Correlations to Pearson Prentice Hall, 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	EA1G	1	Adding Integers	Add positive and negative integers using a visual model.
1.1	EA1G	1	Subtracting Integers	Subtract positive and negative integers using a visual model.
1.1	EA1G	1	Raz's Magic Multiplying Machine	Explore features of multiplication with a continuous dynamic model.
1.1	EA1G	1	Multiple Models of Multiplication	Look at multiplication in four very different ways.
1.1	EA1G	1	Mystery Machines	Figure out where 0 and 1 are located on these machines, or what operations they perform.
1.1	EA1G	1	Dividing Real Numbers	See how division works by switching a model from multiplication to division.
1.1	EA1G	1	The Commutative Property	Use a dynamic model to determine which algebraic operations are commutative.
1.1	EA1G	1	The Associative Property	Use a dynamic model to determine which algebraic operations are associative.
1.1	EA1G	1	Identity Elements and Inverses	Determine which operations have identity elements and inverses and which do not.
1.1	EA1G	1	Exploring Properties of Operations	Verify or disprove various properties, some common and some obscure.
1.1 Exploration	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
1.2	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
1.2	EA1G	3	Equivalent Expressions	Compare expressions to determine which are equivalent.
1.2	EA1G	3	Equivalent Expressions: The Border Problem	Invent a variety of equivalent expressions for a real-world problem.
1.2	EA1G	3	The Distributive Property: A Painting Dilemma	A Student Activities Committee project leads to a mathematical principle.
1.2	EA1G	3	The Distributive Property	A visual model brings the distributive property to life.
1.4	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
1.4	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
1.4	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
1.4	EA1G	4	Solving Compound Inequalities	Substitute many values quickly to solve compound inequalities.
1.5	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
1.5	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
1.5	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
2.1	EA2G	1	Introducing Dynagraphs	Students explore dynagraphs to develop a feel for functional relationships.
2.1	EA2G	1	From Dynagraphs to Cartesian Graphs	Students make connections between symbolic, Cartesian, and dynagraph representations of functions.
2.1	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
2.1	EA1G	1	Mystery Machines	Figure out where 0 and 1 are located on these machines, or what operations they perform.
2.1	EA2G	2	Relations and Functions	Students explore the definitions of relation and function, and develop a vertical line test for functions.
2.1	EA2G	2	Functions in a Triangle	Students measure constructions in a triangle and investigate the relations and their graphs.
2.1	EA2G	2	Functional Geometry	Students explore relations defined by geometric measurements and create graphs, explaining how they decided on the independent variable.
2.1	EA1G	5	Coordinates: The Fly on the Ceiling	Measure coordinates and plot points with the help of a fly on Descartes' ceiling.
2.1	EA1G	5	The Origin: Center of the World	Work with the origin and negative coordinates, identify the quadrants, and draw figures.
2.2	EA2G	1	Functions Again and Again	Students define an iterated coordinate transformation on a point, and observe and draw conclusions from the orbit.
2.2	EA2G	2	Relations and Functions	Students explore the definitions of relation and function, and develop a vertical line test for functions.
2.2	EA2G	2	The Circumference Function	Students measure, graph, and analyze the function that connects a circle's diameter and circumference.
2.2	EA2G	2	Radius and Arc Length	Students explore the relationship between the radius of a circle and the arc length of a semicircle.
2.2	EA1G	5	Points Lining Up in the Plane	Find points that satisfy algebraic rules and write rules to describe sets of points.
2.2	EA1G	5	The Slope of a Line	Explore the relationship between the slope of a line and the points that determine the line.
2.2	EA1G	5	The Slope Game	Construct and play a game involving lines and slope measurements.
2.2	EA1G	5	More Slope Games	Acquire an intuitive feel for slope by playing four different games involving slopes.
2.2	EA1G	5	How Slope Is Measured	Connect an intuitive sense of slope to specific calculations based on coordinates.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
2.2	EA1G	5	Slopes of Parallel and Perpendicular Lines	Experiment and draw conclusions about the slopes of parallel and perpendicular lines.
2.2	EA2G	6	Absolute Value Functions	Students graph and explore the absolute value function, reviewing the point-slope form of linear functions.
2.2	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 **Supplemental Activities** folder using the form $y = a + bx$.
2.2	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 **Supplemental Activities** folder using the form $y = y_1 + b(x - x_1)$.
2.2	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 $ax + by = c$.
2.3	EA1G	6	Direct Variation	Build a geometric model to study direct variation.
2.4	EA1G	5	Points Lining Up in the Plane	Find points that satisfy algebraic rules and write rules to describe sets of points.
2.4	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.
2.4	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.
2.5	EA2G	6	Absolute Value Functions	Students graph and explore the absolute value function, reviewing the point-slope form of linear functions.
2.6	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.
2.6	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
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	3	Graphing Inequalities in Two Variables	Students use a prepared sketch to graph various inequalities in *x* and *y*.
2.7	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
2.7	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.
2.7	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
3.1–3.2	EA2G	3	Solving Systems of Equations	Students use rate information from two companies to find out which is cheaper for various moves.
3.2 Extension	EA2G	6	Modeling Linear Motion: An Ant's Progress	Students model linear motion using parametric equations.
3.3	EA2G	3	Graphing Systems of Inequalities	Students use a prepared sketch to solve systems of two and three inequalities.
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.
3.4	EA2G	3	Linear Programming: Swans and Giraffes	Students explore a linear programming problem, writing constraint equations, defining the feasible region, and maximizing a quantity.
3.4	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.
3.4	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
4.2	EA2G	9	Solving Systems Using Matrices	Students solve a system of equations expressed as a single matrix equation.
4.4	EA2G	5	Translating Coordinates	Students translate points in and make connections between the coordinates of a point and its translated image.
4.4	EA2G	5	Rotating Coordinates	Students explore coordinate rotation of figures about the origin by multiples of 90°.
4.4	EA2G	5	Reflecting in Geometry and Algebra	Students explore algebraic associations between the coordinates of a point and its reflected image.
4.4	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.
4.4	EA2G	5	Transforming Coordinates	Students perform elementary transformations in the coordinate plane.
4.4	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to x- and y-values.
4.4	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
4.4	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
4.4	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
4.4	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
4.7–4.8	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	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	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
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	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.1	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	7	Modeling with Quadratic Equations: Where Are the Giant Ants?	Explore issues of scale to better understand quadratic and linear relationships.
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	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.
5.1–5.2	EA2G	SA	Quadratic Intercepts	Students derive a quadratic function from the *y*-intercept and the two *x*-intercepts.
5.2	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.3	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.

Legend: SA = Supplemental Activity

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
5.3	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
5.3	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.3	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.
5.3	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
5.3	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
5.3	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
5.3	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
5.3	EA1G	7	Graphing Quadratic Functions	Plot the graph of $y = ax^2 + bx + c$ and study the effects of changing the parameters.
5.3	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.
5.3	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
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	EA1G	3	Squaring Binomials	Use dynamic algebra tiles to connect algebraic and geometric squares.
5.4	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
5.4	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.4	EA1G	7	Factoring Trinomials	Factor trinomials using algebra tiles and investigate the role of the coefficients.
5.5	EA1G	2	The Golden Rectangle and Ratio	Construct the ratio while building rectangles and spirals.
5.5	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
5.5	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
5.5	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.
5.5	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
5.5	EA1G	4	Solving Inequalities by Substitution	Substitute many values quickly to find the solution set of an inequality.

Legend: SA = Supplemental Activity

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
5.5	EA1G	4	Solving Inequalities by Balancing	Use a balance model to solve equations.
5.5	EA1G	7	Modeling with Quadratic Equations: Where Are the Giant Ants?	Explore issues of scale to better understand quadratic and linear relationships.
5.5	EA2G	SA	Quadratic Intercepts	Students derive a quadratic function from the *y*-intercept and the two *x*-intercepts.
5.5 Extension	EA2G	3	Graphing Inequalities in Two Variables	Students use a prepared sketch to graph various inequalities in *x* and *y*.
5.5 Extension	EA2G	3	Graphing Systems of Inequalities	Students use a prepared sketch to solve systems of two and three inequalities.
5.5 Extension	EA1G	4	Properties of Inequality	Investigate arithmetic properties of inequality using a visual model.
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	EA1G	3	Squares and Square Roots	Explore squares and square roots using virtual dot paper.
5.6	EA1G	5	The Pythagorean Theorem	Verify the Pythagorean theorem using coordinates and develop the distance formula.
5.7	EA1G	3	Algebra Tiles	Model algebraic quantities with the dimensions and area of dynamic tiles.
5.7	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
5.7	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
5.8	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
6.1	EA2G	1	Odd and Even Functions	Students explore odd and even functions using dynagraphs and transformations.
6.1	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
6.1	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.
6.1–6.6	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
6.1–6.6	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
6.1–6.6	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
6.1–6.6	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.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
6.1–6.6	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
6.1–6.6	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
6.1–6.6	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
6.1–6.6	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
6.1–6.6	EA2G	4	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
6.1–6.6	EA2G	4	Modeling Projectile Motion	Students make a Sketchpad model of a basketball's flight, and make the ball go through a basket.
6.2	EA2G	1	Odd and Even Functions	Students explore odd and even functions using dynagraphs and transformations.
6.2	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.
6.4–6.6	EA2G	1	Odd and Even Functions	Students explore odd and even functions using dynagraphs and transformations.
6.7	EA2G	8	Permutation and Combination	Students explore permutations and combinations of given set of objects.
7.1	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
7.1	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
7.1	EA1G	2	Zero and Negative Exponents	Use a visual model to understand the behavior of negative exponents.
7.4	EA1G	2	Exponents	Learn principles of exponents by experimenting with repeated multiplication.
7.6–7.7	EA2G	1	Function Composition with Dynagraphs	Students use dynagraphs to model composite functions.
7.7	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
7.7	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
7.7 Extension	EA2G	6	Modeling Linear Motion: An Ant's Progress	Students model linear motion using parametric equations.
7.8	EA2G	1	Domain and Range	Students explore domain and range of functions, including those with restricted domain or range, using dynagraphs and Cartesian graphs.
7.8	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
7.8	EA2G	2	Relations and Functions	Students explore the definitions of relation and function, and develop a vertical line test for functions.
7.8	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
7.8	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.
7.8	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
7.8	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
7.8	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
7.8	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
7.8	EA2G	6	Square Root Functions	Students explore the square root function and think about the conditions under which inverse relations are also inverse functions.
7.8	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
8.1	EA2G	6	Exponential Functions	Students graph exponential functions, examine their properties, and use them to model real-world applications.
8.1	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.
8.2	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.
8.2	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
8.2	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
8.2	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
8.2	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
8.2	EA2G	6	Exponential Functions	Students graph exponential functions, examine their properties, and use them to model real-world applications.
8.2–8.3	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
8.3	EA2G	1	Inverse Functions	Students use linked dynagraphs to investigate inverse functions.
8.3	EA1G	4	Undoing Operations	Use inverse operations in a visual model to undo an algebraic expression.
8.3	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.
8.3	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
8.3	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
8.3	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.

Legend: SA = Supplemental Activity

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
8.3	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
8.3–8.4	EA2G	6	Logarithmic Functions	Students explore the relationships between exponential and logarithmic functions.
8.5	EA2G	6	Exponential Functions	Students graph exponential functions, examine their properties, and use them to model real-world applications.
8.5–8.6	EA2G	6	Logarithmic Functions	Students explore the relationships between exponential and logarithmic functions.
9.1	EA1G	6	Direct Variation	Build a geometric model to study direct variation.
9.1	EA1G	6	Inverse Variation	Plot (x, y) points representing an inverse relationship, and then plot a family of curves.
9.1–9.3	EA2G	6	Rational Functions	Students explore rational functions as transformations of $y = 1/x$.
9.2	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.
9.2	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to x- and y-values.
9.2	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
9.2	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
9.2	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
9.2	EA1G	6	Inverse Variation	Plot (x, y) points representing an inverse relationship, and then plot a family of curves.
9.2	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
Chapter 10	EA2G	4	Parabolas in Vertex Form	Students graph parabolas using the vertex form.
Chapter 10	EA2G	4	Exploring Parabolas in Vertex Form	Students graph parabolas using the vertex form (open-ended).
Chapter 10	EA2G	4	Parabolas in Factored Form	Students investigate the relationship between the factored form of a quadratic function and its graph.
Chapter 10	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 10	EA2G	4	Changing Quadratic Function Forms	Students change quadratic functions between standard, vertex, and factored forms.
Chapter 10	EA2G	4	The Discriminant	Students calculate and explore the discriminant of a quadratic function.
Chapter 10	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
Chapter 10	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
Legend: SA = Supplemental Activity				

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
Chapter 10	EA2G	4	Modeling Projectile Motion	Students make a Sketchpad model of a basketball's flight, and make the ball go through a basket.
10.1	EA2G	4	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
10.2	EA2G	4	Parabolas: A Geometric Approach	Students construct a parabola geometrically.
10.2	EA2G	4	Parabolas in Headlights and Satellite Dishes	Students construct and explore a two-dimensional model of a parabolic reflector.
10.2–10.3	EA2G	4	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
10.3	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.
10.3	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
10.3	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
10.3	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
10.3	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
10.3	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
10.3 Extension	EA2G	6	Modeling Linear Motion: An Ant's Progress	Students model linear motion using parametric equations.
10.4–10.5	EA2G	4	Conic Reflections	Students explore reflective properties of ellipses and hyperbolas.
10.6	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.
10.6	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
10.6	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
10.6	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
10.6	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
10.6	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
10.6 Extension	EA2G	3	Solving Systems of Equations	Students use rate information from two companies to find out which is cheaper for various moves.
10.6 Extension	EA2G	3	Graphing Systems of Inequalities	Students use a prepared sketch to solve systems of two and three inequalities.
12.3	EA2G	8	Box and Whiskers	Students change data and explore the effects on a box-and-whiskers plot.

Legend: SA = Supplemental Activity

Textbook Lesson	Related Sketchpad Activity			
	Book	**Unit**	**Title**	**Description**
12.5	EA1G	2	Ratio and Proportion	Explore ratios and proportions involving side lengths of rectangles.
12.7	EA2G	8	Normal Distribution	Students use a random distribution to explore the normal density curve.
13.2–13.6	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.2–13.6	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
13.2 Extension	EA2G	7	Right Triangle Functions	Students calculate ratios for right triangles, plotting the values to reveal the graphs of the trigonometric functions.
13.3	EA2G	7	Radian Measure	Students explore the relationship between the length, radius, and central angle of an arc.
13.7	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.
13.7	EA2G	5	Translating Functions	Students translate function graphs vertically and horizontally by adding constants to *x*- and *y*-values.
13.7	EA2G	5	Reflecting Function Plots	Students reflect function plots across the axes and explore connections between algebraic and geometric transformations.
13.7	EA2G	5	Stretching and Shrinking Functions	Students stretch and shrink function graphs vertically and horizontally.
13.7	EA2G	5	Transforming Odd and Even Functions	Students explore the symmetry in odd and even functions.
13.7	EA2G	SA	Function Transformation Game	Students match the graph of a mystery function by choosing a parent function and applying transformations to it.
13.8	EA2G	7	Unit Circle Functions	Students use a unit circle to define the trigonometric functions.
13.8	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
14.1–14.2	EA2G	7	Trigonometric Identities	Students use geometric relationships to justify trigonometric identities.
14.2 Extension	EA2G	6	Modeling Linear Motion: An Ant's Progress	Students model linear motion using parametric equations.
14.3	EA1G	2	Proportions in Similar Triangles	Use ratio and proportion in triangles to determine inaccessible distances.
14.3	EA2G	7	Right Triangle Functions	Students calculate ratios for right triangles, plotting the values to reveal the graphs of the trigonometric functions.
14.3	EA2G	7	Unit Circle and Right Triangle Functions	Students compare the unit circle definitions and right triangle definitions of trigonometric functions.
14.3	EA2G	7	Trigonometric Identities	Students use geometric relationships to justify trigonometric identities.
14.4	EA2G	7	Law of Sines	Students explore the Law of Sines and develop a proof.
14.5	EA2G	7	Law of Cosines	Students develop the Law of Cosines by exploring how the Pythagorean theorem fails for triangles without a right angle.
Legend: SA = Supplemental Activity				