Math·U·See

Objectives List: *PreAlgebra*

Lesson 1

PA.1.a	Add integers
PA.1.b	Explain how negative addends affect the sign of the sum

Lesson 2

PA.2.a	Subtract integers
PA.2.b	Rewrite subtraction of a negative as addition of a positive and vice versa

Lesson 3

PA.3.a	Multiply integers
PA.3.b	Explain how negative factors affect the sign of the product

Lesson 4

PA.4.a	Divide integers
PA.4.b	Explain how the signs of the original numbers affect the sign of the quotient

Lesson 5

PA.5.a	Convert from an exponential expression to a series of factors and vice versa
PA.5.b	Express exponential expressions in words

Lesson 6

PA.6.a	Express quantities in standard notation, place-value notation, expanded notation, and exponential notation; convert among these notations
PA.6.b	Explain how dollars, dimes, and pennies are parallel to units, tenths, and hundredths, respectively

Lesson 7

PA.7.a	Raise an integer to a power
PA.7.b	Explain how the use of parentheses affects the value of an integer raised to a power

Lesson 8

PA.8.a	Identify the square root symbol
PA.8.b	Find square roots of perfect squares

Lesson 9

PA.9.a	Explain how adding the same amount to both sides of an equation does not affect its validity
PA.9.b	Solve equations for an unknown by using the additive inverse

Lesson 10

PA.10.a	State the Pythagorean theorem
PA.10.b	Apply the Pythagorean theorem to solve for the length of the missing side of a right triangle
PA.10.c	Use the Pythagorean theorem to determine if a triangle is a right triangle when all the sides are known

Lesson 11

PA.11.a	Identify the operations to which the Associative and Commutative Properties apply
PA.11.b	Rewrite addition or multiplication problems using the Associative and/or Commutative Properties
PA.11.c	Rewrite subtraction problems as addition problems so that the Associative and Commutative Properties can be applied
PA.11.d	Apply the Associative and Commutative Properties to solve equations

Lesson 12

PA.12.a	Explain how the Distributive Property can be used to solve a problem
PA.12.b	Rewrite expressions by applying the Distributive Property of Multiplication over Addition
PA.12.c	Rewrite expressions by finding the common factor
PA.12.d	Explain that variables with no specified coefficient are understood to have a coefficient of one

Lesson 13

PA.13.a	Define multiplicative inverse
PA.13.b	Find the multiplicative inverse of a number
PA.13.c	Use the multiplicative inverse to solve equations

Lesson 14

PA.14.a	Explain the order of operations and how it is applied to an expression
PA.14.b	Use the order of operations to evaluate expressions
PA.14.c	Use the order of operations to solve for an unknown in an equation

Lesson 15

PA.15.a	Explain that the surface area of a solid is the sum of the areas of all external surfaces of the solid
PA.15.b	Calculate the surface area of rectangular solids, including cubes, triangluar pyramids, and rectangular pyramids
PA.15.c	Determine the surface area of rectangular solids to solve problems

Lesson 16

PA.16.a	State the formula for converting Celsius to Fahrenheit
PA.16.b	Convert temperature from degrees Celsius to degrees Fahrenheit

Lesson 17

PA.17.a	State the formula for converting Fahrenheit to Celsius
PA.17.b	Convert temperature from degrees Fahrenheit to degrees Celsius

Lesson 18

PA.18.a	Identify the absolute value symbol
PA.18.b	Determine the absolute value of a number
PA.18.c	Simplify absolute value expressions

Lesson 19

PA.19.a	Explain the meaning of ratio and proportion
PA.19.b	Solve problems involving proportions with unknowns
PA.19.c	Write and solve proportions based on word problems

Lesson 20

PA.20.a	Write a proportion to solve for the missing side length in a pair of similar polygons

Lesson 21

PA.21.a	Define Least Common Multiple (LCM)
PA.21.b	Find the LCM of two numbers by listing their respective multiples
PA.21.c	Find the LCM of two numbers using prime factorization

Lesson 22

PA.22.a	Define Greatest Common Factor (GCF)
PA.22.b	Find the GCF of two numbers by listing factors and selecting the greatest factor common to both lists
PA.22.c	Find the GCF of two numbers using prime factorization

Lesson 23

PA.23.a	Define the terms polynomial, trinomial, binomial, and monomial
PA.23.b	Show the relationships among physical, pictorial, and symbolic representations of polynomials
PA.23.c	Calculate the sum of two polynomials

Lesson 24

PA.24.a	Find the volume of a cylinder given the height and the radius or diameter
PA.24.b	Apply the formula $V = Bh$ to determine the volume of a cylinder

Lesson 25

PA.25.a	Build a rectangle with blocks to find the product of polynomials
PA.25.b	Multiply binomials
PA.25.c	Explain the similarity between multiplication of base-10 numbers and base-x numbers

Lesson 26

PA.26.a	Calculate elapsed time in hour and minute units
PA.26.b	Solve problems involving elapsed time in hours and minutes

Lesson 27

PA.27.a	Find the volume of a cone given its altitude and its radius or diameter
PA.27.b	Apply the formula $V = \frac{1}{3}Bh$ to determine the volume of a pyramid and cone

Lesson 28

PA.28.a	Convert between military time and time on a 12-hour clock
PA.28.b	Perform operations of addition and subtraction with military time

Lesson 29

PA.29.a	Perform addition and subtraction with multiple customary units of measure

Lesson 30

PA.30.a	Explain the difference between a rational and irrational number
PA.30.b	Identify numbers as rational or irrational
PA.30.c	Find the square root of a number to the nearest hundredth, without a calculator