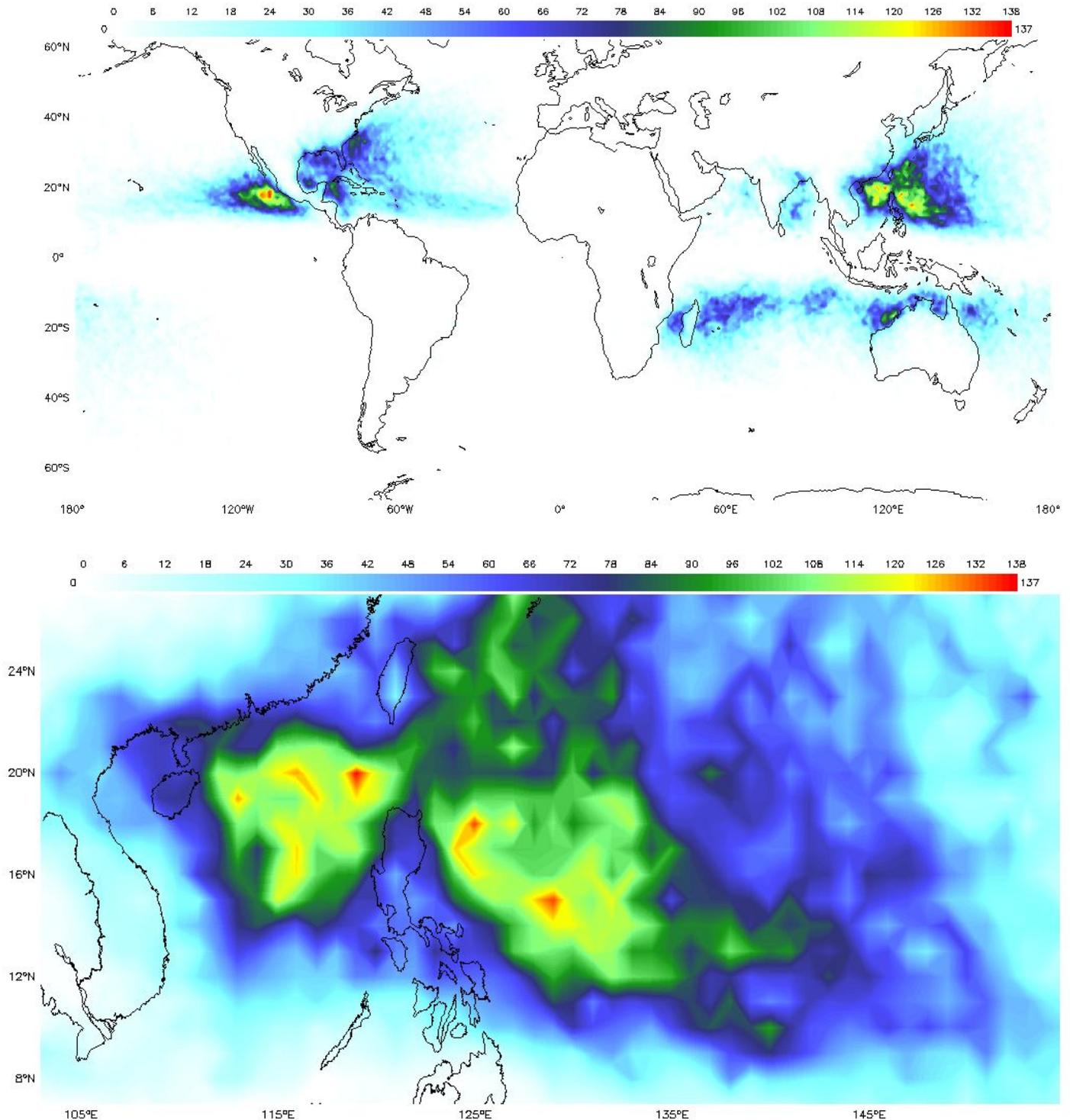**Data**

The data set I chose is the number of tropical cyclones places have in relationship to their latitude. This is the data from 1842-2017 and the colors on the map represent how many tropical cyclones have occurred.

DATASET: Number of Tropical Cyclones
VARIABLE: Number of Tropical Cyclones (1842 - 2017) (dimensionless (count))

Example of how the students can zoom in to get a better grasp of the number of tropical cyclones for certain latitude measurements.

How does the data serve as an engaging context for the math concepts you teach?
This data serves as an engaging context for teaching scatter plots because it is more interactive and a different way of obtaining data than is typically used in class. The data is also engaging because by simply looking at the map the students may not be able to guess what type of scatter plot will be made from this data. Students will be interested in the data because they have all hear of tropical cyclones in the real world and will think it is interesting to track where they tend to happen and what areas never seem to get tropical cyclones.

Measurable Objective
Students will be able to:
  ● Obtain data from the graph using chromebooks to zoom in and out of certain areas to get the most accurate data possible.
  ● Create a table from the data obtained comparing latitude and number of tropical cyclones.
  ● Create a scatterplot of the data.
  ● Identify which type function the data represents.
  ● Write a function that best represents their data.
  ● Interpret any correlations they see between the variables.

Standards
Common Core State Standards - Math
  ● CCSS.MATH.CONTENT.HSS.ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
  ● CCSS.MATH.CONTENT.HSS.ID.B.6.AnFit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.
  ● CCSS.MATH.CONTENT.HSA.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
  ● CCSS.MATH.CONTENT.HSS.ID.A.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
  ● CCSS.MATH.CONTENT.HSF.BF.A.1 Write a function that describes a relationship between two quantities.

Evidence

I am not currently in session for school and have never done this assignment with my students. I have created the following to show how I plan on gathering evidence when I do this lesson. The students will be using Chromebooks to do this activity where the link to the data will be provided on Schoology, an online resource my school district uses. They will need to be able to interpret the map in order to obtain their data, which might require some review on latitude and longitude. I considered giving the students the data, but since this will be done in Algebra 2, I decided they would find their points on their own and compare the functions students get within the class based on their approximations. I will be assessing their ability to create a table, set up a graph correctly, and if they are able to write a function from the correct function family, which would be quadratics.

Tropical Cyclones Scatter Plot   Name:_____

Use the link found in Schoology to access the Tropical Cyclone data from My NASA Data. Use the zoom tools to help get the most accurate reading possible of the number of Tropical Cyclones at 120 Degrees West. Track your data in the following table and plot the points. Label your axes appropriately.

Latitude	Number of Tropical Cyclones
0	
5	
10	
15	
20	
25	
30	
35	
40	

1. Which type of function would best represent this data? _____

2. Write a function that would best fit the scatter plot:_____

3. Is there a correlation between the two variables? Justify your answer.

4. Compare and contrast the function you wrote with others in the class. Are the functions similar? Are they different? Write down any observations you find.

Tropical Cyclones Survey   Name:_____

Answer the following questions regarding the Tropical Cyclones Scatter Plot activity.

      1. What was your favorite part of the assignment?

      2. What was the most challenging part of the assignment?

      3. Did you discover anything unexpected during this assignment? Explain your answer.

      4. If you could change something about this activity, what would it be?

      5. Come up with another real world example that could be used when studying scatter plots.