Name: _____

Date: _____

Hour: _____

Topic: The Mole; Stoichiometry
Content Standard(s):

Formula of a Hydrate Worksheet

Data:

	Trial #1	Trial #2
1. Mass of empty pipet		
2. Mass of *hydrate* + pipet		
3. Mass of *anhydrous salt* + pipet (after heating)		

Record the formula of the anhydrous salt (on bottle): _____

Analysis (Calculate the following for EACH TRIAL!):

4. Mass of the hydrated salt (Compound before heating):

Trial #1	Trial #2

5. Mass of the anhydrous salt (Compound after heating):

Trial #1	Trial #2

6. Mass of water lost during heating:

Trial #1	Trial #2

7. Use the Periodic Table of Elements to find the formula mass of (Same for each trial)
    a. Anhydrous salt (without water)

    b. Water

8. Use the formula mass to convert from grams to moles of:

    a. Anhydrous salt:

Trial #1	Trial #2

    b. Water:

Trial #1	Trial #2

9. Find the empirical formula of the hydrate (Remember to think mole). Do not round your answer.

Trial #1	Trial #2

10. Plug the mole ratio into your hydrate formula. List the ratio to the nearest tenth:

Trial #1	Trial #2
$BaCl_2$ • _____ H_2O	$BaCl_2$ • _____ H_2O

Conclusion:

11. Suggest reasons why the procedure used in this experiment is not suitable for all hydrates.

12. Find the experimental mass percent composition of water in your hydrate from your mass results

Trial #1	Trial #2

13. Get the actual formula of the hydrate from your teacher. From this formula, find the expected mass percent composition of the water in the hydrate.

14. Calculate the relative percent error. (Relatively how far away were you from the expected results.

$$\frac{|\text{experimental value - theoretical value}|}{\text{theoretical value}} \times 100 = \% \text{ error}$$

Trial #1	Trial #2

15. Suggest what may have happened during the experiment that may have caused your answers to be different from the expected value.

16. Discuss what changes in the procedure you would make to help correct this discrepancy.