Math·U·See

Objectives List: *Algebra 1*

Lesson 1

A1.1.a	Identify the operations to which the Associative and Commutative Properties apply
A1.1.b	Rewrite addition or multiplication expressions using the Associative and/or Commutative Properties
A1.1.c	Rewrite subtraction expressions as addition before using Associative or Commutative Properties
A1.1.d	Use the Associative and Commutative Properties to solve equations
A1.1.e	Perform operations with integers

Lesson 2

A1.2.a	State the priority for multiple operations in the same equation or expression
A1.2.b	Simplify expressions using the order of operations

Lesson 3

A1.3.a	Define a variable
A1.3.b	Solve single-variable linear equations, applying the principles of additive and multiplicative inverses

Lesson 4

A1.4.a	Use factoring and the Distributive Property of Multiplication over Addition to simplify expressions
A1.4.b	Simplify expressions to solve equations

Lesson 5

A1.5.a	Plot numbers on a number line
A1.5.b	Plot single-variable inequalities on a number line
A1.5.c	Identify the coordinates of a given point on the Cartesian plane
A1.5.d	Identify in which quadrant of the Cartesian plane a point lies
A1.5.e	Plot a point on the Cartesian plane, given a pair of coordinates

Lesson 6

A1.6.a	Write a linear equation for a real-world scenario
A1.6.b	Substitute for the variables in an equation to determine solutions
A1.6.c	Create a table for a real-world scenario
A1.6.d	Graph the data provided on a table in a coordinate grid
A1.6.e	Determine whether a set of data demonstrates a linear relationship

Lesson 7

A1.7.a	Find the slope and *y*-intercept of a line graphed on the Cartesian plane
A1.7.b	Find the slope and *y*-intercept of a line represented by a given equation
A1.7.c	Give the equation of a line graphed on the Cartesian plane
A1.7.d	Describe the equation of a line as a relationship between a dependent and an independent variable

Lesson 8

A1.8.a	Graph a linear equation
A1.8.b	Give the equation for any horizontal or vertical line
A1.8.c	Describe the visual difference between positive and negative slope
A1.8.d	Explain that a numerically greater slope is steeper than a slope that is numerically less

Lesson 9

A1.9.a	Rewrite linear equations in standard form
A1.9.b	Rewrite linear equations in slope-intercept form
A1.9.c	Given a pair of equations, determine whether the lines they represent are parallel, without graphing

Lesson 10

A1.10.a	Determine whether a given equation represents a line perpendicular to a given line on a graph
A1.10.b	Define perpendicular lines
A1.10.c	Explain the relationship between the slopes of two perpendicular lines
A1.10.d	Write the equation of a line perpendicular to a given line that runs through a specific point

Lesson 11

A1.11.a	Find the equation in slope-intercept form when given the slope and one point on a line
A1.11.b	Find the slope when given two points on a line
A1.11.c	Find the equation in slope-intercept form when given two points on a line

Lesson 12

A1.12.a	Graph a linear inequality
A1.12.b	Name a pair of points which are on opposite sides of the boundary line of a linear inequality
A1.12.c	Determine whether a given point is a solution to a linear inequality

Lesson 13

A1.13.a	Explain that the graph of a line represents all the ordered pairs that make the line's equation true
A1.13.b	Explain that the intersection of two lines represents the one point that makes the equations of both lines true
A1.13.c	Explain that two parallel lines have no intersection and that their equations have no common solution

Lesson 14

A1.14.a	Rewrite a given equation in a form that expresses one variable in terms of the other
A1.14.b	Replace a variable in one equation with an expression representing that variable in terms of the other variable
A1.14.c	Substitute the value of a known variable into a linear equation and solve for the unknown variable

Lesson 15

A1.15.a	Rewrite one equation from a system of equations to prepare for elimination of one variable by addition
A1.15.b	Eliminate one variable in a system of equations by adding two equations

Lesson 16

A1.16.a	Solve a system of equations for coin problems

Lesson 17

A1.17.a	Solve an equation or set of equations for consecutive integer problems

Lesson 18

A1.18.a	Use addition of exponents to multiply factors with the same base
A1.18.b	Use subtraction of exponents to divide factors with the same base

Lesson 19

A1.19.a	Rewrite an expression with a negative exponent as the multiplicative inverse of the same expression with a positive exponent
A1.19.b	Rewrite negative exponents as fractions
A1.19.c	Rewrite fractions as expressions with negative exponents
A1.19.d	Identify numbers with an exponent of zero as being equal to one
A1.19.e	Raise an exponential expression to a power by multiplying exponents
A1.19.f	Rewrite rational expressions using negative exponents so that all the exponents are positive

Lesson 20

A1.20.a	Model second-order polynomials using manipulatives
A1.20.b	Model addition of second-order polynomials using manipulatives
A1.20.c	Add second-order polynomials
A1.20.d	Model multiplication of binomials using manipulatives
A1.20.e	Multiply binomials

Lesson 21

A1.21.a	Model factorization of second-order polynomials using manipulatives
A1.21.b	Factor second-order polynomials into two binomial factors

Lesson 22

A1.22.a	Model factorization of second-order polynomials where the coefficient of the squared term is not one
A1.22.b	Use vertical multiplication to factor second-order polynomials where the coefficient of the squared term is not one
A1.22.c	Use FOIL to factor second-order polynomials where the coefficient of the squared term is not one

Lesson 23

A1.23.a	Model factorization of second-order polynomials, where some terms are negative
A1.23.b	Factor second-order polynomials using vertical multiplication, where some terms are negative
A1.23.c	Factor second-order polynomials using FOIL, where some terms are negative

Lesson 24

A1.24.a	Find the square root of a perfect square trinomial using various strategies
A1.24.b	Model division of a trinomial by a binomial
A1.24.c	Perform long division of a trinomial by a binomial

Lesson 25

A1.25.a	Model the factorization of the difference of two squares
A1.25.b	Factor the difference of two squares

Lesson 26

A1.26.a	Identify the appropriate strategies to use in factoring a polynomial
A1.26.b	Factor a polynomial completely

Lesson 27

A1.27.a	Factor to solve quadratic equations
A1.27.b	Check solutions to quadratic equations

Lesson 28

A1.28.a	Create unit multipliers
A1.28.b	Identify the correct unit multiplier to use in a given problem
A1.28.c	Use a unit multiplier to convert from one unit to another

Lesson 29

A1.29.a	Identify the number of times a unit multiplier needs to be used, based on whether a conversion is in one, two, or three dimensions
A1.29.b	Identify when different unit multipliers need to be used

Lesson 30

A1.30.a	Convert between metric and customary units of length, using unit multipliers
A1.30.b	Convert between metric and customary units of weight/mass, using unit multipliers
A1.30.c	Convert between metric and customary units of volume, using unit multipliers

Lesson 31

A1.31.a	Rewrite a radical expression as a base with a fractional exponent
A1.31.b	Rewrite a base with a fractional exponent as a radical expression

Lesson 32

A1.32.a	Identify the number of significant digits in a given number
A1.32.b	Express answers to addition and multiplication problems using the correct number of significant digits
A1.32.c	Convert numbers to and from scientific notation
A1.32.d	Use scientific notation to multiply and divide both very large and very small numbers

Lesson 33

A1.33.a	Convert numbers from base ten to other bases
A1.33.b	Convert numbers from other bases to base ten

Lesson 34

A1.34.a	State the center and radius of a circle, given its equation
A1.34.b	State the center and extremities of an ellipse based on its equation
A1.34.c	Graph a circle
A1.34.d	Graph an ellipse

Lesson 35

A1.35.a	Plot points and sketch a parabola, given its equation
A1.35.b	Plot points and sketch a hyperbola, given its equation