New York State MAP Plus, Third Edition

Grade 8, Form A Crosswalk

Session/ Question #	CCLS	Next Generation Standard
SESSION 1		
1	8.EE.1	NY-8.EE.1
2	8.F.1	NY-8.F.1
3	8.F.3	NY-8.F.3
4	8.G.1.a, 2	NY-8.G.1.a, 2
5	8.F.3	NY-8.F.3
6	8.F.1, 3	NY-8.F.1, 3
7	8.F.4	NY-8.F.4
8	8.SP.4	Standard Removed
9	8.G.2, 3	NY-8.G.2, 3
10	8.F.3	NY-8.F.3
11	8.EE.8.b, c	NY-8.EE.8.b, c
12	8.EE.6	NY-8.EE.6
13	8.G.9	NY-8.G.9
14	8.EE.4	NY-8.EE.4
15	8.F.2	NY-8.F.2
16	8.EE.7.b	NY-8.EE.7.b
17	8.EE.8.a, b	NY-8.EE.8.a, b
18	8.G.4	NY-8.G.4
19	8.EE.5	NY-8.EE.5
20	8.SP.2	NY-8.SP.2
21	8.G.1.b	NY-8.G.1.b
22	8.SP.1	NY-8.SP.1
23	8.EE.1	NY-8.EE.1

Grade 8, Form B Crosswalk

Session/ Question #	CCLS	Next Generation Standard
SESSION 1		
1	8.EE.1	NY-8.EE.1
2	8.F.1	NY-8.F.1
3	8.F.3	NY-8.F.3
4	8.G.1.a, 2	NY-8.G.1.a, 2
5	8.F.3	NY-8.F.3
6	8.F.1, 3	NY-8.F.1, 3
7	8.F.4	NY-8.F.4
8	8.SP.4	Standard Removed
9	8.G.2, 3	NY-8.G.2, 3
10	8.F.3	NY-8.F.3
11	8.EE.8.b, c	NY-8.EE.8.b, c
12	8.EE.6	NY-8.EE.6
13	8.G.9	NY-8.G.9
14	8.EE.4	NY-8.EE.4
15	8.F.2	NY-8.F.2
16	8.EE.7.b	NY-8.EE.7.b
17	8.EE.8.a, b	NY-8.EE.8.a, b
18	8.G.4	NY-8.G.4
19	8.EE.5	NY-8.EE.5
20	8.SP.2	NY-8.SP.2
21	8.G.1.b	NY-8.G.1.b
22	8.SP.1	NY-8.SP.1
23	8.EE.1	NY-8.EE.1

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Session/ Question #	CCLS	Next Generation Standard
24	8.EE.4	NY-8.EE.4
25	8.SP.3, 8.F.4	NY-8.SP.3, NY-8.F.4
26	8.EE.8.a	NY-8.EE.8.a
27	8.EE.7.a	NY-8.EE.7.a
28	8.F.2	NY-8.F.2
29	8.EE.3	NY-8.EE.3
30	8.F.4	NY-8.F.4
31	8.G.5	NY-8.G.5
32	8.SP.1	NY-8.SP.1
33	8.EE.5, 8.F.3	NY-8.EE.5, NY-8.F.3
SESSION 2		
34	8.EE.8.c	NY-8.EE.8.c
35	8.SP.4	Standard Removed
36	8.F.4	NY-8.F.4
37	8.F.5	NY-8.F.5
38	8.G.3	NY-8.G.3
39	8.EE.7	NY-8.EE.7
40	8.EE.5	NY-8.EE.5
41 Short Response	8.EE.7.b	NY-8.EE.7.b
42 Short Response	8.F.4	NY-8.F.4
43 Short Response	8.G.1, 2	NY-8.G.1, 2
44 Short Response	8.SP.1	NY-8.SP.1
45 Short Response	8.G.9	NY-8.G.9
46 Short Response	8.EE.3, 4	NY-8.EE.3, 4
47 Short Response	8.G.5	NY-8.G.5
48 Extended Response	8.EE.5	NY-8.EE.5

Grade 8, Form B Crosswalk

Session/ Question #	CCLS	Next Generation Standard
24	8.EE.4	NY-8.EE.4
25	8.SP.3, 8.F.4	NY-8.SP.3, NY-8.F.4
26	8.EE.8.a	NY-8.EE.8.a
27	8.EE.7.a	NY-8.EE.7.a
28	8.F.2	NY-8.F.2
29	8.EE.3	NY-8.EE.3
30	8.F.4	NY-8.F.4
31	8.G.5	NY-8.G.5
32	8.SP.1	NY-8.SP.1
33	8.EE.5, 8.F.3	NY-8.EE.5, NY-8.F.3
SESSION 2		
34	8.EE.8.c	NY-8.EE.8.c
35	8.SP.4	Standard Removed
36	8.F.4	NY-8.F.4
37	8.F.5	NY-8.F.5
38	8.G.3	NY-8.G.3
39	8.EE.7	NY-8.EE.7
40	8.EE.5	NY-8.EE.5
41 Short Response	8.EE.7.a, b	NY-8.EE.7.a, b
42 Short Response	8.F.4	NY-8.F.4
43 Short Response	8.G.1, 2	NY-8.G.1, 2
44 Short Response	8.SP.1	NY-8.SP.1
45 Short Response	8.G.9	NY-8.G.9
46 Short Response	8.EE.3, 4	NY-8.EE.3, 4
47 Short Response	8.G.5	NY-8.G.5
48 Extended Response	8.EE.5	NY-8.EE.5

THE NUMBER SYSTEM		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Know that there are numbers that are not rational and approximate them by rational numbers.	**8.NS.1** Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, ~~and convert a decimal expansion which repeats eventually into a rational number.~~	**NY-8.NS.1** Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion eventually repeats. Know that other numbers that are not rational are called irrational.
	8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line ~~diagram~~, and estimate the value of expressions ~~(e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*~~	**NY-8.NS.2** Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.

EXPRESSIONS AND EQUATIONS (INEQUALITIES)		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Work with radicals and integer exponents.	**8.EE.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.	**NY-8.EE.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions. e.g., $3^2 \times 3^{-5} = 3^{(-3)} = \frac{1}{(3^3)} = \frac{1}{27}$
	8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	**NY-8.EE.2** Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. **Know square roots of perfect squares up to 225 and cube roots of perfect cubes up to 125. Know that the square root of a non-perfect square is irrational.** e.g., The $\sqrt{2}$ is irrational.
	8.EE.3 Use numbers expressed in the form of a single digit times a ~~whole number~~ power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger.*	**NY-8.EE.3** Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. e.g., Estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.
	8.EE.4 Perform ~~operations~~ with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities ~~(e.g., use millimeters per year for seafloor spreading)~~. Interpret scientific notation that has been generated by technology.	**NY-8.EE.4** Perform **multiplication and division** with numbers expressed in scientific notation, including problems where both **standard decimal form** and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.

EXPRESSIONS AND EQUATIONS (INEQUALITIES)		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Understand the connections between proportional relationships, lines, and linear equations.	**8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	**NY-8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. e.g., Compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
	8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	**NY-8.EE.6** Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.
Analyze and solve linear equations and pairs of simultaneous linear equations.	**8.EE.7** Solve linear equations in one variable.	**NY-8.EE.7** Solve linear equations in one variable.
	8.EE.7.a Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler form, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	**NY-8.EE.7.a** **Recognize when** linear equations in one variable have one solution, infinitely many solutions, or no solutions. Give examples and show which of these possibilities is the case by successively transforming the given equation into simpler forms.
	8.EE.7.b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	**NY-8.EE.7.b** Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. **Note: This includes equations that contain variables on both sides of the equation.**

EXPRESSIONS AND EQUATIONS (INEQUALITIES)		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.8 Analyze and solve pairs of simultaneous linear equations.	NY-8.EE.8 Analyze and solve pairs of simultaneous linear equations.
	8.EE.8.a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	NY-8.EE.8.a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. **Recognize when the system has one solution, no solution, or infinitely many solutions.**
	8.EE.8.b Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. ~~*For example, 3x + 2y = 5 and 3x + 2y = 6 has no solution because 3x + 2y cannot simultaneously be 5 and 6.*~~	NY-8.EE.8.b Solve systems of two linear equations in two variables **with integer coefficients: graphically, numerically using a table, and algebraically.** Solve simple cases by inspection. e.g., $3x + y = 5$ and $3x + y = 6$ have no solution because $3x + y$ cannot simultaneously be 5 and 6. **<u>Notes</u>: Solving systems algebraically will be limited to at least one equation containing at least one variable whose coefficient is 1. Algebraic solution methods include elimination and substitution.** **The standard is a fluency expectation for grade 8. For more guidance, see Fluency in the Glossary of Verbs Associated with the New York State Next Generation Mathematics Learning Standards.**
	8.EE.8.c Solve real-world and mathematical problems leading to two linear equations in two variables. ~~*For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*~~	NY-8.EE.8.c Solve real-world and mathematical problems **involving systems of two linear equations in two variables with integer coefficients.** **<u>Note</u>: Solving systems algebraically will be limited to at least one equation containing at least one variable whose coefficient is 1.**

FUNCTIONS		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Define, evaluate and compare functions.	**8.F.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. Note: Function notation is not required in Grade 8.	**NY-8.F.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. Notes: Function notation is not required in Grade 8. **The terms domain and range may be introduced at this level; however, these terms are formally introduced in Algebra I (AI-F.IF.1).**
	8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*	**NY-8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). e.g., Given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. Note: Function notation is not required in Grade 8.
	8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; ~~give~~ examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2, 4) and (3, 9), which are not on a straight line.*	**NY-8.F.3** Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line. **Recognize** examples of functions that are linear and not linear. e.g., The function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2, 4) and (3, 9), which are not on a straight line. Note: Function notation is not required in Grade 8.

FUNCTIONS		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Use functions to model relationships between quantities.	**8.F.4** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two *(x, y)* values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	**NY-8.F.4** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x, y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. Note: Function notation is not required in Grade 8.
	8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described ~~verbally.~~	**NY-8.F.5** Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described **in a real-world context.** e.g., where the function is increasing or decreasing or when the function is linear or nonlinear. Note: Function notation is not required in Grade 8.

GEOMETRY		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Understand congruence and similarity using physical models, transparencies or geometry software.	8.G.1 Verify experimentally the properties of rotations, reflections, and translations.	NY-8.G.1 Verify experimentally the properties of rotations, reflections, and translations. **Notes:** **A translation displaces every point in the plane by the same distance (in the same direction) and can be described using a vector.** **A rotation requires knowing the center/point of rotation and the measure/direction of the angle of rotation.** **A line reflection requires a line and the knowledge of perpendicular bisectors.**
	8.G.1.a Lines are ~~taken~~ to lines, and line segments to line segments of the same length.	NY-8.G.1.a **Verify experimentally** lines are **mapped** to lines, and line segments to line segments of the same length.
	8.G.1.b Angles are ~~taken~~ to angles of the same measure.	NY-8.G.1.b **Verify experimentally** angles are **mapped** to angles of the same measure.
	8.G.1.c Parallel lines are ~~taken~~ to parallel lines.	NY-8.G.1.c **Verify experimentally** parallel lines are **mapped** to parallel lines.
	8.G.2 ~~Understand~~ that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that ~~exhibits~~ the congruence between them.	NY-8.G.2 **Know** that a two-dimensional figure is congruent to another if the **corresponding angles are congruent and the corresponding sides are congruent. Equivalently, two two-dimensional figures are congruent if one is the image of the other after a sequence of rotations, reflections, and translations.** Given two congruent figures, describe a sequence that maps the congruence between them **on the coordinate plane.**
	8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	NY-8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. **Note: Lines of reflection are limited to both axes and lines of the form $y = k$ and $x = k$, where k is a constant. Rotations are limited to 90 and 180 degrees about the origin. Unless otherwise specified, rotations are assumed to be counterclockwise.**

GEOMETRY		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Understand congruence and similarity using physical models, transparencies or geometry software.	8.G.4 ~~Understand~~ that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that ~~exhibits~~ the similarity between them.	NY-8.G.4 **Know** that a two-dimensional figure is similar to another if the **corresponding angles are congruent and the corresponding sides are in proportion. Equivalently, two two-dimensional figures are similar if one is the image of the other after a sequence of rotations, reflections, translations, and dilations.** Given two similar two-dimensional figures, describe a sequence that **maps** the similarity between them **on the coordinate plane.** **Note: With dilation, the center and scale factor must be specified.**
	8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*	NY-8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. e.g., Arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so. **Note: This standard does not include formal geometric proof. Multiple representations may be used to demonstrate understanding.**
Understand and apply the Pythagorean Theorem.	8.G.6 ~~Explain~~ a proof of the Pythagorean Theorem and its converse.	NY-8.G.6 **Understand** a proof of the Pythagorean Theorem and its converse.
	8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	NY-8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
	8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	NY-8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.	8.G.9 ~~Know~~ the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	NY-8.G.9 **Given** the formulas for the volume of cones, cylinders, and spheres, solve mathematical and real-world problems.

STATISTICS AND PROBABILITY		
Cluster	Common Core Learning Standard	Next Generation Learning Standard
Investigate patterns of association in bivariate data.	8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	NY-8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
	8.SP.2 ~~Know~~ that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	NY-8.SP.2 **Understand** that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
	8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*	NY-8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. e.g., In a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
	8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*	**STANDARD REMOVED.**