How to Read the Crosswalk Document

This West Virginia Crosswalk document is designed to help readers easily understand the similarities and differences between the Next Generation (NxG) WV Content Standards and Objectives for Mathematics, which have been aligned with the *Common Core State Standards for Mathematics,* and the current 21st Century Content Standards and Objectives (CSOs) for Mathematics in WV Schools.

Grade Change (△) Next Generation WV Objective – WV 21st Century Objective.

Positive (+) Grade Change – Content moving to higher grade.

Negative (-) Grade Change – Content moving to lower grade

NxG WV State Objective Aligned to CCSS	WV 21st Century Objective	Grade△	Alignment	
	This objective is the currently adopted objective in WV Public Schools.	**+1 Positive Grade change; Content moving to the next higher grade** **0 No change** **-1 Negative Grade change; Content moving to previous or lower grade**	**Index** **3: Excellent** **2: Partial** **1: Weak** **0: No Match**	**The comment section will provide the reader with specific information relevant to the crosswalk between the standards identified. The intent is to provide the reader specific information relevant to any changes in student expectations.**

High School Mathematics--Math 1

How to Read the Crosswalk Document

The West Virginia Crosswalk document is designed to help readers easily understand the similarities and differences between the 21st Century Content Standards and Objectives for English Language Arts and Mathematics in WV Schools and the Next Generation WV Content Standards and Objectives for English Language Arts and Mathematics that have been aligned with the *Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science and Technical Subjects* and the *Common Core State Standards for Mathematics.*

NxG WV State Objective Aligned to CCSS	WV 21st Century Objective	Grade △	Alignment	Comment
M.1HS.RBQ.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.			0	The NxG WV objective stresses unit analysis.
M.1HS.RBQ.2 Define **appropriate quantities** for the purpose of **descriptive modeling**.	**M.O.A1.2.2** create and solve multi-step linear equations, absolute value equations, and linear inequalities in one variable, (with and without technology); apply skills toward solving practical problems such as distance, mixtures or motion and **judge the reasonableness of solutions**.	0	1	The NxG objective requires analyzing the problem situation, as well as judging the reasonableness of the solution.

M.1HS.RBQ.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.			0	The NxG WV objective stresses appropriate levels of accuracy.
M.1HS.RBQ.4 Interpret **expressions that represent a quantity in terms of its context**.* a. Interpret parts of an expression, such as terms, factors, and coefficients. *b.* Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret P (1+r) n as the product of P and a factor not depending on P. (Limit to linear expressions and to exponential expressions with integer exponents.*	**M.O.A1.2.1** formulate **algebraic expressions** for use in equations and inequalities **that** require planning to accurately **model real-world problems**.	0	1	The NxG WV objective stresses interpreting elements of given expressions.
M.1HS.RBQ.5 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from **linear** and quadratic functions, and simple rational and exponential functions. (*Limit to **linear** and exponential equations, and, **in the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs.)***	**M.O.A1.2.2 create and solve multi-step linear equations**, absolute value equations, and **linear inequalities in one variable,** (with and without technology); **apply skills toward solving practical problems** such as distance, mixtures or motion and judge the reasonableness of solutions.	0	2	The NxG WV objective includes exponential functions; however the alignment concerning linear functions is strong.
	M.O.A1.2.15 describe real life situations involving exponential growth and decay equations including $y=2^x$ and $y=(½)^x$; compare the equation with attributes of an associated table and graph to demonstrate an understanding of their interrelationship.	0	1	The NxG WV objective is open-ended in addressing exponential functions.
M.1HS.RBQ.6 Create equations	**M.O.A1.2.5 analyze a given set of**	0	1	The NxG WV objective requires students

in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. (*Limit to linear and exponential equations, and, in the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs.)*	**data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns** and make inferences and predictions based on observing the pattern.			to create and graph linear and exponential equations.
M.1HS.RBQ.7 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. (Limit to linear equations and inequalities.)*	**M.O.A2.2.10** solve and graph the solution set of systems of linear inequalities in two variables by finding the maximum or minimum values of a function over the feasible region using linear programming techniques.	-2	3	There is a strong alignment.
M.1HS.RBQ.8 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R. (Limit to formulas with a linear focus.)*	**M.O.A1.2.3** evaluate data provided, given a real-world situation, select an appropriate literal equation and solve for a needed variable.	0	3	There is a strong alignment.
M.1HS.LER.1 Understand that the **graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane**, often forming a curve (which could be a line). *(Focus on **linear** and exponential equations and be able to adapt and apply that learning to other types of equations in future courses.)*	**M.O.8.2.6 graph linear equations and inequalities within the Cartesian coordinate plane by generating a table of values (with and without technology).**	1	1	The NxG WV objective includes exponential functions and emphasizes the concept of the solution.

M.1HS.LER.2 Explain why **the *x*-coordinates of the points where the graphs of the equations *y = f(x)* and *y = g(x)* intersect are the solutions of the equation *f(x) = g(x)*;** find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where *f(x)* and/or *g(x)* are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.* *(Focus on cases where f(x) and g(x) are linear or exponential.)*	**M.O.A1.2.9** create and **solve systems of linear equations graphically** and numerically using the elimination method and the substitution method, given a real-world situation.	0	1	The NxG WV objective includes exponential functions; its focus is on solving systems by using tables and graphs.
M.1HS.LER.3 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and **graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.**	**M.O.8.2.6 graph linear equations and inequalities within the Cartesian coordinate plane by generating a table of values (with and without technology).**	1	2	The NxG WV objective requires students to solve systems of linear inequalities by graphing.
	M.O.A2.2.10 solve and graph the solution set of systems of linear inequalities in two variables by finding the maximum or minimum values of a function over the feasible region using linear programming techniques.	-2	1	The NxG WV objective requires students to solve systems of linear inequalities by graphing.
M.1HS.LER.4 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f(x)* denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the	**M.O.A2.2.7 define a function** and find its zeros; **express the domain and range** using interval notation; find the inverse of a function; find the value of a function for a given element in its domain; and perform basic operations on functions including composition of functions.	-2	1	The NxG WV objective stresses the meaning of function.

equation $y = f(x)$.				
M.1HS.LER.5 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	**M.O.A2.2.7** define a function and find its zeros; express the domain and range using interval notation; find the inverse of a function; **find the value of a function for a given element in its domain;** and perform basic operations on functions including composition of functions.	-2	1	The NxG WV objective develops the meaning of function in a contextual situation.
M.1HS.LER.6 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by f (0) = f (1) = 1, f (n+1) = f (n) + f (n-1) for n ≥ 1.*	**M.O.A2.2.16 describe and illustrate how patterns and sequences are used to develop recursive** and closed form **equations;** analyze and describe characteristics of each form.	-2	2	The NxG WV objective stresses recursive functions.
M.1HS.LER.7 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.** (*Focus on linear and exponential functions.)*			0	The NxG WV objective stresses identifying key features of a function.
M.1HS.LER.8 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the*			0	The NxG WV objective stresses the relationship of the domain to its graph.

*positive integers would be an appropriate domain for the function.**(*Focus on linear and exponential functions.)*				
M.1HS.LER.9 Calculate and interpret **the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.***(***Focus on linear functions** *and intervals for exponential functions whose domain is a subset of the integers. Mathematics II and III will address other function types. M2.ENS.1 and M2.ENS.2 will need to be referenced here before discussing exponential models with continuous domains.)*	**M.O.A1.2.6determine the slope of a line through a variety of strategies (e.g. given an equation or graph).**	0	1	The NxG WV objective includes exponential functions and stresses understanding slope as the average rate of change.
M.1HS.LER.10 Graph functions expressed symbolically and show key features of the graph, **by hand in simple cases and using technology for more complicated cases*.** a. **Graph linear** and quadratic functions and show intercepts, maxima, and minima. e. **Graph exponential** and logarithmic functions, **showing intercepts** and end behavior, and trigonometric functions, showing period, midline, and amplitude.	**M.O.8.2.6 graph linear equations** and inequalities **within the Cartesian coordinate plane by generating a table of values (with and without technology).**	1	1	The NxG WV objective includes exponential functions and s key features.
	M.O.A1.2.15 describe real life situations involving exponential growth and decay equations including $y=2^x$ and $y=(½)^x$; **compare the equation with attributes of an associated table and graph** to demonstrate an understanding of their interrelationship.	0	1	The NxG WV objective requires student to graph and show key features of an equation and associated table.
M.1HS.LER.11 Compare properties of two functions each represented in a different	**M.O.A1.2.21 use multiple representations, such as words, graphs, tables of values and**	0	1	The NxG WV objective requires students to analyze properties of two functions represented in different ways.

way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	**equations,** to solve practical problems; **describe advantages and disadvantages of the use of each representation.**			
M.1HS.LER.12 Write a function that describes a relationship between two quantities.* a. **Determine an explicit expression**, a recursive process, or steps for calculation **from a context.** *b.* Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	**M.O.A1.2.1 formulate algebraic expressions for use in equations** and inequalities **that require planning to accurately model real-world problems.**	0	2	There is an alignment between part a of the NxG WV objective and the 21C WV objective.
	M.O.A2.2.16 describe and illustrate how patterns and sequences are used to develop recursive and closed form **equations; analyze and describe characteristics of each form.**	-2	1	There is an alignment between part a of the NxG WV objective and the 21C WV objective.
M.1HS.LER.13 Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.* (*Connect arithmetic sequences to linear functions and geometric sequences to exponential functions.)*	**M.O.8.2.7 formulate and apply a rule to generate an arithmetic, geometric and algebraic pattern.**	1	1	The NxG WV objective emphasizes connections between sequences and functions.
M.1HS.LER.14 Identify the effect on the graph of replacing *f(x)* by *f(x) + k, k f(x), f(kx),* and *f(x + k)*	**M.O.A2.2.8 analyze families of functions and their transformations;** recognize linear,	-2	2	The NxG WV objective stresses functions and their transformations.

for specific values of *k* (both positive and negative); find the value of *k* given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	quadratic, radical, absolute value, step, piece-wise, and exponential functions; analyze connections among words, graphs, tables and equations when solving practical problems with and without technology.			
M.1HS.LER.15 Distinguish between situations that can be modeled with linear functions and with exponential functions. a. Prove that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals. **b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.** c. c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	**M.O.A1.2.7 analyze situations and solve problems by determining the equation of a line given a graph of a line,** two points on the line, the slope and a point, or the slope and y intercept.	0	1	There is an alignment between part b of the NxG WV objective and the 21C WV objective.
M.1HS.LER.15 Distinguish between situations that can be modeled with linear functions and with exponential functions. a. Prove that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.	**M.O.A1.2.15 describe real life situations involving exponential growth and decay equations** including $y=2^x$ and $y=(\frac{1}{2})^x$; compare the equation with attributes of an associated table and graph to demonstrate an understanding of their interrelationship.	0	1	There is an alignment between part c of the NxG WV objective and the 21C WV objective.
	M.O.A2.2.8 analyze families of functions and their transformations;	-2	2	The NxG WV objective stresses comparisons between function families.

b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. c. c. **Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.**	**recognize linear,** quadratic, radical, absolute value, step, piece-wise, **and exponential functions; analyze connections among words, graphs, tables and equations when solving practical problems with and without technology.**			
M.1HS.LER.16 Construct linear and exponential **functions,** including arithmetic and geometric sequences, **given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).**	**M.O.A1.2.7** analyze situations and solve problems by **determining the equation of a line given a graph of a line, two points on the line,** the slope and a point, or the slope and y intercept.	0	2	The NxG WV objective addresses both linear and exponential functions.
M.1HS.LER.17 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. *(Limit to comparisons between exponential and linear models.)*			0	The NxG WV objective stresses comparisons between function families.
M.1HS.LER.18 Interpret the parameters in a linear or exponential function in terms of a context.			0	The NxG WV objective stresses the interpretation of parameters.
M.1HS.RWE.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.			0	The NxG WV objective stresses need for a justification of the solution method and each step in the method.

M.1HS.RWE.2 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	**M.O.A1.2.2** create and **solve multi-step linear equations,** absolute value equations, **and linear inequalities in one variable,** (with and without technology); apply skills toward solving practical problems such as distance, mixtures or motion and judge the reasonableness of solutions.	0	2	The NxG WV objective focuses on linear equations and inequalities.
	M.O.A1.2.3 evaluate data provided, given a real-world situation, select an appropriate **literal equation and solve for a needed variable.**	0	2	The NxG WV objective focuses on literal equations.
M.1HS.RWE.3 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	**M.O.A1.2.9** create and **solve systems of linear equations** graphically and numerically **using the elimination method** and the substitution method, given a real-world situation.	0	1	The NxG WV objective emphasizes student understanding of the reasonableness of the solution method.
M.1HS.RWE.4 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	**M.O.A1.2.9** create and solve systems of linear equations graphically and numerically using the elimination method and the substitution method, given a real-world situation.	0	3	There is a strong alignment.
M.1HS.DST.1 Represent data with plots on the real number line (dot plots, **histograms, and box plots).**	**M.O.A1.2.19** gather data to **create histograms, box plots,** scatter plots and normal distribution curves and use them to draw and support conclusions about the data.	0	1	The NxG WV objective stresses representing data graphically.
M.1HS.DST.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.			0	The NxG WV CSO stresses comparing data sets.
M.1HS.DST.3 Interpret differences in shape, center, and spread in the context of the	**M.O.A1.2.19** gather data to create histograms, box plots, scatter plots and normal distribution curves and	0	1	The NxG WV objective is specific about the type of data analysis that is necessary.

data sets, accounting for possible effects of extreme data points (outliers).	**use them to draw and support conclusions about the data.**			
M.1HS.DST.4 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.			0	The NxG WV objective stresses the use of two-way frequency tables.
M.1HS.DST.5 \Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. *a.* **Fit a function to the data; use functions fitted to data to solve problems in the context of the data.** *Use given functions or choose a function suggested by the context. Emphasize linear and exponential models.* b. Informally assess the fit of a function by plotting and analyzing residuals. *(Focus should be on situations for which linear models are appropriate.)* c. c. Fit a linear function for scatter plots that suggest a linear association.	**M.O.A1.2.5 analyze a given set of data and prove the existence of a pattern** numerically, algebraically and **graphically, write equations from the patterns and make inferences and predictions based on observing the pattern.**	0	1	The NxG WV objective specifies representing data on a scatter plot.
M.1HS.DST.5 Represent data on two quantitative variables on a scatter plot, **and describe how the variables are related.** *a.* **Fit a function to the data; use functions**	**M.O.A1.2.17 perform a linear regression (with and without technology),** • **compare and evaluate methods of fitting lines to data.**	0	1	The NxG WV objective also stresses analyzing residuals.

fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear and exponential models.* b. Informally assess the fit of a function by plotting and analyzing residuals. *(Focus should be on situations for which linear models are appropriate.)* **c. c. Fit a linear function for scatter plots that suggest a linear association.**	• **identify the equation for the line of regression,** • examine the correlation coefficient to determine how well the line fits the data • **use the equation to predict specific values of a variable.**			
M.1HS.DST.6 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. (*Build on students' work with linear relationships in eighth grade and introduce the correlation coefficient. The focus here is on the computation and interpretation of the correlation coefficient as a measure of how well the data fit the relationship.)*	**M.O.A1.2.5 analyze a given set of data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns** and make inferences and predictions based on observing the pattern.	0	2	The NxG WV objective interprets the linear model in the context of the problem and introduces the correlation coefficient.
M.1HS.DST.6 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. (*Build on students' work with linear relationships in eighth grade and introduce the correlation coefficient. The focus here is on the computation and interpretation of the correlation coefficient as a measure of how well the data fit*	**M.O.A1.2.17** perform a linear regression (with and without technology), • compare and evaluate methods of fitting lines to data. • identify the equation for the line of regression, • examine the correlation coefficient to determine how well the line fits the data	0	3	There is a strong alignment.

the relationship.)	• use the equation to predict specific values of a variable.			
M.1HS.DST.7 Compute (using technology) and interpret the correlation coefficient of a linear fit.	**M.O.A1.2.1** perform a linear regression (with and without technology), • compare and evaluate methods of fitting lines to data. • identify the equation for the line of regression, • examine the correlation coefficient to determine how well the line fits the data • use the equation to predict specific values of a variable.	0	3	There is a strong alignment.
M.1HS.DST.8 Distinguish between correlation and causation. (*The important distinction between a statistical relationship and a cause-and-effect relationship arises here.)*			0	The NxG WV objective stresses correlation and causation.
M.1HS.CPC.1 Know **precise definitions** of angle, circle, perpendicular line, parallel line, and line segment, based on the **undefined notions** of point, line, distance along a line, and distance around a circular arc.	**M.O.G.3.1** represent geometric figures, such as points, lines, planes, segments, rays, and angles pictorially with proper identification and **distinguish between undefined and defined terms.**	-1	1	The NxG WV objective clearly identifies required vocabulary.
M.1HS.CPC.2 Represent **transformations in the plane** using, e.g., transparencies and geometry software; **describe transformations as functions that take points in the plane as inputs and give other points as outputs.** Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	**M.O.7.3.3 apply rotations, reflections, translations to plane figures and determine the coordinates of its transformation** and compare and contrast the new figure with the original.	2	2	The NxG WV objective stresses comparing transformations that preserve distance and angle to those that do not.
	M.O.G.3.19 create and apply concepts using transformational geometry and laws of symmetry, of a • **reflection,**	-1	3	The NxG WV objective stresses transformations in the coordinate plane.

	• **translation,** • **rotation,** • **glide reflection,** • **dilation of a figure, and develop logical arguments for congruency and similarity.**			
M.1HS.CPC.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	**M.O.G.3.19 create and apply concepts using transformational geometry and laws of symmetry, of a** • **reflection,** • translation, • **rotation,** • glide reflection, • dilation of a figure, and develop logical arguments for congruency and similarity.	-1	1	The NxG WV objective addresses specific quadrilaterals and regular polygons.
M.1HS.CPC.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, **parallel lines**, and line segments.	**M.O.G.3.6 compare and contrast the relationships between angles formed by two lines cut by a transversal when lines are parallel and when they are not parallel, and use the results to develop concepts that will justify parallelism.**	-1	1	The NxG WV objective goes beyond using parallel lines to define transformations.
	M.O.G.3.19create and apply concepts using transformational geometry and laws of symmetry, of a • **reflection,** • **translation,** • **rotation,** • glide reflection, • dilation of a figure, and develop logical arguments for congruency and similarity.	-1	1	The NxG WV objective stresses developing definitions of transformations in terms of geometric figures.
M.1HS.CPC.5 Given a geometric figure and a rotation, reflection, or translation, draw the	**M.O.G.3.19** create and **apply concepts using transformational geometry and laws of symmetry, of**	-1	1	The NxG WV objective stresses specifying a sequence of transformations.

transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	**a** • **reflection,** • **translation,** • **rotation,** • **glide reflection,** • dilation of a figure, **and develop logical arguments for congruency and similarity.**			
M.1HS.CPC.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; **given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.**	**M.O.G.3.19** create and **apply concepts using transformational geometry and laws of symmetry,** of a • reflection, • translation, • rotation, • glide reflection, • dilation of a figure, **and develop logical arguments for congruency and similarity.**	-1	1	The NxG WV objective uses rigid motion transformations to develop congruency.
M.1HS.CPC.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	**M.O.G.3.7 make conjectures and justify congruence relationships with an emphasis on triangles** and employ these relationships to solve problems.	-1	1	The NxG WV objectives emphasize rigid motion transformations.
	M.O.G.3.19 create and **apply concepts using transformational geometry and laws of symmetry,** of a • reflection, • translation, • rotation, • glide reflection, • dilation of a figure**, and develop logical arguments for congruency** and similarity.	-1	1	The NxG WV objective stresses triangle congruency.
M.1HS.CPC.8 Explain how the	**M.O.G.3.7 make conjectures and**	-1	1	The NxG WV objectives emphasize rigid

criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	**justify congruence relationships with an emphasis on triangles** and employ these relationships to solve problems.			motion transformations.
	M.O.G.3.19 create and **apply concepts using transformational geometry** and laws of symmetry, of a • reflection, • translation, • rotation, • glide reflection, • dilation **of a figure, and develop logical arguments for congruency** and similarity.	-1	1	The NxG WV objective stresses triangle congruency.
M.1HS.CPC.9 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). ***Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment;*** *and constructing a line parallel to a given line through a point not on the line.*	**M.O.7.3.1 identify and construct** • **angle-pairs adjacent, complementary, supplementary, vertical** • **congruent segments and angles** • **perpendicular bisectors of segments** • **angle-bisectors.**	2	2	The NxG WV objective requires students to construct a line parallel to a given line.
M.1HS.CPC.10 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.			0	The NxG WV objective stresses specific constructions.
M.1HS.CAG.1 Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a*	**M.O.G.3.17 apply concepts of analytical geometry such as formulas for distance, slope, and midpoint and apply these to finding dimensions of polygons on the coordinate plane.**	-1	2	The NxG WV objective requires students use coordinates to prove geometric theorems.

rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).				
M.1HS.CAG.2 Prove the slope criteria for parallel and perpendicular lines; **use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).**(*Relate work on parallel lines to work on M.1HSRWE.3 involving systems of equations having no solution or infinitely many solutions.)*	**M.O.A2.2.1 determine equations of lines including parallel, perpendicular, vertical and horizontal lines, and compare and contrast the properties of these equations.**	-2	2	The NxG WV objective stresses proof.
M.1HS.CAG.3 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.*(*Provides practice with the distance formula and its connection with the Pythagorean theorem.)*	**M.O.G.3.17** apply concepts of analytical geometry such as formulas for distance, slope, and midpoint and apply these to finding dimensions of polygons on the coordinate plane.	-1	3	There is a strong alignment.