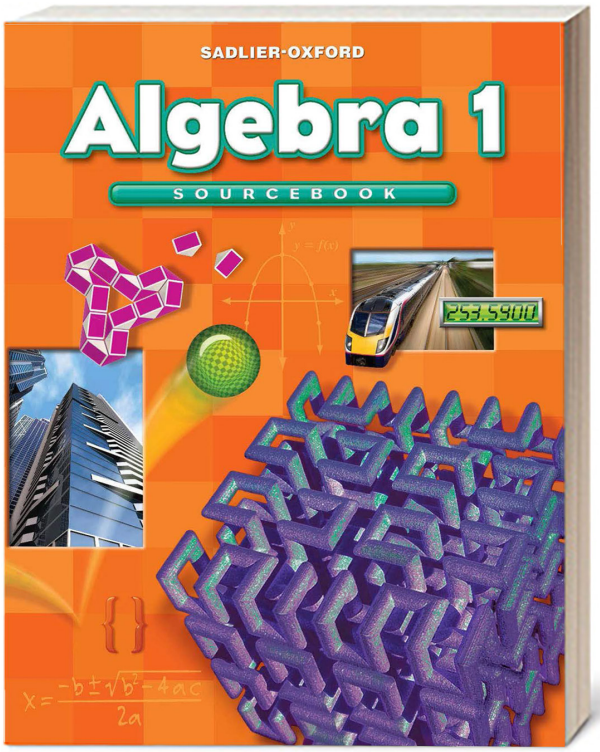
SADLIER-OXFORD

Algebra 1



Aligned to the

Chapter 111.
Texas Essential Knowledge and Skills (TEKS) for Mathematics

Subchapter C. High School

§111.39, Algebra I, ADOPTED 2012.

Sadlier
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800-221-5175

(C) Knowledge and skills

TEKS for Mathematics, Algebra I			Sadlier-Oxford *Algebra 1*
(1)	Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:		
	(A)	apply mathematics to problems arising in everyday life, society, and the workplace;	In every lesson, students have the opportunity to apply problem-solving skills to everyday situations and challenges.
	(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;	Each of the problem-solving strategy lessons below is organized around the four-step problem-solving model introduced on p. xiii. The four steps include Read, Plan, Solve, and Check. **1-15 Problem-Solving Strategy: Make a Drawing**—TE pp. 34–35B; SB pp. 34–35 / PB pp. 29–30 **2-9 Problem-Solving Strategy: Solve a Simpler Problem**—TE pp. 64–65B; SB pp. 64–65 / PB pp. 55–56 **3-8 Problem-Solving Strategy: Reason Logically**—TE pp. 88–89B; SB pp. 88–89 / PB pp. 79–80 **4-6 Problem Solving: Review of Strategies**—TE pp. 110–111B; SB pp. 110–111 / PB pp. 99–100 **5-11 Problem-Solving Strategy: Consider Extreme Cases**—TE pp. 144–145B; SB pp. 144–145 / PB pp. 131–132 **6-9 Problem-Solving Strategy: Work Backward**—TE pp. 170–171B; SB pp. 170–171 / PB pp. 159–160 **7-9 Problem-Solving Strategy: Find a Pattern**—TE pp. 194–195B; SB pp. 194–195 / PB pp. 185–186 **8-9 Problem Solving: Review of Strategies**—TE pp. 220–221B; SB pp. 220–221 / PB pp. 211–212 **9-7 Problem-Solving Strategy: Account for All Possibilities**—TE pp. 240–241B; SB pp. 240–241 / PB pp. 233–234 **10-11 Problem-Solving Strategy: Adopt a Different Point of View**—TE pp. 274–275B; SB pp. 274–275 / PB pp. 267–268 **11-9 Problem-Solving Strategy: Guess and Test**—TE pp. 300–301B; SB pp. 300–301 / PB pp. 293–294 **12-10 Problem Solving: Review of Strategies**—TE pp. 324–325B; SB pp. 324–325 / PB pp. 321–322 **13-9 Problem-Solving Strategy: Organize Data**—TE pp. 352–353B; SB pp. 352–353 / PB pp. 349–350 **14-17 Problem Solving: Review of Strategies**—TE pp. 398–399B; SB pp. 398–399 / PB pp. 391–392
	(C)	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;	Students work with a variety of tools and techniques in learning to solve challenging problems, including the following: **Estimation**—TE/SB pp. 6–9, 403 / PB pp. 5–6 **Mental Math** (end-of-lesson feature)—PB pp. 8, 40, 72, 96, 118, 152, 182, 208, 230, 256, 288, 310, 342, 368, 384 **Technology**—pp. 18–19, 30–31, 32–33, 62–63, 86–87, 112–113, 139–140, 140–141, 142–143, 166–167, 168–169, 218–219, 250–251, 252–253, 270–271, 272–273, 291–292, 298–299, 342–343, 346–347, 348–349, 350–351, 394–395, 396–397, 397–398

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(D)	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Throughout the program students practice sharing mathematical ideas and reasoning using multiple representations. These include symbols, equations, notations, models, drawings, graphs, matrices, diagrams, tables, and charts.
(E)	create and use representations to organize, record, and communicate mathematical ideas;	Each day students respond to the teacher presentation of new concepts with appropriate representations, thereby building communication skills through discussion, questioning, reading, and writing. They are encouraged to record explanations of new concepts in their own words in their **Math Journals**.
(F)	analyze mathematical relationships to connect and communicate mathematical ideas; and	Each chapter begins with a **Do You Remember?** review to help students make connections between what they have studied earlier and new concepts that will be presented in the next lessons. Students analyze mathematical relationships and communicate their ideas in **Discuss and Write**, **Tell About It**, and **Write About It** exercises.
(G)	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Activities that develop mathematical reasoning are featured throughout the program. Students focus on distinguishing between correct and incorrect solutions. For the **Critical Thinking** exercises, they write generalizations based on their own examples. New vocabulary words are highlighted in yellow, defined in context, in the **Glossary** at the back of the **SourceBook**, and in the online **Extended Glossary**. The **Discuss and Write** questions help underscore the concepts of the lesson as students write about them in their own words—pp. 3, 5, 7, 9, 11, 13, 15, 19, 21, 25, 27, 29, 31, 33, 35, 37, 41, 45, 49, 53, 57, 59, 61, 63, 65, 67, 71, 73, 75, 79, 83, 85, 87, 89, 91, 95, 99, 101, 105, 109, 111, 113, 119, 121, 125, 127, 131, 135, 137, 139, 141, 143, 145, 147, 153, 155, 157, 159, 161, 165, 167, 169, 171, 173, 177, 181, 183, 185, 187, 189, 191, 193, 195, 197, 201, 205, 209, 211, 213, 215, 217, 219, 221, 223, 227, 229, 233, 235, 237, 239, 241, 243, 249, 253, 257, 259, 261, 263, 265, 269, 271, 273, 275, 277, 283, 285, 287, 289, 291, 293, 297, 299, 301, 303, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 331, 335, 337, 341, 345, 347, 349, 351, 353, 355, 361, 363, 365, 369, 371, 373, 377, 379, 381, 385, 387, 389, 391, 393, 395, 397, 399, 401 **Tell About It**—PB pp. 36, 38, 62, 64, 86, 88, 106, 108, 138, 140, 166, 168, 192, 194, 218, 220, 240, 242, 274, 276, 300, 302, 328, 330, 356, 358, 398, 400 **Write About It** (end-of-lesson feature)—PB pp. 2, 14, 18, 44, 116, 150, 170, 232, 254, 286, 304, 318, 370, 374, 380

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(2)	Linear functions, equations, and inequalities. The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. The student is expected to:		
	(A)	determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and represent domain and range using inequalities;	**3-1 Write and Graph Inequalities** (identify equivalent symbolic forms for representing the solution sets of inequalities)—SB pp. 70–71; PB pp. 65–66; TE pp. 70–71B **4-1 Introduction to Relations** (identify the domain and range of relations in tables, graphs, words, and equations)—TE pp. 94–95B; SB pp. 94–95, PB pp. 89–90 **4-2 Introduction to Functions** (domain and range of relations)—TE pp. 96–99B; SB pp. 96–99, PB pp. 91–92
	(B)	write linear equations in two variables in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$, given one point and the slope and given two points;	**5-3 Equations in Slope-Intercept Form** (write a linear equation in slope-intercept form)—SB pp. 122–125; PB pp. 115–116; TE pp. 122–125B **5-4 Equations in Point-Slope Form** (write and graph linear equations using point-slope form)—SB pp. 126–127; PB pp. 117–118; TE pp. 126–127B **5-5 Change the Form of a Linear Equation** (rewrite a linear equation using a different form)—SB pp. 128–131; PB pp. 119–120; TE pp. 128–131B
	(C)	write linear equations in two variables given a table of values, a graph, and a verbal description;	**5-3 Equations in Slope-Intercept Form** (write a linear equation in slope-intercept form given a verbal description and a graph)—SB pp. 122–125; PB pp. 115–116; TE pp. 122–125B **5-4 Equations in Point-Slope Form** (write linear equations using point-slope form given a verbal description and a graph)—SB pp. 126–127; PB pp. 117–118; TE pp. 126–127B
	(D)	write and solve equations involving direct variation;	**5-2 Direct Variation** (write and graph direct variation)—SB pp. 120–121; PB pp. 113–114; TE pp. 120–121B
	(E)	write the equation of a line that contains a given point and is parallel to a given line;	**5-6 Parallel and Perpendicular Lines** (write an equation of a line that is parallel or perpendicular to a given line)—SB pp. 132–135; PB pp. 121–122; TE pp. 132–135B
	(F)	write the equation of a line that contains a given point and is perpendicular to a given line;	**5-6 Parallel and Perpendicular Lines** (write an equation of a line that is parallel or perpendicular to a given line)—SB pp. 132–135; PB pp. 121–122; TE pp. 132–135B
	(G)	write an equation of a line that is parallel or perpendicular to the *X* or *Y* axis and determine whether the slope of the line is zero or undefined;	**5-6 Parallel and Perpendicular Lines** (slope is undefined)—TE pp. 132–135B; SB pp. 132–135 / PB pp. 121–122
	(I)	write linear inequalities in two variables given a table of values, a graph, and a verbal description; and	**3-1 Write and Graph Inequalities** (translate a word sentence into an inequality and vice versa)—SB pp. 70–71; PB pp. 65–66; TE pp. 70–71B

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			5-7 Graph a Linear Inequality in the Coordinate Plane (graph a linear inequality in two variables)—SB pp. 136–137; PB pp. 123–124; TE pp. 136–137B
	(H)	write systems of two linear equations given a table of values, a graph, and a verbal description.	***6-1A Solve Systems of Linear Equations Using Successive Approximations** (write and solve a linear system of equations using a graph, and then verifying the approximate solution with the method of successive approximations)—Online **6-2 Solve Systems of Linear Equations by Substitution** (write and solve systems of linear equations in two variables algebraically by substitution)—SB pp. 154–155; PB pp. 145–146; TE pp. 154–155B ***6-2A Replacing an Equation in a System of Equations** (write and graph a system of linear equations)—Online **6-3 Solve Systems of Linear Equations by Elimination** (write and solve systems of linear equations in two variables algebraically by using addition or subtraction to eliminate one variable)—SB pp. 156–157; PB pp. 147–148; TE pp. 156–157B
(3)	Linear functions, equations, and inequalities. The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. The student is expected to:		
	(A)	determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$;	**5-1 Identify Linear Functions and Their Graphs: Slope Formula** (find slopes of lines)—SB pp. 116–119; PB pp. 109–112; TE pp. 116–119B **5-3 Equations in Slope-Intercept Form** (graph a line using slope-intercept form)—SB pp. 122–125; PB pp. 115–116; TE pp. 122–125B **5-5 Change the Form of a Linear Equation: Standard Form of a Linear Equation**—SB pp. 128–131; PB pp. 119–120; TE pp. 128–131B
	(B)	calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems;	**5-1 Identify Linear Functions and Their Graphs** (relate a constant rate of change to the slope of a line)—SB pp. 116–119; PB pp. 109–112; TE pp. 116–119B ***5-6A Average Rate of Change** (calculate and interpret the average rate of change of a function)—Online
	(C)	graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems;	**5-9 Technology: Graph Linear Functions and Inequalities** (use a handheld to graph linear functions and inequalities)—SB pp. 140–141; PB pp. 127–128; TE pp. 140–141B
	(D)	graph the solution set of linear inequalities in two variables on the coordinate plane;	**3-4 Solve Multistep Inequalities** (solve and graph multistep inequalities)—SB pp. 76–79; PB pp. 71–72; TE pp. 76–79B

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	(E)	determine the effects on the graph of the parent function $f(x) = x$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x - c)$, $f(bx)$ for specific values of a, b, c, and d;	***6-2A Replacing an Equation in a System of Equations** (prove that, given a system of equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions)—Online
	(F)	graph systems of two linear equations in two variables on the coordinate plane and determine the solutions if they exist;	**6-1 Solve Systems of Linear Equations Graphically** (solve systems of linear equations in two variables graphically)—SB pp. 150–153; PB pp. 141–144; TE pp. 150–153B **6-7 Technology: Graph Systems of Equations** (use a handheld to graph a system of linear equations)—SB pp. 166–167; PB pp. 155–156; TE pp. 166–167B
	(G)	estimate graphically the solutions to systems of two linear equations with two variables in real-world problems; and	**6-1 Solve Systems of Linear Equations Graphically** (solve systems of linear equations in two variables graphically)—SB pp. 150–153; PB pp. 141–144; TE pp. 150–153B
	(H)	graph the solution set of systems of two linear inequalities in two variables on the coordinate plane.	**6-6 Graph Systems of Linear Inequalities** (graph and solve systems of linear inequalities in two variables)—SB pp. 162–165; PB pp. 153–154; TE pp. 162–165B **6-8 Technology: Graph Systems of Inequalities** (use a handheld to graph a system of linear inequalities)—SB pp. 168–169; PB pp. 157–158; TE pp. 168–169B
(4)	Linear functions, equations, and inequalities. The student applies the mathematical process standards to formulate statistical relationships and evaluate their reasonableness based on real-world data. The student is expected to:		
	(A)	calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association;	***14-7B Correlation Coefficient** (compute and interpret the correlation coefficient of a linear fit using a handheld)—Online
	(B)	compare and contrast association and causation in real-world problems; and	**14-7 Scatter Plots** (identify correlation from a scatter plot; analyze association and causation)—SB pp. 374–377; PB pp. 371–372; TE pp. 374–377B
	(C)	write, with and without technology, linear functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.	**14-7 Scatter Plots** (construct lines of best fit for scatter plots and write their equations)—SB pp. 374–377; PB pp. 371–372; TE pp. 374–377B ***14-7A Fit a Function to Data** (use a function to fit a data set and to assess the fit of a function by plotting and analyzing residuals)—Online

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(5)	Linear functions, equations, and inequalities. The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. The student is expected to:		
	(A)	solve linear equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides;	***2-5A Solve Equations with Letter Coefficients** (solving a multistep equation in one variable with coefficients represented by letters; use the Distributive Property; variables on both sides)—Online
	(B)	solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides; and	**3-2 Solve Inequalities Using Addition or Subtraction** (graph the solution sets of addition and subtraction inequalities)—SB pp. 72–73; PB pp. 67–68; TE pp. 72–73B **3-3 Solve Inequalities Using Multiplication or Division** (graph the solution sets of multiplication and division inequalities)—SB pp. 74–75; PB pp. 69–70; TE pp. 74–75B **3-4 Solve Multistep Inequalities** (solve and graph multistep inequalities; use the Distributive Property)—SB pp. 76–79; PB pp. 71–72; TE pp. 76–79B **3-7 Technology: Solve Linear Inequalities** (use a handheld to solve linear inequalities)—SB pp. 86–87; PB pp. 77–78; TE pp. 86–87B
	(C)	solve systems of two linear equations with two variables for mathematical and real-world problems.	**6-1 Solve Systems of Linear Equations Graphically** (solve systems of linear equations in two variables graphically)—SB pp. 150–153; PB pp. 141–144; TE pp. 150–153B ***6-1A Solve Systems of Linear Equations Using Successive Approximations** (write and solve a linear system of equations using a graph, and then verifying the approximate solution with the method of successive approximations)—Online **6-2 Solve Systems of Linear Equations by Substitution** (solve systems of linear equations in two variables algebraically by substitution)—SB pp. 154–155; PB pp. 145–146; TE pp. 154–155B ***6-2A Replacing an Equation in a System of Equations** (prove that, given a system of equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions)—Online **6-3 Solve Systems of Linear Equations by Elimination** (solve systems of linear equations in two variables algebraically by using addition or subtraction to eliminate one variable)—SB pp. 156–157; PB pp. 147–148; TE pp. 156–157B **6-4 Solve Equivalent Systems of Linear Equations** (solve systems of linear equations in two variables using equivalent systems)—SB pp. 158–159; PB pp. 149–150; TE pp. 158–159B **6-5 Apply Systems of Linear Equations** (solve a variety of verbal problems using systems of linear equations in two variables)—SB pp. 160–161; PB pp. 151–152; TE pp. 160–161B

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			6-7 Technology: Graph Systems of Equations (use a handheld to graph a system of linear equations)—SB pp. 166–167; PB pp. 155–156; TE pp. 166–167B **Chapter 6 Enrichment: Use Cramer's Rule to Solve Systems of Linear Equations**—SB pp. 172–173; PB pp. 161–162; TE pp. 172–173B
(6)	Quadratic functions and equations. The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. The student is expected to:		
	(A)	determine the domain and range of quadratic functions and represent the domain and range using inequalities;	**10-1 Identify Quadratic Functions and Their Graphs** (find the maximum or minimum value and the domain and range of a quadratic function, given its graph; represent domain and range using inequalities)—SB pp. 246–249; PB pp. 243–246; TE pp. 246–249B
	(B)	write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ($f(x) = a(x - h)^2 + k$), and rewrite the equation from vertex form to standard form ($f(x) = ax^2 + bx + c$); and	*No vertex form.
	(C)	write quadratic functions when given real solutions and graphs of their related equations.	**10-1 Identify Quadratic Functions and Their Graphs** (write quadratic functions)—SB pp. 246–249; PB pp. 243–246; TE pp. 246–249B
(7)	Quadratic functions and equations. The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. The student is expected to:		
	(A)	graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including *x*-intercept, *y*-intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry;	**10-1 Identify Quadratic Functions and Their Graphs** (find the maximum or minimum value and the domain and range of a quadratic function, given its graph; vertex; write the equations of the axis of symmetry)—SB pp. 246–249; PB pp. 243–246; TE pp. 246–249B **10-2 Graph Quadratic Functions: Parabola** (find the coordinates of the vertex of a parabola and the equation of its axis of symmetry, given its function rule)—SB pp. 250–253; PB pp. 247–248; TE pp. 250–253B ***10-2A Features of Quadratic Functions** (find the equation of the axis of symmetry and coordinates of the vertex; graph the quadratic function)—Online
	(B)	describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions; and	**10-3 Solve Quadratic Equations by Factoring** (apply the Zero Product Property)—SB pp. 254–257; PB pp. 249–252; TE pp. 254–257B

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			10-8 Solve Linear-Quadratic Systems (apply the Zero Product Property)—SB pp. 266–269; PB pp. 261–262; TE pp. 266–269B
	(C)	determine the effects on the graph of the parent function $f(x) = x^2$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x - c)$, $f(bx)$ for specific values of a, b, c, and d.	**10-2 Graph Quadratic Functions: Parabola** (use a handheld to investigate the characteristics of families of parabolas)—SB pp. 250–253; PB pp. 247–248; TE pp. 250–253B **10-10 Technology: Families of Quadratic Functions** (use a handheld to explore families of quadratic functions)—SB pp. 272–273; PB pp. 265–266; TE pp. 272–273B **13-2 Graph Rational Functions** (identify vertical and horizontal asymptotes)—SB pp. 332–335; PB pp. 333–334; TE pp. 332–335B
(8)	Quadratic functions and equations. The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. The student is expected to:		
	(A)	solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and	**10-3 Solve Quadratic Equations by Factoring**—SB pp. 254–257; PB pp. 249–252; TE pp. 254–257B **10-4 Solve Verbal Problems Involving Quadratic Equations**—SB pp. 258–259; PB pp. 253–254; TE pp. 258–259B **10-5 Solve Quadratic Equations by Completing the Square**—SB pp. 260–261; PB pp. 255–256; TE pp. 260–261B **10-6 The Quadratic Formula and the Discriminant**—SB pp. 262–263; PB pp. 257–258; TE pp. 262–263B **10-7 Solve Quadratic Equations with the Quadratic Formula**—SB pp. 264–265; PB pp. 259–260; TE pp. 264–265B
	(B)	write, using technology, quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.	***10-10B Write a Quadratic Function Rule** (write an explicit function rule for a quadratic function for which only ordered pairs are known and to use context to interpret the features of the function rule)—Online
(9)	Exponential functions and equations. The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. The student is expected to:		
	(A)	determine the domain and range of exponential functions of the form $f(x) = ab^x$ and represent the domain and range using inequalities;	**13-4 Identify Exponential Functions and Their Graphs** (identify the domain and range of exponentials functions using inequalities)—SB pp. 338–341; PB pp. 337–340; TE pp. 338–341B

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			***13-4A Features of Exponential Functions** (identify the key features of exponential functions; identify the domain and range using inequalities)—Online
	(B)	interpret the meaning of the values of a and b in exponential functions of the form $f(x) = ab^x$ in real-world problems;	**13-4 Identify Exponential Functions and Their Graphs** (identify and evaluate exponential functions)—SB pp. 338–341; PB pp. 337–340; TE pp. 338–341B ***13-4A Features of Exponential Functions**—Online
	(C)	write exponential functions in the form $f(x) = ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay;	**13-4 Identify Exponential Functions and Their Graphs** (identify and evaluate exponential functions; write an exponential function)—SB pp. 338–341; PB pp. 337–340; TE pp. 338–341B **13-5 Exponential Growth and Decay** (write and solve an exponential function which models exponential growth and decay)—SB pp. 342–345; PB pp. 341–342; TE pp. 342–345B ***13-5C Compare Linear and Exponential Change** (observe how linear and exponential relationships differ)—Online ***13-5D Growth of Linear, Quadratic, and Exponential Functions** (prove that linear functions grow by equal differences and exponential functions grow by equal factors and to show that exponential growth always exceeds quadratic or linear growth)—Online
	(D)	graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems; and	**13-4 Identify Exponential Functions and Their Graphs** (graph exponential functions)—SB pp. 338–341; PB pp. 337–340; TE pp. 338–341B ***13-4A Features of Exponential Functions** (identify the key features of exponential functions)—Online **13-5 Exponential Growth and Decay** (solve problems involving exponential growth and decay)—SB pp. 342–345; PB pp. 341–342; TE pp. 342–345B ***13-5A Transform Exponential Functions** (solve problems by transforming expressions for exponential functions using the Properties of Exponents)—Online **13-8 Technology: Compare Exponential Growth and Decay** (use a handheld to compare exponential growth and decay)—SB pp. 350–351; PB pp. 347–348; TE pp. 350–351B
	(E)	write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems.	**13-8 Technology: Compare Exponential Growth and Decay** (use a handheld to compare exponential growth and decay)—SB pp. 350–351; PB pp. 347–348; TE pp. 350–351B
(10)	Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. The student is expected to:		
	(A)	add and subtract polynomials of degree one and degree two;	**7-2 Add and Subtract Polynomials**—SB pp. 178–181; PB pp. 171–172; TE pp. 178–181B

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(C) Knowledge and skills

	TEKS for Mathematics, Algebra I	Sadlier-Oxford *Algebra 1*
(B)	multiply polynomials of degree one and degree two;	**7-3 Multiply a Polynomial by a Monomial** (multiply a polynomial by a monomial)—SB pp. 182–183; PB pp. 173–174; TE pp. 182–183B **7-6 Multiply Polynomials** (multiply a polynomial by a polynomial)—SB pp. 188–189; PB pp. 179–180; TE pp. 188–189B
(C)	determine the quotient of a polynomial of degree one and polynomial of degree two when divided by a polynomial of degree one and polynomial of degree two when the degree of the divisor does not exceed the degree of the dividend;	**7-7 Divide a Polynomial by a Monomial** (divide a polynomial by a monomial)—SB pp. 190–191; PB pp. 181–182; TE pp. 190–191B **7-8 Divide Polynomials Using Long Division** (divide a polynomial by a binomial)—SB pp. 192–193; PB pp. 183–184; TE pp. 192–193B
(D)	rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property;	**7-1 Introduction to Polynomials** (simplify using the Distributive Property)—SB pp. 176–177; PB pp. 169–170; TE pp. 176–177B **7-2 Add and Subtract Polynomials** (simplify using the Distributive Property)—SB pp. 178–181; PB pp. 171–172; TE pp. 178–181B **7-3 Multiply a Polynomial by a Monomial** (apply the Distributive Property)—SB pp. 182–183; PB pp. 173–174; TE pp. 182–183B **7-5 Multiply Binomials** (multiply binomials using the Distributive Property)—SB pp. 186–187; PB pp. 177–178; TE pp. 186–187B **7-6 Multiply Polynomials** (apply the Distributive Property)—SB pp. 188–189; PB pp. 179–180; TE pp. 188–189B **7-7 Divide a Polynomial by a Monomial** (apply the Distributive Property)—SB pp. 190–191; PB pp. 181–182; TE pp. 190–191B **8-3 Factor Trinomials: $ax^2 + bx + c$, $a \neq 1$** (use the Distributive Property)—SB pp. 206–209; PB pp. 199–200; TE pp. 206–209B **8-6 Factor by Grouping** (use the Distributive Property)—SB pp. 214–215; PB pp. 205–206; TE pp. 214–215B **8-7 Factor Completely** (apply the Distributive Property)—SB pp. 216–217; PB pp. 207–208; TE pp. 216–217B
(E)	factor, if possible, trinomials with real factors in the form $ax^2 + bx + c$, including perfect square trinomials of degree two; and	**8-3 Factor Trinomials: $ax^2 + bx + c$, $a \neq 1$** (factor quadratic trinomials when the leading coefficient is other than 1)—SB pp. 206–209; PB pp. 199–200; TE pp. 206–209B **8-4 Special Product and Factoring: $(a \pm b)^2 = a^2 \pm 2ab + b^2$** (factor a perfect-square trinomial)—SB pp. 210–211; PB pp. 201–202; TE pp. 210–211B
(E)	factor, if possible, trinomials with real factors in the form $ax^2 + bx + c$, including perfect square trinomials of degree two; and	**8-3 Factor Trinomials: $ax^2 + bx + c$, $a \neq 1$** (factor quadratic trinomials when the leading coefficient is other than 1)—SB pp. 206–209; PB pp. 199–200; TE pp. 206–209B **8-4 Special Product and Factoring: $(a \pm b)^2 = a^2 \pm 2ab + b^2$** (factor a perfect-square trinomial)—SB pp. 210–211; PB pp. 201–202; TE pp. 210–211B

*Online at progressinmathematics.com.

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(C) Knowledge and skills

		TEKS for Mathematics, Algebra I	Sadlier-Oxford *Algebra 1*
	(F)	decide if a binomial can be written as the difference of two squares and, if possible, use the structure of a difference of two squares to rewrite the binomial.	**8-5 Special Product and Factoring: $(a + b)(a - b) = a^2 - b^2$** (identify and factor binomials that are differences of two perfect squares)—SB pp. 212–213; PB pp. 203–204; TE pp. 212–213B
(11)		Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to rewrite algebraic expressions into equivalent forms. The student is expected to:	
	(A)	simplify numerical radical expressions involving square roots; and	**9-1 Simplify Radical Expressions** (write square-root expressions in simplest radical form)—SB pp. 226–227; PB pp. 221–222; TE pp. 226–227B
	(B)	simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents.	**1-5 Integer Exponents (apply the Laws of Exponents; apply the definitions of zero and negative exponents)**—SB pp. 10–11; PB pp. 9–10; TE pp. 10–11B ***1-5A Properties of Integer Exponents** (use properties of exponents to simplify expressions)—Online **1-6 The Order of Operations** (simplify numerical expressions using the order of operations)—SB pp. 12–13; PB pp. 11–12; TE pp. 12–13B **1-8 Algebraic Expressions** (evaluate algebraic expressions by using the order of operations)—SB pp. 16–19; PB pp. 15–16; TE pp. 16–19B **13-4 Identify Exponential Functions and Their Graphs** (simplify numbers with rational exponents; Power Law of Exponents)—SB pp. 338–341; PB pp. 337–340; TE pp. 338–341B
(12)		Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. The student is expected to:	
	(A)	decide whether relations represented verbally, tabularly, graphically, and symbolically define a function;	**4-1 Introduction to Relations** (define relation, domain, and range)—SB pp. 94–95; PB pp. 89–90; TE pp. 94–95B **4-2 Introduction to Functions** (identify relations as functions, given different representations)—SB pp. 96–99; PB pp. 91–92; TE pp. 96–99B ***4.2A Graphs of Functions** (understand that the graph of an equation in two variables is the set of all of its solutions plotted on the coordinate plane and choose and interpret the scale and the origin in those graphs)—Online **4-3 Write Function Rules** (make function tables)—SB pp. 100–101; PB pp. 93–94; TE pp. 100–101B
	(B)	evaluate functions, expressed in function notation, given one or more elements in their domains;	**4-2 Introduction to Functions** (evaluate functions expressed in function notation)—SB pp. 96–99; PB pp. 91–92; TE pp. 96–99B

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(C) Knowledge and skills

	TEKS for Mathematics, Algebra I	Sadlier-Oxford *Algebra 1*
(C)	identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes;	**4-4 Arithmetic Sequences** (find an indicated term of an arithmetic sequence)—SB pp. 102–105; PB pp. 95–96; TE pp. 102–105B **4-5 Geometric Sequences** (find an indicated term of a geometric sequence; write a recursive formula for a geometric sequence)—SB pp. 106–109; PB pp. 97–98; TE pp. 106–109B
(D)	write a formula for the n^{th} term of arithmetic and geometric sequences, given the value of several of their terms; and	**4-4 Arithmetic Sequences: Formula for the *n*th Term of an Arithmetic Sequence**—SB pp. 102–105; PB pp. 95–96; TE pp. 102–105B **4-5 Geometric Sequences: Formula for the *n*th term of a Geometric Sequence**—SB pp. 106–109; PB pp. 97–98; TE pp. 106–109B
(E)	solve mathematic and scientific formulas, and other literal equations, for a specified variable.	**2-7 Formulas and Literal Equations** (solve literal equations for particular variables)—SB pp. 60–61; PB pp. 51–52; TE pp. 60–61B

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