**Math modeling unit and activity**

Activity name: Create your survey

Big Idea(s)/ Concept(s)/major math area(s): Frequency Tables

Grade level(s): 9th/Algebra

**Math Standards included:** AI.DS.1 and AI.DS.5

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

**Lesson details**,

expected timing: 45 minutes

Teacher introduction: students will be asked to create a survey question of interest to them. Their question should be in multiple choice format with four response options. (ie: “Given these options, who is the best basketball player? Lebron James, Stephen Curry, Kevin Durant, Michael Jordan.)

**Part 1** Groups will create their survey question, including Male/Female on Survey Monkey and send to their classmates. Students will be expected to respond in a timely manner.

**Part 2** Using the results of their survey, students will organize their results in a two way frequency table, comparing gender and survey results. Because this is a discovery lesson, the teacher may need to play a guiding role during this time. Questions to be asked may include: “How many girls responded \_\_\_\_?” “How many boys took your survey?”

**Part 3** Students will share their results and tables in a whole group discussion, pointing out two big observations that they noticed from their data. The teacher will also lead a discussion about “sample population” and “bias in sampling.”

**Part 4** As a follow up activity, we will pose the question “Would there be any other way to display the results in a more useful manner?” This will generate a discussion about percentages and frequencies. The teacher will then ask the students to create a two-way relative frequency table.

**Part 5 Final discussion**

During the final discussion, we will introduce the important vocabulary: “joint, marginal and relative frequency.”

**Brief summary** This lesson will belong to the data unit of Algebra 1. It could be used as an introductory lesson to explore two-way frequency tables.