Virtual Experiment Worksheet   Names:

Experiment – Specific Heat Capacity of Copper

Part 1, Calculating the calorimeter constant:
Start with 50.0 g iron and 50.0 g water.

What is the starting temperature of the water? _____ What is the final temperature? _____

Write out your heat equation including the calorimeter constant, showing just the variables and all the proper subscript labels (e.g., water, iron, calorimeter, final, initial). Remember, $0 = q_{metal} + q_{water} + q_{calorimeter}$.

$q_{calorimeter} = C_{calorimeter}(T_{final} - T_{initial})$

What is $C_{calorimeter}$? Show proper units. _____

Change the mass of the iron and the mass of the water. Perform the same experiment and calculate $C_{calorimeter}$. What do you get this time?

Part 2: Now calculate the specific heat capacity of copper. Start with a copper mass of 50.0 g and a mass of water at 50.0 g. Record the following value:

Starting Water Temperature: _____ Final Water Temperature: _____

Write out your heat equation (using only variables) including the heat transferred to the calorimeter. Then substitute in your known values. Calculate the specific heat capacity of copper. How does this value compare to the one you found in class?