Group Members: _____

Predicting A Catastrophe

Part 1: Analyzing the Data

Check out the data below. It shows the population of a country and how many people it can feed based on their agricultural production for each year.

Year	Population (number of people)	Food Production (number of people)
1975	2,993,876	6,400,000
1980	3,365,441	7,000,000
1985	3,799,550	7,100,000
1990	4,312,246	8,100,000
1995	4,274,819	9,400,000
2000	4,564,297	7,500,000
2005	5,658,379	9,600,000
2010	6,458,720	10,000,000
2015	7,237,025	10,400,000
2016	7,396,190	10,700,000
2017	7,557,212	10,800,000
2018	7,719,729	10,500,000

Take some time to look at the data and discuss your observations with your group members. Write down your observations; be sure to add detail and use vocabulary from previous chapters.

Part 2: Representing the Data

Discuss with your group how you could represent this data differently. Write down your ideas.

What are the advantages and disadvantages of your ideas?

Part 3: Graphing the Data

As a group, create a graph of the data. Make sure to decide on an appropriate scale before you make your graph. What assumptions are you making as you graph? List three.

Part 4: Reflecting on the Graph

After graphing the data, what did you notice?

Can you identify the type of relationship(s) present?

What do you wonder? When do you think this country might run out of food?

Do you think the model you have created accurately represents the situation? Explain.

Self-Assessment

	Curricular Competency	**Task-specific Evidence**
Part 1	I analyzed the data to look for a pattern.	☐ I considered how the data changed with respect to time. ☐ I noticed that one relation increased faster. ☐ I was able to use the terms: relation, rate of change, constant/non-constant, linear/non-linear and independent/dependent variables.
Part 2	I considered multiple ways to show the data.	☐ I considered describing the data in words, an equation and/or a graph. ☐ I was flexible in my thinking and listened to my group members' ideas. ☐ I considered assumptions I would be making.
Part 3	I created multiple models to show the data.	☐ I have a function, equation and/or graph that represents the data. ☐ I have a model that is scaled to fit the data. ☐ I considered the domain to reflect this real-world scenario.
Part 4	I made a prediction based on my model.	☐ I have a model that was scaled appropriately to make a prediction. ☐ I recognized the intersection of the functions was a solution to the problem. ☐ I was able to describe the limitations of my model.

Core Competency Reflection:

1. What parts of this activity did you find interesting? Surprising?

2. What did you find went well in this activity?

3. What did you find challenging?

4. Was it helpful to work in a group? Why or why not.

5. What would you do differently in a future activity to improve?