**VIRTUAL CALORIMETRY LAB**

Purpose: To explore calorimetry by determining the specific heat of a known metal and an unknown metal.

**Go to:** [**http://dbpoc.com/pearson/chemsims/gold/calorgold5/Calor.php**](http://dbpoc.com/pearson/chemsims/gold/calorgold5/Calor.php)

**Click the Experiment tab at the top, the RUN EXPERIMENT.**

**Part 1: Determining the Specific Heat Capacity of a Known Metal**

1. Select SOLIDS under the beaker on the left. From the drop down menu, add a known metal of your choice to the beaker.
2. Using the mass and temperature sliders, select a mass of 45.0 grams and a temperature of 90.0°C.
3. Hit the “Next” button on the left column of the page.
4. Select LIQUIDS under the calorimeter on the right. From the drop down menu, add water.
5. Using the mass and temperature sliders, select a mass of 100. grams and a temperature of 20°C
6. Hit the “Next” button on the left column of the page.
7. In the RUN EXPERIMENT BOX, select both the graph view and microscopic view, and “Start” the experiment.
8. Record the final temperature reached in the calorimeter. \_\_\_\_\_\_

Calculations

1. Calculate the specific heat capacity for the known metal.
2. Using the table of specific heat capacities on page 2 in your booklet, calculate your percent error.

**Part 2: Determining the Specific Heat Capacity of an Unknown Metal**

1. Select SOLIDS under the beaker on the left. From the drop down menu, add one of the unknown metals into the beaker.
2. Using the mass and temperature sliders, select a mass of 45.0 grams and a temperature of 90.0°C.
3. Hit the “Next” button on the left column of the page.
4. Select LIQUIDS under the calorimeter on the right. From the drop down menu, add water.
5. Using the mass and temperature sliders, select a mass of 100. grams and a temperature of 20°C
6. Hit the “Next” button on the left column of the page.
7. In the RUN EXPERIMENT BOX, select both the graph view and microscopic view, and “Start” the experiment.
8. Record the final temperature reached in the calorimeter. \_\_\_\_\_\_

Calculations

1. Calculate the specific heat capacity for the unknown metal.
2. Using a table of specific heat capacities, identify the metal.
3. Based on the specific heat capacity of the metal you chose in step 5, calculate your percent error.
4. Were your values for percent error high or low? Why do you think that is?