**Math modeling unit and activity** - example layout of description

Activity name: \_\_\_*Order of Operations/Arithmetic*\_\_\_\_

Big Idea(s)/ Concept(s)/major math area(s): \_\_*Order of operations/ practice arithmetic*\_\_\_\_\_\_\_

Grade level(s): \_\_\_\_\_\_\_\_\_\_9-12\_\_\_\_\_\_

**Math (and science?) Standards included:** \_\_\_\_\_Al.RNE.3\_\_\_\_\_\_\_\_\_\_

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

**Lesson details**: 45 minutes, this lesson will allow the students to explore order of operations while practicing with arithmetic

The lesson may consist of one or more sequential activities leading to and using the “big idea” of the lesson.

**Part 1** Students are organized into groups and given white boards. The prompt is to write as many 1 step operation expressions (+, -, ×, ÷) as you can that equal 10 using numbers 0-20. ex: (8+2). A timer is on the board students will get 3 minutes. Afterwards, students will display their boards and a class discussion will take place.

**Part 2** Students will get back into their groups and will be given the prompt: write as many 2 step operation expressions (+, -, ×, ÷) as you can that equal 10 using numbers 0-20. ex: (10/2 +5). A timer is on the board students will get 3 minutes. Afterwards, students will display their boards and a class discussion will take place.

**Part 3** Students will get back into their groups and will be given the prompt: write as many 3 step operation expressions (+, -, ×, ÷) as you can that equal 10 using numbers 0-20. ex: (10/2 +5). A timer is on the board students will get 3 minutes. Afterwards, students will display their boards and a class discussion will take place.

Questions to bring up:

Does order matter?

How can we show what math to do first?

**Part 4** – Discuss PEMDAS and practice several problems in the groups.

**Part 5**—Lastly, groups will be given the following prompt: In your groups, develop a way to remember PEMDAS in 5 minutes. A class discussion will take place.

\*\*Alteration to lesson: Make each correct answer in part 1=1 point, part 2=2 points, 3=3 points.