y = mx + b$ format, no vertical/horizontal lines)	Opportunity to address the objective: 282 <i>Quick Review Math Handbook Book 3</i> 330
8.G.19*	Graph the solution set of an inequality on a number line	Course 2: 186, 207, 213, 221
8.G.20*	Distinguish between linear and nonlinear equations $ax^2 + bx + c$; $a=1$ (only graphically)	282-283, 288-293, 308-310
8.G.21*	Recognize the characteristics of quadratics in tables, graphs, equations, and situations	288-293, 308-310

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Strand Measurement		
<i>Students will determine what can be measured and how, using appropriate methods and formulas.</i>		
Units of Measurement		
8.M.1	Solve equations/proportions to convert to equivalent measurements within metric and customary measurement systems <i>Note: Also allow Fahrenheit to Celsius and vice versa.</i>	52-53, 79 See also Course 1: 229, 264, 308, 311, 313-314 See also Course 2: 199-218 Quick Review Math Handbook Book 3 310, 413-414, 417

*Indicator is not tested on the Grade 8 test.

RM = Reading Mathematics Feature, P = Preview Lesson, F = Follow-Up Lesson,
PS = Prerequisite Skills Appendix (pp. 706-723)