

Algebra II Scope and Sequence First Six Weeks

Topic: Properties and Operations			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 1.1</p> <ul style="list-style-type: none"> • Sets of Numbers <ul style="list-style-type: none"> ○ Real Number Subsets ○ Interval Notation ○ Set-Builder Notation <p>Section 1.2</p> <ul style="list-style-type: none"> • Properties of Real Numbers <p>Section 1.3</p> <ul style="list-style-type: none"> • Square Roots <ul style="list-style-type: none"> ○ Simplify ○ Rationalize Denominator <p>Section 1.4</p> <ul style="list-style-type: none"> • Simplify Algebraic Expressions <ul style="list-style-type: none"> ○ Translate ○ Evaluate ○ Simplify <p>Section 1.5</p> <ul style="list-style-type: none"> • Properties of Exponents <ul style="list-style-type: none"> ○ Negative 	<p>Section 1.1</p> <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.2.B</u> Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete. <p>Section 1.2</p> <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.4.B</u> Use the commutative, associative, & distributive properties to simplify algebraic expressions. <p>Section 1.3</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>Section 1.4</p> <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.3.A</u> Use symbols to represent unknowns and variables. <p>TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • <u>8.15.A</u> Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models. <p>Section 1.5</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • <u>8.16.A</u> Make conjectures from patterns or sets of examples and nonexamples. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.1</u> • <u>All</u> 	<p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • <u>Day 1 of Class</u> • <u>Algebra 1 Review Day 2</u> • <u>Algebra 1 Review Day 3</u> • <u>Sets of Numbers</u> • <u>Properties of Real Numbers</u> • <u>Square Roots</u>

Algebra II Scope and Sequence First Six Weeks

Topic: Introduction to Functions			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 1.6</p> <ul style="list-style-type: none"> • Relations and Functions <p>Section 1.7</p> <ul style="list-style-type: none"> • Function Notation <ul style="list-style-type: none"> ○ Point on Graph ○ Evaluate <p>Section 1.8</p> <ul style="list-style-type: none"> • Exploring Transformations <ul style="list-style-type: none"> ○ In Function Notation ○ Translation on a Grid ○ Reflection on a Grid <p>Section 1.9</p> <ul style="list-style-type: none"> • Parent Functions <ul style="list-style-type: none"> ○ Linear ○ Quadratic ○ Cubic ○ Square Root 	<p>Section 1.6</p> <ul style="list-style-type: none"> • 2A.1.A Identify the mathematical domains and ranges of functions and determine reasonable domain and range values for continuous and discrete situations. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • <u>A.1.B</u> Gather and record data, and use data sets to determine functional relationships between quantities. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.2.C</u> Interpret situations in terms of given graphs or creates situations that fit given graphs. <p>Section 1.7</p> <ul style="list-style-type: none"> • 2A.1.A Identify the mathematical domains & ranges of functions & determine reasonable domain & range ... <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.2.B</u> Identify mathematical domains and ranges ... <p>Section 1.8</p> <ul style="list-style-type: none"> • 2A.4.B Extend parent functions with parameters such as a in $f(x) = \frac{a}{x}$ and describe the effects of the parameter changes on the graph of parent functions. <p>TAKS OBJECTIVE 6</p> <ul style="list-style-type: none"> • <u>G.5.C</u> Use prop. of transformations and their compositions to make connections to mathematics & the real world such as tessellations. <p>TAKS OBJECTIVE 7</p> <ul style="list-style-type: none"> • <u>G.7.A</u> Use coordinate systems to represent points, lines, rays, ... <p>Section 1.9</p> <ul style="list-style-type: none"> • 2A.4.A Identify and sketch graphs of parent functions, including linear ($f(x) = x$), quadratic ($f(x) = x^2$), exponential ($f(x) = a^x$), and logarithmic ($f(x) = \log_a x$) functions, absolute value of x ($f(x) = x$), square root of x ($f(x) = \sqrt{x}$), and reciprocal of x ($f(x) = 1/x$). <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.2.A</u> Identify and sketch the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.1</u> • <u>All</u> <p>TEXTEAMS</p> <p>Foundations of Functions</p> <ul style="list-style-type: none"> • <u>Explore Transformations</u> p.10 • <u>Move the Monster</u> p. 17 <p>Clarifying Activities</p> <ul style="list-style-type: none"> • <u>Domain and Range</u> 2A.1.A (Activity b.1.a) • <u>Parameter changes on parent function</u> 2A.4.B (Activity c.1.b) 	<p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • <u>Function Notation</u> • <u>Parent Functions</u> <p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Characteristics of Functions</u> <ul style="list-style-type: none"> ○ Supplement to TEXTEAMS • <u>A Transformation Story</u> <ul style="list-style-type: none"> ○ Supplement to TEXTEAMS

Algebra II Scope and Sequence First Six Weeks

Topic: Linear Equations and Inequalities			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 2.1</p> <ul style="list-style-type: none"> • Solving Linear Equations and Inequalities <ul style="list-style-type: none"> ○ Two Step ○ Variables on Both Sides ○ Infinite & No Solution <p>Section 2.2</p> <ul style="list-style-type: none"> • Proportional Reasoning <p>Section 2.3</p> <ul style="list-style-type: none"> • Graph Linear Functions <ul style="list-style-type: none"> ○ Finite Differences ○ Given Slope and a Point ○ Finding Intercepts ○ Slope – Intercept Form ○ Vertical & Horizontal <p>Section 2.4</p> <ul style="list-style-type: none"> • Writing Linear Functions <ul style="list-style-type: none"> ○ Slope – Intercept Form ○ Given Two Points ○ Words To Table To Equation To Graph <p>Section 2.5</p> <ul style="list-style-type: none"> • Linear Inequalities in Two Variables <ul style="list-style-type: none"> ○ Slope – Intercept Form ○ Standard Form 	<p>Section 2.1</p> <p>TAKS OBJECTIVE 4</p> <ul style="list-style-type: none"> • A.7.A Analyze situations involving linear functions and formulate linear equations or inequalities to solve problems. • A.7.B Investigate methods for solving linear equations and inequalities... • A.7.C Determine the reasonableness of solutions to linear equations. <p>TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • 8.16.B Validate his/her conclusions using mathematical properties and relationships. <p>Section 2.2</p> <ul style="list-style-type: none"> • 2A.10.G Use functions to model and make predictions in problem situations involving direct & inverse variation. <p>Section 2.3</p> <ul style="list-style-type: none"> • 2A.4.A Identify and sketch graphs of parent functions, including linear ($f(x) = x$), quadratic ($f(x) = x^2$), exponential ($f(x) = a^x$), ... <p>TAKS OBJECTIVE 8</p> <ul style="list-style-type: none"> • G.11.B Use ratios to solve problems involving similar figures. <p>TAKS OBJECTIVE 3</p> <ul style="list-style-type: none"> • A.6.A Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations. • A.6.B Interpret the meaning of slope and intercepts ... • A.6.D Graph and write equations of lines given characteristics ... • A.6.E Determine the intercepts of the graphs of linear functions & zeros of linear functions from graphs, tables, & algebraic rep. • A.6.G Relate direct variation to linear functions and solve ... <p>Section 2.4</p> <p>TAKS OBJECTIVE 3</p> <ul style="list-style-type: none"> • A.5.A Determine whether or not given situations can be represented by linear functions. • A.5.C Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions. <p>Section 2.5</p> <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.D Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal, equations, & inequalities. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.2 • All 	<p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • Review Solve Equations • Review Solve Equations and Inequalities • Proportional Reasoning

Algebra II Scope and Sequence First Six Weeks

Topic: Graph Linear and Absolute Value Functions

[Math Home](#)

[TAKS Resources](#)

Topics	TEKS	Resources	PreAP Resources
<p>Section 2.6</p> <ul style="list-style-type: none"> • Transforming Linear Functions <ul style="list-style-type: none"> ○ Changing Slope ○ Changing y – intercept <p>Section 2.7</p> <ul style="list-style-type: none"> • Linear Regression <ul style="list-style-type: none"> ○ Correlation Coefficient <p>Section 2.8</p> <ul style="list-style-type: none"> • Solve Absolute – Value Equations and Inequalities <p>Section 2.9</p> <ul style="list-style-type: none"> • Absolute – Value Funct. <ul style="list-style-type: none"> ○ Graph in Two Variables ○ Transformations 	<p>Section 2.6</p> <ul style="list-style-type: none"> • 2A.4.B Extend parent functions with parameters such as a in $f(x) = \frac{a}{x}$ and describe the effects of the parameter changes on the graph of parent functions. <p>TAKS OBJECTIVE 3</p> <ul style="list-style-type: none"> • A.6.C Investigate, describe, and predict the effects of changes in m and b on the graph of $y = mx + b$. • A.6.F Interpret and predict the effects of changing slope and y – intercept in applied situations. <p>Section 2.7</p> <ul style="list-style-type: none"> • 2A.1.B Collect & organize data, make & interpret scatterplots, fit the graph of a function to the data, interpret the results, and then model, predict, & make decisions & critical judgments. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.B Gather and record data, and use data sets to determine functional relationships between quantities. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.2.D Collect and organize data, make and interpret scatterplots (recognizing pos., neg., or no correlation for data approx. linear situations), and model, predict, and make decisions and critical judgments in problem situations. • A.3.B Look for patterns and represent algebraically. <p>Section 2.8</p> <p>TAKS OBJECTIVE 4</p> <ul style="list-style-type: none"> • A.7.C Interpret and determine the reasonableness of solutions to linear equations and inequalities. <p>Section 2.9</p> <ul style="list-style-type: none"> • 2A.4.A Identify and sketch graphs of parent functions, including linear ($f(x) = x$), quadratic ($f(x) = x^2$), ..., absolute value of x ($f(x) = x$), ... <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.2.A Identify and sketch the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.2 • All <p>TEXTTEAMS</p> <p>Foundations of Functions (2.2)</p> <ul style="list-style-type: none"> • Airlines p. 73 <ul style="list-style-type: none"> ○ guess and check a trend line (use with Text 2.4) 	

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Topic: Linear Systems			
		<u>Math Home</u>	<u>TAKS Resources</u>
Topics	TEKS	Resources	PreAP Resources
<p>Section 3.1</p> <ul style="list-style-type: none"> • Solving System of Linear Equations <ul style="list-style-type: none"> ○ Table and Graphs ○ Infinite & No Solution <p>Section 3.2</p> <ul style="list-style-type: none"> • Solving System of Linear Equations <ul style="list-style-type: none"> ○ Algebraic Methods <ol style="list-style-type: none"> 1. Substitution 2. Elimination ○ Infinite & No Solution <p>Section 3.3</p> <ul style="list-style-type: none"> • Solving System of Linear Inequalities <ul style="list-style-type: none"> ○ Graphing ○ Geometric Application <p>Section 3.4</p> <ul style="list-style-type: none"> • Linear Programming <ul style="list-style-type: none"> ○ Vertex Principle <p>Section 3.5</p> <ul style="list-style-type: none"> • Linear Equations in Three Dimensions <ul style="list-style-type: none"> ○ z – axis ○ Graph using intercepts <p>Section 3.6</p> <ul style="list-style-type: none"> • Solving Systems of Linear Equations in Three Var. <ul style="list-style-type: none"> ○ Elimination ○ Infinite & No Solution 	<p>Section 3.1 – 3.6</p> <ul style="list-style-type: none"> • 2A.3.A Analyze situations and formulate systems of equations in two or more unknowns or inequalities in two unknowns to solve problems. • 2A.3.B Use algebraic methods, graphs, tables, or matrices to solve systems of equations or inequalities. • 2A.3.C Interpret and determine the reasonableness of solutions to systems of equations or inequalities for given contexts. <p>TAKS OBJECTIVE 4</p> <ul style="list-style-type: none"> • <u>A.8.A</u> Analyze situations and formulate systems of linear equations in two unknowns to solve problems. • <u>A.8.B</u> Solve systems of linear equations using concrete models, graphs, tables, and algebraic methods. • <u>A.8.C</u> Interpret and determine the reasonableness of solutions to systems of linear equations. <p>TAKS OBJECTIVE 7</p> <ul style="list-style-type: none"> • <u>G.7.B</u> Use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangles and other polygons. <p>TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • <u>8.14.B</u> Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. • <u>8.14.C</u> Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.3</u> • <u>All</u> 	<p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Parametric Equations</u> (2.6), p.107 • <u>Systems of Linear Inequalities</u> p.90

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Topic: Matrices			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 4.1</p> <ul style="list-style-type: none"> • Matrices and Data <ul style="list-style-type: none"> ○ Add and Subtract ○ Scalar Multiplication <p>Section 4.2</p> <ul style="list-style-type: none"> • Multiplying Matrices <ul style="list-style-type: none"> ○ Identity Matrix ○ Powers of a Matrix <p>Section 4.3</p> <ul style="list-style-type: none"> • Transform Geometric Figures on a Grid <ul style="list-style-type: none"> ○ Translate ○ Dilate ○ Reflect ○ Rotate <p>Section 4.5</p> <ul style="list-style-type: none"> • Matrix Inverses and Solving Systems 	<p>Section 4.1 – 4.2</p> <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • <u>A.4.B</u> Use the commutative, associative, and distributive properties to simplify algebraic expressions. <p>Section 4.3</p> <p>TAKS OBJECTIVE 6</p> <ul style="list-style-type: none"> • <u>G.10.A</u> Use congruence transformations to make conjectures and justify properties of geometric figures including figures represented on a coordinate plane. <p>TAKS OBJECTIVE 8</p> <ul style="list-style-type: none"> • <u>G.11.A</u> Use and extend similarity properties and transformations to explore and justify conjectures about geometric figures. <p>Section 4.5</p> <ul style="list-style-type: none"> • 2A.3.B Use algebraic methods, graphs, tables, or matrices to solve systems of equations or inequalities. • 2A.3.C Interpret and determine the reasonableness of solutions to systems of equations or inequalities for given contexts. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.4</u> • <u>All</u> 	<p>Holt Algebra 2:</p> <p>Section 4.4</p> <ul style="list-style-type: none"> • Determinants and Cramer’s Rule <p>Section 4.6</p> <ul style="list-style-type: none"> • Row Operations and Augmented Matrices <p>NOTE: Matrices are not included in Holt Geometry Book. This may be the first exposure for students.</p>

Algebra II Scope and Sequence Third Six Weeks

Topic: Quadratic Functions			
		Math Home	TAKS Resources
Topics	TEKS	Resources	PreAP Resources
<p>Section 5.1</p> <ul style="list-style-type: none"> • Transformations of Quadratic Graphs <ul style="list-style-type: none"> ○ $y = ax^2 + bx + c$ ○ $y = a(x - h)^2 + k$ <p>Section 5.2</p> <ul style="list-style-type: none"> • Standard Form <ul style="list-style-type: none"> ○ $y = ax^2 + bx + c$ 1. Axis of Symmetry 2. Vertex 3. y – intercept <p>Section 5.3</p> <ul style="list-style-type: none"> • Solve Quadratic Equations <ul style="list-style-type: none"> ○ Graphing ○ Factoring <ol style="list-style-type: none"> 1. Difference of Two Squares 2. Perfect – Square Trinomial <p>Section 5.4</p> <ul style="list-style-type: none"> • Completing the Square <ul style="list-style-type: none"> ○ Solve by Square Root ○ Solve by Completing the Square ○ Standard Form to Vertex Form <p>Section 5.5</p> <ul style="list-style-type: none"> • Complex Numbers and Roots <p>Section 5.6</p> <ul style="list-style-type: none"> • The Quadratic Formula 	<p>Section 5.1</p> <ul style="list-style-type: none"> • 2A.7.B Use the parent function to investigate, describe, & predict the effects of changes in a, h, & k on the graphs of $y = a(x - h)^2 + k$ form of a function in applied and purely mathematical situations. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.2.B Identify mathematical domains and ranges ... <p>TAKS OBJECTIVE 5</p> <ul style="list-style-type: none"> • A.9.B Effects of changes in a on the graph of $y = ax^2 + c$. • A.9.C Effects of changes in c on the graph of $y = x^2 + c$. • A.9.D Analyze graphs of quadratic functions. <p>Section 5.2</p> <ul style="list-style-type: none"> • 2A.7.A Use characteristics of the quadratic parent function to sketch the related graphs and connect between the $y = ax^2 + bx + c$ and the $y = a(x - h)^2 + k$ symbolic representations of quadratic functions. • 2A.8.C Compare and translate between algebraic and graphical solutions of quadratic equations. <p>Section 5.3</p> <ul style="list-style-type: none"> • 2A.6.A Determine the reasonable domain and range values of quadratic functions; interpret & determine the reasonableness of solutions to quadratic equations & inequalities. • 2A.8.D Solve quadratic equations and inequalities using graphs, tables, and algebraic methods. <p>TAKS OBJECTIVE 5</p> <ul style="list-style-type: none"> • A.10.A Solve quadratic equations using many methods. • A.10.B Solutions, roots, zeros, & x-intercepts of graph. <p>Section 5.4</p> <ul style="list-style-type: none"> • 2A.5.E Use the method of completing the square. <p>Section 5.5</p> <ul style="list-style-type: none"> • 2A.2.B Use complex numbers to describe the solutions of quadratic equations. <p>Section 5.6</p> <ul style="list-style-type: none"> • 2A.8.B Analyze and interpret the solutions of quadratic equations using discriminants and solve quadratic equations using the quadratic formula. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.5 • All <p>TEXTEAMS</p> <ul style="list-style-type: none"> • 1.1 p. 195 Ball Drop – write quadratic function using transformations on parent function • 1.2 Activity 2, p. 209, Counting Diagonals involves a table, the 2nd difference, writing the quadratic function • Reflect and Apply, p. 211, compares linear and quadratic functions created from the same data <p>Clarifying Activities</p> <ul style="list-style-type: none"> • 2A.6.A p.15 Describe the domain and range for a ball thrown upward • 2A.7.A p.18 Work with a quadratic function expressed in both forms • 2A.6.B p. 16 Multiple representation • 2A.4.A p.19 Graph and make table describing parameter changes 	

Algebra II Scope and Sequence Third Six Weeks

Topic: Applying Quadratic Functions			
Topics	TEKS	Resources	PreAP Resources
<p>Section 5.7</p> <ul style="list-style-type: none"> • Solving Quadratic Inequalities <ul style="list-style-type: none"> ○ Tables and Graphs ○ Algebra <p>Section 5.8</p> <ul style="list-style-type: none"> • Curve Fitting with Quadratic Models <ul style="list-style-type: none"> ○ Second Differences ○ Given Three Points ○ Regression <p>Section 5.9</p> <ul style="list-style-type: none"> • Complex Numbers <ul style="list-style-type: none"> ○ Graphing ○ Absolute Value ○ Add and Subtract ○ Multiply and Divide ○ Powers of i 	<p>Section 5.7</p> <ul style="list-style-type: none"> • 2A.8.D Solve quadratic equations and inequalities using graphs, tables, and algebraic methods. <p>Section 5.8</p> <ul style="list-style-type: none"> • 2A.1.B Collect and organize data, make and interpret scatterplots, fit the graph of a function to the data, interpret the results, and proceed to model, predict, and make decisions and critical judgments. • 2A.8.A Analyze situations involving quadratic functions and formulate quadratic equations or inequalities to solve problems. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.B Gather and record data, and use data sets to determine functional relationships between quantities. • A.1.D Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.3.B Look for patterns and represent generalizations algebraically. <p>Section 5.9</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • 8.16.A Make conjectures from patterns or sets of examples and nonexamples. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.5 • All <p>Clarifying Activities</p> <ul style="list-style-type: none"> • 2A.6.C p. 21 Find roots graphically using graphing calculator & algebraically and relate them. • 2A.8.A p. 20 Box with corners cut off problem • 2A.8.B p. 20 Use discriminant to predict number of real solutions • c2E p. 12 Completing the square using algebra tiles • 2A.5.E p. 21 Solve by graphing, factoring, completing the square, quadratic formula 	<p style="text-align: right;">Math Home TAKS Resources</p> <p>Laying The Foundation</p> <ul style="list-style-type: none"> • Exploring Inequalities p.83

Algebra II Scope and Sequence Third Six Weeks

Topic: Operations With Polynomials			
Topics	TEKS	Resources	PreAP Resources
<p>Section 6.1</p> <ul style="list-style-type: none"> • Polynomials <ul style="list-style-type: none"> ○ Classify ○ Add and Subtract ○ Graph Higher Degree Polynomials <p>Section 6.2</p> <ul style="list-style-type: none"> • Multiply Polynomials <ul style="list-style-type: none"> ○ Monomial by ... ○ Binomials by ... ○ Power of a Binomial <ul style="list-style-type: none"> 1. Pascal's Triangle <p>Section 6.3</p> <ul style="list-style-type: none"> • Dividing Polynomials <ul style="list-style-type: none"> ○ Long Division ○ Synthetic Division ○ Remainder Theorem <p>Section 6.4</p> <ul style="list-style-type: none"> • Factoring Polynomials <ul style="list-style-type: none"> ○ Using Synthetic Division ○ Grouping ○ Sum and Difference of Two Cubes 	<p>Section 6.1</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.4.B Use the commutative, associative, & distributive properties to simplify algebraic expressions. <p>Section 6.2</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.4.A Find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.11.A Use patterns to generate the laws of exponents and apply them in problem-solving situations. <p>Section 6.3 – 6.4</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.6 • All <p>TEXTEAMS</p> <ul style="list-style-type: none"> • Power and Polynomial Functions 	

Algebra II Scope and Sequence Fourth Six Weeks

Topic: Applying Polynomial Functions			
Topics	TEKS	Resources	PreAP Resources
<p>Section 6.5</p> <ul style="list-style-type: none"> • Finding Real Roots <ul style="list-style-type: none"> ○ Factoring ○ Multiplicity ○ Rational Root Theorem ○ Irrational Root Theorem ○ Synthetic Substitution <p>Section 6.6</p> <ul style="list-style-type: none"> • Fundamental Theorem of Algebra <ul style="list-style-type: none"> ○ Find All Roots ○ Complex Conjugate Theorem ○ Writing Polynomial Functions given Roots <p>Section 6.7 – 6.9</p> <ul style="list-style-type: none"> • Graphs of Polynomial Functions <ul style="list-style-type: none"> ○ End Behavior ○ Graph Using: <ol style="list-style-type: none"> 1. Roots, Solutions, Zeros, x – intercepts 2. y – intercept 3. End Behavior ○ Local Maximum and Minimum ○ Transformations ○ Curve Fitting <ol style="list-style-type: none"> 1. Third Difference 2. Regression 	<p>Section 6.5 – 6.6</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>Section 6.7 – 6.9</p> <ul style="list-style-type: none"> • 2A.1.B Collect and organize data, make and interpret scatterplots, fit the graph of a function to the data, interpret the results, and proceed to model, predict, and make decisions and critical judgments. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.B Gather and record data, and use data sets to determine functional relationships between quantities. • A.1.D Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.3.B Look for patterns and represent generalizations algebraically. <p>TAKS OBJECTIVE 5</p> <ul style="list-style-type: none"> • A.10.B Make connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x – intercepts) of the graph of the function. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.6 • All <p>TEXTTEAMS</p> <ul style="list-style-type: none"> • 3.1 p. 248 Investigating polynomials – graphing end behavior • p. 249 zeroes 	<p style="text-align: right;">Math Home TAKS Resources</p> <p>Laying The Foundation</p> <ul style="list-style-type: none"> • Quadratic Optimization, p.159

Algebra II Scope and Sequence Fourth Six Weeks

Topic: Exponential and Logarithmic Functions			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 7.1</p> <ul style="list-style-type: none"> • Growth and Decay <ul style="list-style-type: none"> ○ Graphs ○ Interest Formula <p>Section 7.2</p> <ul style="list-style-type: none"> • Inverse Relations and Functions <ul style="list-style-type: none"> ○ Graphing ○ Writing Inverse Funct. <p>Section 7.3</p> <ul style="list-style-type: none"> • Logarithmic Functions <ul style="list-style-type: none"> ○ Writing Logarithms ○ Graphing <p>Section 7.4</p> <ul style="list-style-type: none"> • Properties of Logarithms <ul style="list-style-type: none"> ○ Add and Subtract ○ Exponents ○ Inverses ○ Change of Base 	<p>Section 7.1</p> <ul style="list-style-type: none"> • 2A.11.C Determine the reasonable domain and range values of exponential and logarithmic functions, as well as interpret and determine the reasonableness of solutions to exponential and logarithmic equations and inequalities. <p>Section 7.2</p> <ul style="list-style-type: none"> • 2A.9.G Connect inverses of square root functions with quadratic functions. <p>• 2A.11.A Develop the definition of logarithms by exploring and describing the relationship between exponential functions and their inverses.</p> <p>Section 7.3</p> <ul style="list-style-type: none"> • 2A.11.A Develop the definition of logarithms by exploring and describing the relationship between exponential functions and their inverses. <p>Section 7.4</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.7</u> • <u>All</u> <p>TEXTEAMS</p> <p>Exponential & Log Func 1.1</p> <ul style="list-style-type: none"> • <u>Recursion & Cell Division</u> p.143 • <u>E. coli Growth Data</u> p. 146 • <u>The Flu Epidemic: A Logistic Growth Model</u> p. 149 (3.4) <p>Clarifying Activities</p> <ul style="list-style-type: none"> • <u>Pendulum</u> 2A.1.B (Activity b.1.b) • <u>Parent Functions</u> 2A.4.A (Activity c.1.a) • <u>Tournament</u> 2A.11.C (Activity f3) modeled as an exponential decay function • <u>Bacteria Growth</u> 2A.11.F (Activity f.5) • <u>Logarithm as Inverse</u> 2A.11.A (Activity f.1) 	<p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • <u>Growth and Decay</u> • <u>Properties of Logarithms</u> <p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Exponential Growth & Decay</u> (3.1), p.325 (supplement)

Algebra II Scope and Sequence Fourth Six Weeks

Topic: Apply Exponential and Logarithmic Functions			
Topics	TEKS	Resources	PreAP Resources
<p>Section 7.5</p> <ul style="list-style-type: none"> • Exponential and Logarithmic Equations <ul style="list-style-type: none"> ○ Solve Exponential ○ Solve Logarithmic ○ Graphing <p>Section 7.6</p> <ul style="list-style-type: none"> • The Natural Base e <ul style="list-style-type: none"> ○ Graphing ○ Simplifying ○ $A = Pe^{rt}$ <p>Section 7.7</p> <ul style="list-style-type: none"> • Transforming Exponential and Logarithmic Functions <ul style="list-style-type: none"> ○ Graphing ○ Writing <p>Section 7.8</p> <ul style="list-style-type: none"> • Curve Fitting <ul style="list-style-type: none"> ○ Common Ratio ○ Regression 	<p>Section 7.5</p> <ul style="list-style-type: none"> • 2A.11.D Determine solutions of exponential and logarithmic equations using graphs, tables, & algebraic methods. • 2A.11.E Determine solutions of exponential and logarithmic inequalities using graphs and tables. • 2A.11.F Analyze a situation modeled by an exponential function, formulate an equation or inequality and solve the problem. <p>Section 7.6</p> <ul style="list-style-type: none"> • 2A.4.A Identify and sketch graphs of parent functions, including linear ($f(x) = x$), quadratic ($f(x) = x^2$), exponential ($f(x) = a^x$), and logarithmic ($f(x) = \log_a x$) functions, absolute value of x ($f(x) = x$), square root of x ($f(x) = \sqrt{x}$), and reciprocal of x ($f(x) = 1/x$). <p>Section 7.7</p> <ul style="list-style-type: none"> • 2A.11.B Use the parent functions to investigate, describe, and predict the effects of parameter changes on the graphs of exponential and logarithmic functions, describe limitations on the domains and ranges, and examine asymptotic behavior. <p>Section 7.8</p> <ul style="list-style-type: none"> • 2A.1.B Collect and organize data, make and interpret scatterplots, fit the graph of a function to the data, interpret the results, and proceed to model, predict, and make decisions and critical judgments. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.7 • All <p>TEXTTEAMS Exponential & Log Func 1.1</p> <ul style="list-style-type: none"> • MIRA Reflections 3.1 <ul style="list-style-type: none"> ○ over x-axis (activity1), ○ y-axis (activity 2), ○ inverses (act. 3) <p>Clarifying Activities</p> <ul style="list-style-type: none"> • Rules of Exponents to solve Equations 2A.2.A (Activity b.2.b #2) • Solving Exponential Eq. 2A.11.D (Activity f.4) • Transformation of Exponential Functions 2A.11.B (Activity f.2) 	<p style="text-align: right;">Math Home TAKS Resources</p> <p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • Solve Logarithmic Equations • Exponent e • Applications of Logarithms <p>Laying The Foundation</p> <ul style="list-style-type: none"> • Exponential and Natural Logarithmic Functions (Factoring), p.317 • Solving Systems of Exponential, Logarithmic, and Linear Equations, p.343 (supplement)

Algebra II Scope and Sequence Fifth Six Weeks

Topic: Rational Functions			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 8.1</p> <ul style="list-style-type: none"> • Variation Functions <ul style="list-style-type: none"> ○ Direct ○ Joint ○ Inverse ○ Combined <p>Section 8.2 – 8.3</p> <ul style="list-style-type: none"> • Simplify Rational Expressions <ul style="list-style-type: none"> ○ Multiply and Divide ○ Add and Subtract ○ Complex Fractions <p>Section 8.4</p> <ul style="list-style-type: none"> • Rational Functions <ul style="list-style-type: none"> ○ Graphing ○ Transformations ○ Vertical Asymptotes ○ Horizontal Asymptotes ○ Holes in the Graph <p>Section 8.5</p> <ul style="list-style-type: none"> • Solve Rational Equations and Inequalities <ul style="list-style-type: none"> ○ Extraneous Solutions 	<p>Section 8.1</p> <ul style="list-style-type: none"> • 2A.10.G Use functions to model and make predictions in problem situations involving direct and inverse variation. <p>Section 8.2 – 8.3</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>Section 8.4</p> <ul style="list-style-type: none"> • 2A.10.A Use quotients of polynomials to describe the graphs of rational functions, predict the effects of parameter changes, describe limitations on the domains and ranges, and examine asymptotic behavior. <p>Section 8.5</p> <ul style="list-style-type: none"> • 2A.10.B Analyze various representations of rational functions with respect to problem situations. • 2A.10.C Determine the reasonable domain and range values of rational functions as well as interpret and determine the reasonableness of solutions to rational equation and inequalities. • 2A.10.D Determine the solutions of rational equations using graphs, tables, and algebraic methods. • 2A.10.E Determine solutions of rational inequalities using graphs and tables. • 2A.10.F Analyze a situation modeled by a rational function, formulate an equation or inequality composed of a linear or quadratic function, and solve the problem. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.8</u> • <u>All</u> <p>TEXTTEAMS</p> <ul style="list-style-type: none"> • Rational Functions • p. 265 Traveling - exploring inverse variation with distance, rate, time (activity 1, 2, and reflect & apply) • p. 289 Should You See a Discontinuity? Uses transformations and tables to graph and analyze a rational function (1-4, 6,7) <p>Clarifying Activities</p> <ul style="list-style-type: none"> • 2A.10.C p. 28 use a table to find domain and range • 2A.10.A p. 29 basketball shooting percentage modeled by rational function – find domain and range • 2A.10.G p. 32 problem about light provided by a 50 watt light bulb <p>Maximizing Algebra II Performance</p> <ul style="list-style-type: none"> • <u>Rational Functions</u> 	<p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Ratonal Functions with Removable Discontinuities</u>, p.246 • <u>Transformations of Rational Functions</u>, p.257 (supplement) • <u>Rational Function Exploration</u>, p.263 (supplement) • <u>Optimization with Rational Functions</u>, p.301

Algebra II Scope and Sequence Fifth Six Weeks

Topic: Radical Functions			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 8.6</p> <ul style="list-style-type: none"> • Radical Expressions and Rational Exponents <ul style="list-style-type: none"> ○ Properties ○ Simplify <p>Section 8.7</p> <ul style="list-style-type: none"> • Radical Functions <ul style="list-style-type: none"> ○ Graphing ○ Transformations ○ Inequalities <p>Section 8.8</p> <ul style="list-style-type: none"> • Solve Radical Equations and Inequalities <ul style="list-style-type: none"> ○ One and Two Radicals ○ Extraneous Solutions 	<p>Section 8.6</p> <ul style="list-style-type: none"> • 2A.2.A Use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations. <p>Section 8.7</p> <ul style="list-style-type: none"> • 2A.9.A Use the parent function to investigate, describe, and predict the effects of parameter changes on the graphs of square root functions and describe limitations on the domains and ranges. • 2A.9.B Relate representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions. • 2A.9.C Determine the reasonable domain and range values of square root functions, as well as interpret and determine the reasonableness of solutions to square root equations and inequalities. • 2A.9.G Connect inverses of square root functions with quadratic functions. <p>Section 8.8</p> <ul style="list-style-type: none"> • 2A.9.D Determine solutions of square root equations using graphs, tables, and algebraic methods. • 2A.9.E Determine solutions of square root inequalities using graphs and tables. • 2A.9.F Analyze situations modeled by square root functions, formulate equations or inequalities, select a method, and solve problems. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.8</u> • <u>All</u> <p>TEXTEAMS</p> <ul style="list-style-type: none"> • I Foundations of Functions • 4.2 p. 118 – pendulum swing: situation, data table, graph, equation • 4.1 Activity 1 p. 108 conical rain gauge – solving a radical equation • Activity 2 p. 109 More rain gauges <p>Clarifying Activities</p> <ul style="list-style-type: none"> • 2A.9.A Use transformations on the parent function to describe radical functions includes domain, range and tables • 2A.9.B Investigate a function based on the parent function, graph, and table • 2A.9.D Solve a radical equation with graphing calculator and algebraically • 2A.9.E Pendulum problem • 2A.9.G Given a quadratic function of the form $y = ax^2 + c$ find the inverse function algebraically • 2A.2.B Graph to show that there are no real roots (x-inter.) then compute the determinant 	<p>SBISD Flipchart Repository</p> <ul style="list-style-type: none"> • <u>Exponential Properties</u> • <u>Review Radicals Jeopardy!</u> <p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Solving Equations Graphically—Is there a Solution?</u>, p.167 (supplement)

Algebra II Scope and Sequence Fifth Six Weeks

Topic: Properties of Functions			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 9.1</p> <ul style="list-style-type: none"> • Multiple Representations <ul style="list-style-type: none"> ○ Words to Equations to Tables to Graphs <p>Section 9.2</p> <ul style="list-style-type: none"> • Piecewise Functions <ul style="list-style-type: none"> ○ Evaluate ○ Graph <p>Section 9.3</p> <ul style="list-style-type: none"> • Transforming Functions <p>Section 9.4</p> <ul style="list-style-type: none"> • Operations With Functions <ul style="list-style-type: none"> ○ Composite Functions <ol style="list-style-type: none"> 1. Evaluate 2. Write <p>Section 9.5</p> <ul style="list-style-type: none"> • Functions and their Inverses <ul style="list-style-type: none"> ○ Horizontal Lines Test ○ Writing Inverse Functions ○ Identify Inverse Functions <p>Section 9.6</p> <ul style="list-style-type: none"> • Model Real World Data <ul style="list-style-type: none"> ○ Compare Regression Equations 	<p>Section 9.1</p> <ul style="list-style-type: none"> • 2A.6.B Relate representations of quadratic functions, such as algebraic, tabular, graphical, and verbal descriptions. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.A Describe independent & dependent quantities in functions. • A.1.C Describe functional relationships for given problem ... <p>Section 9.2</p> <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.E Interpret and make decisions, predictions, and ... <p>Section 9.3</p> <ul style="list-style-type: none"> • 2A.4.B Extend parent functions with parameters such as a in $f(x) = \frac{a}{x}$ and describe the effects of the parameter changes on the graph of parent functions. <p>Section 9.4</p> <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.D Represent ... using tables, graphs, , words, equations, ... <p>Section 9.5</p> <ul style="list-style-type: none"> • 2A.4.C Describe and analyze the relationship between a function and its inverse. • 2A.9.G Connect inverses of square root functions with quadratic functions. <p>Section 9.6</p> <ul style="list-style-type: none"> • 2A.1.B Collect and organize data, make and interpret scatterplots, fit the graph of a function to data, interpret the results, & proceed to model, predict, and make decisions and critical judgments. <p>TAKS OBJECTIVE 1</p> <ul style="list-style-type: none"> • A.1.B Gather and record data, and use data sets ... <p>TAKS OBJECTIVE 2</p> <ul style="list-style-type: none"> • A.2.D Collect and organize data, make and interpret scatterplots (recognizing pos., neg., or no correlation for data ... • A.3.B Look for patterns and represent algebraically. <p>TAKS OBJECTIVE 6</p> <ul style="list-style-type: none"> • G.5.A Use numeric and geometric patterns to develop algebraic expressions representing geometric properties. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.9 • All <p>Maximizing Algebra II Performance</p> <ul style="list-style-type: none"> • Inverses of Functions 	<p>Laying The Foundation</p> <ul style="list-style-type: none"> • Interval Notation, p.35 • Piecewise Functions, p.97 (supplement) • Piecewise Regression p.371 (supplement) • Composition of Functions Graphically p.117 • Composition of Functions p.121

Algebra II Scope and Sequence Fifth Six Weeks

Topic: Probability and Statistics			
		<u>Math Home</u>	<u>TAKS Resources</u>
Topics	TEKS	Resources	PreAP Resources
<p>Section 11.1</p> <ul style="list-style-type: none"> • Permutations and Combinations <ul style="list-style-type: none"> ○ Counting Principle ○ Factorials <p>Section 11.2</p> <ul style="list-style-type: none"> • Theoretical and Experimental Probability <ul style="list-style-type: none"> ○ Complement ○ Permutations or Combinations ○ Geometric Probability <p>Section 11.3</p> <ul style="list-style-type: none"> • Independent and Dependent Events <p>Section 11.4</p> <ul style="list-style-type: none"> • Compound Events <ul style="list-style-type: none"> ○ Mutually Exclusive ○ Inclusive <p>Section 11.5</p> <ul style="list-style-type: none"> • Central Tendencies <ul style="list-style-type: none"> ○ Mean, Median, Mode ○ Expected Value ○ Box – & – Whisker Plot ○ Standard Deviation 	<p>Section 11.1 TAKS OBJECTIVE 10</p> <ul style="list-style-type: none"> • 8.14.A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. <p>Section 11.2 TAKS OBJECTIVE 9</p> <ul style="list-style-type: none"> • 8.11.B Use theoretical probabilities and experimental results to make predictions and decisions. • 8.12.C Select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms and Venn diagrams, with and without the use of technology. <p>Section 11.3 – 11.4 TAKS OBJECTIVE 9</p> <ul style="list-style-type: none"> • 8.11.A Find the probabilities of dependent and independent events. <p>Section 11.5 TAKS OBJECTIVE 9</p> <ul style="list-style-type: none"> • 8.12.A Select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular situation. • 8.12.C Select and use an appropriate representation for presenting and displaying..., box and whisker plots, ... • 8.13.B Recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • Ch.11 • All 	<p>Holt Algebra 2: Section 11.6</p> <ul style="list-style-type: none"> • Binomial Distribution <ul style="list-style-type: none"> ○ Binomial Theorem ○ Binomial Probability <p>Laying The Foundation</p> <ul style="list-style-type: none"> • Comparing Boxplots, p.381 • Sample Space, Basic Counting Principles, Permutations, p.387 (supplement) • Combinations, p.395 (supplement)

Algebra II Scope and Sequence Sixth Six Weeks

Topic: TAKS Review

[Math Home](#)

[TAKS Resources](#)

This can be done throughout the year or in one block. Listed below are TAKS tested TEKS not previously covered in the Algebra II Scope and Sequence.

Topics	TEKS	Resources	PreAP Resources
<p>Geometry</p> <ul style="list-style-type: none"> • Angles • Special Right Triangles • Nets • Three – Dimensional Views • Distance and Midpoint • Front, Side, and Top Views • Areas • Sectors and Arc Lengths • Pythagorean Theorem • Volume • Triangle Similarity • Effects of Change in Dimensions 	<p>TAKS OBJECTIVE 6</p> <ul style="list-style-type: none"> • G.4.A Select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems. • G.5.B Use numeric and geometric patterns to make generalizations about geometric properties, ... • G.5.D Identify & apply patterns from right triangles to solve problems, including special right triangles (45°-45°-90° and 30°-60°-90°) and triangles whose sides are Pythagorean triples. <p>TAKS OBJECTIVE 7</p> <ul style="list-style-type: none"> • G.6.B Use nets to represent & construct three-dim. figures. • G.6.C Use orthographic and isometric views of three-dimensional geometric figures to represent and construct three-dimensional geometric figures and solve problems. • G.7.C Derive and use formulas involving length, slope, and midpoint. • G.9.D Analyze the characteristics of polyhedra and other three-dimensional figures and their component parts... <p>TAKS OBJECTIVE 8</p> <ul style="list-style-type: none"> • G.8.A Find areas of regular polygons, circles, and composite figures. • G.8.B Find areas of sectors and arc lengths of circles using proportional reasoning. • G.8.C Derive, extend, and use the Pythagorean Theorem. • G.8.D Find surface areas and volumes of prism, pyramids, spheres, cones, and cylinders, and composites ... • G.11.C Develop, apply, and justify triangle similarity relationships, such as right triangle ratios, trig. ratios, and Pythagorean triple. • G.11.D Describe the effect on perimeter, area, and volume when one or more dimensions of a figure are changed and apply this idea in solving problems. <p>TAKS OBJECTIVE 9</p> <ul style="list-style-type: none"> • 8.3.B Estimate and find solutions to application problems involving percents and other proportional relationships ... 		

Algebra II Scope and Sequence Sixth Six Weeks

Topic: Conic Sections			
	<u>Math Home</u>	<u>TAKS Resources</u>	
Topics	TEKS	Resources	PreAP Resources
<p>Section 10.1</p> <ul style="list-style-type: none"> • Intro. to Conic Sections <ul style="list-style-type: none"> ○ Graphing on Calculator ○ Midpoint and Distance ○ Center & Radius–Circle <p>Section 10.2</p> <ul style="list-style-type: none"> • Circles <ul style="list-style-type: none"> ○ Equation of a Circle ○ Tangent Line Equation <p>Section 10.3</p> <ul style="list-style-type: none"> • Ellipses <ul style="list-style-type: none"> ○ Equation of an Ellipse ○ Component Parts ○ Graphing <p>Section 10.4</p> <ul style="list-style-type: none"> • Hyperbola <ul style="list-style-type: none"> ○ Equation of a Hyperbola ○ Component Parts ○ Graphing <p>Section 10.5</p> <ul style="list-style-type: none"> • Parabolas <ul style="list-style-type: none"> ○ Equation of a Parabola ○ Component Parts ○ Graphing <p>Section 10.6</p> <ul style="list-style-type: none"> • Identify Conic Sections <ul style="list-style-type: none"> ○ Writing Standard Form <p>Section 10.7</p> <ul style="list-style-type: none"> • Solve Nonlinear Systems <ul style="list-style-type: none"> ○ Calculator ○ Substitution/Elimination 	<p>Section 10.1</p> <ul style="list-style-type: none"> • 2A.5.A Describe a conic section as the intersection of a plane and a cone. • 2A.5.C Identify symmetries from graphs of conic sections. <p>TAKS OBJECTIVE 7</p> <ul style="list-style-type: none"> • <u>G.7.C</u> Derive and use formulas involving length, slope, and midpoint. <p>Section 10.2 – 10.5</p> <ul style="list-style-type: none"> • 2A.5.B Sketch graphs of conic sections to relate simple parameter changes in the equation to corresponding changes in the graph. <p>Section 10.6</p> <ul style="list-style-type: none"> • 2A.5.D Identify the conic section from a given equation. • 2A.5.E Use the method of completing the square. <p>Section 10.7</p> <ul style="list-style-type: none"> • 2A.3.B Use algebraic methods, graphs, tables, or matrices to solve systems of equations or inequalities. 	<p>SBISD Assessment Guidelines</p> <ul style="list-style-type: none"> • <u>Ch.10</u> • <u>All</u> <p>Clarifying Activities</p> <ul style="list-style-type: none"> • 2A.5.A p. 11 Use models of a cone to show cross-sections. • 2A.5.E p. 14 Complete the square to translate equations into standard form for sketching 	<p>Laying The Foundation</p> <ul style="list-style-type: none"> • <u>Tangents to Circles in Algebra 2</u> p.215 • <u>Transformations of the Graphs of Conic Sections</u>, p.221 (supplement)