



Algebra 1

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STANDARDS	PAGE REFERENCES
<p>Standard 1: Students will acquire number sense and perform operations with real numbers.</p>	
<p>Objective 1: Compute fluently and make reasonable estimates.</p>	
<p>a. Estimate solutions to problems.</p>	<p>Student Edition: 46-52, 215 Ex 3, 216 Ex 4, 306 #46, 480-485</p>
<p>b. Evaluate and simplify numerical expressions using the order of operations.</p>	<p>Student Edition: 10-14, 15-20, 21-25, 92-97, 98-103, 117-121, 358-364 Teacher Wraparound Edition A 14; PE 93</p>
<p>c. Compute solutions to problems and determine the reasonableness of an answer by relating them to the problem.</p>	<p>Student Edition: 78-84, 85-90, 92-97 (especially #43), 98-103, 105-110, 111-115, 122-128, 264 #28, 283 #18, 312 #36, 592 #23 <i>Algebra Lab</i> 77, 91 <i>Reading Mathematics</i> 116 Teacher Wraparound Edition T 123</p>

STANDARDS	PAGE REFERENCES
Objective 2: Represent real numbers in a variety of ways.	
a. Compare and order real numbers .	Student Edition: 46-52
b. Choose appropriate and convenient forms of real numbers for solving problems and representing answers, e.g., radical form, multiples of pi, decimal, fraction, or percent.	Student Edition: 46-52, 84 #55-56, 111-116, 370 Ex 5, 528-534, 536-540, 549-554, 555-559 <i>Graphing Calculator Lab</i> 535 <i>Prerequisite Skills</i> 706-707 <i>Reading Mathematics</i> 116
Objective 3: Identify relationships among real numbers and operations involving these numbers.	
a. Classify numbers as rational or irrational in the real number system.	Student Edition: 46-52 Teacher Wraparound Edition 47
b. Relate properties and operations of rational numbers to irrational numbers .	Student Edition: 528-534, 536-540 <i>Graphing Calculator Lab</i> 535
Standard 2: Students will represent and analyze mathematical situations and properties using patterns, relations, functions, and algebraic symbols.	
Objective 1: Use patterns, relations, and functions to represent mathematical situations.	
a. Write algebraic expressions or equations to generalize visual patterns, numerical patterns, relations, data sets, or scatter plots .	Student Edition: 143-148, 149-154, 165-170, 172-176, 187-195, 213-218, 220-225, 227-233, 236-241 <i>Algebra Lab</i> 142, 186, 228 <i>Graphing Calculator Lab</i> 234-235, 515-516 <i>Reading Mathematics</i> 171
b. Represent linear equations in slope-intercept form, $y = mx + b$, or standard form, $ax + by = c$.	Student Edition: 204-209, 213-218, 220-225, 227-234, 236-241 <i>Graphing Calculator Lab</i> 203
c. Distinguish between linear and nonlinear functions or equations by examining a table, equation, or graph.	Student Edition: 155-161
d. Identify the slope of a linear function as an average rate of change in real-world situations.	Student Edition: 187-195, 196-202 <i>Algebra Lab</i> 186

STANDARDS	PAGE REFERENCES
Objective 2: Evaluate, solve, and analyze mathematical situations using algebraic properties and symbols.	
a. Solve real-world problems involving constant rates of change, e.g., rates of travel, hourly wages, or rates of interest.	Student Edition: 122-128, 165-170, 172-176, 187-195, 196-202 <i>Algebra Lab</i> 186 <i>Spreadsheet Lab</i> 129
b. Solve multi-step equations and inequalities: <ul style="list-style-type: none"> • Numerically; e.g., from a table or guess and check. • Algebraically, including the use of manipulatives. • Graphically. • Using technology. 	Student Edition: 78-84, 85-90, 92-97, 98-103, 105-110, 111-116, 122-128, 294-299, 301-307, 308-313, 315-320 <i>Algebra Lab</i> 77, 91, 300 <i>Graphing Calculator Lab</i> 129, 342 <i>Spreadsheet Lab</i> 129
c. Solve systems of two linear equations or inequalities: <ul style="list-style-type: none"> • Numerically; e.g., from a table or guess and check. • Algebraically. • Graphically. • Using technology. 	Student Edition: 253-258, 260-265, 266-270, 272-278, 280-284, 341-345 <i>Algebra Lab</i> 260 <i>Graphing Calculator Lab</i> 259, 342 <i>Spreadsheet Lab</i> 252
d. Determine the number of possible solutions for a system of two linear equations.	Student Edition: 253-258 Teacher Wraparound Edition <i>Pre-AP</i> 254
e. Evaluate numerical expressions (including exponents and square roots), algebraic expressions, formulas, and equations.	Student Edition: 10-14, 15-20, 26-31, 46-52, 78-84, 85-90, 92-97, 98-103, 105-110, 111-115, 117-121, 122-128, 471-477
f. Solve linear formulas and literal equations for a specified variable, e.g., solve for p in $I = prt$.	Student Edition: 117-121 Teacher Wraparound Edition <i>Pre-AP</i> 121
g. Simplify algebraic expressions, including those having integer exponents.	Student Edition: 26-31, 33-37, 98-103, 358-364, 366-373, 376-381, 384-388, 390-395, 398-403, 404-409 <i>Algebra Lab</i> 375, 382-383, 396-397 <i>Graphing Calculator Lab</i> 367 <i>Reading Mathematics</i> 38
h. Solve proportions that include algebraic first-degree expressions.	Student Edition: 105-110, 111-115, 626-632

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Objective 3: Represent quantitative relationships using mathematical models and symbols.

a. Identify the slope of a line when given: <ul style="list-style-type: none"> • A set of two ordered pairs. • An equation of a linear function. • The graph of a linear function. • A table of values. 	Student Edition: 187-195, 196-202, 204-209, 213-218, 220-225, 227-233, 236-241 <i>Algebra Lab</i> 186 <i>Graphing Calculator Lab</i> 234-235
b. Write the equation of a line when given: <ul style="list-style-type: none"> • A set of ordered pairs. • The slope and a point on the line. • The graph of a line. 	Student Edition: 204-209, 213-218, 220-225, 227-233, 236-241 <i>Graphing Calculator Lab</i> 234-235
c. Identify horizontal and vertical lines given the equations.	Student Edition: 155-161, 187-195
d. Identify the domain and range of a relation or function from a graph, equation, table, or set of ordered pairs.	Student Edition: 53-58, 143-148, 149-154, 160 #54 <i>Algebra Lab</i> 145
e. Determine the effect of parameter changes on the graphs of linear relations.	Student Edition: 196-202, 204-209 <i>Graphing Calculator Lab</i> 162-163, 197, 210-211
f. Determine whether two lines are parallel, perpendicular, or neither, given the equations.	Student Edition: 236-241 <i>Algebra Lab</i> 237
g. Determine the x- and y- intercepts from an equation or graph of a line.	Student Edition: 155-161, 204-209 <i>Graphing Calculator Lab</i> 210-211
h. Graph linear functions: <ul style="list-style-type: none"> • By plotting points. • By finding x- and y-intercepts. • Using the slope-intercept form of a line. • Using the slope and any point on the line. 	Student Edition: 155-161, 172-176, 187-195, 196-202, 204-209, 213-218 <i>Algebra Lab</i> 186 <i>Graphing Calculator Lab</i> 197, 203, 210-211
i. Solve and graph a system of linear inequalities and identify the boundary lines and solution area .	Student Edition: 341-345 <i>Graphing Calculator Lab</i> 342
j. Determine and explain the meaning of intercepts using real-world examples.	Student Edition: 155-161 (especially Ex 2 & Ex 3, #11 and #37)
k. Use direct variation to model rates of change, e.g., if income = 40 hours times rate of pay, then increasing the rate of pay increases income.	Student Edition: 196-202

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Standard 3: Students will solve problems using spatial and logical reasoning, applications of geometric principles, and modeling.	
Objective 1: Specify locations and describe spatial relationships using coordinate geometry.	
a. Find the distance between two given points and find the coordinates of the midpoint between them.	Student Edition: 555-559
b. Solve problems using the distance formula.	Student Edition: 555-559
c. Solve problems for areas, perimeters, volumes, and surface areas.	Student Edition: 12 Ex 4, 14 #47, 31 #46 & 49, 31 #58-60, 35 #9, 70-76, 84 #55-60, 100 (Standardized Test Example), 102 #44, 121 #34-35, 306 #46, 371 #13, 377 Ex 2 <i>Algebra Lab</i> 72, 142, 365 <i>Prerequisite Skills</i> 704-705, 708
d. Solve problems for areas and circumferences of circles.	Student Edition: 84 #55-56, 88 #27, 118 Ex 3, 306 #47, 370 Ex 5, 394 #58, 544 #43-46 <i>Prerequisite Skills</i> 706-707
Objective 2: Solve problems using visualization, spatial reasoning, and geometric modeling.	
a. Solve problems using the Pythagorean Theorem .	Student Edition: 549-554
b. Find missing parts of geometric figures using proportional reasoning and geometric relationships.	Student Edition: 560-565
c. Multiply polynomials using the distributive property, area models, and other methods, e.g., $(a + b)^2$, $x(x + 2)$, or $(x + a)(x + b)$.	Student Edition: 390-395, 398-403, 404-409 <i>Algebra Lab</i> 396-397
d. Factor polynomials using a variety of methods.	Student Edition: 426-431, 434-439, 441-446, 447-452, 454-460 <i>Algebra Lab</i> 425, 432-433, 441, 447

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Standard 4: Students will understand and apply measurement tools, formulas, and techniques.	
Objective 1: Understand measurable attributes of objects and the units, systems, and processes of measurement.	
a. Solve problems and express answers using appropriate units of measure.	Student Edition: 417 #11, 590-594 <i>Algebra Lab</i> 228, 365 <i>Graphing Calculator Lab</i> 203
b. Express the rate of change as a ratio of two different measures.	Student Edition: 187-195 <i>Algebra Lab</i> 186
c. Select appropriate units to achieve the desired precision when solving problems.	Student Edition: 417 #11 <i>Algebra Lab</i> 228, 365 <i>Graphing Calculator Lab</i> 203
Standard 5: Students will draw conclusions using concepts of probability after collecting, organizing, and analyzing a data set.	
Objective 1: Formulate and answer questions by collecting, organizing, and analyzing data.	
a. Collect, record, organize, and display a set of data.	Student Edition: <i>Algebra Lab</i> 142, 186, 228 <i>Graphing Calculator Lab</i> 203, 470 <i>Prerequisite Skills</i> 713, 714-715
b. Determine whether the pattern of the data is linear or nonlinear when given in a list, table, or graph.	Student Edition: 155-161 <i>Algebra Lab</i> 142, 186, 228 <i>Graphing Calculator Lab</i> 203, 470
c. Interpret the correlation between two variables as being positive, negative, or having no correlation .	Student Edition: 227-233 <i>Graphing Calculator Lab</i> 234-235
d. Find a line of best fit by estimation, choosing two points, or using technology for a given set of data.	Student Edition: 227-233 <i>Algebra Lab</i> 228 <i>Graphing Calculator Lab</i> 234-235
e. Analyze the meaning of the slope and y-intercept of a line of best fit as it relates to the data.	Student Edition: 227-233 <i>Algebra Lab</i> 228 <i>Graphing Calculator Lab</i> 234-235

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f. Make predictions based on a line of best fit.	Student Edition: 227-233 <i>Algebra Lab 228</i> <i>Graphing Calculator Lab 234-235</i>
Objective 2: Apply basic concepts of probability.	
a. Determine and express the probability of an event as a fraction, percent, ratio, or decimal.	Student Edition: 650-654, 655-662, 663-670, 672-676, 677-683 <i>Algebra Lab 678</i> <i>Prerequisite Skills 709-710</i>
b. Identify the probability of an event as being between zero (event not possible) and one (event certain).	Student Edition: <i>Prerequisite Skills 709-710</i>
c. Recognize that the sum of the probability of an event and the probability of its complement is equal to one.	Student Edition: 663-670
d. Determine whether a game or process is fair.	This standard can be integrated into Chapter 12 Student Edition: 669 #39-#42