

## Correlations to Holt, Rinehart, and Winston, Algebra 2

This table shows Sketchpad activities you can use with many of the lessons in your textbook. The activities listed come from these activity books: *Exploring Algebra 1 with The Geometer's Sketchpad* (EA1G) and *Exploring Algebra 2 with The Geometer's Sketchpad* (EA2G).

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
1.1	EA2G	1	Functions Again and Again	Students define an iterated coordinate transformation on a point, and observe and draw conclusions from the orbit.
1.1	EA2G	2	The Circumference Function	Students measure, graph, and analyze the function that connects a circle's diameter and circumference.
1.1	EA2G	2	Radius and Arc Length	Students explore the relationship between the radius of a circle and the arc length of a semicircle.
1.1	EA1G	5	Points Lining Up in the Plane	Find points that satisfy algebraic rules and write rules to describe sets of points.
1.2	EA1G	5	The Slope of a Line	Explore the relationship between the slope of a line and the points that determine the line.
1.2	EA1G	5	The Slope Game	Construct and play a game involving lines and slope measurements.
1.2	EA1G	5	More Slope Games	Acquire an intuitive feel for slope by playing four different games involving slopes.
1.2	EA1G	5	How Slope Is Measured	Connect an intuitive sense of slope to specific calculations based on coordinates.
1.2	EA1G	6	The Slope-Intercept Form of a Line	Plot points determined by $y = mx + b$ and construct the resulting line and families of lines. This activity is also available in the <b>Supplemental Activities</b> folder using the form $y = a + bx$ .
1.2	EA1G	6	The Standard Form of a Line	Explore the effects of $a$ , $b$ , and $c$ on the graph of a line expressed in the form $ax + by = c$ .
1.3	EA1G	5	Slopes of Parallel and Perpendicular Lines	Experiment and draw conclusions about the slopes of parallel and perpendicular lines.
1.3	EA2G	6	Absolute Value Functions	Students graph and explore the absolute value function, reviewing the point-slope form of linear functions.
1.3	EA1G	6	The Slope-Intercept Form of a Line	Plot points determined by $y = mx + b$ and construct the resulting line and families of lines. This activity is also available in the <b>Supplemental Activities</b> folder using the form $y = a + bx$ .
1.3	EA1G	6	The Point-Slope Form of a Line	Examine the effect of each constant on the graph of an equation in the form $y = m(x - h) + k$ . This activity is also available in the <b>Supplemental Activities</b> folder using the form $y + y_1 + b(x - x_1)$ .
1.3	EA1G	6	The Standard Form of a Line	Explore the effects of $a$ , $b$ , and $c$ on the graph of a line expressed in the form $ax + by = c$ .
1.4	EA2G	1	Functions Again and Again	Students define an iterated coordinate transformation on a point, and observe and draw conclusions from the orbit.
1.4	EA1G	2	Ratio and Proportion	Explore ratios and proportions involving side lengths of rectangles.
1.4	EA1G	2	Proportions in Similar Triangles	Use ratio and proportion in triangles to determine inaccessible distances.

Legend: SA = Supplemental Activity

## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
1.4	EA2G	2	The Circumference Function	Students measure, graph, and analyze the function that connects a circle's diameter and circumference.
1.4	EA1G	2	Rates and Ratios	Work with a Sketchpad pasta machine to better understand rates and ratios.
1.4	EA2G	2	Radius and Arc Length	Students explore the relationship between the radius of a circle and the arc length of a semicircle.
1.4	EA1G	6	Direct Variation	Build a geometric model to study direct variation.
1.4	EA1G	6	Inverse Variation	Plot $(x, y)$ points representing an inverse relationship, and then plot a family of curves.
1.5	EA1G	6	Lines of Fit	Approximate a line of best fit to a number of data points, and use the line to make an estimate.
1.5	EA2G	8	Fitting Functions to Data	Students transform functions to fit data and use a least-squares calculation to judge how good the fit is.
1.6	EA1G	1	Exploring Properties of Operations	Verify or disprove various properties, some common and some obscure.
1.6	EA1G	3	Equivalent Expressions	Compare expressions to determine which are equivalent.
1.6	EA1G	3	Equivalent Expressions: The Border Problem	Invent a variety of equivalent expressions for a real-world problem.
1.6	EA1G	4	Approximating Solutions to Equations	Substitute many values quickly and easily to find approximate solutions.
1.6	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
1.6	EA1G	4	Solving Linear Equations by Balancing	Manipulate a balance model and use it to solve equations.
1.6	EA1G	4	Solving Linear Equations by Undoing	Use a visual model and inverse operations to solve equations.
1.6	EA1G	4	Solving Linear Equations by Jumping	Use distances and rates to write and solve equations of the form $a + bx = c + dx$ .
1.7	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
1.7	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
1.7	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
1.7	EA1G	4	Solving Compound Inequalities	Substitute many values quickly to solve compound inequalities.
1.8	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
1.8	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
1.8	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.

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## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
2.1	EA1G	1	The Commutative Property	Use a dynamic model to determine which algebraic operations are commutative.
2.1	EA1G	1	The Associative Property	Use a dynamic model to determine which algebraic operations are associative.
2.1	EA1G	1	Identity Elements and Inverses	Determine which operations have identity elements and inverses and which do not.
2.1	EA1G	1	Exploring Properties of Operations	Verify or disprove various properties, some common and some obscure.
2.1	EA1G	3	Order of Operations	Explore how mathematical communication requires agreement on certain rules.
2.1	EA1G	3	The Distributive Property: A Painting Dilemma	A Student Activities Committee project leads to a mathematical principle.
2.1	EA1G	3	The Distributive Property	A visual model brings the distributive property to life.
2.2	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
2.2	EA1G	2	Zero and Negative Exponents	Use a visual model to understand the behavior of negative exponents.
2.3	EA2G	1	Introducing Dynagraphs	Students explore dynagraphs to develop a feel for functional relationships.
2.3	EA2G	1	From Dynagraphs to Cartesian Graphs	Students make connections between symbolic, Cartesian, and dynagraph representations of functions.
2.3	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
2.3	EA1G	1	Mystery Machines	Figure out where 0 and 1 are located on these machines, or what operations they perform.
2.3	EA2G	2	Relations and Functions	Students explore the definitions of relation and function, and develop a vertical line test for functions.
2.3	EA2G	2	Functions in a Triangle	Students measure constructions in a triangle and investigate the relations and their graphs.
2.3	EA2G	2	Functional Geometry	Students explore relations defined by geometric measurements and create graphs, explaining how they decided on the independent variable.
2.3	EA1G	5	Points Lining Up in the Plane	Find points that satisfy algebraic rules and write rules to describe sets of points.
2.4	EA2G	1	Function Composition with Dynagraphs	Students use dynagraphs to model composite functions.
2.5	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
2.5	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
2.5	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
2.6	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to $x$ - and $y$ -values.

Legend: SA = Supplemental Activity

## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
2.6	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
2.6	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
2.6	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
2.6	EA2G	6	Absolute Value Functions	Students graph and explore the absolute value function, reviewing the point-slope form of linear functions.
2.6	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
2.7	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
2.7	EA2G	5	Translating Coordinates	Students translate points in and make connections between the coordinates of a point and its translated image.
2.7	EA2G	5	Rotating Coordinates	Students explore coordinate rotation of figures about the origin by multiples of $90^\circ$ .
2.7	EA2G	5	Reflecting in Geometry and Algebra	Students explore algebraic associations between the coordinates of a point and its reflected image.
2.7	EA2G	5	Stretching and Shrinking Coordinates	Students investigate the behavior of polygons when the $x$ - or $y$ -values of the vertices are multiplied by various constants.
2.7	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to $x$ - and $y$ -values.
2.7	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
2.7	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
2.7	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
2.7	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
3.1	EA2G	3	Solving Systems of Equations	Students use rate information from two companies to find out which is cheaper for various moves.
3.2	EA2G	3	Solving Systems of Equations	Students use rate information from two companies to find out which is cheaper for various moves.
3.3	EA2G	3	Graphing Inequalities in Two Variables	Students use a prepared sketch to graph various inequalities in $x$ and $y$ .
3.3	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
3.3	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
3.3	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
3.4	EA2G	3	Graphing Systems of Inequalities	Students use a prepared sketch to solve systems of two and three inequalities.

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## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
3.4	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
3.4	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
3.5	EA2G	3	Linear Programming: Swans and Giraffes	Students explore a linear programming problem, writing constraint equations, defining the feasible region, and maximizing a quantity.
3.5	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
3.5	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
3.6	EA2G	4	Modeling Projectile Motion	Students make a Sketchpad model of a basketball's flight, and make the ball go through a basket.
3.6	EA2G	6	Modeling Linear Motion: An Ant's Progress	Students model linear motion using parametric equations.
4.1	EA2G	5	Stretching and Shrinking Coordinates	Students investigate the behavior of polygons when the $x$ - or $y$ -values of the vertices are multiplied by various constants.
4.1	EA2G	5	Transforming Coordinates	Students perform elementary transformations in the coordinate plane.
4.4	EA2G	9	Solving Systems Using Matrices	Students solve a system of equations expressed as a single matrix equation.
Chapter 5	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
Chapter 5	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
Chapter 5	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
Chapter 5	EA2G	4	Parabolas in Standard Form	Students use the standard form to identify the behavior of the graph when $a$ , $b$ , and $c$ are changed.
Chapter 5	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
Chapter 5	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
Chapter 5	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
Chapter 5	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
Chapter 5	EA2G	4	Modeling Projectile Motion	Students make a Sketchpad model of a basketball's flight, and make the ball go through a basket.
5.1	EA1G	3	The Product of Two Binomials	Use tiles to model multiplication of binomials.
5.1	EA1G	3	Squaring Binomials	Use dynamic algebra tiles to connect algebraic and geometric squares.
5.1	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.

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## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
5.1	EA2G	4	Parabolas in Standard Form	Students use the standard form to identify the behavior of the graph when $a$ , $b$ , and $c$ are changed.
5.1	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.1	EA1G	7	Graphing Quadratic Functions	Plot the graph of $y = ax^2 + bx + c$ and study the effects of changing the parameters.
5.1	EA1G	7	Graphing Factored Quadratics	Graph a function in the form $f(x) = a(x - r_1)(x - r_2)$ , and investigate the role of the parameters.
5.1–5.4	EA2G	SA	Quadratic Intercepts	Students derive a quadratic function from the $y$ -intercept and the two $x$ -intercepts.
5.2	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
5.2	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.2	EA1G	5	The Pythagorean Theorem	Verify the Pythagorean theorem using coordinates and develop the distance formula.
5.3	EA1G	3	Algebra Tiles	Model algebraic quantities with the dimensions and area of dynamic tiles.
5.3	EA1G	3	The Product of Two Binomials	Use tiles to model multiplication of binomials.
5.3	EA1G	3	Squaring Binomials	Use dynamic algebra tiles to connect algebraic and geometric squares.
5.3	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
5.3	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.4	EA1G	3	Algebra Tiles	Model algebraic quantities with the dimensions and area of dynamic tiles.
5.4	EA1G	3	The Product of Two Binomials	Use tiles to model multiplication of binomials.
5.4	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
5.4	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
5.4	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.4	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to $x$ - and $y$ -values.
5.4	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
5.4	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
5.4	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.

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## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
5.4	EA2G	6	Absolute Value Functions	Students graph and explore the absolute value function, reviewing the point-slope form of linear functions.
5.4	EA1G	7	Graphing Quadratic Functions	Plot the graph of $y = ax^2 + bx + c$ and study the effects of changing the parameters.
5.4	EA1G	7	Factoring Trinomials	Factor trinomials using algebra tiles and investigate the role of the coefficients.
5.4	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
5.5	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
5.5 Exploration	EA1G	2	The Golden Rectangle and Ratio	Construct the ratio while building rectangles and spirals.
5.6	EA1G	3	The Product of Two Binomials	Use tiles to model multiplication of binomials.
5.6	EA1G	3	Squaring Binomials	Use dynamic algebra tiles to connect algebraic and geometric squares.
5.6	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
5.6	EA1G	5	The Pythagorean Theorem	Verify the Pythagorean theorem using coordinates and develop the distance formula.
5.7	EA1G	7	Modeling with Quadratic Equations: Where Are the Giant Ants?	Explore issues of scale to better understand quadratic and linear relationships.
5.7	EA2G	8	Fitting Functions to Data	Students transform functions to fit data and use a least-squares calculation to judge how good the fit is.
5.8	EA2G	3	Graphing Inequalities in Two Variables	Students use a prepared sketch to graph various inequalities in $x$ and $y$ .
5.8	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
5.8	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
6.1	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
6.1–6.2	EA2G	6	Exponential Functions	Students graph exponential functions, examine their properties, and use them to model real-world applications.
6.3	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
6.3	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
6.3	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
6.3–6.7	EA2G	6	Logarithmic Functions	Students explore the relationships between exponential and logarithmic functions.
Legend: SA = Supplemental Activity				

## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
6.6–6.7	EA2G	6	Exponential Functions	Students graph exponential functions, examine their properties, and use them to model real-world applications.
6.7	EA2G	8	Fitting Functions to Data	Students transform functions to fit data and use a least-squares calculation to judge how good the fit is.
Chapter 7	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
Chapter 7	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
Chapter 7	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
Chapter 7	EA2G	4	Parabolas in Standard Form	Students use the standard form to identify the behavior of the graph when $a$ , $b$ , and $c$ are changed.
Chapter 7	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
Chapter 7	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
Chapter 7	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
Chapter 7	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
7.1–7.2	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
7.2	EA2G	1	Odd and Even Functions	Students explore odd and even functions using dynagraphs and transformations.
7.2	EA1G	7	Graphing Factored Quadratics	Graph a function in the form $f(x) = a(x - r_1)(x - r_2)$ , and investigate the role of the parameters.
8.1	EA1G	6	Inverse Variation	Plot $(x, y)$ points representing an inverse relationship, and then plot a family of curves.
8.1	EA2G	6	Rational Functions	Students explore rational functions as transformations of $y = 1/x$ .
8.2	EA2G	6	Rational Functions	Students explore rational functions as transformations of $y = 1/x$ .
8.5	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
8.5	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
8.5	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
8.6	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
8.6	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
8.6	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.

Legend: SA = Supplemental Activity

## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
8.6	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
8.6	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to $x$ - and $y$ -values.
8.6	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
8.6	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
8.6	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
8.6	EA2G	6	Square Root Functions	Students explore the square root function and think about the conditions under which inverse relations are also inverse functions.
8.6	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
8.8	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
8.8	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
8.8	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
8.8	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
Chapter 9	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
Chapter 9	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
Chapter 9	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
Chapter 9	EA2G	4	Parabolas in Standard Form	Students use the standard form to identify the behavior of the graph when $a$ , $b$ , and $c$ are changed.
Chapter 9	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
Chapter 9	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
Chapter 9	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
Chapter 9	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
9.1	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
9.1	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
9.1	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).

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## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
9.1	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
9.1	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
9.1	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
9.1	EA1G	5	The Pythagorean Theorem	Verify the Pythagorean theorem using coordinates and develop the distance formula.
9.3–9.5	EA2G	4	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
9.6	EA2G	3	Solving Systems of Equations	Students use rate information from two companies to find out which is cheaper for various moves.
10.2–10.3	EA2G	8	Permutation and Combination	Students explore permutations and combinations of given set of objects.
11.6	EA1G	2	Length of the Koch Curve	Investigate the ratio of similarity in this self-similar curve.
12.3	EA2G	8	Box and Whiskers	Students change data and explore the effects on a box-and-whiskers plot.
12.6	EA2G	8	Normal Distribution	Students use a random distribution to explore the normal density curve.
13.1	EA2G	7	Right Triangle Functions	Students calculate ratios for right triangles, plotting the values to reveal the graphs of the trigonometric functions.
13.2	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.2	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
13.3	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.3	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
13.4	EA2G	7	Radian Measure	Students explore the relationship between the length, radius, and central angle of an arc.
13.4	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.4	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
13.5	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to $x$ - and $y$ -values.
13.5	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
13.5	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
13.5	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.

Legend: SA = Supplemental Activity

## Correlations to Holt, Rinehart, and Winston, Algebra 2

continued

Textbook Lesson	Related Sketchpad Activity			
	Book	Unit	Title	Description
13.5	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.5	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
13.5	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
13.6	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
13.6	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.6	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
14.1	EA2G	7	Law of Sines	Students explore the Law of Sines and develop a proof.
14.2	EA1G	5	The Pythagorean Theorem	Verify the Pythagorean theorem using coordinates and develop the distance formula.
14.2	EA2G	7	Law of Cosines	Students develop the Law of Cosines by exploring how the Pythagorean theorem fails for triangles without a right angle.
14.3–14.5	EA2G	7	Trigonometric Identities	Students use geometric relationships to justify trigonometric identities.
Legend: SA = Supplemental Activity				