Algebra 1

Credits: 1
Prerequisite: Pre-algebra
Recommended: 8th, 9th

Course Description: Students will engage in real world and hands-on problem solving while using their developing skills in algebra. Students will learn new material through animations, videos, reading, and guided practice. The topics covered in this course include: real numbers, algebraic expressions, graphing to solve inequalities and absolute value, graphing to solve linear equations, systems of equations, factoring polynomial equations, relations and functions, quadratic equations, radical and rational expressions and equations, and probability. Students will also do timed PSAT practice questions.

Day 1 Intro to Algebra
Day 2 approaches to problems
Day 3 solving equations
Day 4 exponents and solving equations
Day 5 multi-step equations
Day 6 multi-step equations, radicals
Day 7 writing expressions and equations
Day 8 writing expressions and equations. Order of operations
Day 9 solving for a specific variable
Day 10 solving for a specific variable. properties of addition.
Day 11 absolute value
Day 12 absolute value. properties of multiplication
Day 13 solving absolute value equations
Day 14 solving absolute value equations. Statements of equality
Day 15-17 project, applying equations
Day 18-19 inductive patterns.
Day 20 representing patterns.
Day 21 representing patterns. radicals
Day 22 representing functions and relations.
Day 23 representing functions and relations. distributive property
Day 24 domain and range
Day 25 domain and range. Simplifying fractions.
Day 26 proportional functions.
Day 27 proportional functions. Equivalent fractions.
Day 28 linear functions
Day 29 linear functions. integers
Day 30 non-linear functions
Day 31 non-linear functions. Multiply and divide integers
Day 32 project, applying functions
Days 33-34-35-36 project, applying functions
Day 37-38 rate of change and slope
Day 39-40 intercepts of linear functions
Day 41 graphing equations slope-intercept form
Day 42 graphing equations.
Day 43 slope form and standard form
Day 44 solving for slope form and standard form. Combine like terms
Day 45 parallel lines
Day 46 parallel lines. Like terms
Day 47-48 perpendicular lines
Day 49 project, analyze graph linear equations, functions and relations
Day 50-51-52-53 project, applying equations/functions/relations
Day 54 project, applying graphing, relationships
Day 55 quiz, project graphing relationships
Day 56 project graphing relationships
Day 57-60 practice PSAT questions
Day 61-62 writing, solving and graphing inequalities in one variable
Day 63 solving and graphing absolute value inequalities
Day 64 solving and graphing absolute value inequalities. words into mathematical expressions
Day 65 writing and using inequalities
Day 66 writing and using inequalities.
Day 67 solving and graphing linear inequalities in two variables
Day 68 solving and graphing linear inequalities in two variables.
Day 69 applying inequalities
Day 70-71-72-73 project, applying inequalities
Day 74 solving systems of linear equations with graphing
Day 75 solving systems of linear equations with graphing. Quiz on solving absolute value equations.
Day 76 solving systems of equations with substitution
Day 77 solving systems of equations with substitution. slope quiz.
Day 78 solving systems of linear equations by elimination
Day 79 solving systems of linear equations by elimination. quiz on solving systems of equations using the elimination method.
Day 80-81 rate problems
Day 82-83 mixture problems
Day 84 applying mixture problems
Day 85-86-87-88 project, applying mixture problems
Day 89 review solving and graphing absolute value inequalities, solving for intercepts of linear functions, proportional functions
Day 90 review Non-linear functions, perpendicular lines, solving and graphing linear inequalities in two variables
Day 91-92 rules of exponents
Day 93-94 Scientific notation
Day 95-96 simplifying expressions with exponents
Day 97 Pythagorean Theorem, quiz
Day 98 applications of the Pythagorean theorem
Day 99 applications of the Pythagorean theorem
Day 100 simplifying radical expressions
Day 101 simplifying radical expressions, absolute value inequality problems
Day 102 solving radical equations
Day 103 solving radical equations, find the slope.
Day 104 applying radical equations
Day 105 applying radical equations, observing graphs
Day 106 fractional exponents
Day 107 fractional exponents, Pythagorean theory
Day 108 applying Pythagorean theory, calculating miles
Day 109 applying pythagorean theorem
Day 110-111 PSAT practice questions
Day 112 -113 Multiplying and dividing monomials
Day 114 applications of polynomials
Day 115 applications of polynomials, quiz solving absolute value inequalities
Day 116 adding and subtracting polynomials
Day 117 adding and subtracting polynomials, quiz radical expressions
Day 118 multiplying polynomials
Day 119 multiplying polynomials, exponent game
Day 120  special products of polynomials
Day 121  special products of polynomials, quiz solving radical equations
Day 122  roman numerals and polynomials
Day 123-124 factoring and the distributive property
Day 125  factoring trinomials by grouping
Day 126  factoring trinomials by grouping, simplifying radicals
Day 127  factoring trinomials by grouping
Day 128  factoring trinomials, simplifying radicals
Day 129 factoring by special products
Day 130  multiplying polynomials, multiplying binomials
Day 131-132  solving quadratic equations by factoring
Day 133  applying equations
Day 134  Review solving linear functions, applying radical equations, Pythagorean theorem
Day 135  Review solving slope form and standard form, rate problems, rules of exponents
Day 136 graphing quadratic equations
Day 137  graphing quadratic equations, find equation of a line
Day 138 solving quadratic equations by completing the square
Day 139 solving quadratic equations by completing the square, quiz on factoring differences of squares
Day 140  solving quadratic equations using quadratic formula
Day 141  solving quadratic equations using quadratic formula, quiz factoring trinomials
Day 142  applications of quadratic functions
Day 143  applications of quadratic functions, quiz factoring perfect square trinomials
Day 144 systems of non-linear equations
Day 145  systems of non-linear equations, quiz factoring trinomials
Day 146  applying trinomials
Day 147-148  simplifying rational expressions
Day 149  multiplying and dividing rational expressions
Day 150  multiplying and dividing rational expressions, quiz on quadratic formula
Day 151  adding and subtracting rational expressions
Day 152  adding and subtracting rational expressions, quiz on parabolas
Day 153  solving rational equations
Day 154  solving rational equations, quiz on completing the square
Day 155  applying rational expressions
Day 156  applying rational expressions, solve the radicals
Day 157  applying expressions
Day 158-159  number sets
Day 160-161  understanding logical statements
Day 162  inductive reasoning
Day 163  inductive reasoning, quiz on properties of numbers
Day 164-165  deductive reasoning
Day 166-167  events and outcomes
Day 168-169  probability of independent events
Day 170  permutations and combinations
Day 171  permutations and combinations, study for final
Day 172-173  probability of dependent events
Day 174  probability applications
Day 175  review of functions and relations
Day 176-179  review for final
Day 180  final exam