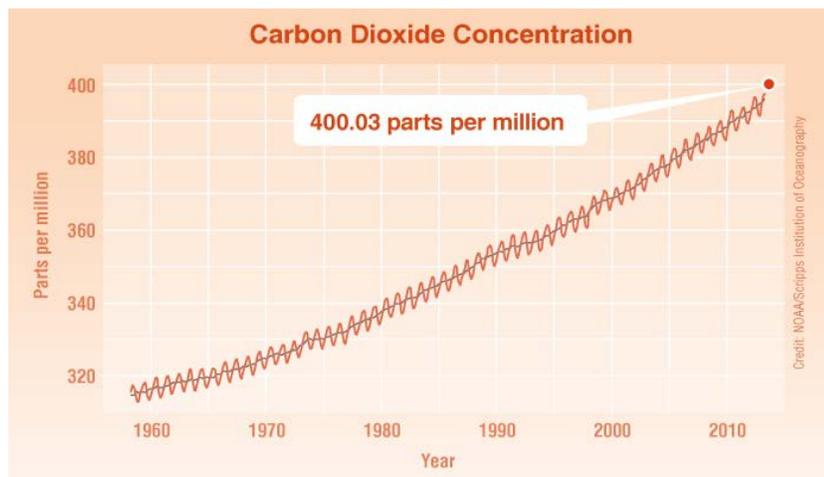
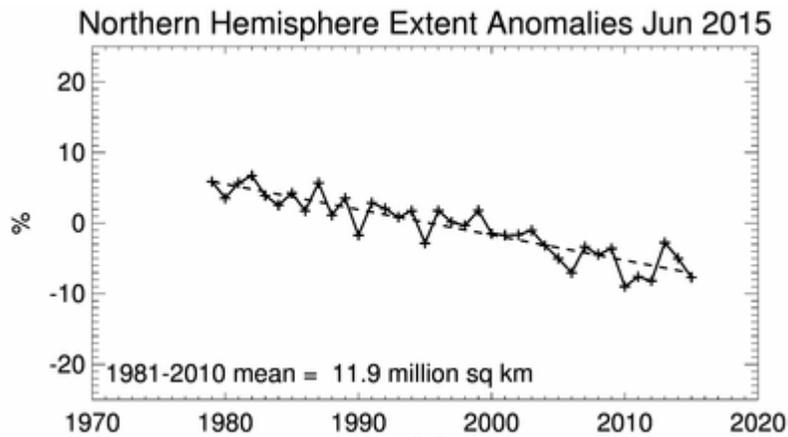
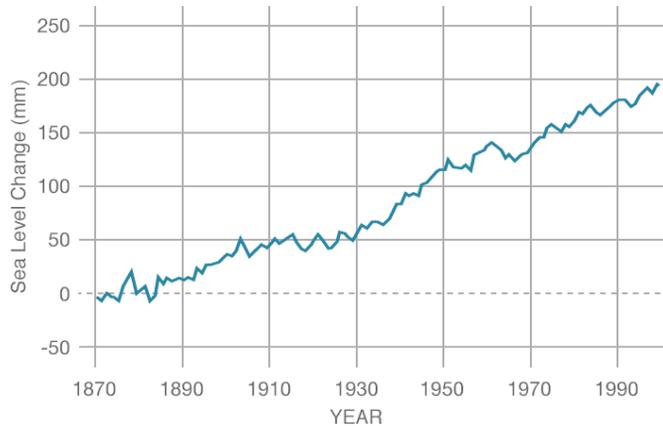


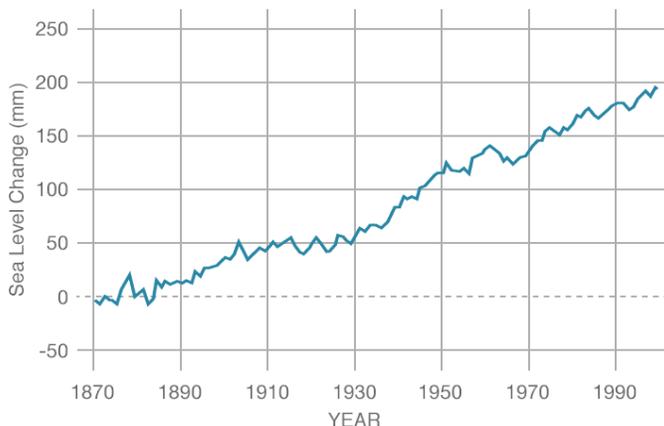
Graphing Activity on Climate Change

Go to the following website: <http://climate.nasa.gov/>

Find some good graphing on climate change. (Such as the ones I found on Sea Level change, Sea Ice and Carbon Dioxide concentration). Crop pictures as needed.



I uploaded this picture as the background on my TI-84 Plus CE calculators. (Be sure you use the correct version of TI-Connect. There is a separate version for CE calculators and it won't work with the regular version of TI-Connect if that is the model of your calculator. I spent a lot of time trying to figure out why my graph would not upload to my calculator and that was the problem.)



I then had to adjust the window to match two of my points. I used (0,0) for the year 1870 as a starting point. I also used (120,175). I put them in for the x and y values on List 1 (L1) and List 2 (L2) by pressing the stat key, 1 for edit and in L1 putting in 0 and 120 and for L2 0 and 175. I then turned the stat plot on by pressing 2nd y=, then choose 1 and entered on the word "On". When you press graph, you see the graph in the background and the two dots you plotted on the stat plot. You can then adjust the window from there. I ended up with the following setting:

Xmin: -30
Xmax: 140
Xscl: 20
Ymin: -130
Ymax: 275
Yscl: 50

You just have to play around to get something close to your liking.

If you want, you could use the calculator to calculate the linear regression. If you press, stat then cursor over to CALC, choose 4 for LinReg (ax+b), cursor down to Calculate and press enter. You get a=1.4583333 and b=0. Which should be close enough for the student activity.

Student Activity on Slope

We are going to use data from the website <http://climate.nasa.gov/vital-signs/sea-level/> to calculate the slope of a line and determine the effect of global warming on sea levels. Please go to the website above and read the information given. I have uploaded the bottom graph into your calculator.

On your graphing calculator, Press 2nd Zoom to get the format window. Cursor down to Background and select Image0 that is where I have saved the graph. Press the graph button, you should see sea level graph in the background of your calculator.

We then need to set the window to fit our data. Press the window button and set the following values:

Xmin: -30

Xmax: 140

Xscl: 20

Ymin: -130

Ymax: 275

Yscl: 50

Press the trace button, cursor up and down the graph to find two points to find a line of best fit for our graph. Try to spread them out, one point at the beginning of the graph and the other toward the end. Go ahead and round your values to the nearest whole number.

Use the formula for slope to find the slope of the line: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Show your work here:

Press the $y=$ button type in your equation assuming the y -intercept is zero.

$$y=mx$$

What is your equation?

How close are you to the graph? Do you need to do some adjusting?

Interpret the meaning of the slope of this line.

If our data is starting in the year 1870, use your equation to predict the change in the sea level compared to the year 1870 for the year 2015. Be sure to use appropriate labels on your answer.