Bonita Unified School District
Integrated Mathematics 1 - Pacing Guide 2016-2017
Updated 1/25/2017
[1]

Days	Textbook Resources	Standards - Breakdown	"I can" statements	CPM and other resources
Unit 1: Quantities and Modeling (11 days plus 5 day bootcamp=16 days) *See TE p. 1E-1F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 1, Teacher Edition Unit 1 Front Matter)*				
5		**Week one review:** School Sites can include a week of a Math Bootcamp/Review. Suggested topics: Day 1: Integers Day 2: Properties: Commutative, Distributive, identity Day 3: Simplifying expressions using integers and properties (distribute and combine terms)/Order of operations Day 4: Fractions (include reciprocal) Day 5: One and two step equations Fundamentals (properties of equalities)	I can review important topics that are foundational to my success in Integrated Math	

[1] ** Indicates a power standard (A standard of high importance and instructional focus)

2	**1.1 Solving Equations**	**A-REI.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.	I can apply and justify properties of algebra to balance an equation.	**(MARS) Solving Equations** **Open-Middle Solving Equation for solution closest to zero DOK2** **(HMH) p. 14 Lesson Performance Task**
~~**1**~~	~~**1.2 Modeling Quantities**~~ **(moved dimensional analysis to module 5)**	~~**N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.~~	~~I can compare units using proportions.~~	
~~**1**~~	~~**1.3 Reporting with Precision and Accuracy**~~**(omitted, can learn in science or mini lesson in exponential functions unit 6)**	**N.Q.3** ~~Choose a level of accuracy appropriate to the limitations on measurement when reporting quantities.~~	~~I can compare precision of measurements.~~	~~**(HMH) p. 38 Lesson Performance Task**~~
1	**2.1 Modeling with Expressions**	**A.SSE-1a** Interpret expressions that represent a quantity in terms of its context.	I can write, analyze and interpret algebraic expressions.	**(CPM) 1.3.1 Questions 1-64 to 1-67 (pages 69/70) **Note this is review of properties of exponents.) (CPM 1.1.1 Team Sort: pages 12 and 93-98** **(HMH) p. 54 Lesson Performance Task**
2	**2.2 Creating and Solving Equations**	**A.CED.1 Create equations and inequalities in one variable ~~including ones with absolute value~~ and use them to solve problems.	I can create equations and inequalities and apply them to solve problems.	**(CPM) 6.1.4 Questions 6-31 through 6-32** **(MARS) Building**

				Equation Task
1	**2.3 Solving for a Variable**	****A.CED.4** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	I can use properties of algebra to solve an equation for different variables.	**(HMH) 2.3 Lesson Performance Task pg. 72 (can be assigned as homework)**
2	**2.4 Creating and Solving Inequalities**	****A.CED.3** 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.	I can write and solve inequalities and interpret the solution set.	**(CPM) 9.1.1 questions 9-1 to 9-4, 9-7 to 9-9 *conceptual intro to inequalities*** **(HMH) 2.4 Lesson Performance Task p.80** **Open-Middle DOK2 Inequality Problem**
2	**2.5 Creating and Solving Compound Inequalities**	****A.CED.1** Create equations and inequalities in one variable ~~**including ones with absolute value**~~ and use them to solve problems.	I can create compound inequalities and solve problems involving them.	**(HMH) Lesson Performance Task 2.5 (p.92)** **(CPM) 9.1.3 questions 9-24 to 9-31 (includes absolute value) Abs Value resource: page 981** **(HMH) p.100 Personal Trainer** Unit Task: Go to my.hrw.com, Teacher Resources, Unit 1, Unit 1 back matter, pg. 4.

1				Unit Test
Unit 2- Understanding Functions (15 days) *See TE p. 101E-101F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 2, Teacher Edition Unit 2 Front Matter)*				
2	**3.1 Graphing Relationships**	****F.IF.4** 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. K*ey features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	I can analyze relationships found in tables and graphs.	**(CPM) lesson 1.1.3 (questions 1-25 to 1-27) (CPM) 1.1.2 parts 1-11 through 1-14 (use resource pages 112 -117 Graphing Stories Template Website for videos Desmos: Carnival https://teacher.desmos.com/carnival**
2	**3.2 Understanding Relations and Functions**	**F.IF.1** 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 equation *y* = *f*(*x*).	I can compare and contrast relations with functions.	**(CPM) 1.2.2 soda machine (questions 1-43 to I-45)** *introduction to functions* **(CPM) 1.1.1 (questions 1-2 to 1-3, 1-4 challenge)1.1.2 Hot Tub** *function machine introduction to input output*
2	**3.3 Modeling with Functions**	**F.IF.2** Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	I can interpret functions using function notation and solve problems involving functions.	**(CPM) 1.2.3 questions (1-53 & I-61)**
2	**3.4 Graphing Functions**	**F.IF.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each	I can determine if a relation is a function from a set of values, table, map, graph or	**(CPM) lesson 1.2.3 (1-52, I-54 to I-58)**

		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 equation *y* = *f*(*x*).	scenario.	(MARS) Representing Functions in Everyday Situations Graphing Functions 98 situations)
2	**4.1 Identifying and Graphing Sequences**	F.IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	I can analyze sequences as functions.	(CPM) 5.2.1 **(Questions 5-41 to 5-42, 5-44)** Editable Version of CPM 5.2.1 **(HMH) Lesson Performance Task p. 164**
2	**4.2 Constructing Arithmetic Sequences**	F.LE.2 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).	I can analyze sequences identify and write arithmetic sequences.	(HMH) Lesson Performance Task p.174
2	**4.3 Modeling with Arithmetic Sequences**	F.BF.1a Determine an explicit expression, a recursive process, or steps for calculation from a context.	I can recognize arithmetic sequences from contexts and write expressions.	Desmos Carnival Part Deux: Culminating
1	**Unit Performance Task**			**(HMH) Interior Design p.194** **Polygraph Functions** https://teacher.desmos.com/polygraph/custom/57d9ae23c9520d090a056b97
Unit 3: Linear Functions, Equations, and Inequalities (26 days) *See TE p. 195E-195F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 3, Teacher Edition Unit 3 Front Matter)*				
2	**5.1 Understanding**	**F.LE.1b Recognize situations in	I can recognize a linear	(CPM) 2.1.1 (Questions

	Linear Functions	which one quantity changes at a constant rate per unit interval relative to another.	functions in contexts by analyzing constant rates of change.	**2-1 through 2-5)** **Filling a Pool Task** **Draining a Pool Task** **(HMH) Lesson Performance Task p.210** *Print page from online student edition so students can graph.* *Desmos Linear Bundle: 7 activities for the unit*
2	**5.2 Using Intercepts**	****F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima.	I can graph and interpret characteristics of linear functions.	**(HMH) Lesson Performance Task p. 220 Question A & extension activity** **Desmos: Lines and Intercepts** **Y-intercept Story**
3	**5.3 Interpreting Rate of Change and Slope**	****F.IF.6** 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.	I can calculate slopes of lines symbolically, visually or in a table and interpret the meaning in contexts.	**(CPM) 2.1.2 (Questions 2.11 through 2.17)** **(CPM) 2.1.3 (Questions 2-23 through 2-28)** **(HMH) p. 231 #25 and Lesson Performance Task p. 232** **Slope Story** **Reason&Wonder Desmos Slope Activty** **Open-Middle Slope DOK 2** **WARM UP**

				Open-Middle Comparing slopes of lines DOK3-(20 min task) Desmos: Point on the Line: SLOPE!
3	**6.1 Slope-Intercept Form**	**F.IF.7a Graph linear and quadratic functions and show intercepts, maxima, and minima.	I can graph and interpret characteristics of linear functions.	(CPM) 2.1.4 **(Questions 2-35 through 2-38)** (CPM) 2.2.2 Questions 2-52 through 2-54) (CPM) 2.2.3 Questions 2-68 through 2-70) Open Middle Short Task: Slope Intercept Form Desmos: Slope Intercept Form Miles to Your Destination
2	**6.2 Point-Slope Form**	A.REI.10 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).	I can understand the relationship between the graph of an equation and the ordered pairs that satisfy the equation.	(CPM) 2.3.1 **Questions 2-87** (CPM) 2.3.2 **questions 2-99 through 2-100**
2	**6.3 Standard Form**	**A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	I can identify patterns in standard form equations and compare them to slope intercept form and identify the usefulness of each.	**(HMH) p. 268 Lesson Performance Task** Open-Middle Standard Form & x/y-intercepts question DOK 2 Open-Middle Standard Form and Slope and Y-intercept Desmos: Discovering

				Standard Form Powerpoint Standard Form w/ Application
2	**6.4 Transforming Linear Functions**	**F.BF.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$ and $f(x + k)$ 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.*	I can experiment with transformations of linear functions and their graphs and look for patterns within the relationships.	**(CPM) 6.1.1 Questions 6-2 and 6-3** **(HMH) p. 280 Lesson Performance Task** Desmos: Match My Line Desmos: Marbleslides**!**
2	**6.5 Comparing Properties of Linear Functions**	**F.IF.9 Compare properties of two functions each represented in a different 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.*	I can analyze and compare properties of linear functions from their tables, equations, graphs and contexts.	**(CPM) Resource Page 245 use throughout function families.** **(HMH) p. 294 Lesson Performance Task** **(HMH) p. 296 Module Performance Task** Practice Problems: Linear Functions Open middle Writing Linear Equation from a Table DOK 3 Problem Canoe Task Break Even Task
2	**7.1 Modeling Linear Relationships**	**A.CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and	I can model linear functions and inequalities and interpret values as solutions	**(HMH) p.308 Lesson Performance Task** **(CPM) 6.1.3 Questions**

		interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional cost constraints on combinations of different foods.*	from scenarios..	**6-21 through 6-23** **(CPM) 6.1.3 Google Slides** **Dan Meyer Linear Task: 25B Apps** **Charge! Battery Life Task** **Culminating Activity** **Desmos: Linear Polygraph** **Cellular Phone Task**
2	**7.2 Using Functions to Solve One-Variable Equations**	**A.REI.11** 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.	I can explain how equal x-coordinates relate to solutions of functions.	**(HMH) p. 322 Lesson Performance Task**
2	**7.3 Linear Inequalities in Two Variables**	**A.REI.12** 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.	I can graph and interpret the solution set of a system of linear inequalities.	**(CPM) 9.2.1 Questions 9-40 through 9-43** **Desmos: Graphing Inequalities** **(HMH) p. 334 Lesson Performance Task**
1	**Unit Performance Task**			**Robert Kaplinsky In N Out Task** **Problem Based Learning Template** **Linear or Not? Task**

				(HMH) p. 341 #10, 11 (mini tasks) and p.342 Math in Careers
District Benchmark Window November 29-December 13:Units 1-3				
Unit 5: Linear Systems (12 days) *See TE p. 475E-475F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 5, Teacher Edition Unit 5 Front Matter)*				
2	**11.1 Solving Linear Systems by Graphing**	****A.REI.6** Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	I can solve a system of equations and interpret the solution graphically.	**(HMH) p. 490 Lesson Performance Task** **(CPM) 6.2.1 (6-44 through 6-48-Equal values method)** **(CPM) 6.2.3 Questions 6-67(use resource page 717)** **Desmos Bundle: 6 Activities** **Mars Task: Classifying solutions to systems of equations** **Exploration Systems NY** **Desmos Polygraph Exploration** **Lowes Versus Home Depot Task** **Babysitting Task**
2	**11.2 Solving Linear Systems by**	****A.REI.6** Solve systems of linear equations exactly and approximately	I can solve a system of equation using the	**Candle Problem** **(HMH) p. 502 Lesson**

	Substitution	(e.g., with graphs), focusing on pairs of linear equations in two variables.	substitution method.	**Performance Task (CPM) 6.2.2 Questions 6-55 through 6-60**
1	**11.3 Solving Linear Systems by Adding or Subtracting**	****A.REI.6** Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	I can solve a system of linear equations using linear combination and interpret the solution.	**(HMH) p. 514 Lesson Performance Task & extension activity (CPM) 6.3.1 Questions 6-79 through 6-83 Desmos Elimination Desmos: Elimination Method**
1	**11.4 Solving Linear Systems by Multiplying First**	**A.REI.5** 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.	I can solve a system of linear equations using linear combination and multiplication.	**(HMH) p. 526 Lesson Performance Task** **Open-Middle Given an equation & solution, find another equation DOK 2** **Elimination Lesson with investigation & guided practice**
1	***Performance Task**			**Desmos Card Sort: 3 methods (HMH) p. 528 Module Performance Task (CPM) Resource pages 676, 689 and 695 (CPM) 6.3.3 Questions 6-101 through 6-105**
2	**12.1 Creating Systems of Linear**	****A.CED.3** Represent constraints by equations or inequalities, and by systems	I can represent and interpret solutions of	**(HMH) TE p. 546 Lesson Performance Task &**

	Equations	of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional cost constraints on combinations of different foods.*	systems of linear inequalities from situations.	**Extension Activity (SE p.442)** **Desmos Systems: Playing Catch up** **Kaplinsky Hybrid Car Pays for itself? task**
2	**12.2 Graphing Systems of Linear Inequalities**	**A.REI.12** 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.	I can represent solutions to systems of linear inequalities graphically.	**(CPM) 9.3.1 Questions 9-65 and 9-66** **(HMH) p. 556 Lesson Performance Task & Extension Activity** **Desmos Polygraph Systems of Lin Inequalities** **Graphing Systems of Lin Inequalities MARS Task**
1	**12.3 Modeling with Linear Systems**	****A.CED.3** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional cost constraints on combinations of different foods.*	I can represent systems of linear inequalities from scenarios and interpret the solution set.	**(HMH) p. 570 Lesson Performance Task & Extension Activity** **(HMH) p. 572 Module Performance Task** **Desmos:Systems: Gym Membership**
~~**1.5**~~	~~**13.1 Understanding Piece-wise Defined Functions**~~	**F.IF.7b** ~~Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.~~	~~I can represent piece-wise functions graphically and compare them to other functions.~~	~~**(HMH) p. 588 Lesson Performance Task**~~

~~1.5~~	~~13.2 Absolute Value Functions and Transformations~~	~~F.IF.7b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.~~	~~I can represent absolute value functions functions and compare them to other functions.~~	~~(HMH) p. 600 Lesson Performance Task~~ ~~Desmos: Absolute Value Equations~~
~~1.5~~	~~13.3 Solving Absolute Value Equations~~	~~A.REI.3.1 (A.CED.1, A.RE.11) Solve one-variable equations and inequalities involving absolute value, graphing the the solutions and interpreting them in context.~~	~~I can solve equations involving absolute value and interpret the meaning of the solution (s) in context.~~	~~Fawn Nguyen Blog on Teaching Absolute Value Equations and Inequalities for Conceptual Understanding~~ ~~Open-Middle Absolute Value Equation DOK 2 Problem~~
~~1.5~~	~~13.4 Solving Absolute Value Inequalities~~	~~A.REI.3.1 (A.CED.1, A.RE.11) Solve one-variable equations and inequalities involving absolute value, graphing the the solutions and interpreting them in context.~~	~~I can solve equations involving absolute value and interpret the meaning of the solution (s) in context.~~	~~Fawn Nguyen Blog on Teaching Absolute Value Equations and Inequalities for Conceptual Understanding~~ ~~(CPM) 9.1.3 Questions 9-24 through 9-31~~ ~~(HMH) p. 624 Lesson Performance Task~~
~~1~~	~~*Performance Task~~			~~(HMH) p. 626 Module Performance Task & p. 632 Math in Careers~~
Unit 7: Transformations and Congruence (21 days) *See TE p. 771E-771F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 7, Teacher Edition Unit 7 Front Matter)* *Geometry Lab*				
4	**16.1 Segment Length and Midpoints**	**G.CO.1 Know precise definitions of angle, circle, perpendicular line, parallel	I can describe, define, compare and contrast	(CPM) 7.2.2 Questions 7-95 & 7-96

		line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	geometric terms such as angle, circle, perpendicular line, parallel line and line segment.	**(HMH) TE p. 788 SE p. 624 Lesson Performance Task DOK 2** **(** **Open-Middle: Equidistant Points** **Card Sort** **3 Act Task:Midpoint** **WODB-Warm Up** **16.1 Study Blue Vocab**
1	**16.2 Angle Measure and Angle Bisectors**	**G.CO.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.	I can construct an angle bisector using tools and measure and classify angles.	**(HMH) p. 800 Lesson Performance Task** *(requires constructions)* **CPM) 11.1.1 Questions 11-1 and 11-2** **(CPM) 11.1.2 Questions 11-13 through 11-14** **StudyBlue Vocab 16.2**
2	**16.3 Representing and Describing Transformations**	**G.CO.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).	I can describe transformations and analyze patterns associated with x and y values as a function.	**(HMH) p. 814 Lesson Performance Task** **(CPM) 3.1.1 Questions 3-1 through 3-6** **Fawn Nguyen Blog on Rigid Transformations** **Mathematics Vision Project: Developing Understanding Rotations, Reflections, Translations**
1	**16.4 Reasoning and Proof**	**G.CO.9** ~~Prove theorems~~ about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior*	I can reason with geometric theorems using proofs.	**StudyBlue 16.4 Vocab**

		angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.		
1	***Performance Task**			**(HMH) p. 828 Module Performance Task**
2	**17.1 Translations**	****G.CO.4** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	I can make inferences to develop the definition of a translation.	**(CPM) 3.1.4 Questions 3-42** **Desmos: Translations Exploration** **Desmos: Polygraph Translations** **HMH Textbook SE p.839 pdf**
2	**17.2 Reflections**	****G.CO.4** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	I can make inferences to develop the definition of a reflection.	**(CPM) 3.1.4 Questions 3-40** **(CPM) 3.1.2 Double Reflections: Questions 3-14 through 3-15** **Desmos: Reflections Exploration** **HMH Textbook SE p.851 pdf**
2	**17.3 Rotations**	****G.CO.4** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	I can make inferences to develop the definition of a rotation.	**(CPM) 3.1.4 Questions 3-38 through 3-39** **HMH Textbook SE p.864 pdf**
1	**17.4 Investigating Symmetry**	****G.CO.3** Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	I can investigate the idea of symmetry,	**(CPM) 3.1.6 Questions 3-61 through 3-65** **Desmos Symmetry** **(HMH) p. 878 Lesson**

				Performance Task **HMH Textbook SE p.876 pdf**
2	**18.1 Sequences of Transformations**	****G.CO.5** Given a geometric figure and a rotation, reflection, or translation, draw the 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.	I can apply geometric transformations to problem solve.	**Mars Task: Translations, Rotations, Reflections** **(HMH) p. 896 Lesson Performance Task** **Desmos Polygraph: transformations** **Carousel Activity Multiple Transformations Worksheet** **Carousel Activity Explanation Video** **hmh 18.1 Textbook SE pdf**
1	**18.2 Proving Figures are Congruent Using Rigid Motions**	****G.CO.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.	I can reason with congruency and relate it to transformations.	**(HMH) p. 908 Lesson Performance Task** **hmh 18.2 Textbook SE pdf**
1	**18.3 Corresponding Parts of Congruent Figures are Congruent**	****G.CO.7** Use the definitions 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.	I can use transformations to determine congruency of figures.	**hmh 18.3 Textbook SE pdf**

1	***Performance Task**			**(HMH) p. 927 Performance Task #10** **(HMH) p. 880 Module Performance Task**
Unit 8: Lines, Angles, and Triangles (15 days) *See TE p. 929E-929F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 8, Teacher Edition Unit 8 Front Matter)*				
1	**19.1 Angles Formed by Intersecting Lines**	**G.CO.9** ~~Prove theorems~~ about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*	I can use reasoning to prove theorems about lines and angles. (vertical angles, supplementary, complementary angles)	**(CPM) 11.1.3 Questions 11-26** Systems with a transversals task.
1	**19.2 Transversals and Parallel Lines**	**G.CO.9** ~~Prove theorems~~ about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*	I can apply reasoning to vertical angles, complementary, supplementary, straight angles and linear pairs. (Don't do proofs, but the vocabulary for angles formed by parallel lines cut by a transversal is an 8th grade standard. Review this vocabulary and do application problems only.)	**(HMH) P. 964 Lesson Performance Task & Extension Activity**
1	~~**19.3 Proving Lines are Parallel**~~ **Shmoop Video**	**G.CO.9** ~~Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a*~~	~~I can apply reasoning to transversals and angles creating while applying ideas of systems of linear equations.~~	

		~~*perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*~~		
~~1~~	~~**19.4 Perpendicular Lines**~~ ~~**Shmoop Video**~~	~~G.CO.9 Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*~~	~~I can use reasoning to prove theorems about lines and angles.~~	
2	**19.5 Equations of Parallel and Perpendicular Lines**	G.GPE.5 Prove the slope criteria for parallel and perpendicular lines and 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).	I can prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.	(CPM) 3.1.3 Questions 3-25 through 3-29 **(HMH) p. 982 Lesson Performance Task & Extension Activity**
1	**20.1 Exploring What Makes Triangles Congruent**	G.CO.7 Use the definitions 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.	I can analyze side and angle relationships between congruent triangles to explore congruency.	**(CPM) 7.1.1 Questions 7-1 through 7-5** **(HMH) p. 1000 Lesson Performance Task & Extension Activity**
2	**20.2 ASA Triangle Congruence**	G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow the definition of congruence in terms of rigid motions.	I can analyze side and angle relationships between congruent triangles to explore congruency.	**(CPM) 7.1.3 Questions 7-31 through 7-34** (CPM) 7.1.6 **(HMH) p. 1014 Lesson Performance Task**
1	**20.3 SAS Triangle Congruence**	G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow the definition of congruence in terms of rigid motions.	I can analyze side and angle relationships between congruent triangles to explore congruency.	**(CPM) 7.1.4 Questions 7-42 through 7-45** **(HMH) p. 1024 Lesson Performance Task**

1	**20.4 SSS Triangle Congruence**	G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow the definition of congruence in terms of rigid motions.	I can analyze side and angle relationships between congruent triangles to explore congruency.	**(CPM) 7.1.6 Questions 7-65 through 7-67**
1	**21.2 AAS Triangle Congruence**	G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	I can prove relationships between congruency and similarity of triangles.	**(CPM) 7.1.5 Questions 7-52 through 7-57** **(HMH) p. 1064 Lesson Performance Task**
1	**21.3 HL Triangle Congruence**	G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	I can prove relationships between congruency and similarity of triangles.	**(CPM) 7.1.7 Questions 7-74 through 7-77** **Use Resource page 790** **(HMH) p. 1074 Lesson Performance Task** **(HMH) p.1078 Module Performance Task**
1	**22.1 Interior and Exterior Angles**	G.CO.10 Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*	I can prove theorems about triangles involving angles.	**(HMH) p. 1096 Lesson Performance Task** **(CPM) 7.1.2 Questions 7-12 through 7-17**
2	**21.1 Justifying Constructions**	G.CO.12 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,*	I can create geometric constructions with various tools. The remaining constructions of G.CO.12 are :*constructing perpendicular lines, including the perpendicular bisector of a line segment; and*	**(CPM) 11.1.1 Questions 11-1 through 11-3**

		including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	*constructing a line parallel to a given line through a point not on the line.*	
~~1~~	~~**22.2 Isosceles and Equilateral Triangles**~~	~~G.CO.10 Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*~~	~~I can prove theorems about triangles involving triangles.~~	~~**(HMH) p. 1110 Lesson Performance Task**~~
~~1~~	~~**22.3 Triangle Inequalities**~~	~~G.GMD.6 Verify experimentally that in a triangle, angles opposite longer sides are larger, sides opposite larger angles are longer, and the sum of any two side lengths is greater than the remaining side length; apply these relationships to solve real- world and mathematical problems.~~	~~I can use experiment and verify relationships between angles and sides of triangles.~~	~~**(HMH) p. 1122 Lesson Performance Task**~~
~~1~~	~~**23.1 Perpendicular Bisectors of Triangles**~~	~~G.C.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.~~	~~I can construct perpendicular bisectors of triangles.~~	
~~1~~	~~**23.2 Angle Bisectors of Triangles**~~	~~G.C.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.~~	~~I can construct perpendicular bisectors of triangles.~~	~~**(HMH) p. 1150 Lesson Performance Task & Extension Activity**~~
~~1~~	~~**23.3 Medians and Altitudes of Triangles**~~	~~G.CO.10 Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the~~	~~I can prove theorems about triangles as they relate to medians and altitudes.~~	~~**(HMH) p. 1164 Lesson Performance Task**~~

		~~*third side and half the length; the medians of a triangle meet at a point.*~~		
~~**1**~~	~~**23.4 Midsegments of Triangles**~~	~~G.CO.10~~Prove theorems about triangles. ~~*Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*~~	~~I can prove theorems about triangles as they relate to midsegments of triangles.~~	~~**CPM 7.2.2 question 7-93 & 7-94**~~ ~~**(HMH) p. 1174 Lesson Performance Task**~~
Unit 6: Exponential Relationships (16 days) *See TE p. 633E-633F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 6, Teacher Edition Unit 6 Front Matter)*				
1	**14.1 Understanding Geometric Sequences**	F.LE.2 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).	I can construct geometric sequences given a graph, table and/or description of a relationship. .	**(CPM) Section 5.1.1 (questions 5-1 to 5-4)** *Intro to geometric sequences* **(HMH) p. 648 Lesson Performance Task** **(CPM) 5.2.2 (Questions 5-57 to 5-62)**
2	**14.2 Constructing Geometric Sequences**	F.BF.1a (also F.LE.2) Determine an explicit expression, a recursive process, or steps for calculation from a context.	I can write a geometric rule for a sequence and compare recursive and explicit sequences.	**(HMH) p. 662 Lesson Performance Task DOK 1** **(CPM) 5.3.1 (Questions 5-83)** **Open-Middle Arithmetic/Geometric Sequence DOK 2 Problem**
1	**14.3 Constructing Exponential**	****F.LE.2** Construct linear and exponential functions, including	I can write rules for exponential functions given	**(HMH) p. 676 Lesson Performance Task**

	Functions	arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	tables, graphs and scenarios.	**(CPM) 8.1.1 Questions 8-1 through 8-3**
3	**14.4 Graphing Exponential Functions**	****F.IF.7e** (note log and trig functions are Integrated 2) Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	I can graph exponential graphs and identify characteristics of the graphs and compare them to other relationships.	**(HMH) p. 690 Lesson Performance Task DOK 1** **(CPM) 8.1.3 Questions 8-32 through 8-33** **(CPM) 8.1.4 8-54 through 8-55**
1	**14.5 Transforming Exponential Functions**	****F.BF.3** Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$ and $f(x + k)$ 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.*	I can experiment with and describe how adding a constant to the function changes an exponential graph and equation.	**(HMH) p. 702TE pg 552SE Lesson Performance Task**
1	***Performance Task**			**(CPM) 5.1.3 Bouncing Ball and Exponential Decay (Questions 5-28 to 5-34) And/Or** **(CPM) 8.1.6 Questions 8-77 through 8-81**
2	**15.1 Using Graphs and Properties to Solve Equations with Exponents**	****A.CED.1** 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.*	I can use a graph of an equation to solve problems involving exponential relationships.	**(HMH) p. 720 Lesson Performance Task** **(CPM) 11.2.2 Questions 11-56 through 11-60**
2	**15.2 Modeling**	**F.IF.7e** (note log and trig functions are	I can experiment with and	**(HMH) p. 734 Lesson**

	Exponential Growth and Decay	Integrated 2) Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	create graphs of exponential functions and compare their features to other relationships.	**Performance Task** **(CPM) 8.2.3 8-115**
1	**15.3 Using Exponential Regression Models**	**S.ID.6a** 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, quadratic, and exponential models.*	I can evaluate data and fit it to an exponential regression model.	**(HMH) p. 748 Lesson Performance Task** *(will need technology to complete)* **(CPM) 8.2.1 Questions 8-90 and 8-91** **(CPM) 8.2.2 Questions 8-103 through 8-104**
1	**15.4 Comparing Linear and Exponential Models**	****F.LE.1c** Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	I can compare linear with exponential models.	**(HMH) p. 762 Lesson Performance Task** **(CPM) 11.2.6 Questions 11-113 through 11-114**
1	***Performance Task**			**(HMH) p. 764 Module Performance Task** **(CPM) 11.2.6 Questions 11-115 through 11-116**
Unit 4 Statistical Models (10 days) *See TE p. 343E-343F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 4, Teacher Edition Unit 4 Front Matter)*				
1	**8.1 Two-Way Frequency Tables**	**S.ID.5** 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.	I can compare quantitative data to categorical data.	**(CPM) 10.1.1 Questions 10-1 through 10-4)** **Resource Page 1044** **(HMH) p. 357 H.O.T. problems #25, 26 and p. 358 Lesson Performance Task**

1	**8.2 Relative Frequency**	S.ID.5 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.	I can summarize and interpret data from two-way tables and analyze their frequencies.	**(CPM) 10.1.1 Questions 10-5 through 10-7) (HMH) p. 370 Lesson Performance Task & p. 372 Module Performance Task**
2	**9.1 Measures of Center and Spread**	S.ID.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.	I can compare measures of center with measures of spread.	**(CPM) 10.1.3 Parts 10-40 through 10-42. Resource page 1054, 1066 and 1077 (HMH) p.387 H.O.T. questions 24-27 & p. 388 Lesson Performance Task**
1	**9.2 Data Distributions and Outliers**	S.ID.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).	I can represent data with appropriate graphs.	**(HMH) p.400 Lesson Performance Task**
1	**9.3 Histograms and Box Plots**	S.ID.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.	I can visually compare data characteristics using graphs.	**(HMH) p.416 Lesson Performance Task**
~~0~~	**~~9.4 Normal Distribution~~**	**~~S.ID.2~~ (Note: this lesson was omitted due to an absence of the topic in S.ID.2)**		**~~(HMH) p. 427 HOT #23-24 p.428 Lesson Performance Task~~**
1.5	**10.1 Scatter Plots and Trend Lines**	****S.ID.6c** Fit a linear function for a scatter plot that suggests a linear association.	I can create a line to best model a linear relationship and use it to make predictions.	**(CPM) 4.1.2 Questions 4-10 through 4-12 pg 177 Handout (HMH) p.449-450 Lesson Performance Task & Extension Activity**
1.5	**10.2 Fitting a Linear**	****S.ID.6b** Fit a linear function for a	I can create a line to best	**(HMH) p.466 Lesson**

	Model to Data	scatter plot that suggests a linear association.	model a linear relationship and use it to make predictions.	**Performance Task & Extension Activity** **Desmos: Lego Prices** **Barbie Bungee**
1	***Performance Task**			**(TOSA folder) US Presidents Age Statistics Task**
Unit 9: Quadrilaterals and Coordinate Proof (12 days) *See TE p. 1185E-1185F for Math Background (Go to my.hrw.com, Teacher Resources, Unit 9, Teacher Edition Unit 9 Front Matter)*				
2	**24.1 Properties of Parallelograms**	**G.CO.11** ~~Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*~~	~~I can prove theorems about parallelograms using their properties.~~	**(CPM) 7.2.1 Questions 7-84 through 7-86** **CPM 7.2.2 question 7-93 & 7-94**
1	**24.2 Conditions of Parallelograms**	**G.CO.11** ~~Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*~~	~~I can prove theorems about parallelograms.~~	**(CPM) 7.2.3 Questions 7-105**
~~**1**~~	~~**24.3 Properties of Rectangles, Rhombuses, and Squares**~~	**G.CO.11** ~~Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and*	~~I can prove theorems about parallelograms using their properties.~~	~~**(HMH) p. 1228 Lesson Performance Task**~~

		~~*conversely, rectangles are parallelograms with congruent diagonals.*~~		
~~**1**~~	~~**24.4 Conditions for Rectangles, Rhombuses, and Squares**~~	~~G.CO.11 Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*~~	~~I can prove theorems about parallelograms using their properties.~~	~~**(HMH) p. 1240 Lesson Performance Task**~~
~~**1**~~	~~**24.5 Properties and Conditions for Kites and Trapezoids**~~	~~G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.~~	~~I can use congruence and similarity criteria to problem solve and prove relationships in geometric figures.~~	~~**(HMH) p. 1256 Lesson Performance Task**~~
1	**25.1 Slope and Parallel Lines**	G.GPE.5 Prove the slope criteria for parallel and perpendicular lines and 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).	I can prove the slope criteria for parallel and perpendicular lines to problem solve.	**(HMH) p. 1278 Lesson Performance Task & Extension Activity Mathematics Vision Project Task :8.2 Slippery Slopes – A Solidify Understanding Task**
1	**25.2 Slope and Perpendicular Lines**	G.GPE.5 Prove the slope criteria for parallel and perpendicular lines and 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).	I can prove the slope criteria for parallel and perpendicular lines to problem solve.	**(HMH) p. 1290 Lesson Performance Task**
1	**25.3 Coordinate Proof Using Distance with Segments and Triangles**	G.GPE.4 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 rectangle; prove or*	I can use coordinates to prove simple geometric theorems algebraically.	**(HMH) p. 1306 Lesson Performance Task Mathematics Vision Project Task : 8.3 Prove It! – A Practice Understanding Task**

		disprove that the point $(1, \sqrt{3})$ *lies on the circle centered at the origin and containing the point (0, 2).*		**CPM 7.2.2**
~~**1**~~	~~**25.4 Coordinate Proof Using Distance with Quadrilaterals**~~	~~G.CO.11 Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*~~	~~I can prove theorems about parallelograms using coordinate proofs and distance with quadrilaterals.~~	
1	**25.5 Perimeter and Area on the Coordinate Plane**	G.GPE.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.	I can use coordinates to compute perimeters of polygons and areas of triangles and rectangles using the distance formula.	**(HMH) p. 1334 Lesson Performance Task & Extension Activity Mathematics Vision Project Task (8.1 "Go the Distance"**
4	**Constructions inscribed in a circle**	G.CO.13	I can construct an equilateral triangle, square and regular hexagon in a circle.	**Enagage NY: Trainalges Engage NY: Squares Illustrative Math: Squares Illustrative Math: Hexagons Illustrative Math: Triangles**
1	**1.2 Modeling Quantities (moved dimensional analysis from module 1)**	N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.	I can compare units using proportions.	**(CPM) 2.2.4 (Questions 2-76 through 2-80)** *P.209 unit conversion table*