

Expressions and Equations

Grade Eight Expressions and Equations HLC

Solve equations for unknowns which may include signed numbers.

September

Grade Eight (EE) Learning Progressions

June

Students must use visual representations to build understanding along this learning progression. Algebra tiles are strongly recommended since students use tiles to model in elementary through high school mathematics. ****Be VERY cautious of introducing algorithms before conceptual understanding is SOLID****

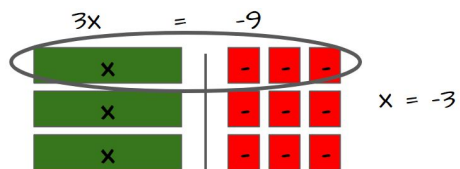
Critical Strategies: Use inverse operations for solving problems

Solving Equations

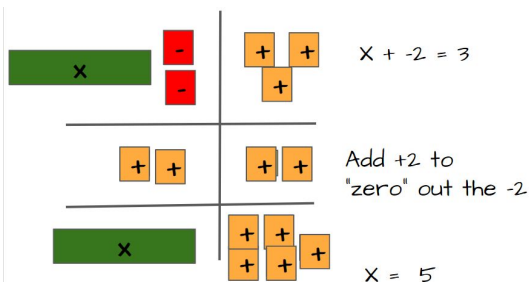
Connecting visual representations to algebraic notation

Algebra Tiles

Grouping/ fair share

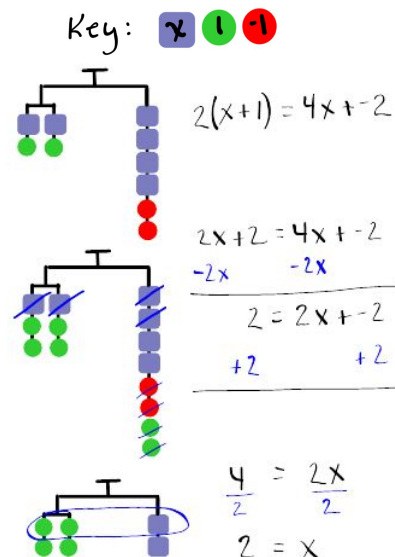


Add tiles to make zero pairs



Other representations: Money bags, pan balance

Hanger Diagram

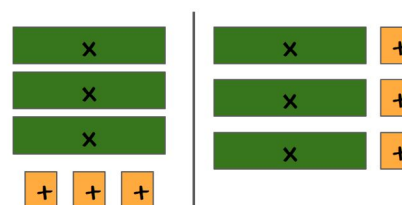


Understanding the number and meaning of solution(s)

The solution is the value(s) of x is that makes a given equation true

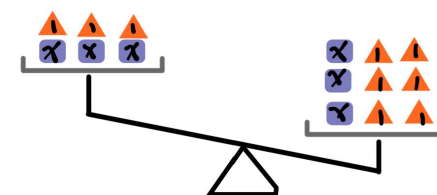
In context of solving an equation:

x = infinitely many solutions:



In this example, $3x + 3 = 3(x+1)$ shows that x can have any value, so x has infinitely many solutions.

x has no solutions:



In this example, $3x + 3 = 3(x+2)$, there is no value of x that will make this true, so x has no solution.