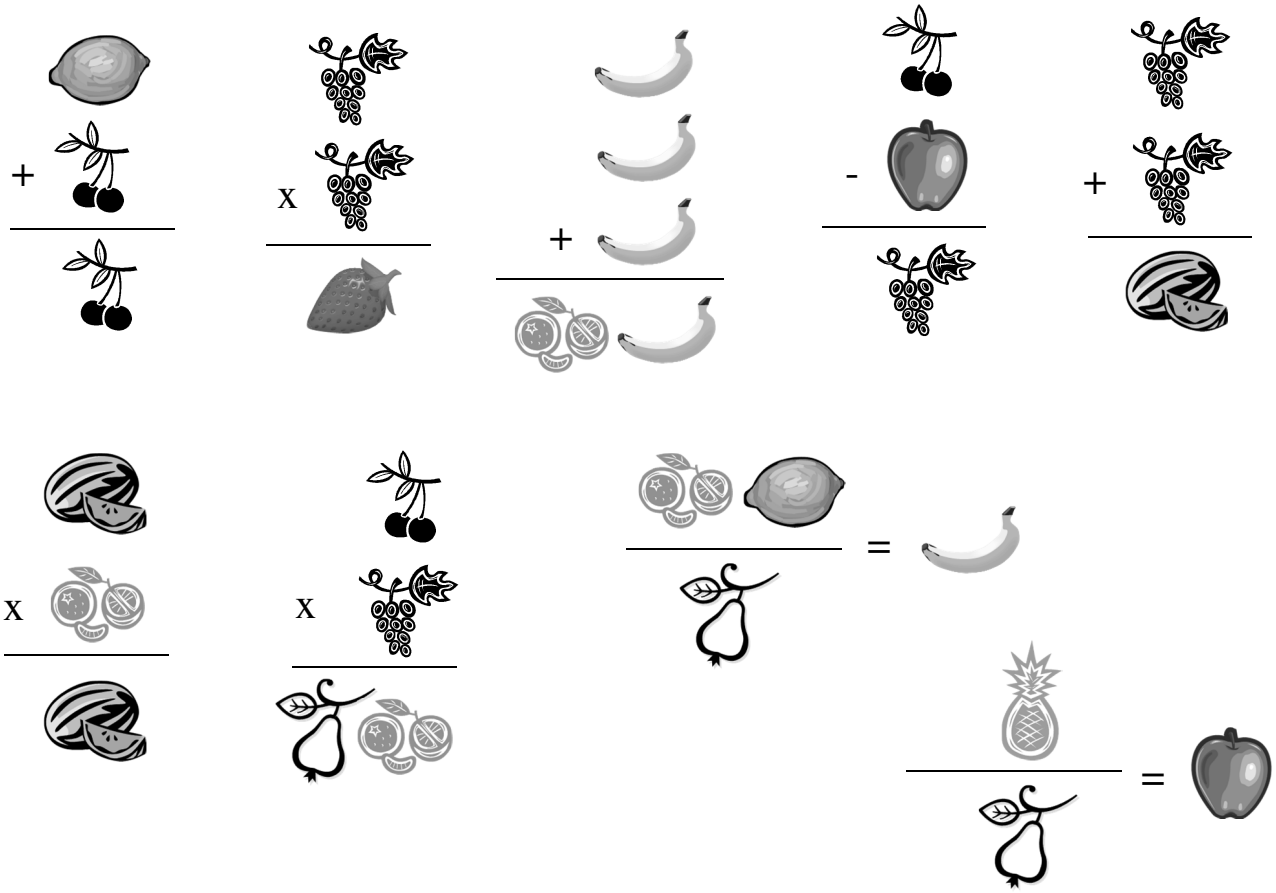
Activity 4-1: **Finding the Unknown** Name:

Each type of fruit represents a different single digit (0-9). Using what you know about the number system, determine the value of each fruit. Two fruits next to each other indicate a two digit number (not multiplication).



What single-digit number do □ and △ each represent in the expressions below?

□ + □ = △ x △ □ + □ + □ + □ = □ x △

What single-digit numbers do □, △, and ○ represent in the expression below?

□ - △ = 3 ○ x △ = 30 ○ + △ + □ = 20

Equations Vocabulary

Coefficient	A coefficient is the number that you multiply a variable by.	$4x=12$ 4 is the coefficient
Variable	A variable is a letter that stands for an unknown amount.	$4x=12$ x is the variable
Constant	A constant is a number that is all by itself (it is not multiplied or divided by a variable).	$4x=12$ 12 is the constant
Term	A term is one of the quantities connected by an addition or subtraction sign in an equation. A term is a number, a variable, or the product or quotient of a number and a variable.	$4x=12$ $4x$ is the term
Like terms	Two terms are called like terms if they have the same variables with the same exponents.	$4x+3x=7x$ $4x$ and $3x$ are like terms
Unlike terms	Terms that are not like. They have either different variables or different exponents or both.	$4x^2+4x+3$ $4x^2$,$4x$, and 3 are all unlike terms

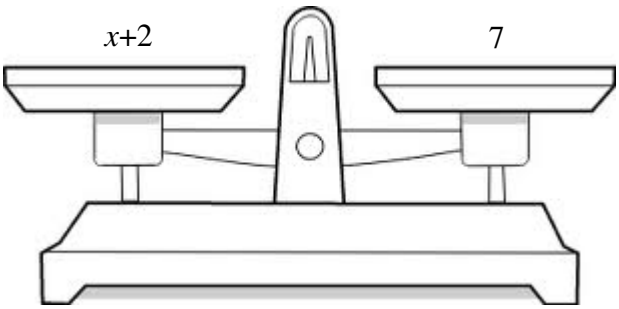
1.	a, b, c, and d each represent a different value. If $a = 2$, find b, c, and d. $a+b=c$ $a-c=d$ $a+b=5$	
2.	a, b, c, and d each represent a different value. If $a=-1$, find b, c, and d. $a+b=c$ $b+b=d$ $c-a=-a$	
3.	a, b, c, and d each represent a different value. If $a = 4$, find b, c, and d. $a+c=b$ $b-a=c$ $cd=-d$ $d+d=a$	

Example 1: $x+2=7$

What are you trying to solve for? You are trying to solve for x.

How do you solve for x?
You need to get x all by itself on one side of the equation.

Think of an equation as a balance or a scale.



Since an equation means both sides are equal, that means the scale is balanced. The left side equals the right side. You need to keep the scale balanced at all times.

That means whatever you do to one side of the scale (say subtract 2 on the left), I need to do the same on the right side. Subtracting 2 on both sides keeps the scale balanced.