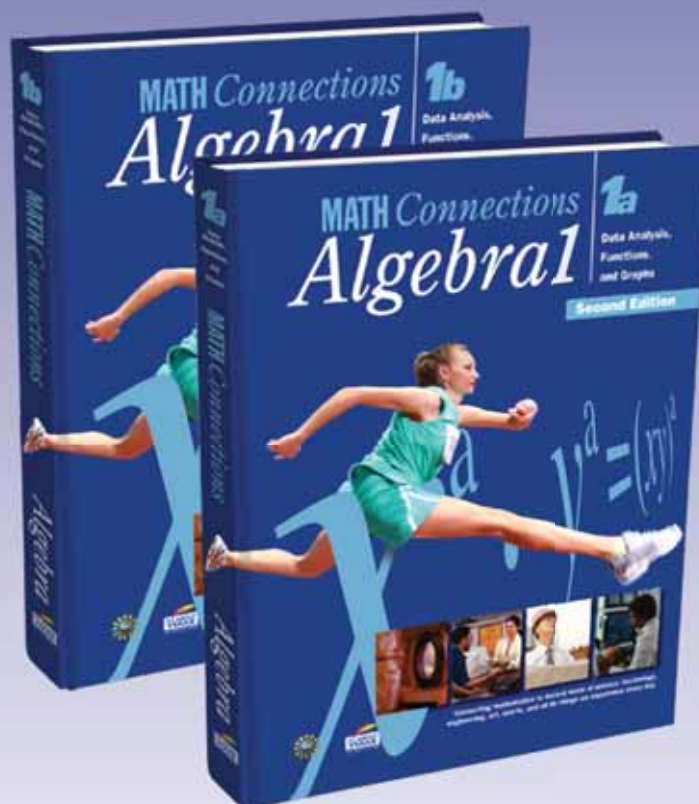


MATH *Connections*[®]

Algebra 1 Correlation to the South Carolina
Mathematics Academic Standards
Grades 9–12

Elementary Algebra



Indicators	Location/Page where Standard is found
Standard EA-1: The students will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
EA-1.1 Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.	Book 1a: 79 – 83, 87 – 106, 109, 113 – 117, 130 – 133, 152, 161 – 164, 195, 203, 214, 216, 222, 223, 232, 239, 240, 278 – 280, 291, 317, 357 – 360 Book 1b: 373, 429, 442 – 450, 453, 478, 482, 503, 518, 519, 528, 564, 626, 638, 642 – 644, 659, 667 – 669, 672
EA-1.2 Connect algebra with other branches of mathematics.	Book 1a: 209 – 214, 228 – 244, 303 – 314, 335 Book 1b: 432 – 435, 442 – 450, 454 – 480, 532 – 537, 619, 622, 637 – 643, 653, 655, 664, 665
EA-1.3 Apply algebraic methods to solve problems in real-world contexts.	Book 1a: 78, 79, 84, 90 – 102, 105 – 108, 114 – 120, 123 – 127, 130, 226, 232 – 234, 243 – 247, 303 – 314 Book 1b: 378, 381 – 387, 391, 393, 394, 397 – 401, 406 – 412, 414 – 416, 425 – 440, 448 – 450, 455 – 470, 474 – 509, 513, 526 – 530, 615, 619, 622, 625, 627, 628, 635 – 648, 652, 653, 659 – 666
EA-1.4 Judge the reasonableness of mathematical solutions.	Book 1a: 85, 98, 109, 120, 149, 198, 219, 316, 320 Book 1b: 394, 397, 403, 418, 462, 582, 603, 606, 663, 676, 681, 682
EA-1.5 Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).	Book 1a: 78 – 80, 84, 85, 90 – 102, 105 – 108, 114 – 120, 123 – 127, 130, 157, 204, 205, 208 – 214, 216, 226, 228, 232 – 234, 236, 243 – 247, 251, 289, 292, 303 – 313, 324 Book 1b: 364 - 373, 378, 381 – 387, 391, 393, 394, 397 – 401, 448 – 450, 452, 455 – 470, 474 – 509, 513, 526 - 530 547, 548, 557, 564, 572, 587 – 589, 615, 619, 622, 625, 627, 628, 635 – 648, 652, 653, 659 – 666
EA-1.6 Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.	Book 1a: 80, 85, 90, 91, 105, 157, 204, 205, 208 - 214, 216, 226, 228, 232, 234, 236, 243, 244, 251, 289, 292, 307, 324 Book 1b: 364 - 373, 384, 401, 452, 459, 481, 482, 487, 494 – 496, 528, 547, 548, 557, 564, 572, 587 – 589
EA-1.7 Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).	Book 1a: 216 – 219, 223, 224, 232, 234, 238, 262, 263, 322 – 324, 328, 330, 331, 338, 344 – 346, 355 – 360 Book 1b: 369, 380, 391 – 393, 404 – 406, 409, 411, 412, 418, 443, 469, 470

Indicators	Location/Page where Standard is found
Standard EA-2: The students will demonstrate through the mathematical processes an understanding of the real number system and operations involving exponents, matrices, and algebraic expressions.	
EA-2.1 Exemplify elements of the real number system (including integers, rational numbers, and irrational numbers)	Book 1a: 57, 58, 67, 68, 332, T405 Book 1b: 441, 442, 452, 453, 463, 465, 474, 502 – 504, 532, 533, 536, 544, 601 – 604, 611, 612 In-depth Year 3 Chapter 7
EA-2.2 Apply the laws of exponents and roots to solve problems.	Book 1a: 142 – 152, 161 – 166 Book 1b: 399, 448 – 450
EA-2.3 Carry out a procedure to perform operations (including multiplication and division) with numbers written in scientific notation.	Book 1a: 128 – 130, 133, 134, 140, 141, 144, 145, 148, 149 Book 1b: 528
EA-2.4 Use dimensional analysis to convert units of measure within a system.	Book 1a: 84, 90, 134, 140, 193, 292, 305, 323 Book 1b: 387, 474, 484, 516, 516, 528
EA-2.5 Carry out a procedure using the properties of real numbers (including commutative, associative, and distributive) to simplify expressions.	Book 1a: 80, 81, 95 – 97, 100 – 106, 114, 121, 122, 143, 146 Book 1b: 390, 391, 483, 497, 502 – 505, 512, 547, 621
EA-2.6 Carry out a procedure to evaluate an expression by substituting a value for the variable.	Book 1a: 81 – 83, 85, 87, 89, 92, 94, 97 – 99, 101 – 106, 110, 113, 121, 125, 165, 180, 181, 306, 310, 311, 314, 320, 335, 345, 346, 352 Book 1b: 368, 369, 373, 388, 397, 402 – 405, 414 – 422, 432 – 434, 441 – 452, 461 – 465, 474, 479, 484, 490, 491, 499 – 501, 507, 508, 524, 537, 161, 629, 632, 636, 664
EA-2.7 Carry out a procedure (including addition, subtraction, multiplication, and division by a monomial) to simplify polynomial expressions.	Book 1a: 137, 138, 144 Book 1b: 619 – 623, 647, 650, 664, 666, 678 – 680
EA-2.8 Carry out a procedure to factor binomials, trinomials, and polynomials by using various techniques (including the greatest common factor, the difference between two squares, and quadratic trinomials).	Book 1b: 452 – 454, 623, 645, 647, 650 – 652, 658, 660, 663, 666, 677, 678, 681, 682
EA-2.9 Carry out a procedure to perform operations with matrices (including addition, subtraction, and scalar multiplication).	Book 2b: Chapter 6
EA-2.10 Represent applied problems by using matrices.	Book 2b: Chapter 6

Indicators	Location/Page where Standard is found
Standard EA-3: The students will demonstrate through the mathematical processes an understanding of relationships and functions.	
EA-3.1 Classify a relationship as being either a function or not a function when given data as a table, set of ordered pairs, or graph.	Book 1b: 427 – 430, 433 – 435, 437, 438, 446
EA-3.2 Use function notation to represent functional relationships.	Book 1b: 427 – 524, 615 – 676
EA-3.3 Carry out a procedure to evaluate a function for a given element in the domain.	Book 1b: 427, 428, 432 – 434, 438, 441 – 452, 461, 463, 465, 474, 479, 484, 490, 491, 499, 501, 507, 508, 524, 616, 624, 630, 632, 633, 636, 664
EA-3.4 Analyze the graph of a continuous function to determine the domain and range of the function.	Book 1b: 455, 510, 511, 666
EA-3.5 Carry out a procedure to graph parent functions (including $y = x$, $y = x^2$, $y = \sqrt{x}$, $y = x $, and $y = \frac{1}{x}$)	Book 1a: 209, 210, 217, 218, 221, 223, 225, 274 – 281 Book 1b: 630 – 632, 667 – 676
EA-3.6 Classify a variation as either direct or inverse.	Book 2a: Section 1.9
EA-3.7 Carry out a procedure to solve literal equations for a specified variable.	Book 1a: 115, 213, 223, 233, 255 – 258 Book 1b: 389 – 392, 404 – 406, 416, 477, 646, 655 – 657, 663
EA-3.8 Apply proportional reasoning to solve problems.	Book 1b: 511 – 517
Indicators	Location/Page where Standard is found
Standard EA-4: The students will demonstrate through the mathematical processes an understanding of the procedures for writing and solving linear equations and inequalities.	
EA-4.1 Carry out a procedure to write an equation of a line with a given slope and a y -intercept.	Book 1a: 223, 224, 230, 232, 250, 251, 253 Book 1b: 368, 381 – 385, 393, 399, 407, 415
EA-4.2 Carry out a procedure to write an equation of a line with a given slope passing through a given point.	Book 1a: 253, 255, 256, 264, 265
EA-4.3 Carry out a procedure to write an equation of a line passing through two given points.	Book 1a: 238, 243, 244, 265, 306, 307, 310, 311, 314, 316, 326, 335, 336, 342, 344, 350
EA-4.4 Use a procedure to write an equation of a trend line from a given scatterplot.	Book 1a: 323 – 332, 338 – 346, 351, 355 – 360 Book 1b: 409 – 413

Indicators	Location/Page where Standard is found
Standard EA-4: The students will demonstrate through the mathematical processes an understanding of the procedures for writing and solving linear equations and inequalities.	
EA-4.5 Analyze a scatterplot to make a prediction	Book 1a: 314, 315, 318, 319, 322, 332 – 347, 350 – 355, 360
EA-4.6 Represent linear equations in multiple forms (including point-slope, slope-intercept, and standard).	Book 1a: 229 – 235, 237, 238, 255 – 259, 264, 265, 354 Book 1b: 404, 405
EA-4.7 Carry out procedures to solve linear equations for one variable algebraically.	Book 1a: 108 – 116, 148, 149, 153 – 156, 162, 238, 241 – 245, 259, 265, 306, 307, 310, 311, 314, 316, 326, 335, 336, 342, 344, 350 Book 1b: 388, 396 – 401, 417 – 422, 536
EA-4.8 Carry out procedures to solve linear inequalities for one variable algebraically and then to graph the solution.	Book 1a: 170 – 180
EA-4.9 Carry out a procedure to solve systems of two linear equations graphically.	Book 1b: 378 – 385, 407, 411
EA-4.10 Carry out a procedure to solve systems of two linear equations algebraically.	Book 1b: 401 – 407, 411, 414, 415
Indicators	Location/Page where Standard is found
Standard EA-5: The students will demonstrate through the mathematical processes an understanding of the graphs and characteristics of linear equations and inequalities.	
EA-5.1 Carry out a procedure to graph a line when given the equation of the line.	Book 1a: 207 – 233, 244, 247, 251, 252, 263, 320, 321, 331, 338, 357, 360 Book 1b: 381 – 385, 393, 394, 407, 471
EA-5.2 Analyze the effects of changes in the slope, m , and the y -intercept, b , on the graph of $y = mx + b$.	Book 1a: 217 – 225, 229 – 233
EA-5.3 Carry out a procedure to graph the line with a given slope and a y -intercept.	Book 1a: 230 – 233, 244, 250, 251, 253 Book 1b: 381 – 385, 392, 393, 399, 407, 415, 415
EA-5.4 Carry out a procedure to graph the line with a given slope passing through a given point.	Book 1a: 204, 211, 212, 230 – 233, 244, 250, 251, 253 Book 1b: 381 – 385, 392, 393, 399, 407, 415, 415
EA-5.5 Carry out a procedure to determine the x -intercept and y -intercept of lines from data given tabularly, graphically, symbolically, and verbally.	Book 1a: 230 – 235, 237 – 242, 245, 250 – 253, 256 – 259, 264, 264, 274, 276, 328, 355 Book 1b: 373, 383, 384, 390, 394 – 400, 404, 405, 413, 471, 476, 479, 509, 510, 635
EA-5.6 Carry out a procedure to determine the slope of a line from data given tabularly, graphically, symbolically, and verbally.	Book 1a: 207 – 214, 227 – 238, 243 – 259, 264, 265, 306, 307, 310, 311, 314, 316, 326, 335, 336, 342, 344, 350 Book 1b: 384, 381 – 385, 393, 395, 397, 399, 400, 405 – 407, 414, 415, 471, 476, 479, 635

Indicators	Location/Page where Standard is found
Standard EA-5: Continued	
EA-5.7 Apply the concept of slope as a rate of change to solve problems.	Book 1a: 206, 207, 222 – 235, 244, 245, 249 – 254, 310, 328 Book 1b: 375 – 385, 397, 400, 413 – 415, 434, 468 – 470, 479, 480, 488, 491, 492, 509, 558, 616
EA-5.8 Analyze the equations of two lines to determine whether the lines are perpendicular or parallel.	Book 1a: 224, 225, 227, 229, 232, 253, 263 Book 1b: 416
EA-5.9 Analyze given information to write a linear function that models a given problem situation.	Book 1a: 79, 80, 82, 89 – 94, 114, 116, 117, 148, 149, 223, 224, 232 - 234, , 226, 232 – 234, 243 – 247, 250 – 254, 303 – 314 Book 1b: 378, 381 – 385, 391, 393 – 397, 399, 406 – 412, 414 – 416, 441– 445, 449, 450, 455 – 472, 477 – 480, 517 – 519, – 616, 622
EA-5.10 Analyze given information to determine the domain and range of a linear function in a problem situation.	Book 1b: 441 – 450, 472, 480
EA-5.11 Analyze given information to write a system of linear equations that models a given problem situation.	Book 1b: 381 – 385, 387, 393, 406, 407, 409 – 412, 414 – 416
EA-5.12 Analyze given information to write a linear inequality in one variable that models a given problem situation.	Book 1a: 199 – 202
Indicators	Location/Page where Standard is found
Standard EA-6: The students will demonstrate through the mathematical processes an understanding of quadratic relationships and functions.	
EA-6.1 Analyze the effects of changing the leading coefficient a on the graph of $y = ax^2$.	Book 1b: 627, 672, 675
EA-6.2 Analyze the effects of changing the constant c on the graph of $y = x^2 + c$.	Book 1a: 225 Book 1b: 641 – 643
EA-6.3 Analyze the graph of a quadratic function to determine its equation.	Book 1b: 652, 666
EA-6.4 Carry out a procedure to solve quadratic equations by factoring.	Book 1b: 645 – 653, 663 – 665
EA-6.5 Carry out a graphic procedure to approximate the solutions of quadratic equations.	Book 1b: 638 – 643, 659, 663
EA-6.6 Analyze given information to determine the domain of a quadratic function in a problem situation.	Book 1b: 636, 640