

New York State Mathematics Content Strands, Grade 7, Correlated to *Glencoe MathScape, Course 2 and Quick Review Math Handbook Book 2*

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 numbers, multiple ways of representing numbers, relationships among numbers, and number systems.</i>		
Number Systems		
7.N.1	Distinguish between the various subsets of real numbers (counting/natural numbers, whole numbers, integers, rational numbers, and irrational numbers)	This indicator is outside the scope of the course.
7.N.2	Recognize the difference between rational and irrational numbers (e.g., explore different approximations of π)	This indicator is outside the scope of the course. Quick Review Math Handbook Book 2 26, 38, 43 (<i>defines terms</i>)
7.N.3	Place rational and irrational numbers (approximations) on a number line and justify the placement of the numbers	This indicator is outside the scope of the course.
7.N.4	Develop the laws of exponents for multiplication and division	Course 3: 296-301, 311-313 Quick Review Math Handbook Book 2 169, 171 #16-#18, 179
7.N.5	Write numbers in scientific notation	Course 3: 300-301, 313 Quick Review Math Handbook Book 2 178-179, 180, 181, 183
7.N.6	Translate numbers from scientific notation into standard form	Course 3: 300-301, 313 Quick Review Math Handbook Book 2 165, 179, 181, 183
7.N.7	Compare numbers written in scientific notation	Opportunity to address the objective: Course 3: 300-301 Quick Review Math Handbook Book 2 181 #19
Number Theory		
7.N.8	Find the common factors and greatest common factor of two or more numbers	Course 1: 97-99, 142-143 Quick Review Math Handbook Book 2 70, 83, 89, 94, 106, 275 #15-#17
7.N.9	Determine multiples and least common multiple of two or more numbers	Course 1: 100-101, 144 Quick Review Math Handbook Book 2 71, 87, 89, 95
7.N.10	Determine the prime factorization of a given number and write in exponential form	118-119, 133 Quick Review Math Handbook Book 2 86, 87, 89, 95

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<i>Students will understand meanings of operations and procedures, and how they relate to one another.</i>		
Operations		
7.N.11	Simplify expressions using order of operations Note: Expressions may include absolute value and/or integral exponents greater than 0.	Course 1: 102-103, 145 <i>Quick Review Math Handbook Book 2</i> 80, 81, 94 #12, #13, 276
7.N.12	Add, subtract, multiply, and divide integers	96-103, 124-127 <i>Quick Review Math Handbook Book 2</i> 71, 91, 92, 93, 95
7.N.13	Add and subtract two integers (with and without the use of a number line)	96-103 <i>Quick Review Math Handbook Book 2</i> 71, 91, 93, 95
7.N.14	Develop a conceptual understanding of negative and zero exponents with a base of ten and relate to fractions and decimals (e.g., $10^{-2} = .01 = 1/100$)	Course 3: 299-301, 312-313
7.N.15	Recognize and state the value of the square root of a perfect square (up to 225)	106-107, 111, 128, 135 <i>Quick Review Math Handbook Book 2</i> 172, 177, 182 #17-#20
7.N.16	Determine the square root of non-perfect squares using a calculator	129 <i>Quick Review Math Handbook Book 2</i> 173, 174, 175, 177, 183
7.N.17	Classify irrational numbers as non-repeating/non-terminating decimals	This indicator is outside the scope of the course.
<i>Students will compute accurately and make reasonable estimates.</i>		
Estimation		
7.N.18	Identify the two consecutive whole numbers between which the square root of a non-perfect square whole number less than 225 lies (with and without the use of a number line)	Opportunity to address the objective: 127 <i>Quick Review Math Handbook Book 2</i> 173, 177, 182
7.N.19	Justify the reasonableness of answers using estimation	28, 43, 274, 298-299, 302, 312 <i>Quick Review Math Handbook Book 2</i> 74, 75, 137 #29, 356
Strand Algebra		
<i>Students will represent and analyze algebraically a wide variety of problem solving situations.</i>		
Variables and Expressions		
7.A.1	Translate two-step verbal expressions into algebraic expressions	184, 212 <i>Quick Review Math Handbook Book 2</i> 264-265
<i>Students will perform algebraic procedures accurately.</i>		
Variables and Expressions		
7.A.2*	Add and subtract monomials with exponents of one	189, 214 <i>Quick Review Math Handbook Book 2</i> 286-287, 288, 291

Strands and Performance Indicators		Student Edition Pages
7.A.3*	Identify a polynomial as an algebraic expression containing one or more terms	Course 3: 194-195, 215
7.A.4*	Solve multi-step equations by combining like terms, using the distributive property, or moving variables to one side of the equation	206, 208-209, 221-222 <i>Quick Review Math Handbook Book 2</i> 286-287, 288, 291
7.A.5	Solve one-step inequalities (positive coefficients only) (See 7.G.10)	207, 221 <i>Quick Review Math Handbook Book 2</i> 297, 299
7.A.6	Evaluate formulas for given input values (surface area, rate, and density problems)	154-155, 174, 294-299, 310, 312 <i>Quick Review Math Handbook Book 2</i> 289, 363, 364
<i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i>		
Patterns, Relations and Functions		
7.A.7*	Draw the graphic representation of a pattern from an equation or from a table of data	195-201, 216-219 <i>Quick Review Math Handbook Book 2</i> 303-305, 307
7.A.8*	Create algebraic patterns using charts/tables, graphs, equations, and expressions	106-107, 120-121
7.A.9*	Build a pattern to develop a rule for determining the sum of the interior angles of polygons	286-287
7.A.10*	Write an equation to represent a function from a table of values	Course 1: 326-329, 334-335, 348-351, 355-356, 363-364
Strand Geometry		
<i>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</i>		
Shapes		
7.G.1	Calculate the radius or diameter, given the circumference or area of a circle	310 <i>Quick Review Math Handbook Book 2</i> 372, 376, 377
7.G.2	Calculate the volume of prisms and cylinders, using a given formula and a calculator	Course 3: 105, 107, 109, 111, 126-129 <i>Quick Review Math Handbook Book 2</i> 367, 368, 371, 391
7.G.3	Identify the two-dimensional shapes that make up the faces and bases of three-dimensional shapes (prisms, cylinders, cones, and pyramids)	150-153, 172 <i>Quick Review Math Handbook Book 2</i> 341
7.G.4	Determine the surface area of prisms and cylinders, using a calculator and a variety of methods	157, 175, See also Course 3: 104, 106-109, 111, 126-129 <i>Quick Review Math Handbook Book 2</i> 362-365, 386

Strands and Performance Indicators		Student Edition Pages
<i>Students will identify and justify geometric relationships, formally and informally.</i>		
Geometric Relationships		
7.G.5*	Identify the right angle, hypotenuse, and legs of a right triangle	Course 3: 239 <i>Quick Review Math Handbook Book 2</i> 382
7.G.6*	Explore the relationship between the lengths of the three sides of a right triangle to develop the Pythagorean Theorem	Course 3: 236-239, 260-261 <i>Quick Review Math Handbook Book 2</i> 379, 380, 381
7.G.7	Find a missing angle when given angles of a quadrilateral	<i>Quick Review Math Handbook Book 2</i> 334, 342
7.G.8*	Use the Pythagorean Theorem to determine the unknown length of a side of a right triangle	Course 3: 238-239, 260-261 <i>Quick Review Math Handbook Book 2</i> 353, 355, 379, 380, 381, 385
7.G.9*	Determine whether a given triangle is a right triangle by applying the Pythagorean Theorem and using a calculator	Opportunity to address the objective: Course 3: 237, 260 <i>Quick Review Math Handbook Book 2</i> 380, 381
<i>Students will apply coordinate geometry to analyze problem solving situations.</i>		
Coordinate Geometry		
7.G.10	Graph the solution set of an inequality (positive coefficients only) on a number line (See 7.A.5)	186, 207, 213, 221
Strand Measurement		
<i>Students will determine what can be measured and how, using appropriate methods and formulas.</i>		
Units of Measurement		
7.M.1*	Calculate distance using a map scale	142, 168, 170 <i>Quick Review Math Handbook Book 2</i> 411 #6, #7
7.M.2	Convert capacities and volumes within a given system	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 401-403
7.M.3	Identify customary and metric units of mass	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 404
7.M.4	Convert mass within a given system	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 405
7.M.5*	Calculate unit price using proportions	10-11, 36

Strands and Performance Indicators		Student Edition Pages
7.M.6*	Compare unit prices	6-11, 13, 34-37
7.M.7*	Convert money between different currencies with the use of an exchange rate table and a calculator	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 155
7.M.8	Draw central angles in a given circle using a protractor (circle graphs)	28-29, 43, 274
Tools and Methods		
7.M.9	Determine the tool and technique to measure with an appropriate level of precision: mass	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 404
<i>Students will develop strategies for estimating measurements.</i>		
Estimation		
7.M.10	Identify the relationships between relative error and magnitude when dealing with large numbers (e.g., money, population)	This indicator is outside the scope of the course.
7.M.11	Estimate surface area	Course 3: 99 <i>Quick Review Math Handbook Book 2</i> 363, 364
7.M.12	Determine personal references for customary /metric units of mass	This indicator is outside the scope of the course.
7.M.13	Justify the reasonableness of the mass of an object	This indicator is outside the scope of the course. <i>Quick Review Math Handbook Book 2</i> 404, 405
Strand Statistics and Probability		
<i>Students will collect, organize, display, and analyze data.</i>		
Collection of Data		
7.S.1	Identify and collect data using a variety of methods	Course 1: 11, 19 <i>Quick Review Math Handbook Book 2</i> 9, 18, 28, 47, 52, 188-192
Organization and Display of Data		
7.S.2	Display data in a circle graph	28-29, 43 <i>Quick Review Math Handbook Book 2</i> 196-197
7.S.3	Convert raw data into double bar graphs and double line graphs	Course 1: 16-17, 40-41 <i>Quick Review Math Handbook Book 2</i> 202
Analysis of Data		
7.S.4	Calculate the range for a given set of data	Course 1: 6-7, 9, 11, 19, 22-24, 36-37 <i>Quick Review Math Handbook Book 2</i> 187, 214, 215

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7.S.5	Select the appropriate measure of central tendency	Course 3: 8-11, 13, 35-38 <i>Quick Review Math Handbook Book 2</i> 187, 210-213, 215
7.S.6	Read and interpret data represented graphically (pictograph, bar graph, histogram, line graph, double line/bar graphs or circle graph)	8, 19, 28, 163, 177 <i>Quick Review Math Handbook Book 2</i> 196-197, 199, 201, 202, 203, 204
<i>Students will make predictions that are based upon data analysis.</i>		
Predictions from Data		
7.S.7	Identify and explain misleading statistics and graphs	Course 1: 15, 39 <i>Quick Review Math Handbook Book 2</i> 190, 191
<i>Students will understand and apply concepts of probability.</i>		
Probability		
7.S.8	Interpret data to provide the basis for predictions and to establish experimental probabilities	Course 1: 24-25 <i>Quick Review Math Handbook Book 2</i> 224-225, 235
7.S.9	Determine the validity of sampling methods to predict outcomes	Course 1: 11, 19, 43 <i>Quick Review Math Handbook Book 2</i> 233, 234
7.S.10	Predict the outcome of an experiment	50-55, 58-59, 68, 80 <i>Quick Review Math Handbook Book 2</i> 224-225, 234, 235
7.S.11	Design and conduct an experiment to test predictions	50-53, 55, 58-59, 68, 74-79 <i>Quick Review Math Handbook Book 2</i> 234
7.S.12	Compare actual results to predicted results	53, 55, 59, 68, 75 <i>Quick Review Math Handbook Book 2</i> 231, 234

*Indicator is not tested on the Grade 7 test.