**Math modeling unit and activity**

Activity name: Create your own equation

Big Idea(s)/ Concept(s)/major math area(s): Solving single variable equations

Grade level(s): 9th/Algebra

**Math Standards included:** AI.L.1 “Understand that the steps taken when solving linear equations create new equations that have the same solution as the original”

**Procedure overview/teacher directions** ........................

**Lesson details**,

expected timing: 30 minutes

Teacher introduction: Class Discussion: As a class, we have been solving equations for a couple days now. Help students build motivation to accept the challenge of creating their own single variable linear equations.

Teacher introduction: students will be given the task to fill in the given equations to meet the requirements for x.

**Part 1** In pairs, students will work to create their five equations by filling in the blank boxes to equal the given value for x. Possible teacher requirements: “Students must use only numbers 1-9”, “Students must use at least one negative number per problem”, “Students cannot repeat a number in a problem” ,“Intentionally make a single mistake in one equation” etc.

**Part 2 (option 1)** Students will trade their work with another group. They will work through the problems to verify that all equations work as intended and find the mistake if that was part of the original process.

**Part 2 (option 2)** Students will share their equations on a white board. As a class, students will compare their equations with others.

**Park 3** Allow time for a whole class discussion on specific methods students took to approach each problem. For example, did some students always start on the left side? Did groups use substitution? Etc.

**Part 4** As an extension, ask students to create the most challenging equation on their own (without the box template) so that x=6 or x = 8 etc.

**Brief summary** This lesson follows a lesson on solving multi-step equations but precedes solving equations with variables on both sides in Algebra 1.