

Common Core Correlations

Mathematics Algebra 2

Please note the following abbreviations found in this document:		A=Activity L=Lesson AP=Activity Practice EA=Embedded Assessment GR=Getting Ready
BENCHMARK CODE	BENCHMARK	SpringBoard Page
A-SSE.1a	Interpret expressions that represent a quantity in terms of its context.	Unit 1: A1, L1-1; A6, L6-1 Unit 2: A7, L7-1, 7-2, 7-3; A12, L12-1 Unit 3: A14, L14-2; A17, L17-1 Unit 4: A19, L19-2; A20, L20-1; A21, L21-2; A22, L22-2; A24, L24-2 Unit 5: A27, L27-2
A-SSE.1b	Interpret expressions that represent a quantity in terms of its context.	Unit 2: A9, L9-3; A12, L12-1, 12-3, 12-4 Unit 3: A14, L14-1; A15, L15-1 Unit 4: A21, L21-2 Unit 5: A27, L27-2; A29, L29-1, 29-3, 29-4

A-SSE.2	Use the structure of an expression to identify ways to rewrite it.	Unit 2: A7, L7-2; A8, L8-3; A9, L9-1, 9-3; A12, L12-1, 12-3 Unit 3: GR; A14, L14-2; A15, L15-2; A17, 17-1, 17-2, A18, L18-2; EA 1 Unit 4: A19, L19-3; A22, L-22-3, 22-4, 23-2, 24-1, 24-3 Unit 5: A25, L25-3; A26, L26-1, 26-3; A28, L28-2
A-SSE.4	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.	Unit 4: A20, L20-1, L20-2; EA 1
A-APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Unit 3: A15, L15-1, 15-2, 15-3
A-APR.2	Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.	Unit 3: A18, L18-2
A-APR.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	Unit 2: A7, L7-1, 7-3, 7-4; A8, L8-1; A12, L12-2, 12-3, 12-4 Unit 3: A17, L17-1, 17-2; A18, L18-1, 18-2, 18-3; EA 2

A-APR.4	Prove polynomial identities and use them to describe numerical relationships.	Unit 3: A15, L15-3; A17, L17-1
A-APR.5	(+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.	Unit 3: GR; A16, L16-1, 16-2; EA 1
A-APR.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.	Unit 3: A15, L15-3; EA 1 Unit 5: A27, L27-2
A-APR.7	(+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	Unit 5: A29, L29-1, 29-2, 29-4; EA 3

A-CED.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	Unit 1: A1, L1-1, 1-3, AP; A2, L2-2; A6, AP; EA 1 & 2 Unit 2: A7, L7-1, 7-3, 7-4; A8, L8-1; A9, L9-1, 9-2, 9-3; A12, L12-1, 12-5; A13, L13-1; EA 1 & 2 Unit 3: A18, L18-3, AP Unit 4: A19, L19-1, AP; A20, L20-1, 20-3, AP; A24, L24-1, 24-2; EA 1 Unit 5: A25, L25-1, 25-3, AP; A27, L27-2, 27-3, AP; A28, AP; A30, L30-1, 30-2, AP; EA 2&3
A-CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Unit 1: A1, L1-2, AP; A2, L2-2, AP; A3, L3-1, 3-2, AP; A4, L4-2, L-3; EA 1 Unit 2: A7, L7-1; A10, L10-1, 10-2, 10-3, AP; A11, L11-1, 11-2; A12, L12-1; A13, L13-1, AP Unit 3: A14, L14-1, AP; EA 1 Unit 4: A19, L19-2; A20, L20-1; A21, AP Unit 5: A27, L27-1, 27-2, 27-3, AP; A28, L28-1, AP
A-CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.	Unit 1: A1, L1-1, 1-2, 1-3, AP; A2, L2-2, AP; A3, L3-2; EA 1 Unit 2: A7, L7-1, 7-3, 7-4, AP; A9, L9-1, AP; A12, L12-2; A13, L13-1, AP; EA 1&2 Unit 3: A14, L14-1 Unit 4: A22, AP; A24, L24-3, AP Unit 5: A26, AP; A27, L27-3, AP Unit 6: A35, L35-1
A-CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Unit 1: A6, L6-1, AP Unit 2: A7, L7-1, 7-4; A9, L9-1, AP; A10, L10-1, AP Unit 4: A27, L27-2; A28, L28-1

A-REI.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	Unit 1: A1, L1-1 Unit 5: A25, L25-2, 25-4, AP; A26, L26-1, AP; A27, L27-2, AP; A28, L28-1, AP; A29, L29-4; A30, L30-1, 30-2, AP; EA 1
A-REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	Unit 1: A2, L2-2; A3, L3-1, AP; EA 1 Unit 2: A13, L13-1, AP Unit 4: A24, L24-1, 24-3; EA 3 Unit 5: A25, L25-2, 25-4; A27, L27-2; A30, L30-2, AP; EA 3

F-IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.	Unit 1: A1, L1-2, AP; A2, L2-1, 2-2; A3, L3-1; A4, L4-2, 4-3; A6, L6-2; EA 1&2 Unit 2: A7, L7-1, 7-2, AP; A10, L10-1, 10-2, 10-3, AP; A11, L11-1, 11-2, AP; A12, L12-1, 12-2, 12-3, 12-4, AP; A13, L13-1, 13-2, AP Unit 4: GR; A21, L21-1, 21-3, AP; A22, L22-1, AP; A24, L24-4 Unit 5: A27, L27-1, 27-2, AP; A28, AP; A29, L29-1, 29-3, 29-4, AP; EA 1, 2 &3 Unit 6: A34, L34-3; A35, L35-1
F-IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	Unit 1: A1, L1-2, AP; A2, L2-1, 2-2, AP; A4, L4-1, 4-3; A6, L6-1, 6-2, AP; EA 2 Unit 2: A7, L7-1, AP; A12, L12-1, 12-2, AP Unit 3: A14, L14-1, AP; A15, L15-1, AP; EA 1 Unit 4: A19, L19-1; A21, L21-1, 21-2, 21-3, AP; A22, L22-1, 22-4, A23, L23-3, AP Unit 5: A25, L25-1, 25-3, AP; A26, L26-1, 26-2, 26-3, AP; A27, L27-1, 27-2, 27-3, AP; A29, L29-3, 29-4, AP; EA 1&2 Unit 6: A35, L35-1; EA 2
F-IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Unit 1: A1, L1-2; A2, L2-1, AP Unit 2: A9, AP Unit 4: A21, L21-1, AP; A24, L24-1

F-IF.7b	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	Unit 1: A4, L4-1, 4-2, 4-3, AP; EA 2 Unit 2: A7, AP; EA 2 Unit 3: A14, L14-2; A15, L15-1 Unit 5: A25, L25-1, 25-3, AP; A26, L26-1, 26-3, AP; EA 1
F-IF.7c	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	Unit 2: A7, L7-1; A10, L10-2; A12, L12-4, AP Unit 3: A14, L14-1, 14-2, 14-3, AP; A18, L18-1; EA 1 Unit 5: A25, L25-1; A26, L26-3, AP; A30, L30-2
F-IF.7e	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	Unit 4: A21, L21-3, 21-5, AP; A22, L22-1, 22-2, 22-3; A23, L23-3, AP; A24, L24-4, AP; EA 2 Unit 6: A34, L34-1, 34-2, 34-3, 34-4, 34-5, AP; A35, L35-1, AP; EA 2
F-IF.8a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	Unit 1: A4, L4-3 Unit 2: A9, L9-1, 9-2, AP; A11, L11-1, 11-2, 11-3, AP Unit 4: A22, L22-2
F-IF.8b	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	Unit 2: A11, AP Unit 4: A21, L21-2, AP; A24, L24-2, AP; EA 3
F-IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Unit 1: A2, L2-1, 2-2; A3, L3-1; A4, L4-2, AP; EA 1 Unit 2: A7, AP; A12, L12-1, 12-3, AP; A13, L13-1 Unit 3: A15, L15-1; A18, L18-3, AP; EA 2 Unit 4: A21, L21-3, 21-5, AP; A22, L22-1, 22-2, 22-4; A23, L23-1, 23-3; A24, AP Unit 5: A25, L25-1, 25-3, AP; A27, L27-1, 27-2; A28, L28-2 Unit 6: A34, L34-2, 34-3, 34-4, 34-5, AP; A35, L35-1; EA 2

F-BF.1b	Write a function that describes a relationship between two quantities.	Unit 1: A2, L2-1, 2-2; A4, L1-4; A6, L6-1 Unit 2: A7, L7-1; A10, L10-2, AP; A11, AP; A12, L12-1, AP; A13, L13-1, AP Unit 3: A17, L17-2, AP; A18, L18-2; EA 1 Unit 4: GR; A19, L19-1; A21, L21-2, AP; A22, L22-1; A24, L24-1 Unit 5: A27, L27-1, 27-2, AP; A29, L29-4, AP; A30, L30-2, AP; EA 2 Unit 6: GR; A34, L34-2, 34-3, 34-4, AP
F-BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	Unit 1: A4, L4-3; EA 2 Unit 2: A11, L11-1, 11-2, 11-3, AP; EA 2 Unit 4: A21, L21-4, 21-5, AP; A23, L23-3, AP; EA 2&3 Unit 5: A25, L25-1, 25-2, 25-3, AP; A28, L28-2; A30, AP; EA 1&2 Unit 6: GR; A34, L34-2, 34-3, 34-4, 34-5, AP; A35, L35-1; EA 2
F-BF.4a	Find inverse functions.	Unit 1: A6, L6-1, 6-2, AP; EA 2 Unit 2: EA 2 Unit 4: A22, L22-2; A23, L23-1, AP Unit 5: A26, L26-1, 26-2, 26-3, AP; A27, L27-2; EA 1
F-LE.4	For exponential models, express as a logarithm the solution to $abct = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.	Unit 4: A22, L22-2, 22-3, 22-4, AP; A23, L23-1, 23-2, 23-3, AP; A24, L24-2, 24-3, AP; EA 2&3

F-TF.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Unit 6: A31, L31-1, 31-2, AP; EA 1
F-TF.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	Unit 6: A32, L32-1, 32-2, AP; A33, AP; EA 1
F-TF.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	Unit 6: A35, L35-1, AP; EA 2
F-TF.8	Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to calculate trigonometric ratios.	Unit 6: A33, L33-1, 33-2, AP

S-ID.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	Unit 7: A36, L36-1, 36-2, 36-3, 36-4, AP; A39, L39-1; EA 1
S-IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Unit 7: A36, L36-1, 36-2, 36-4, AP; A27, L37-1, 37-3, AP; A39, L39-1, 39-2, AP; EA 1
S-IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?	Unit 7: A38, L38-2, AP; A39, L39-1, AP

S-IC.3	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	Unit 7: A37, L37-1, 37-2, 37-3, AP; A38, L38-1; A39, L39-1; A40, L40-1; EA 1
S-IC.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.	Unit 7: A39, L39-1, 39-2, AP; EA 2
S-IC.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	Unit 7: A37, L37-2; A40, L40-1, 40-2, AP; EA 2
S-IC.6	Evaluate reports based on data.	Unit 7: A38, L38-2; A39, L39-2, AP; A40, L40-2; EA 1
S-MD.6	(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Unit 7: A37, L37-2; A38, L38-1, 38-2; A39, L39-1, AP
S-MD.7	(+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Unit 7: A37, L37-3

N-CN.1	Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.	Unit 2: A8, L8-1, 8-2, AP
N-CN.2	Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Unit 2: A8, L8-2, AP
N-CN.7	Solve quadratic equations with real coefficients that have complex solutions.	Unit 2: A8, L8-3, AP; A9, L9-1, 9-3, AP; A12, L12-3; A13, L13-2
N-CN.8	(+) Extend polynomial identities to the complex numbers.	Unit 2: A8, L8-2, 8-3, AP; A9, L9-3
N-CN.9	(+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Unit 2: A9, L9-3; A12, L12-4 Unit 3: A17, L17-2, AP; A18, AP; EA 2