A Correlation of

Pearson Mathematics
Algebra 1, Geometry, Algebra 2
Common Core
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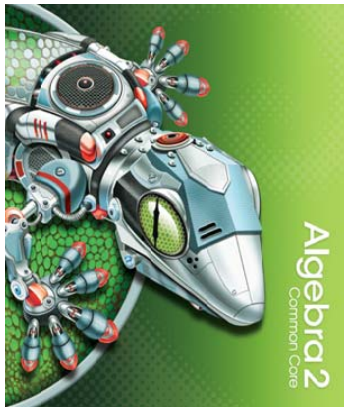

to

Nebraska's College and Career Ready Standards for Mathematics
Grades 9-11

Pearson

A Correlation of Pearson High School Mathematics
Algebra 1, Geometry, Algebra 2 Common Core ©2015
to the Nebraska College and Career Ready Standards for Mathematics

Introduction

This document demonstrates how ***Pearson Algebra 1, Geometry, Algebra 2 Common Core Edition*** **©2015** meets the Nebraska College and Career Ready Standards for Mathematics. Correlation references are to the pages of the Student and Teacher's Editions.

Pearson Algebra 1, Geometry, Algebra 2 Common Core Edition ©2015 is a rigorous, flexible, and data-driven high school math program designed to ensure high school students master the Common Core State Standards. The program's 5-step lesson design was built for the requirements of the Common Core, and independent research has proven the program's lesson design is effective for all learners.

Pearson Algebra 1, Geometry, Algebra 2 Common Core Edition ©2015 balances conceptual understanding, procedural fluency, and the application of mathematics to solve problems and formulate models. The lesson design of the program was built specifically to meet the "rigor" criterion of the Common Core State Standards.

- Each lesson begins with **Interactive Learning**, the *Solve It!*, which immediately engages students in their daily learning according to the Standards for Mathematical Practice.

- The second step of the lesson, **Guided Instruction**, uses visual learning principles and a Thinking/Reasoning strand (seen in the *Know/Need/Plan* and *Think/Plan/Write* boxes) to introduce the Essential Understanding of the lesson by teaching THROUGH and FOR problem-solving. **Interactive Learning** and **Guided Instruction** are both deliberately designed to address the essential elements in the Common Core conceptual category of mathematical modeling.

- In the third step of the lesson, the **Lesson Check**, *Do you know HOW?* exercises measure students' procedural fluency, while *Do you UNDERSTAND?* problems measure students' conceptual understanding.

- In the fourth step of the lesson, **Practice** problems are designed to develop students' fluency in the Content Standards and proficiency with the Mathematical Practices. Real-world STEM problems as well as problems designed to elicit the use of one or more of the Standards for Mathematical Practice are clearly labeled in the **Practice** step of the lesson.

- The final phase of the lesson, **Assess and Remediate,** features a Lesson Quiz to measure students' understanding of lesson concepts. By utilizing the balanced and proven-effective approach of Pearson's 5-step lesson design, you can teach the Common Core State Standards with confidence.

A Correlation of Pearson High School Mathematics Algebra 1, Geometry, Algebra 2 to the Nebraska's College and Career Ready Standards for Mathematics

Nebraska's College and Career Ready Standards for Mathematics Grades 9 – 11	Pearson High Mathematics Algebra 1, Geometry, Algebra 2 ©2015
MATHEMATICAL PROCESSES	
1. Solves mathematical problems. Through the use of appropriate academic and technical tools, students will make sense of mathematical problems and persevere in solving them. Students will draw upon their prior knowledge in order to employ critical thinking skills, reasoning skills, creativity, and innovative ability. Additionally, students will compute accurately and determine the reasonableness of solutions.	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE:** CB: 45, 81-87, 200-206, 364-369, 378-384, 518-522, 553-558, CCPT: 613, PIAT: 652, 691-697, 726-731 **TE:** 87A-87B, 206A-206B, 369A-369B, 384A-384B, 522A-522B, 558A-558B, 697A-697B, 731A-731B **Geometry** This standard is addressed throughout the text. See, for example: **SE/TE:** CCPT: 3, 34-40, 59-67, CCPT: 139, 189-196, 226-233, CCPT: 283, 285-291, 353-358, 367-374, 660-666, 668-674, 762-769 **TE:** 40A-40B, 67A-67B, 196A-196B, 233A-233B, 291A-291B, 358A-358B, 374A-374B, 666A-666B, 674A-674B, 769A-769B **Algebra 2** This standard is addressed throughout the text. See, for example: **SE/TE:** 26-32, 114-120, 145-148, CB: 163, 202-208, 240-247, CB: 265, 312-317, CCPT: 359, CB: 413, PIAT: 421, CB: 578, 580-586, CCPT: 613, PIAT: 662 **TE:** 32A-32B, 120A-120B, 148A-148B, 208A-208B, 247A-247B, 317A-317B, 586A-586B
2. Models and represents mathematical problems. Students will analyze relationships in order to create mathematical models given a real-world situation or scenario. Conversely, students will describe situations or scenarios given a mathematical model.	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE:** CCPT: 3, 4-9, 53-58, CB: 80, CB: 101, 214-220, 234-239, 301-306, CB: 371, 546-552, 705-712, 732-737 **TE:** 9A-9B, 58A-58B, 220A-220B, 239A-239B, 306A-306B, 552A-552B, 712A-712B, 737A-737B

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(Continued) **2. Models and represents mathematical problems.** Students will analyze relationships in order to create mathematical models given a real-world situation or scenario. Conversely, students will describe situations or scenarios given a mathematical model.	**Geometry** This standard is addressed throughout the text. See, for example: **SE/TE:** 4-10, 43-48, CB: 49, CB: 170, 182-188, CB: 225, CB: 300, CB: 413, CB: 659, 688-695, CB: 696-697, CB: 770 **TE:** 10A-10B, 48A-48B, 188A-188B, 695A-695B **Algebra 2** This standard is addressed throughout the text. See, for example: **SE/TE:** CCPT: 3, 18-24, PIAT: 49, 92-98, CB: 164-165, 209-214, CB: 325, 434-441, CB: 477, CB: 594, 614-620, 703-709, 868-874, 928-934 **TE:** 24A-24B, 98A-98B, 165A-165B, 214A-214B, 441A-441B, 620A-620B, 709A-709B, 874A-874B, 934A-934B
3. Communicates mathematical ideas effectively. Students will communicate mathematical ideas effectively and precisely. Students will critique the reasoning of others as well as provide mathematical justifications. Students will utilize appropriate communication approaches individually and collectively and through multiple methods, including writing, speaking, and listening.	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE:** CCPT:3, CB: 37, PIAT: 67, CCPT: 163, 171-177, CCPT: 233, PIAT: 282, CB: 351, 364-369, 453-459, CB: 559 **TE:** 177A-177B, 369A-369B, 459A-459B **Geometry** This standard is addressed throughout the text. See, for example: **SE/TE:** 20-26, PIAT: 69, 82-88, 89-95, 106-112, 113-119, PIAT: 128, CB: 170, CB: 179-180, 258-264, CB: 284, 285-291, CB: 300, CB: 413, CB: 667, CB: 725 **TE:** 26A-26B, 88A-88B, 95A-95B, 112A-112B, 119A-119B, 264A-264B, 291A-291

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(Continued) **3. Communicates mathematical ideas effectively.** Students will communicate mathematical ideas effectively and precisely. Students will critique the reasoning of others as well as provide mathematical justifications. Students will utilize appropriate communication approaches individually and collectively and through multiple methods, including writing, speaking, and listening.	**Algebra 2** This standard is addressed throughout the text. See, for example: **SE/TE:** 166-173, 194-201, 202-208, 209-214, 248-255, CB: 256-257, CB: 318, 361-366, CB: 594, CB: 621, CB: 694-695, CB: 860 **TE:** 173A-173B, 201A-201B, 208A-208B, 214A-214B, 255A-255B, 366A-366B
4. Makes mathematical connections. Students will connect mathematical knowledge, ideas, and skills beyond the math classroom. This includes the connection of mathematical ideas to other topics within mathematics and to other content areas. Additionally, students will be able to describe the connection of mathematical knowledge and skills to their career interest as well as within authentic/real-world contexts.	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE:** 88-93, 186-192, 253-259, 387-392, 460-466, 553-558, CCPT: 613, PIAT: 652, 684-689, 698-704, 726-731 **TE:** 93A-93B, 192A-192B, 259A-259B, 392A-392B, 466A-466B, 704A-704B, 731A-731B **Geometry** This standard is addressed throughout the text. See, for example: **SE/TE:** 164-169, 218-224, 244-245, 285-291, 332-339, 587-593, CCPT: 613, 623-628, 635-641, 726-732, 733-740, 824-829 **TE:** 169A-169B, 224A-224B, 245A-245B, 291A-291B, 339A-339B, 593A-593B, 628A-628B, 641A-641B, 732A-732B, 740A-740B, 829A-829B **Algebra 2** This standard is addressed throughout the text. See, for example: **SE/TE:** 92-98, 134-141, 149-155, 209-214, 331-338, 398-404, 434-441, 478-483, 681-687, 688-693, 809-815, 844-850, 861-867 **TE:** 98A-98B, 141A-14B, 155A-155B, 214A-214B, 338A-338B, 404A-404B, 441A-441B, 483A-483B, 687A-687B, 693A-693B, 815A-815B, 850A-850B, 867A-867B

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MA 11.1 NUMBER: Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.	
MA.11.1.1 Numeric Relationships: Students will demonstrate, represent, and show relationships among the subsets of real numbers and the complex number system.	
MA 11.1.1.a Compare and contrast subsets of the complex number system, including imaginary, rational, irrational, integers, whole, and natural numbers.	**Algebra 1** **SE/TE:** 18-21 **TE:** 22A-22B **Algebra 2** **SE/TE:** 11-17, 248-255 **TE:** 17A-17B, 255A-255B
MA 11.1.1.b Recognize that closure properties apply to the subsets of the complex number system, under the standard operations.	**Algebra 2** **SE/TE:** 248-255 **TE:** 255A-255B
MA 11.1.1.c Use drawings, words, and symbols to explain the effects of operations such as multiplication and division on the magnitude of quantities in the real number system, including powers and roots (e.g., if you take the square root of a number, will the result always be smaller than the original number?).	**Algebra 1** **SE/TE:** 16-17, 38-44, CB: 45, CB: 424, 425-431, CB: 432, 433-438, 439-445, 619-625, 627-631, 804, 807 **TE:** 22A-22B, 44A-44B, 431A-431B, 438A-438B, 445A-445B, 625A-625B, T804, T807 **Geometry** For related content, please see: **SE/TE:** 889, 892 **TE:** 889T, 892T **Algebra 2** For related content, please see: **SE/TE:** 11-17, CB: 225, CB: 265, 361-366, 381-388 **TE:** 17A-17B, 366A-366B, 388A-388B

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MA 11.1.2 Operations: Students will compute with real and complex numbers.	
MA 11.1.2.a Compute with subsets of the complex number system, including imaginary, rational, irrational, integers, whole, and natural numbers.	**Algebra 1** **SE/TE:** 16-17, 30-36, 38-44, CB: 45, CB: 424, 425-431, CB: 432, 433-438, 439-445, 619-625, 626-631, 804, 807 **TE:** 22A-22B, 36A-36B, 44A-44B, 431A-431B, 438A-438B, 445A-445B, 625A-625B, T804, T807 **Algebra 2** **SE/TE:** 33-40, 248-255, CB: 225, CB: 265, CB: 360, 367-373, 374-380, 462-468 **TE:** 40A-40B, 255A-255B, 373A-373B, 380A-380B, 468A-468B
MA 11.1.2.b Simplify expressions with rational exponents.	**Algebra 1** **SE/TE:** 428-431, CB:447, 447-452 **TE:** 431A-431B, 452A-452B **Algebra 2** **SE/TE:** 381-388 **TE:** 388A-388B
MA 11.1.2.c Select, apply, and explain the method of computation when problem solving using real numbers (e.g., models, mental computation, paper-pencil, or technology).	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE:** 16-17, 30-36, 38-44, CB: 45, CB: 424, 425-431, CB: 432, 433-438, 439-445, 619-625, 626-631, 804, 807 **TE:** 22A-22B, 36A-36B, 44A-44B, 431A-431B, 438A-438B, 445A-445B, 625A-625B, T804, T807 **Geometry** For related content, please see: **SE/TE:** 50-56, CB: 57, 59-67, 159-163, 173-178, 197-204, CCPT: 283, 285-291, 293-299, Algebra Review: 399, 616-622, 643-648, 717-724, CB: 725 **TE:** 56A-56B, 67A-67B, 163A-163B, 178A-178B, 204A-204B, 291A-291B, 299A-299B, 622A-622B, 648A-648B, 724A-724B

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(Continued) MA 11.1.2.c Select, apply, and explain the method of computation when problem solving using real numbers (e.g., models, mental computation, paper-pencil, or technology).	**Algebra 2** **SE/TE:** 88-93, 166-173, 186-192, 194-201, 202-208, 209-214, 248-255, 361-366, 387-392, 460-466, 553-558, 684-689, 698-704, 726-731 **TE:** 93A-93B, 173A-173B, 192A-192B, 201A-201B, 208A-208B, 214A-214B, 255A-255B, 366A-366B, 392A-392B, 466A-466B, 558A-558B, 689A-689B, 704A-704B, 731A-731B
MA 11.1.2.d Use estimation methods to check the reasonableness of real number computations and decide if the problem calls for an approximation (including appropriate rounding) or an exact number.	**Algebra 1** For related content, please see: **SE/TE:** 17, 20, 120, 191, 800 **TE:** T800 **Geometry** For related content, please see: **SE/TE:** 887 **TE:** T887 **Algebra 2** For related content, please see: **SE/TE:** 374, 436, 438, 453, 466, 479, 481-482
MA 11.2 ALGEBRA: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.	
MA 11.2.1 Algebraic Relationships: Students will demonstrate, represent, and show relationships with functions.	
MA 11.2.1.a Define a function and use function notation.	**Algebra 1** **SE/TE:** 240-245, 246-251, 268-273 **TE:** 245A-245B, 251A-251B, 273A-273B **Algebra 2** **SE/TE:** 60-67 **TE:** 67A-67B

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MA 11.2.1.b Analyze a relation to determine if it is a function given graphs, tables, or algebraic notation.	**Algebra 1** **SE/TE:** 268-273 **TE:** 273A-273B **Algebra 2** **SE/TE:** 60-67 **TE:** 67A-67B
MA 11.2.1.c Classify a function given graphs, tables, or algebraic notation, as linear, quadratic, or neither.	**Algebra 1** **SE/TE:** 240-245, 246-251, 252-259, 268-273, 540-552 **TE:** 245A-245B, 251A-251B, 259A-259B, 273A-273B, 552A-552B **Algebra 2** **SE/TE:** 74-80, CB: 90-91, 107-113, 194-201, 202-208, 280-287, 434-441, 454-458, 515-523 **TE:** 80A-80B, 113A-113B, 201A-201B, 287A-287B, 441A-441B, 458A-458B, 523A-523B
MA 11.2.1.d Identify domain and range of functions represented in either algebraic or graphical form.	**Algebra 1** **SE/TE:** 240-245, 246-251, 268-273, 546-552 **TE:** 245A-245B, 251A-251B, 273A-273B, 552A-552B **Algebra 2** **SE/TE:** 60-67, 107-113, 194-201, 202-208, 280-287, 434-441, 454-458, 515-523 **TE:** 67A-67B, 113A-113B, 201A-201B, 208A-208B, 287A-287B, 441A-441B, 458A-458B, 523A-523B
MA 11.2.1.e Analyze and graph linear functions and inequalities (point-slope form, slope-intercept form, standard form, intercepts, rate of change, parallel and perpendicular lines, vertical and horizontal lines, and inequalities).	**Algebra 1** **SE/TE:** 240-245, 253-259, 294-300, CB: 307, 308-314, 315-320, 322-328, 330-335, 394-399 **TE:** 245A-245B, 259A-259B, 300A-300B, 314A-314B, 320A-320B, 328A-328B, 335A-335B, 399A-399B **Geometry** **SE/TE:** 189-196, 197-204 **TE:** 196A-196B, 204A-204B

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(Continued) MA 11.2.1.e Analyze and graph linear functions and inequalities (point-slope form, slope-intercept form, standard form, intercepts, rate of change, parallel and perpendicular lines, vertical and horizontal lines, and inequalities).	**Algebra 2** **SE/TE:** 74-80, 81-88, 114-120 **TE:** 80A-80B, 88A-88B, 120A-120B
MA 11.2.1.f Analyze and graph absolute value functions (finding the vertex, symmetry, transformations, determine intercepts, and minimums or maximums using the piecewise definition).	**Algebra 1** **SE/TE:** 346-350, CB: 351 **TE:** 350A-350B **Algebra 2** **SE/TE:** 107-113 **TE:** 113A-113B
MA 11.2.1.g Analyze and graph quadratic functions (standard form, vertex form, finding zeros, symmetry, transformations, determine intercepts, and minimums or maximums).	**Algebra 1** **SE/TE:** 546-552, 553-558, 561-566, CB: 567 **TE:** 552A-552B, 558A-558B, 566A-566B **Algebra 2** **SE/TE:** 194-201, 202-208 **TE:** 201A-201B, 208A-208B
MA 11.2.1.h Represent, interpret, and analyze inverses of functions algebraically and graphically.	**Algebra 1** **SE/TE:** CB: 329 **Algebra 2** **SE/TE:** 405-412, 451-458, 911-918 **TE:** 412A-412B, 458A-458B, 918A-918B

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MA 11.2.2 Algebraic Processes: Students will apply the operational properties when evaluating rational expressions, and solving linear and quadratic equations, and inequalities.	
MA 11.2.2.a Convert equivalent rates (e.g., miles per hour to feet per second).	**Algebra 1** **SE/TE:** 116-121 **TE:** 121A-121B **Geometry** For related content, please see: **SE/TE:** 62, 886 **TE:** T886
MA 11.2.2.b Identify and explain the properties used in solving equations and inequalities.	**Algebra 1** **SE/TE:** 23-28, 81-87, 88-93, 94-100, 102-108, 171-177 **TE:** 28A-28B, 87A-87B, 93A-93B, 100A-100B, 108A-108B, 177A-177B **Geometry** For related content, please see: **SE/TE:** Algebra Review: 323, Algebra Review: 439, 894 **TE:** T894 **Algebra 2** **SE/TE:** 11-17, 26-32, 33-40 **TE:** 17A-17B, 32A-32B, 40A-40B
MA 11.2.2.c Simplify algebraic expressions involving integer and fractional exponents.	**Algebra 1** **SE/TE:** 10-15, 48-52, 418-423, 428-431 **TE:** 15A-15B, 52A-52B, 423A-423B, 431A-431B **Geometry** For related content, please see: **SE/TE:** 890 **TE:** T890 **Algebra 2** **SE/TE:** 18-24, 381-388, 527-533 **TE:** 24A-24B, 388A-388B, 533A-533B

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MA 11.2.2.d Perform operations on rational expressions (add, subtract, multiply, divide, and simplify).	**Algebra 1** **SE/TE:** 664-669, 670-676, 684-689 **TE:** 669A-669B, 676A-676B, 689A-689B **Algebra 2** **SE/TE:** 527-533, 534-541 **TE:** 533A-533B, 541A-541B
MA 11.2.2.e Evaluate expressions at specified values of their variables (polynomial, rational, radical, and absolute value).	**Algebra 1** **SE/TE:** 12-15 **TE:** 15A-15B **Algebra 2** **SE/TE:** 19-24, 364, 371 (#52), 386 (#35-38), 530 **TE:** 24A-24B
MA 11.2.2.f Solve an equation involving several variables for one variable in terms of the others.	**Algebra 1** **SE/TE:** 109-114 **TE:** 114A-114B **Geometry** **SE/TE:** Algebra Review: 698 **Algebra 2** **SE/TE:** 29, 31 **TE:** 32A-32B
MA 11.2.2.g Solve linear and absolute value equations and inequalities.	**Algebra 1** **SE/TE:** CB: 80, 81-87, 88-93, 94-100, CB: 101, 102-108, 164-170, 178-183, CB:185, 186-192, 200-206, 207-213, 308-314, 315-320, 322-328, 394-399 **TE:** 87A-87B, 93A-93B, 100A-100B, 108A-108B, 170A-170B, 183A-183B, 192A-192B, 206A-206B, 213A-213B, 314A-314B, 320A-320B, 399A-399B **Geometry** **SE/TE:** Algebra Review: 323, 894 **TE:** T894

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(Continued) MA 11.2.2.g Solve linear and absolute value equations and inequalities.	**Algebra 2** **SE/TE:** 41-48, 68-73, 74-80, 81-88, 114-120 **TE:** 48A-48B, 73A-73B, 80A-80B, 88A-88B, 120A-120B
MA 11.2.2.h Analyze and solve systems of two linear equations and inequalities in two variables algebraically and graphically.	**Algebra 1** **SE/TE:** 364-369, CB: 370, CB: 371, 372-377, 378-384, CB: 385-386, 387-392, 400-405, CB: 406 **TE:** 369A-369B, 377A-377B, 384A-384B, 392A-392B, 405A-405B **Geometry** **SE/TE:** Algebra Review: 257, Algebra Review: 362 **Algebra 2** **SE/TE:** 134-141, 142-148, 149-155 **TE:** 141A-141B, 148A-148B, 155A-155B
MA 11.2.2.i Perform operations (addition subtraction, multiplication, and division) on polynomials.	**Algebra 1** **SE/TE:** 486-491, 492-496, CB: 497, 498-503, 504-509, CB: 677, 678-683 **TE:** 491A-491B, 496A-496B, 503A-503B, 509A-509B, 683A-683B **Algebra 2** **SE/TE:** 303-310, 979 **TE:** 310A-310B
MA 11.2.2.j Factor polynomials to include factoring out monomial terms and factoring quadratic expressions.	**Algebra 1** **SE/TE:** 492-496, CB: 511, 512-517, 518-522, 523-528, 529-533 **TE:** 496A-496B, 517A-517B, 522A-522B, 528A-528B, 533A-533B **Algebra 2** **SE/TE:** 216-223, 288, 293, 296-302 **TE:** 223A-223B, 302A-302B

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MA 11.2.2 k. Recognize polynomial multiplication patterns and their related factoring patterns (e.g., $(a + b)^2 = a^2 + 2ab + b^2$, $a^2 – b^2 = (a + b)(a - b)$).	**Algebra 1** **SE/TE:** 504-509, 523-528 **TE:** 509A-509B, 528A-528B **Algebra 2** **SE/TE:** 979
MA 11.2.2.l Make the connection between the factors of a polynomial and the zeros of a polynomial.	**Algebra 1** **SE/TE:** 568-572 **TE:** 572A-572B **Algebra 2** **SE/TE:** 288-295 **TE:** 295A-295B
MA 11.2.2.m Combine functions by composition and perform operations (addition, subtraction, multiplication, division) on functions.	**Algebra 2** **SE/TE:** 398-404 **TE:** 404A-404B
MA 11.2.2.n Solve quadratic equations involving real coefficients and real or imaginary roots.	**Algebra 1** **SE/TE:** 561-566, CB: 567, 568-572, 576-581, 582-588 **TE:** 566A-566B, 572A-572B, 581A-581B, 588A-588B **Geometry** **SE/TE:** Algebra Review: 439 **Algebra 2** **SE/TE:** 226-231, 233-239, 240-247, 248-255 **TE:** 231A-231B, 239A-239B, 247A-247B, 255A-255B

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MA 11.2.3 Applications: Students will solve real-world problems involving linear equations and inequalities, systems of linear equations, quadratic, exponential, square root, and absolute value functions.	
MA 11.2.3.a Analyze, model, and solve real-world problems using various representations (graphs, tables, linear equations and inequalities, systems of linear equations, quadratic, exponential, square root, and absolute value functions).	**Algebra 1** This standard is addressed throughout the text. See, for example: **SE/TE**: CB:80, 81-87, 88-93, 94-100, CB: 101, 102-108, 164-170, 178-183, CB:185, 186-192, 200-206, 207-213, 308-314, 315-320, 322-328, 364-369, CB: 370, CB: 371, 372-377, 378-384, CB: 385-386, 387-392, 394-399, 400-405, CB: 406, 453-459, 460-466, 561-566, CB: 567, 568-572, 576-581, 582-588, 639-644 **TE:** 87A-87B, 93A-93B, 100A-100B, 108A-108B, 170A-170B, 183A-183B, 192A-192B, 206A-206B, 213A-213B, 314A-314B, 320A-320B, 369A-369B, 377A-377B, 384A-384B, 392A-392B, 399A-399B, 405A-405B, 453A-453B, 466A-466B, 566A-566B, 572A-572B, 581A-581B, 588A-588B, 644A-644B **Geometry** For related content, please see: **SE/TE:** 50-56, CB:68, 189-196, 202-203 **TE:** 56A-56B, 196A-196B, **Algebra 2** **SE/TE:** 92-98, 134-141, 142-148, 149-155, 157-162, 209-214, 226-231, 233-239, 240-247, 392, 395-396, 419, 434-441 **TE:** 98A-98B, 141A-141B, 148A-148B, 155A-155B, 162A-162B, 214A-214B, 231A-231B, 239A-239B, 247A-247B, 396A-396B, 441A-441B

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MA 11.3 GEOMETRY: Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.	
MA 11.3.1 Characteristics: Students will identify and describe geometric characteristics and create two- and three-dimensional shapes.	
MA 11.3.1.a Know and use precise definitions of ray, line segment, angle, perpendicular lines, parallel lines, and congruence based on the undefined terms of geometry: point, line and plane.	**Algebra 1** **SE/TE:** 330-335 **TE:** 335A-335B **Geometry** **SE/TE:** 11-19, 27-33, 114, 140-146, 164-169 **TE:** 19A-19B, 33A-33B, 146A-146B, 169A-169B
MA 11.3.1.b Prove geometric theorems about angles, triangles, congruent triangles, similar triangles, parallel lines with transversals, and quadrilaterals using deductive reasoning.	**Geometry** **SE/TE:** 155(#25), 168 (#10), 176 (#26), 177 (#33), 203 (#39, 40), 255 (#22, 23), 298 (#32, 33, 34, 35), 331 (#45), 365 (#32), 366 (#43), 373 (#20, 21), 381 (#41, 45), 387 (#23, 24), 388 (#31), 396 (#46, 53, 54, 56), 458 (#36), 466 (#42, 43), 476 (#37), 477 (#46, 47), 497 (#49), 498 (#52, 53, 54)
MA 11.3.1.c Apply geometric properties to solve problems involving similar triangles, congruent triangles, quadrilaterals, and other polygons.	**Algebra 1** **SE/TE:** 130-136 **TE:** 136A-36B **Geometry** **SE/TE:** 218-224, 226-233, 234-241, CB: 242, 244-248, 250-256, 258-264, 359-366, 367-374, 375-382, 383-388, 389-397, 400-403, 414-418, 450-458, 460-467 **TE:** 224A-224B 233A-233B, 241A-241B, 248A-248B, 256A-256B, 264A-264B, 366A-366B, 374A-374B, 382A-382B, 388A-388B, 397A-397B, 403A-403B, 418A-418B, 458A-458B, 467A-467B

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MA 11.3.1.d Identify and apply right triangle relationships including sine, cosine, tangent, special right triangles, and the converse of the Pythagorean Theorem.	**Algebra 1** **SE/TE:** 614-618, 645-651 **TE:** 618A-618B, 651A-651B **Geometry** **SE/TE:** CB: 490, 491-498, 499-505, CB: 506, 507-513, CB: 514 **TE:** 498A-498B, 505A-505B, 513A-513B **Algebra 2** **SE/TE:** 835, 919-926 **TE:** 926A-926B
MA 11.3.1.e Create geometric models to visualize, describe, and solve problems using similar triangles, right triangles, and trigonometry.	**Algebra 1** For related content, please see: **SE/TE:** 130-136, 645-651 **TE:** 136A-136B, 651A-651B **Geometry** **SE/TE:** 457(#32), 465 (#23), 466 (#5), CB: 490, 505 (#32), CB: 506, 512 (#39), CB: 574 **Algebra 2** **SE/TE:** 919-926 **TE:** 926A-926B
MA 11.3.1.f Know and use precise definitions and terminology of circles, including central angle, inscribed angle, arc, intercepted arc, chord, secant, and tangent.	**Geometry** **SE/TE:** 762-769, CB: 770, 771-779, 780-787, CB: 789, 790-797 **TE:** 769A-769B, 779A-779B, 787A-787B, 797A-797B
MA 11.3.1.g Apply the properties of central angles, inscribed angles, angles formed by intersecting chords, and angles formed by secants and/or tangents to find the measures of angles related to the circle.	**Geometry** **SE/TE:** 762-769, 780-787, 790-797 **TE:** 769A-769B, 787A-787B, 797A-797B

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MA 11.3.1.h Sketch, draw, and construct appropriate representations of geometric objects using a variety of tools and methods which may include ruler/straight edge, protractor, compass, reflective devices, paper folding, or dynamic geometric software.	**Geometry** **SE/TE:** 4-10, CB: 42, 43-48, CB: 49, CB: 147, CB: 179-180, 182-188, CB: 242, 247 (#17), CB: 249, 255 (#29), 263 (#19, 20, 21, 22), 271 (#28, 34), 297 (#24, 25), CB: 300, 306 (#20, 21), 313 (#22, 23), 314 (#29, 30, 35), CB: 352, 374 (#27), CB: 413, CB: 490, CB: 544, CB: 553, CB: 568-569, CB: 614-615, 640 (#41), CB: 667, 692 (#21, 22, 23), 693 (#28, 29, 30), 694 (#42-50), CB: 696-697, CB: 725, 768 (#28), CB: 770, 777 (#26), 778 (#28), 786 (#30), 787 (#39) **TE:** 10A-10B, 48A-48B, 188A-188B
MA 11.3.2 Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.	
MA 11.3.2.a Derive and apply the midpoint formula.	**Algebra 1** For related content, please see: **SE/TE:** 114 (#50) **Geometry** **SE/TE:** 50-56, 286-291, 400-405 **TE:** 56A-56B, 291A-291B, 405A-405B
MA 11.3.2.b Use coordinate geometry to analyze linear relationships to determine if lines are parallel or perpendicular.	**Algebra 1** **SE/TE:** 330-335 **TE:** 335A-335B **Geometry** **SE/TE:** 197-204 **TE:** 204A-204B

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MA 11.3.2.c Given a line, write the equation of a line that is parallel or perpendicular to it.	**Algebra 1** **SE/TE:** 330-335 **TE:** 335A-335B **Geometry** **SE/TE:** 189-196 **TE:** 196A-196B **Algebra 2** **SE/TE:** 81-88 **TE:** 88A-88B
MA 11.3.2.d Derive and apply the distance formula.	**Geometry** **SE/TE:** 50-56, 400-405, 497 (#35) **TE:** 56A-56B, 405A-405B
MA 11.3.2.e Use coordinate geometry to prove triangles are right, acute, obtuse, isosceles, equilateral, or scalene.	**Geometry** **SE/TE:** 400-405 **TE:** 405A-405B
MA 11.3.2.f Use coordinate geometry to prove quadrilaterals are trapezoids, isosceles trapezoids, parallelograms, rectangles, rhombi, kites, or squares.	**Geometry** **SE/TE:** 400-405, 414-418 **TE:** 405A-405B, 418A-418B **Algebra 2** **SE/TE:** 801-808 **TE:** 808A-808B
MA 11.3.2.g Perform and describe positions and orientation of shapes under a single translation using algebraic notation on a coordinate plane.	**Geometry** **SE/TE:** CB: 544, 545-552 **TE:** 552A-552B **Algebra 2** For related content, please see: **SE/TE:** 99-106, 108, 112, 196-201, 455, 456, 631, 653-660, 801-808, 875-882 **TE:** 106A-106B, 201A-201B, 660A-660B, 808A-808B, 882A-882B

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MA 11.3.2.h Perform and describe positions and orientation of shapes under a rotation about the origin in multiples of 90 degrees using algebraic notation on a coordinate plane.	**Geometry** **SE/TE:** 561-567 **TE:** 567A-567B **Algebra 2** For related content, please see: **SE/TE:** 801-808 **TE:** 808A-808B
MA 11.3.2.i Perform and describe positions and orientation of shapes under a reflection across a line using algebraic notation on a coordinate plane.	**Algebra 1** For related content, please see: **SE/TE:** 414 (#28) **Geometry** **SE/TE:** CB: 553, 554-560 **TE:** 560A-560B **Algebra 2** For related content, please see: **SE/TE:** 99-106, 195, 200, 801-808 **TE:** 106A-106B, 808A-808B
MA 11.3.2.j Perform and describe positions and orientation of shapes under a single dilation on a coordinate plane.	**Geometry** **SE/TE:** CB: 586, 587-593 **TE:** 593A-593B **Algebra 2** **SE/TE:** 802-803, 807
MA 11.3.2.k Derive the equation of a circle given the radius and the center.	**Geometry** **SE/TE:** 798-803 **TE:** 803A-803B **Algebra 2** **SE/TE:** 630-636 **TE:** 636A-636B

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MA 11.3.3 Measurement: Students will perform and compare measurements and apply formulas.	
MA 11.3.3.a Convert between various units of length, area, and volume (e.g., such as square feet to square yards). (Continued) MA 11.3.3.a Convert between various units of length, area, and volume (e.g., such as square feet to square yards).	**Algebra 1** For related content, please see: **SE/TE:** 117-121 **TE:** 121A-121B **Geometry** For related content, please see: **SE/TE:** 616-622, 623-628, 886 **TE:** 622A-622B, 628A-628B
MA 11.3.3.b Convert between metric and standard units of measurement.	**Algebra 1** **SE/TE:** 117-121 **TE:** 121A-121B
MA 11.3.3.c Apply the effect of a scale factor to determine the length, area, and volume of similar two- and three-dimensional shapes and solids.	**Algebra 1** For related content, please see: **SE/TE:** 132-136 **TE:** 136A-136B **Geometry** **SE/TE:** 635-641, CB: 741, 742-749 **TE:** 641A-641B, 749A-749B
MA 11.3.3.d Find arc length and area of sectors of a circle.	**Geometry** **SE/TE:** 653-657, 661-666 **TE:** 657A-657B, 666A-666B
MA 11.3.3.e Determine surface area and volume of spheres, cones, pyramids, and prisms using formulas and appropriate units.	**Algebra 1** For related content, please see: **SE/TE:** 15 (#60), 114 (#49), 147, 149 (#23), 265 (#20), 496 (#43, 66) **Geometry** **SE/TE:** 699-707, 708-715, 717-724, CB: 725, 726-732, 733-740 **TE:** 707A-707B, 715A-715B, 724A-724B, 732A-732B, 740A-740B

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MA 11.4 DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.	
MA 11.4.1 Representations: Students will create displays that represent data.	
No additional indicator(s) at this level. Mastery is expected at previous grade levels.	
MA 11.4.2 Analysis & Applications: Students will analyze data to address the situation.	
MA 11.4.2.a Identify and compute measures of central tendency (mean, median, mode) when provided data both with and without technology.	**Algebra 1** **SE/TE:** CCPT: 725, 738-744, PIAT: 785 **TE:** 744A-744B **Algebra 2** **SE/TE:** 711-718 **TE:** 718A-718B
MA 11.4.2.b Explain how transformations of data, including outliers, affect measures of central tendency.	**Algebra 1** **SE/TE:** 738-744 **TE:** 744A-744B **Algebra 2** **SE/TE:** 711-718 **TE:** 718A-718B
MA 11.4.2.c Compare data sets and formulate conclusions.	**Algebra 1** **SE/TE:** CCPT: 725, 746-751, PIAT: 785 **TE:** 751 **Algebra 2** **SE/TE:** 711-718, 719-724 **TE:** 718A-718B, 724A-724B
MA 11.4.2.d Support conclusions with valid arguments.	**Algebra 1** **SE/TE:** CCPT: 725, 746-751, PIAT: 785 **TE:** 751 **Algebra 2** **SE/TE:** 711-718, 719-724, 739-745, CB: 748-749 **TE:** 718A-718B, 724A-724B, 745A-745B

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MA 11.4.2.e Develop linear equations for linear models to predict unobserved outcomes using the regression line and correlation coefficient with technology.	**Algebra 1** **SE/TE:** 336-343, CB: 344-345 **TE:** 343A-343B **Algebra 2** **SE/TE:** 92-98 **TE:** 98A-98B
MA 11.4.2.f Describe the shape, identify any outliers, and determine the spread of a data set.	**Algebra 1** **SE/TE:** 740-744 **TE:** 744A-744B **Algebra 2** **SE/TE:** 711-718, 719-724, 739-745 **TE:** 718A-718B, 724A-724B, 745A-745B
MA 11.4.2.g Explain the impact of sampling methods, bias, and the phrasing of questions asked during data collection, and the conclusions that can rightfully be made.	**Algebra 1** **SE/TE:** CB: 752, 753-759 **TE:** 759A-759B **Algebra 2** **SE/TE:** 725-730 **TE:** 730A-730B
MA 11.4.2.h Explain the differences between a randomized experiment and observational studies.	**Algebra 1** **SE/TE:** 753-759 **TE:** 759A-759B **Algebra 2** **SE/TE:** 725-730 **TE:** 730A-730B
MA 11.4.2.i Using scatter plots, analyze patterns and describe relationships in paired data.	**Algebra 1** **SE/TE:** 336-343, CB: 344-345 **TE:** 343A-343B **Algebra 2** **SE/TE:** 92-98 **TE:** 98A-98B

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MA 11.4.2.j Recognize when arguments based on data confuse correlation with causation.	**Algebra 1** **SE/TE:** 336-343 **TE:** 343A-343B **Algebra 2** For related content, please see: **SE/TE:** 92-98 **TE:** 98A-98B
MA 11.4.2.k Interpret data represented by the normal distribution, formulate conclusions, and recognize that some data sets are not normally distributed.	**Algebra 1** **SE/TE:** CB: 783-784 **Algebra 2** **SE/TE:** 739-745, CB: 746-747, CB 748-749 **TE:** 745A-745B
MA 11.4.3 Probability: Students will interpret and apply concepts of probability.	
MA 11.4.3.a Construct sample spaces and probability distributions.	**Algebra 1** **SE/TE:** 769-774 **TE:** 774A-774B **Geometry** **SE/TE:** 824-829, 830-835, 850-855, 856-861 **TE:** 829A-829B, 835A-835B, 855A-855B, 861A-861B **Algebra 2** **SE/TE:** 681-687 **TE:** 687A-687B
MA 11.4.3.b Use appropriate counting techniques to determine the probability of an event.	**Algebra 1** **SE/TE:** 762-768 **TE:** 768A-768B **Geometry** **SE/TE:** 836-842 **TE:** 842A-842B **Algebra 2** **SE/TE:** 674-680 **TE:** 680A-680B

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MA 11.4.3.c Determine if events are mutually exclusive and calculate their probabilities in either case.	**Algebra 1** **SE/TE:** 776-782 **TE:** 782A-782B **Geometry** **SE/TE:** 845-849 **TE:** 849A-849B **Algebra 2** **SE/TE:** 688-693 **TE:** 693A-693B

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