ACT and OLS Standards Alignment

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 13-15									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 201. Perform one-operation computation with whole numbers and decimals	MS	AF 201. Solve problems in one or two steps using whole numbers and using decimals in the context of money	MS	AF 201. Solve problems in one or two steps using whole numbers and using decimals in the context of money	MS	G 201. Estimate the length of a line segment based on other lengths in a geometric figure	?	S 201. Calculate the average of a list of positive whole numbers	MS
N 202. Recognize equivalent fractions and fractions in lowest terms	MS	A 201. Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)	MS	F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms	MS	G 202. Calculate the length of a line segment based on the lengths of other line segments that go in the same direction (e.g., overlapping line segments and parallel sides of polygons with only right angles)	MS	S 202. Extract one relevant number from a basic table or chart, and use it in a single computation	MS
N 203. Locate positive rational numbers (expressed as whole numbers, fractions, decimals, and mixed numbers) on the number line	MS	A 202. Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals	MS			G 203. Perform common conversions of money and of length, weight, mass, and time within a measurement system (e.g., dollars to dimes, inches to feet, and hours to minutes)	MS		

ACT and OLS Standards Alignment

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 16-19									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 301. Recognize one-digit factors of a number	MS	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent	MS	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent	MS	G 301. Exhibit some knowledge of the angles associated with parallel lines	MS	S 301. Calculate the average of a list of numbers	MS
N 302. Identify a digit's place value	MS	AF 302. Solve some routine two-step arithmetic problems	MS	AF 302. Solve some routine two-step arithmetic problems	MS	G 302. Compute the perimeter of polygons when all side lengths are given	MS	S 302. Calculate the average given the number of data values and the sum of the data values	MS
N 303. Locate rational numbers on the number line *Note: A matrix as a representation of data is treated here as a basic table.*	MS	AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing,	MS	AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing, higher and lower	MS	G 303. Compute the area of rectangles when whole number dimensions are given	MS	S 303. Read basic tables and charts	MS
		AF 304. Apply a definition of an operation for whole numbers (e.g., $a \square b = 3a - b$)	MS	AF 304. Apply a definition of an operation for whole numbers (e.g., $a \square b = 3a - b$)	MS	G 304. Locate points in the first quadrant	MS	S 304. Extract relevant data from a basic table or chart and use the data in a computation	MS
		A 301. Substitute whole numbers for unknown quantities to evaluate expressions	MS	F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms	MS			S 305. Use the relationship between the probability of an event and the probability of its complement	G
		A 302. Solve one-step equations to get integer or decimal answers	MS						
		A 303. Combine like terms (e.g., $2x + 5x$)	MS						

ACT and OLS Standards Alignment

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 20-23									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor	MS	AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values	MS	AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values	MS	G 401. Use properties of parallel lines to find the measure of an angle	G	S 401. Calculate the missing data value given the average and all data values but one	MS
N 402. Write positive powers of 10 by using exponents	MS	AF 402. Perform straightforward word-to-symbol translations	MS	AF 402. Perform straightforward word-to-symbol translations	MS	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)	MS	S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph)	
N 403. Comprehend the concept of length on the number line, and find the distance between two points	MS	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)	MS	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)	MS	G 403. Compute the area and perimeter of triangles and rectangles in simple problems	MS	S 403. Determine the probability of a simple event	MS
N 404. Understand absolute value in terms of distance	MS	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities	MS	F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values	A1	G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10 triangles)	MS	S 404. Describe events as combinations of other events e.g., using *and*, *or*, and *not*)	G
N 405. Find the distance in the coordinate plane between two points with the same *x*-coordinate or *y*-coordinate	MS	A 402. Add and subtract simple algebraic expressions	MS			G 405. Use geometric formulas when all necessary information is given	MS	S 405. Exhibit knowledge of simple counting techniques	MS
N 406. Add two matrices that have whole number entries		A 403. Solve routine first-degree equations	MS			G 406. Locate points in the coordinate plane	MS		
			A1			G 407. Translate points up, down, left, and right in the coordinate plane	MS		

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

		A 404. Multiply two binomials A 405. Match simple inequalities with their graphs on the number line (e.g., x≥ –3 5 x≥ –35) A 406. Exhibit knowledge of slope	MS MS						

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 24-27									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 501. Order fractions	MS	AF 501. Solve multistep arithmetic problems that involve planning or converting common derived units of measure (e.g., feet per second to miles per hour)	A1	AF 501. Solve multistep arithmetic problems that involve planning or converting common derived units of measure (e.g., feet per second to miles per hour)	A1	G 501. Use several angle properties to find an unknown angle measure	G	S 501. Calculate the average given the frequency counts of all the data values	MS
N 502. Find and use the least common multiple	MS					G 502. Count the number of lines of symmetry of a geometric figure	G	S 502. Manipulate data from tables and charts	
N 503. Work with numerical factors	MS	AF 502. Build functions and write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)	MS	AF 502. Build functions and write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)	MS	G 503. Use symmetry of isosceles triangles to find unknown side lengths or angle measures	G	S 503. Compute straightforward probabilities for common situations	MS
N 504. Exhibit some knowledge of the complex numbers	A2					G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure	MP-6	S 504. Use Venn diagrams in counting	G
N 505. Add and subtract matrices that have integer entries		AF 503. Match linear equations with their graphs in the coordinate plane	MS	AF 503. Match linear equations with their graphs in the coordinate plane	MS			S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having appropriate precision	MP-6
		A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded		F 501. Evaluate polynomial functions, expressed in function notation, at integer values	A1	G 505. Compute the perimeter of simple composite geometric figures with unknown side lengths	MS	S 506. Recognize that when a statistical model is used, model values typically differ from actual values	
		A 502. Solve real-world problems by using first-degree equations	MS	F 502. Find the next term in a sequence described recursively	A1	G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required	MS		
				F 503. Build functions and use quantitative	A1				

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

		A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign	MS	information to identify graphs for relations that are proportional or linear		G 507. Compute the area and circumference of circles after identifying necessary information	MS		
		A 504. Match compound inequalities with their graphs on the number line (e.g., $-10.5 < x \leq 20.3$)	A1	F 504. Attend to the difference between a function modeling a situation and the reality of the situation	A1	G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples	MS		
		A 505. Add, subtract, and multiply polynomials	A1	F 505. Understand the concept of a function as having a well-defined output value at each valid input value	A1	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths	G		
		A 506. Identify solutions to simple quadratic equations	A1	F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs	A1	G 510. Determine the slope of a line from points or a graph	MS		
		A 507. Solve quadratic equations in the form $(x + a)(x + b) = 0$, where a and b are numbers or variables	A1	F 507. Interpret statements that use function notation in terms of their context	A1	G 511. Find the midpoint of a line segment	G		
		A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)	A1	F 508. Find the domain of polynomial functions and rational functions	A2	G 512. Find the coordinates of a point rotated 180° around a given center point	G		
		A 509. Work with squares and square roots of numbers	A1	F 509. Find the range of polynomial functions	A2				
		A 510. Work with cubes and cube roots of numbers	A1	F 510. Find where a rational function's graph has a vertical asymptote	A2				
			MS		A1				

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

		A 511. Work with scientific notation A 512. Work problems involving positive integer exponents A 513. Determine when an expression is undefined A 514. Determine the slope of a line from an equation	A1 A1 A1	F 511. Use function notation for simple functions of two variables					

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 28-32									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 601. Apply number properties involving prime factorization		AF 601. Solve word problems containing several rates, proportions, or percentages	MS	AF 601. Solve word problems containing several rates, proportions, or percentages	A1	G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a given volume and simple geometric probability)	G	S 601. Calculate or use a weighted average	A1
N 602. Apply number properties involving even/odd numbers and factors/multiples	MS	AF 602. Build functions and write expressions, equations, and inequalities for common algebra settings (e.g., distance to a point on a curve and profit for variable cost and demand)	A1	AF 602. Build functions and write expressions, equations, and inequalities for common algebra settings (e.g., distance to a point on a curve and profit for variable cost and demand)	A1	G 602. Use the Pythagorean theorem	MS	S 602. Interpret and use information from tables and charts, including two-way frequency tables	G
N 603. Apply number properties involving positive/negative numbers	MS	AF 603. Interpret and use information from graphs in the coordinate plane	A1	AF 603. Interpret and use information from graphs in the coordinate plane	MS/ A1/ A2	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles	G	S 603. Apply counting techniques	
N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square	A1	AF 604. Given an equation or function, find an equation or function whose graph is a translation by a specified amount up or down	A1	AF 604. Given an equation or function, find an equation or function whose graph is a translation by a specified amount up or down	A1	G 604. Apply basic trigonometric ratios to solve right-triangle problems	G	S 604. Compute a probability when the event and/or sample space are not given or obvious	G
N 605. Apply properties of rational exponents	A2	A 601. Manipulate expressions and equations	A1	F 601. Relate a graph to a situation described qualitatively in terms of faster change or slower change	A1	G 605. Use the distance formula	G	S 605. Recognize the concepts of conditional and joint probability expressed in real-world contexts	G
N 606. Multiply two complex numbers	A2	A 602. Solve linear inequalities when the method involves	A1			G 606. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point	G	S 606. Recognize the concept of independence expressed in real-world contexts	G
N 607. Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices						G 607. Find the coordinates of a point reflected across a	G		

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

		reversing the inequality sign A 603. Match linear inequalities with their graphs on the number line A 604. Solve systems of two linear equations A 605. Solve quadratic equations A 606. Solve absolute value equations	A1 A1 A1 A2	F 602. Build functions for relations that are inversely proportional F 603. Find a recursive expression for the general term in a sequence described recursively F 604. Evaluate composite functions at integer values	A1	vertical or horizontal line or across $y = x$ G 608. Find the coordinates of a point rotated 90° about the origin G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)	MS A1/ G		

ACT and OLS Standards Alignment

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

Score Range 33-36									
Number and Quantity		Algebra		Functions		Geometry		Stats & Prob	
N 701. Analyze and draw conclusions based on number concepts		AF 701. Solve complex arithmetic problems involving percent of increase or decrease or requiring integration of several concepts (e.g., using several ratios, comparing percentages, or comparing averages)	MS	AF 701. Solve complex arithmetic problems involving percent of increase or decrease or requiring integration of several concepts (e.g., using several ratios, comparing percentages, or comparing averages)	MS	G 701. Use relationships among angles, arcs, and distances in a circle	G	S 701. Distinguish between mean, median, and mode for a list of numbers	MS
N 702. Apply properties of rational numbers and the rational number system	A1	AF 702. Build functions and write expressions, equations, and inequalities when the process requires planning and/or strategic manipulation		AF 702. Build functions and write expressions, equations, and inequalities when the process requires planning and/or strategic manipulation		G 702. Compute the area of composite geometric figures when planning and/or visualization is required	G	S 702. Analyze and draw conclusions based on information from tables and charts, including two-way frequency tables	G
N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers	A1	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions		AF 703. Analyze and draw conclusions based on properties of algebra and/or functions		G 703. Use scale factors to determine the magnitude of a size change	G	S 703. Understand the role of randomization in surveys, experiments, and observational studies	A2
N 704. Apply properties of complex numbers and the complex number system	A2	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane		AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane		G 704. Analyze and draw conclusions based on a set of conditions	G	S 704. Exhibit knowledge of conditional and joint probability	G
N 705. Multiply matrices		AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$	A1	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$	A1	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization	G	S 705. Recognize that part of the power of statistical modeling comes from looking at regularity in the differences between actual values and model values	
N 706. Apply properties of matrices and properties of matrices as a number system									

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

		AF 706. Given n equation or function, find an equation or function whose graph is a translation by specified amounts in the horizontal and vertical directions A 701. Solve simple absolute value inequalities A 702. Match simple quadratic inequalities with their graphs on the number line A 703. Apply the remainder theorem for polynomials, that $P(a)$ is the remainder when $P(x)$ is divided by $(x - a)$	A1 A2 A1 A2	AF 706. Given an equation or function, find an equation or function whose graph is a translation by specified amounts in the horizontal and vertical directions F 701. Compare actual values and the values of a modeling function to judge model fit and compare models F 702. Build functions for relations that are exponential F 703. Exhibit knowledge of geometric sequences F 704. Exhibit knowledge of unit circle trigonometry F 705. Match graphs of basic trigonometric functions with their equations F 706. Use trigonometric concepts and basic identities to solve problems F 707. Exhibit knowledge of logarithms	A1 A1 A1 A2 A2 A2* A2				

Note: ACT standards highlighted in grey are part of standards in Middle School, Algebra 1, or Geometry courses.

				F 708. Write an expression for the composite of two simple functions					