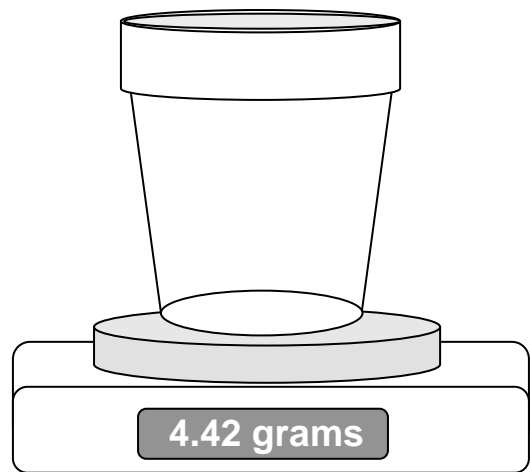


## DETERMINATION OF THE SPECIFIC HEAT OF A METAL ~ DRY LAB

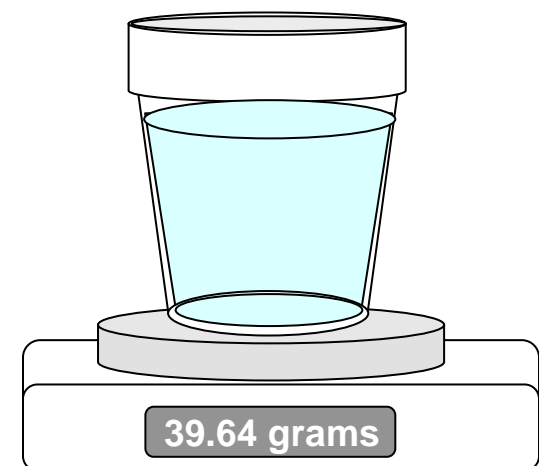
Written by W. Lee ~ Enhanced and Updated 2004 ~ J. Flint Baumwirt

Granada Hills Charter High School CA Content Standard: **Chemical Thermodynamics**  
 7.d. Students know how to solve problems involving heat flow and temperature changes, using known values of specific heat:  $Q = mC_p \Delta T$

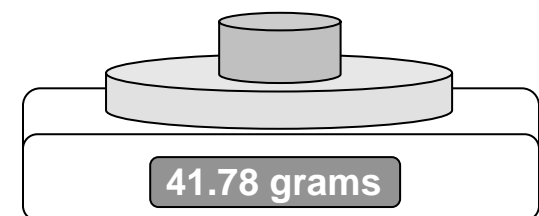
**5. Maximum temperature of the boiling water and metal in the beaker after 2-3 minutes.**



**1. Mass of the Empty Calorimeter**

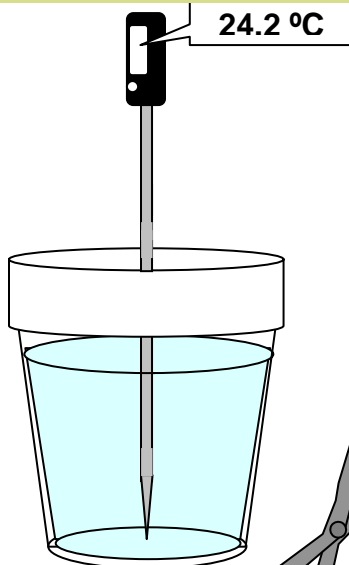


**2. Mass of the Calorimeter and water**

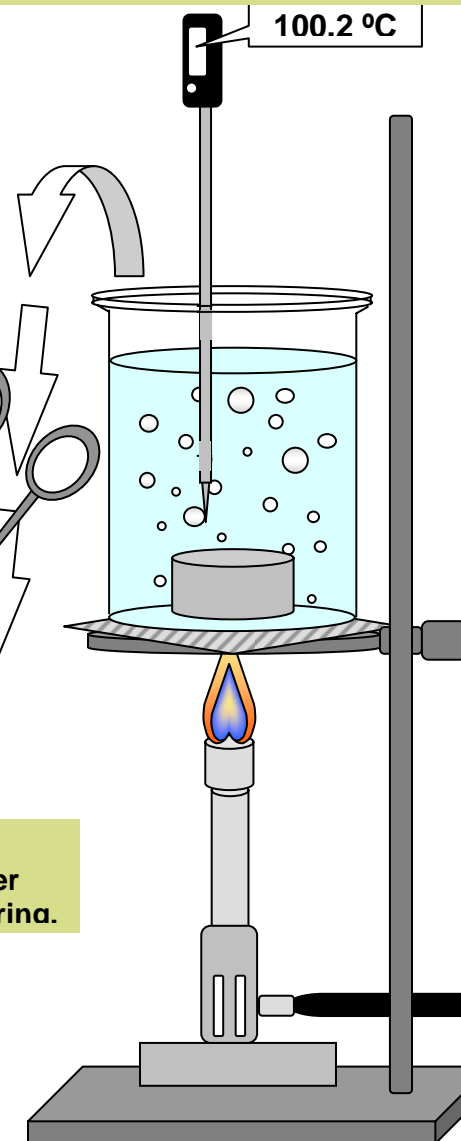
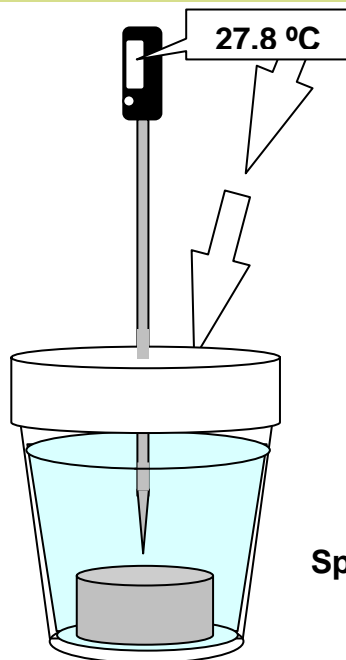


**3. Mass of the Unknown Metal**

**4. Temperature of the water in the Calorimeter**



**6. Maximum temperature of the water and metal in the calorimeter after 2-5 minutes with gentle stirring.**



**Heating of the metal:**

If the metal remains in contact with the boiling water for 2-3 minutes, what would you assume the temperature of the metal to be? \_\_\_\_\_ °C

Specific Heat of Water =  $\frac{4.184 \text{ Joules}}{\text{g } ^\circ\text{C}}$

**Calculations:**

Mass of the water in calorimeter: \_\_\_\_\_ g

$\Delta T$  of the water in the calorimeter: \_\_\_\_\_ °C

Heat gained by the water in the calorimeter = \_\_\_\_\_ J

Heat lost by the metal = \_\_\_\_\_ J

Mass of the metal: \_\_\_\_\_ g

$\Delta T$  of the metal: \_\_\_\_\_ °C

The Specific Heat of the Unknown Metal = \_\_\_\_\_ J/g °C