Lab Template

Text: AMME
Volume: 1   Chapter: 6
Unit number: 6   Title: Opposites Attract
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Attach the Following Documents:
   ## 1. Lab Instructions
   ## 2. Student Handout(s)
   ## 3. Rubric and/or Assessment Tool

Short Description (Be sure to include where in your unit this lab takes place):

This lab will occur after the initial discussion of what opposites are in terms of numbers and x's. The lab uses the balance method to solve single variable equations. Students will be kinetically involved in the creation of zeros (tossing out of the ring) of either 1's or x's. Students will be given two cards, a 1 and an X. The teacher will post an equation on the board and students will come up and assembles themselves in the form of the equation. Then during the "Main Event" other students can come up and create zero's in the equation to ultimately find the value for X. Student's "toss" each other out when they are opposites (-1 and 1) or (x and –x).

Unit 16 Lab – Solving Equations Royal Rumble

LAB PLAN

TEACHER: *(Teacher Prep/Lab Plan)*
   - **Lab Objective**
         Students will work collaboratively in groups of 4, but each student will have their own 1's and x's cards. Students will use the balancing method to understand how to manipulate variables and numbers in equations to solve for unknown variable. Students will see that portions of equations can be eliminated by introducing opposites to both sides of the equation.
   - **Statement of prerequisite skills needed** *(Vocabulary, Measurement Techniques, Formulas, etc.)*
         Students understand that a variable represents an unknown number. Student's will understand the concept of opposites and that when opposites are paired they create zeros. Students will know how to combine like terms.

   - **Vocabulary**
         Variable   opposite   create zeros
         Balancing equations   royal rumble
   - **State Standards addressed:** *(Highlight "Green" Standards, you may use your District's Power Standards if applicable)*

- ⚔ **Math:**
- ⚔ Standard: A.1.4.A – Write and solve linear equations and inequalities in one variable.
- ⚔ **Reading:**
- ⚔ **Writing:**
- ⚔ **Leadership:**
  Students collaborate in teams with defined roles with both individual and group accountability. Students are given set norms and monitored by teacher during the lab.
- ⚔ **SCAN Skills/Workplace Skills:**

⚔ **Teacher Preparation:** *(What materials and set-up are required for this lesson?)*
- ⚔ Materials: x's and 1's cards. Equations sheet. Large = sign to tape to board at the front of the room.
- ⚔ Set-Up Required: Print out x's and 1's.
- ⚔ Teacher Tasks: Teacher reviews concept of opposites. Shows short video clip of Royal Rumble. Leads initial sessions of "tossing out" x's and 1's. Keeps track of student participation.

⚔ **Lab Organizational Strategies:**
- ⚔ Grouping/Leadership/Presentation Opportunities:
  Students are already in groups of 4. Groups will be encouraged to strategize how they will get rid of all their numbers.
- ⚔ Expectations: See rubric attached to lab document
- ⚔ Time-line:
  Lab – 50 minute period.
  Intro & Outline Lab. Review opposites concept – 5 minutes
  Show royal rumble clip and pass out cards – 5 minutes
  Model a simple royal rumble session using simple scenarios like:
  $$x \text{ with } -x, \text{ or } -3 \text{ and } 3 - 5 \text{ minutes}$$
  Main Event – equation royal rumbles – 25 minutes
  Complete follow up problems – 10 minutes

⚔ **Post Lab Follow-Up/Conclusions** *(to be covered after student completes lab)*
- ⚔ Discuss real world application of learning from lab: See below.
- ⚔ Career Applications: Any scenario involving unknown variables. Budgets, resource allocation, inventory, etc.
- ⚔ Optional or Extension Activities:
  Additional challenge problems provided