# LEARNING PLAN

## Exploratory Activities
- “Weighing Blocks” (*Groundworks*, Creative Publications)
- Algebraic Expressions vs. Equations notes (PowerPoint)
  - Includes notes on writing equations and word problems

## Concept Development Activities
  - “3.1 Exploring Equality”
  - “3.2 From Pouches to Variables”
  - “3.3 Using a Symbolic Method”
- “Model Solving Equations” (Using cups and counters and algebra tiles)
- Parts of an Algebraic Expression/Equation Chart
- “Equations: Addition and Subtraction” (Instructional Fair, Inc.)
- “Equations: Multiplication and Division” (Instructional Fair, Inc.)
- “Model and Solve Two-Step Equations” (Using cups and counters and algebra tiles)
- “Equations Involving Two Operations” (Instructional Fair, Inc.)
- “Skills Practice: Simplifying Algebraic Expressions” (Glencoe)
- “Solving Equations by Combining Like Terms”
- Equations Puzzles (Magic Squares)
  - One-step equations
  - Two-step equations

## Basic Facts and Standard Algorithms Formalized
- Variables as the unknown
- Constants
- Inverse properties of addition and multiplication
- Equality
- Zero pairs (integer rules)
- Combining like terms
- Solving one-step equations
- Solving two-step equations
- Solving equations by combining like terms

## Materials and Resources
- cups
- two-color counters
- Algebra Tiles
- Electric circuit
  - Alligator clips with wires
  - Battery holder
  - Small light bulb
  - D battery
- Parts of an algebraic expression matching chart
- *Groundworks* (Creative Publications)
- Glencoe
- National Library of Virtual Manipulatives ([http://nlvm.usu.edu/en/nav/frames_asid_324_g_3_t_2.html?open=instructions](http://nlvm.usu.edu/en/nav/frames_asid_324_g_3_t_2.html?open=instructions))

## Assessment
- “Equations Quiz”
- Equations Puzzle (Magic Square)
  - Equations potpourri

## Concept
**Solving Linear Equations**

## Originality and Creativity
**Student Products**
- **Written**
  - **“Algebra Storybook”**
    Students will write word problems that describe given equations. Students will write equations to describe given word problems. This will show that students understand the relationship between the constants and the variables.
<table>
<thead>
<tr>
<th>Related TEKS</th>
<th>Verbal Classroom Demonstration</th>
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<tbody>
<tr>
<td>7.5A, 7.5B, 7.13B, 7.13D, 7.14A</td>
<td>Students will solve an equation using cups and counters or algebra tiles in front of the class. The student will use correct vocabulary (i.e. “variable,” “constant,” “equal,” etc.) to describe the process of solving an equation using three manipulatives and what it represents. This will demonstrate an understanding of the relationship between the various parts of an equation and an awareness of the mathematics behind the model.</td>
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<tr>
<td></td>
<td>Kinesthetic Classroom Demonstration</td>
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<tr>
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<td>Students will use cups and counters or algebra tiles to demonstrate how to solve equations in front of the class. This will show an understanding of how zero pairs and in inverse property of multiplication are used to find a missing value.</td>
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<tr>
<td></td>
<td>Visual “Algebra Storybook”</td>
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<td></td>
<td>Students will draw a picture (using cups and counters or algebra tiles) to describe how to solve the equation. Students will also show how they solved the equation symbolically (using numbers and variables). This will demonstrate an understanding of how to solve equations.</td>
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</tbody>
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