Algebra II

Seeing F° and C°

Theory

In this investigation we will try to determine if there is a Linear relationship between the temperature in Fahrenheit and the temperature in Celsius, and if there is, what is the equation that best models this relationship.

Set Up

I. Collect the following materials:

Cup of ice H_2O	CBL/CBL2	Strip of tape
FANDC3.83p	Link cable	2 Temperature Probes
TI-83 or TI-83 Plus	Partners	

II. Tape the two temperature probes so that the tips are close together.

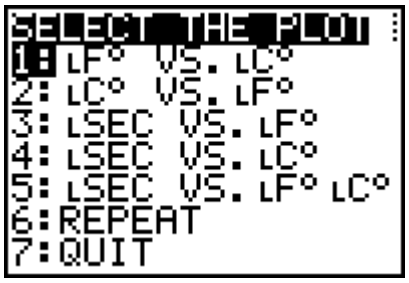
III. Place the two probes in the palm of your hand as we set up.

The Data Collection

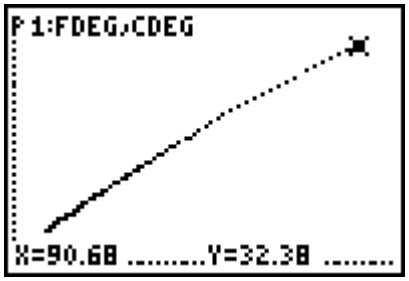
I. Run the FANDC3 program, and follow the instructions.

II. Place the two temperature probes in the ice H_2O at the same time that you start the data collection.

III. Examine the Plot of Fahrenheit vs. Celsius. Option 1.



IV. If this data appears Linear, then quit the program, and link and send the three lists to your partners. If the data is incorrect, repeat the experiment.



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Data Analysis

1. Get the best-fit equation that models this data.

2. Identify the units and physical significance of the 4 values in your equation (y, x, M, and B in y = Mx+B).

3. Compare this equation to the True equation.

4. Predict the following.

F°	C° from Model
32°	
	100°
98.6°	
	20°
-40°	
	212°
1000°	

5. Compare to the True equation.

F°	C° from Truth
32°	
	100°
98.6°	
	20°
-40°	
	212°
1000°	

6. Give a quantitative evaluation of how well your equation models the relationship between Fahrenheit and Celsius.

7. Save the three lists from the experiment for use at a later date. Group.