Name			
Period	Date	_/	_/

HYDRATE DEMONSTRATION EXPERIMENT

Cupric sulfate, CuSO ₄ is a hydrate , that is, there are water molecules					
incorporated into the solid. Circle the water molecules on the right.					
How many do you see?					

Cupric sulfate has the formula, $CuSO_4 \cdot 5H_2O$. It is named cupric sulfate pentahydrate.



Calculate the **mass** of $CuSO_4 \cdot 5H_2O$ _____ Notice that the " \cdot " means "attached" not "multiply by".

What is the **percent water** in the hydrate? ______ Justify your answer below with a calculation.

This percent can be determined **experimentally** by heating the hydrate. The water molecules will leave as steam. What is the appearance of cupric sulfate pentahydrate?

We will heat the cupric sulfate in a **crucible** (a porcelain cup that can be heated red-hot without breaking). Draw the heating set-up used in this demonstration.

DATA mass of clean, dry crucible:(0.01 gmass of crucible + solid:(0.01 gmass of crucible & solid after heating 1:(0.01 gmass of crucible & solid after heating 2:(0.01 gmass of crucible & solid after heating 3:(0.01 g				
ALCULATIONS That is the mass of the original solid? That mass of water vaporized? That was the experimental % of water in the hydrate? That is the percent error in the experimental percentage of water That is the calculated percentage of water?				
QUESTIONSWhat is the appearance of the anhydrous cupric sulfate?Why was the crucible heated again and again?Why was the crucible allowed to cool before being massed?				

When you know about **moles**, calculate the following:

	mass	molar mass	moles	ratio of moles
cupric sulfate pentahydrate				
water				
anhydrous cupric sulfate				1