New York State Testing Program
Next Generation Learning Standards
Mathematics Test
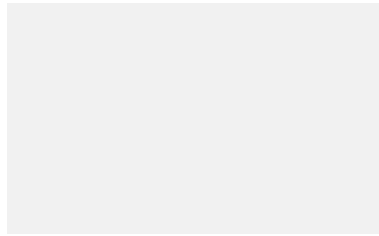
Performance Level Descriptions

Grade

October 2020

Next Generation Learning Standards Grade 8 Mathematics Performance Level Descriptions

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students work with radicals and integer exponents. (NY-8.EE.1-4)	Perform multiplication and division with numbers expressed in scientific and standard decimal form, with and without technology.	Perform multiplication and division with numbers expressed in scientific notation, including problems where both standard decimal form and scientific notation are used. (8.EE.4)	Perform multiplication and division with numbers expressed in scientific notation, without technology.	Perform multiplication with numbers expressed in scientific notation, without technology.
		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. (8.EE.4)		
Students understand the connections between proportional relationships, lines, and linear equation.1 (r)-(th)-3.1n1 (n)-6.2 (s)-7t73(N (s)1n1Y .9	(c n51J0b-7.6 (e)3.1 (s)-7.6 (ci)-1	(e)3 t)2.7 (e) Tc -0.002 (n)-6.1c -0.00	(s)1n1Y .9 (c n51J0b-7.)-3.9 (n)-6.1 (tbEen)-9Eenc	

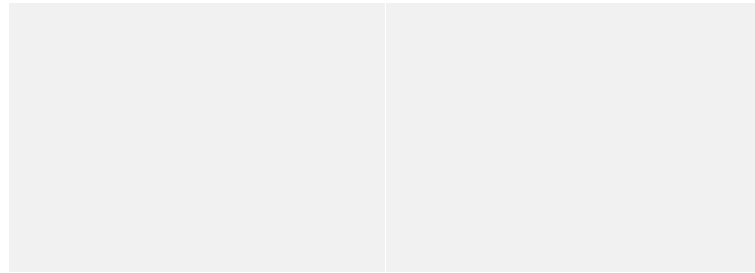| Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students analyze and solve linear equations and pairs of simultaneous linear equations. (NY-8.EE.7-8)		Solve systems of two linear equations in two variables with integer coefficients: graphically, numerically using a table, and algebraically. Solve simple cases by inspection.[‡] (8.EE.8b)	Solve a system of two linear equations in two variables by inspection.	
		Solve real-world and mathematical problems involving systems of two linear equations in two variables with integer coefficients. (8.EE.8c)	Solve mathematical problems involving systems of two linear equations in two variables with integer coefficients.	
Students define, evaluate, and compare functions.[§] (8.F.1-3)	Define a function as a relation that assigns to each element from one set, called the domain, exactly one element of another set, called the range. Know that one-to-one, many-to-one, one-to-many, many-to-many are functions and/or not functions. Know and solve real life applications by using functions.	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.[††] (8.F.1)	Define a function as a rule that assigns to each input exactly one output. Recognize a graph and/or a table of a function as the set of ordered pairs consisting of an input and its corresponding output.	Identify values of x and y for a given function. Identify the graph of a function given a table of values.

[‡] Solving by Inspection is limited to simple cases in Performance Level 3. This standard is a fluency expectation for Grade 8.
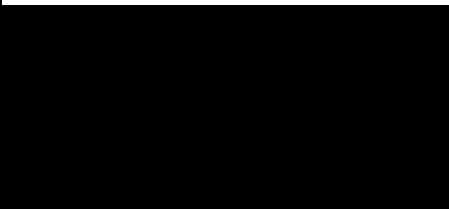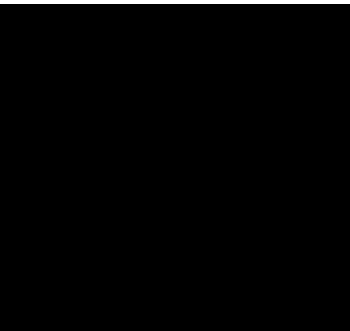
[§] Function notation is not required in Grade 8.

[††] The terms domain and range may be introduced at this level; however, these terms are formally introduced in Algebra I (AI-F.IF.1).

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Use functions to model relationships between quantities. (NY-8.F.4-5)		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. (8.F.5)	Describe attributes of a function by analyzing a graph.	Use a function for a problem context to make qualitative inferences.
Students understand congru(p)-6 -0.9 (ng)	6.1 (95.88 Tm (h)-9.[m2 516.96((n)]0 -1(De)3.1 (t)-3.4m)i)3.1 (t)-3.4l0 Td (t)-3.4(s)-74.9 (l)-0.9 (i)-0.9 (l)-)1.9(q)-6.1(De)3.1 (t)-3.4n ten Detua0.9 mibeDeer			

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students investigate patterns of association in bivariate data. (NY-8.SP.1-3)	Analyze patterns of association between two quantities and use data to make and justify predictions.	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.1)	Describe patterns such as outliers, positive or negative association, linear association, and nonlinear association. Identify a scatter plot from a set of bivariate data.	Identify if an association between two quantities exists.
	Determine the equation for a line of best fit.	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.2)	For scatter plots that suggest a linear association, informally fit a straight line.	Recognize that straight lines can be used on scatter plots to model linear relationships between two quantitative variables. Determine from a graph, which line represents the line of best fit.
	Determine the equation for a line of best fit and use the equation to make and justify predictions.	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. (8.SP.3)	Use the equation of a linear model to solve problems in the context of bivariate measurement data, identifying the slope and intercept.	Identify the slope and intercept.