

X Pre-Algebra

Objectives List



The checkboxes on the right side below may be used to help you record student progress. For example, you can record quarterly grades, or you can indicate level of skill development (not yet begun, beginning, developing, mastered).

Lesson	Number	Objective	✓	✓	✓	✓
1	PA.1.a	Add integers				
1	PA.1.b	Explain how negative addends affect the sign of the sum				
2	PA.2.a	Subtract integers				
2	PA.2.b	Rewrite subtraction of a negative as addition of a positive and vice versa				
3	PA.3.a	Multiply integers				
3	PA.3.b	Explain how negative factors affect sign of the product				
4	PA.4.a	Divide integers				
4	PA.4.b	Explain how the signs of the original numbers affect the sign of the quotient				
5	PA.5.a	Convert from an exponential expression to a series of factors and vice versa				
5	PA.5.b	Express exponential expressions in words				
6	PA.6.a	Express quantities in standard notation, place value notation, expanded notation, and exponential notation; convert among these notations				
6	PA.6.b	Explain how dollars, dimes, and pennies are parallel to units, tenths, and hundredths, respectively				
7	PA.7.a	Raise an integer to a power				
7	PA.7.b	Explain how the use of parentheses affects the value of an integer raised to a power				
8	PA.8.a	Identify the square root symbol				
8	PA.8.b	Find square roots of perfect squares				
9	PA.9.a	Explain how adding the same amount to both sides of an equation does not affect its validity				
9	PA.9.b	Solve equations for an unknown by using the additive inverse				

Lesson	Number	Objective	✓	✓	✓	✓
10	PA.10.a	State the Pythagorean theorem				
10	PA.10.b	Apply the Pythagorean theorem to solve for the length of the missing side of a right triangle				
10	PA.10.c	Use the Pythagorean Theorem to determine if a triangle is a right triangle when all three sides are known				
11	PA.11.a	Identify the operations to which the Associative and Commutative Properties apply				
11	PA.11.b	Rewrite addition or multiplication problems using the Associative and/or Commutative Properties				
11	PA.11.c	Rewrite subtraction problems as addition problems so that the Associative and Commutative Properties can be applied				
11	PA.11.d	Apply the Associative and Commutative Properties to solve equations				
12	PA.12.a	Explain how the Distributive Property can be used to solve a problem				
12	PA.12.b	Rewrite expressions by applying the Distributive Property				
12	PA.12.c	Rewrite expressions by finding the common factor				
12	PA.12.d	Explain that variables with no specified coefficient are understood to have a coefficient of 1				
13	PA.13.a	Define multiplicative inverse				
13	PA.13.b	Find the multiplicative inverse of a number				
13	PA.13.c	Use the multiplicative inverse to solve equations				
14	PA.14.a	Explain the order of operations and how it is applied to an expression				
14	PA.14.b	Use the order of operations to evaluate expressions				
14	PA.14.c	Use the order of operations to solve for an unknown in an equation				
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				
15	PA.15.b	Calculate the surface area of rectangular solids, including cubes, triangular pyramids, and rectangular pyramids				
15	PA.15.c	Determine the surface area of rectangular solids to solve problems				
16	PA.16.a	State the formula for converting Celsius to Fahrenheit				
16	PA.16.b	Convert temperatures from degrees Celsius to degrees Fahrenheit				
17	PA.17.a	State the formula for converting degrees Fahrenheit to degrees Celsius				

Lesson	Number	Objective	✓	✓	✓	✓
17	PA.17.b	Convert temperatures from degrees Celsius to degrees Fahrenheit				
18	PA.18.a	Identify the absolute value symbol				
18	PA.18.b	Determine the absolute value of a number				
18	PA.18.c	Simplify absolute value expressions				
19	PA.19.a	Explain the meanings of ratios and proportions				
19	PA.19.b	Solve problems involving proportions with unknowns				
19	PA.19.c	Write and solve proportions based on word problems				
20	PA.20	Write a proportion to solve for the missing side length in a pair of similar polygons				
21	PA.21.a	Define Least Common Multiple (LCM)				
21	PA.21.b	Find the LCM of two numbers by listing their respective multiples				
21	PA.21.c	Find LCM of two numbers using prime factorization				
22	PA.22.a	Define Greatest Common Factor (GCF)				
22	PA.22.b	Find the GCF of two numbers by listing factors and selecting the greatest factor common to both lists				
22	PA.22.c	Find the GCF of two numbers using prime factorization				
23	PA.23.a	Define the terms polynomial, trinomial, binomial, and monomial				
23	PA.23.b	Show the relationships among physical, pictorial, and symbolic representations of polynomials				
23	PA.23.c	Calculate the sum of two polynomials				
24	PA.24.a	Find the volume of a cylinder given the height and the radius or diameter				
24	PA.24.b	Apply the formula $V=bh$ to determine the volume of a cylinder				
25	PA.25.a	Build a rectangle with blocks to find the product of polynomials				
25	PA.25.b	Multiply binomials				
25	PA.25.c	Explain the similarity between multiplication of base-10 numbers and "base-x" numbers				
26	PA.26.a	Calculate elapsed time in hour and minute units				

Lesson	Number	Objective	✓	✓	✓	✓
26	PA.26.b	Solve problems involving elapsed time in hours and minutes				
27	PA.27.a	Find the volume of a cone given its altitude and its radius or diameter				
27	PA.27.b	Apply the formula $V=1/3Bh$ to determine the volume of a pyramid and cone				
28	PA.28.a	Convert between military time and time on a 12-hour clock				
28	PA.28.b	Perform operations of addition and subtraction with military time				
29	PA.29.a	Perform addition and subtraction with multiple units of customary linear measure				
29	PA.29.b	Perform addition and subtraction with multiple units of customary weight measures				
30	PA.30.a	Explain the difference between a rational and irrational number				
30	PA.30.b	Identify numbers as rational or irrational				
30	PA.30.c	Find the square root of a number to the nearest hundredth, without a calculator				