

**Secondary Mathematics 2 Honors
Curriculum Map 2014-2015**

<i>Lesson</i>	<i>Topic</i> <i>PB refers to Pearson Book</i> <i>NG refers to Note Guide</i>	<i>Objective</i>	<i>Common Core Standards</i>
PB Chapter 6: Reasoning and Proof			
1	PB 6.1 Reasoning in Algebra and Geometry	Connect reasoning in algebra and geometry.	Prepares for G.CO.9, G.CO.10, G.CO.11
2	PB 6.2 Proving Angles Congruent	Prove and apply theorems about angles.	G.CO.9
3	PB 6.3 Lines and Angles	Identify angles formed by two lines and a transversal.	Prepares for G.CO.9
	PB 6.4 Properties of Parallel Lines	Prove theorems about parallel lines; to use properties of parallel lines to find angle measures.	G.CO.9
	PB 6.5 Proving Lines Parallel	Determine whether two lines are parallel.	G.CO.9
4	PB 6.6 Parallel and Perpendicular Lines	Relate parallel and perpendicular lines.	G.CO.9
	Nat. PB 2.5 Parallel Lines and Triangles (Missing from Utah PB)	Use parallel lines to prove theorems about triangles; To find measures of angles of a triangle.	G.CO.9, G.CO.10
	Review Chapter 6		
PB Chapter 7: Congruent Triangles			
1	PB 7.1 Congruent Figures	Recognize congruent figures and their corresponding parts.	G. SRT.5
	PB 7.2 Triangle Congruence by SSS and SAS	Prove two triangles congruent using the SSS and SAS Postulates.	G. SRT.5
	PB 7.3 Triangle Congruence by ASA and AAS	Prove two triangles congruent using the ASA and AAS Postulates.	G. SRT.5
2	PB 7.4 Using Corresponding Parts of Congruent Triangles	Use triangle congruence and corresponding parts of congruent triangles to prove that parts of two triangles are congruent.	G. SRT.5
	PB 7.5 Isosceles and Equilateral Triangles	Use and apply properties of isosceles and equilateral triangles.	G.CO.10, G. SRT.5
	PB 7.6 Congruence in Right Triangles	Prove right triangles congruent using the Hypotenuse-Leg Theorem.	G.CO.10
3	PB 7.7 Congruence in Overlapping Triangles	Prove two triangles congruent using other congruent triangles.	G.CO.10
	PB 7.8 Congruence Transformations	Identify congruence transformations; to prove triangle congruence using isometries.	G. SRT.5
PB Chapter 8: Proving Theorems About Triangles			
4	PB 8.1 Midsegments of Triangles	Use properties of midsegments to solve problems.	G.CO.10, G. SRT.5
	PB 8.2 Perpendicular and Angle Bisectors	Use properties of perpendicular and angle bisectors.	G.CO.9, G. CO.12, G.SRT.5
5	PB 8.3 Bisectors in Triangles	Identify properties of perpendicular bisectors and angle bisectors. Construct inscribed and circumscribed circles.	G.CO.10, G.C.3
	PB 8.4 Medians and Altitudes	Identify properties of medians and altitudes of a triangle.	G.CO.10, G. SRT.5
6	Review Chapters 7-8		

PB Chapter 9: Proving Theorems about Quadrilaterals			
1	PB 9.1 The Polygon Angle-Sum Theorem	Find the sum of the measures of the interior and exterior angles of a polygon.	G.CO.9, G. SRT.5
	PB 9.2 Properties of Parallelograms	Use relationships among sides, angles, and diagonals of parallelograms.	G.CO.11, G. SRT.5
	PB 9.3 Proving That a Quadrilateral Is a Parallelogram	Determine whether a quadrilateral is a parallelogram.	G.CO.11, G. SRT.5
2	PB 9.4 Properties of Rhombuses, Rectangles, and Squares	Define and classify special types of parallelograms; to use properties of diagonals of rhombuses and rectangles.	G.CO.11, G. SRT.5
	PB 9.5 Conditions for Rhombuses, Rectangles, and Squares	Determine whether a parallelogram is a rhombus or a rectangle.	G.CO.11, G. SRT.5
3	PB 9.7 Applying Coordinate Geometry	Name coordinates of special figures by using their properties.	G.CO.10, G.CO.11
	PB 9.8 Proofs Using Coordinate Geometry	Prove theorems using figures in the coordinate plane.	G.CO.10, G.CO.11
PB Chapter 10: Similarity			
1	PB 10.1 Ratios and Proportions	Write ratios and proportions.	N.Q.2, Prepares for G.SRT 5
	PB10.2 Similar Polygons	Identify similar polygons.	G.SRT 5
2	PB 10.3 Proving Triangles Similar	Use the AA \sim Postulate and the SAS \sim and SSS \sim Theorems.	G.SRT 5, G.GPE.5
	PB 10.4 Similarity in Right Triangles	Find and use relationships in similar right triangles.	G.SRT 5, G.GPE.5
3	PB10.5 Proportions in Triangles	Use the Side-Splitter Theorem and the Triangle-Angle-Bisector Theorem.	G.SRT 4
	PB 10.6 Dilations	Understand dilation images of figures.	G.SRT.1a, G.SRT.1b
4	PB 10.7 Similarity Transformations	Identify similarity transformations and verify properties of similarity.	G.SRT.2, G.SRT.3
	Review Chapter 10		
PB Chapter 12: Circles			
1	PB 12.1 Circles and Arcs	Find the measures of central angles and arcs; find circumference and arc lengths.	G.C.1, G.C.2, G.C.5
	PB12.2 Areas of Circles and Sectors	Find the areas of circles, sectors, and segments of circles.	G.C.5
	PB 12.3 Tangent Lines	Use properties of a tangent to a circle.	G.C.2
2	PB 12.4 Chords and Arcs	Use congruent chords, arcs, and central angles; to use perpendicular bisectors to chords.	G.C.2
	PB 12.5 Inscribed Angles	Find the measure of an inscribed angle; to find the measure of an angle formed by a tangent and a chord.	G.C.2, G.C.3
	PB 12.6 Angle Measures and Segment Lengths	Find the measure of angles formed by chords, secants, and tangents; find the lengths of segments associated with circles.	G.C.2
3	Review Chapter 12		

NG Chapter 1: Polynomials and Factoring			
1	NG 1.1 Polynomials	Classify, add, subtract, and multiply polynomials.	A.SSE.1
	NG 1.2 Factoring Polynomials	Factor polynomials of form $x^2 + bx + c$	A.SSE.1, A.SSE.2
2	NG 1.3 Factoring Polynomials	Factor polynomials of form $ax^2 + bx + c$	A.SSE.1, A.SSE.2
NG Chapter 2: Functions			
1	NG 2.1 Functions	Understand function notation; Find values of functions.	Prepares for F.IF.4, F.IF.5
2	NG 2.2 Graphs of Functions	Recognize graphs of functions, find domain and range of functions, identify decreasing and increasing intervals, identify local maxima and minima, identify positive and negative intervals.	F.IF.4, F.IF.5
3	NG 2.3 Absolute Value Functions	Graph absolute value functions.	F.IF.4, F.IF.5, F.IF.7.b, F.BF.3
4	NG 2.4 Piecewise Functions	Graph and write equations for piecewise functions.	F.IF.7.b
5	NG 2.5 Combining Functions	Create new functions by adding, subtracting, multiplying, and dividing functions.	F.BF.1.b
6	NG 2.6 Function Composition	Create new functions by composing functions together.	F.BF.1.b
7	NG 2.7 Inverse Functions	Find inverse functions.	F.BF.4
8	Review Chapter 2		
NG Chapter 3: Graphing Quadratics			
1	NG 3.1 Graph Quadratics in Standard Form	Graph quadratics in the form $f(x) = ax^2 + bx + c$.	F.IF.4, F.IF.5, F.IF.7.a
2	NG 3.2 Graph Quadratics in Vertex Form	Graph quadratics in the form $f(x) = a(x - h)^2 + k$.	F.IF.4, F.IF.5, F.IF.7.a, F.BF.3
3	NG 3.3 Graph Quadratics in Intercept Form	Graph quadratics in the form $f(x) = a(x - p)(x - q)$.	F.IF.4, F.IF.5, F.IF.7.a
4	NG 3.4 Applications With Quadratics	Solve quadratic story problems by finding the vertex.	F.IF.5
5	NG 3.5 Quadratic Tables	Use tables to find information about quadratic functions. Compare quadratic functions represented by tables, graphs, and equations.	F.IF.9
	Review Chapter 3		
NG Chapter 4: Rewriting Quadratics in Equivalent Forms and Solving Quadratics			
1	NG 4.1 Convert to Standard Form	Convert from intercept form and vertex form to standard form by multiplying.	F.IF.8, A.SSE.3
	NG 4.2 Convert From Standard Form to Intercept Form	Convert from standard form to intercept form by factoring.	F.IF.8a, A.SSE.2.a, A.SSE.3.a
2	NG 4.3 Convert From Standard Form to Vertex Form	Convert from standard form to vertex form by completing the square.	F.IF.8a, A.SSE.3.b, A.REI.4.a
3	NG 4.4 Solve Quadratics by Factoring	Solve quadratic equations and inequalities by factoring.	A.REI.4.b, N.CN.8, N.CN.9, A.CED.1
4	NG 4.5 Solve Quadratics by Taking Square Roots	Solve quadratic equations by taking square roots.	A.REI.4.b, N.CN.1, N.CN.7
5	NG 4.6 Solve Quadratics by Completing the Square	Solve quadratic equations by completing the square.	N.RN.3, A.REI.4.a, A.REI.4.b

6	NG 4.7 Solve Quadratics Using the Quadratic Formula	Solve quadratic equations by using the quadratic formula.	A.REI.4.a, A.REI.4.b, N.CN.7
7	NG 4.8 Solve Quadratic Systems	Solve systems of lines and quadratics	A.REI.7
8	Review Chapter 4		
NG Chapter 5: Complex Numbers			
1	NG 5.1 Perform Operations With Complex Numbers	Find complex zeros of quadratic functions.	N.CN.1, N.CN.2, N.CN.3, N.CN.4
2	NG 5.2 Complex Zeros and the Fundamental Theorem of Algebra	Find complex zeros of quadratic functions.	N.CN.5, N.CN.6
NG Chapter 6: Rational Exponents and Radical Functions			
1	NG 6.1 Properties of Exponents	Simplify expressions involving powers.	Prepares for N.RN.1
2	NG 6.2 Evaluate n^{th} Roots and Use Rational Exponents	Evaluate n^{th} roots and rewrite expressions involving radicals and rational exponents.	N.RN.2
3	NG 6.3 Properties of Rational Exponents and Radicals	Use properties of rational exponents and radicals to simplify expressions.	N.RN.1
4	NG 6.4 Graph Square Root and Cube Root Functions	Graph square root and cube root functions.	F.IF.4, F.IF.5, F.IF.7.b, F.BF.3
5	NG 6.5 Graph Cubic Functions	Graph cubic functions.	F.IF.4, F.IF.5, F.IF.7.b, F.BF.3
	NG 6.6 Inverse Functions	Find inverse functions.	F.BF.4
6	NG 6.7 Solve Radical Equations	Solve radical equations.	
	NG 6.8 Operations with Rational and Irrational Numbers	Classify sums and products of rational and irrational numbers.	N.RN.3
NG Chapter 7: More Functions			
1	NG 7.1 Introduction to Exponential Functions	Understand exponential functions.	Math 1, F.IF.8
2	NG 7.2 Transforming Formulas for Exponential Functions	Write formulas for exponential functions in different but equivalent forms.	F.IF.8
	NG 7.3 Graphing Exponential Functions	Graph exponential functions.	F.IF.4, F.IF.5
4	NG 7.4 Even and Odd Functions	Identify even and odd functions visually from graphs and algebraically.	F.BF.3
	NG 7.5 Stretches, Compressions, and Reflections of Function Graphs	Graph and write functions with horizontal stretches and compressions and reflections about the y -axis.	F.BF.3
5	NG 7.6 Rate of Change	Determine the rate of change of a function over an interval.	F.IF.6
6	NG 7.7 Build Functions That Model Relationships Between Two Quantities	Build linear, exponential, or quadratic functions that model relationships between two quantities. (Include explicit and recursive formulas.)	F.BF.1, F.LE.3
	Review Chapter 7		

NG Chapter 8: Trigonometry			
1	NG 8.1 The Pythagorean Theorem	Use the Pythagorean Theorem.	G.SRT.4, G.SRT.8
	NG 8.2 Special Right Triangles	Use the properties of 45°-45°-90° and 30°-60°-90° triangles.	G.SRT.8
2	NG 8.3 Right Triangle Trigonometry	Use the sine, cosine, and tangent, cosecant, secant, and cotangent ratios to determine side lengths in right triangles.	G.SRT.7, G.SRT.8
3	NG 8.4 Inverse Trigonometric Functions	Use the inverse sine, inverse cosine, and inverse tangent functions to determine angle measures in right triangles.	G.SRT.7, G.SRT.8
4	NG 8.5 Proving Trigonometric Identities	Prove the Pythagorean Theorem and fundamental trigonometric identities.	F.TF.8
	Review Chapter 8		
NG Chapter 9: Area and Volume			
1	NG9.1 Area of Regular Polygons	Find the area of a regular polygon.	A.SSE1.b, G.CO.13
	NG9.2 Volume	Find the volume of prisms, cylinders, pyramids, cones, and spheres	G.GMD.1, G.GMD.3,
PB Chapter 14: Probability			
1	PB 14.1 Experimental and Theoretical Probability	Calculate experimental and theoretical probability.	S.CP.1
	PB 14.2 Probability Distributions and Frequency Tables	Make and use frequency tables and probability distributions.	Prepares for S.CP.4, Prepares for S.CP.5
2	PB 14.3 Permutations and Combinations	Use permutations and combinations to solve problems.	S.CP.9
3	PB 14.4 Compound Probability	Identify independent and dependent events; find compound probabilities.	S.CP.1, S.CP.2, S.CP.5, S.CP.7
	PB 14.5 Probability Models	Construct and use probability models.	S.CP.4
4	PB 14.6 Conditional Probability Formulas	Understand and calculate conditional probabilities.	S.CP.3, S.CP.4, S.CP.5, S.CP.6
5	PB 14.7 Modeling Randomness	Understand random numbers; use probabilities in decision making.	S.MD.6, S.MD.7
	Review Chapter 14		
NG Chapter 10: Conics			
1	NG 10.1 Circles	Write the equation of circle in standard form; graph circles.	G.GPE.1
2	NG 10.2 Parabolas	Derive the equation of a parabola given a focus and directrix; graph parabolas.	G.GPE.2
3	NG 10.3 Ellipses	Derive the equation of an ellipse given the foci ; graph ellipses	G.GPE.3
4	NG 10.4 Hyperbolas	Derive the equation of a hyperbola given the foci; graph hyperbolas.	G.GPE.3
5	Review Chapter 10		

NG Chapter 11: Matrices			
1	NG 11.1 Systems of Equations	Solve 2x2 systems using the substitution method or the elimination method; write systems to represent application problems.	Prepares for A.REI.8
2	NG 11.2 Matrices	Write a system of equations in matrix form; solve systems using row echelon form.	A.REI.8
3	NG 11.3 Matrices	Solve systems using reduced row echelon form.	A.REI.8
4	NG 11.4 Cramer's Rule	Solve systems using Cramer's Rule.	
5	NG 11.5 Matrix Algebra	Add, subtract, and multiply matrices; multiply a matrix by a scalar.	Prepares for A.REI.9
6	NG 11.6 Inverse Matrices	Find the inverse of nonsingular matrices; solve systems using the inverse method.	A.REI.9
	Review Chapter 11		
7	WS Calculator Matrix Problems	Solve matrices using a graphing calculator.	