My Cotton Boll Data **Version A**

Goal: Identify an equation to determine the relationship between cotton lint weight and the number of cotton seeds to determine the value for farming profit.

1) Pull the cotton out of the bur. Weigh the lint on the balance in ounces.
   Record the weight here: _____oz.

2) Estimate the number of seeds in your lint. Pick the seeds out of the lint.
   Record the number of seeds here:_____seeds

3) Use the Goal above to write an if-then hypothesis.
   If the _____, then the _____.

4) Identify your x and y variables (cotton lint or seeds):

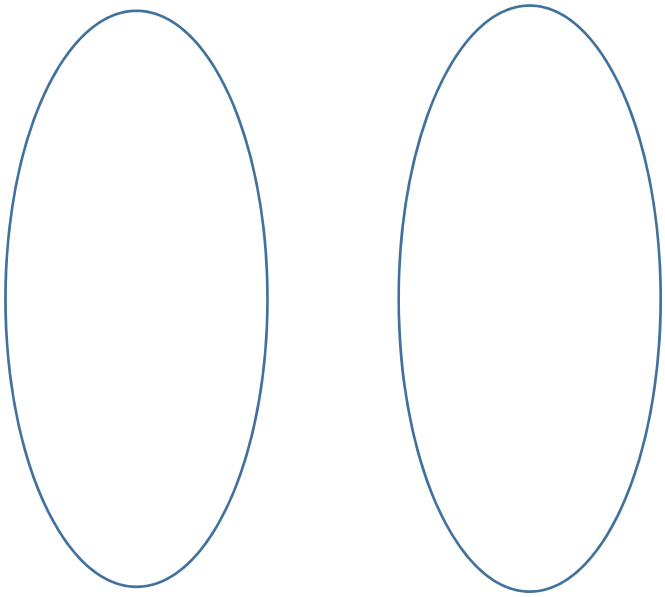
   X variable (the input or independent variable that affects the y variable): _____

   Y variable (the output or dependent variable that is affected by the x variable):_____

5) Compile the data from your group. Use the table below to show the number of seeds and the weight of the cotton lint for each person.

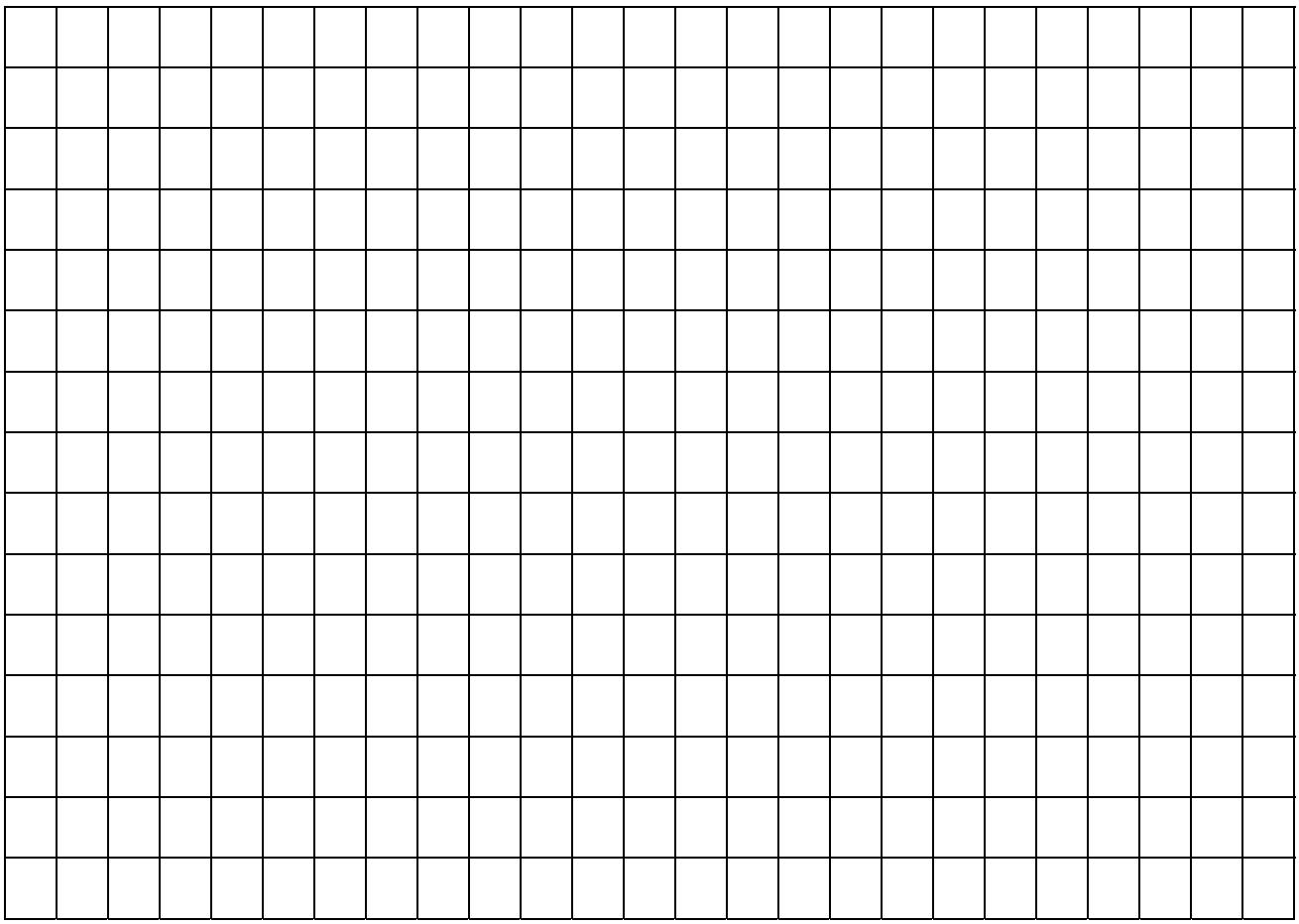
Group Member Name	Weight of Cotton Lint in Ounces	Number of Seeds in the lint

6) Create a mapping diagram of this relation:



7) Is this relation a function (does every input have one unique output)? _____

8) Use the grid below to create a graph of your group's data.
Consider:
   - Equally spaced increments
   - Labels on both axes
   - Clearly written units on the axes
   - A title that tells the reader what the graph is all about



_____

9) Is there a correlation? _____ What type (positive, negative, none)? _____
10) Find the line of best fit (draw a line on your graph through the middle of your data). Find the equation of your line in the form of y = mx + b (m=slope and b=y-intercept).

11) Predict the weight of cotton lint that contains 100 seeds. Why do you think this?

12) Weigh your lint without the seeds and record in ounces: _____oz.

    What was the weight difference between with seeds and without seeds? _____oz.

13) How many ounces of cotton lint did your group collect?_____ Are you able to create the following or how many more ounces would you need to create the following? (16oz=1lb):

    a. Jeans (1.5 lbs.) ____
    b. Bath Towel (0.6 lbs.) ____
    c. Cloth Diaper (0.15 lbs.) ____
    d. T-Shirt (0.5 lbs.)

14) What would you tell a farmer about the weight of the cotton lint and what they should expect on the return of cotton seeds produced?

15) If cotton is selling for $0.79 per pound and a bale of cotton weighs around 500 lbs., how many bales of cotton would a farmer need to sell to gross $100,000?

16) How many seeds should a farmer expect from a bale of cotton (500 lbs includes the seeds-use your equation)?

    If seeds sell for $0.18 per pound, how much would the cotton seeds sell for from a bale of cotton?