

**THIS COMPLETED STUDY GUIDE IS DUE 3/7/16 AS PART OF THE UNIT 4b PACKET #2.
Your highest packet score of the three collected will be part of your ALT 4 grade.**

Part 1: Types of Reactions: *Know the following terms. Write a definition in the space provided*
You will need your Lesson 6 handout and your completed Lesson 6 video note guide.

Reactivity series (Lesson 6 video notes)

Single exchange reaction (p. 371)

Decomposition reaction (p. 370)

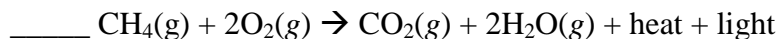
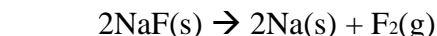
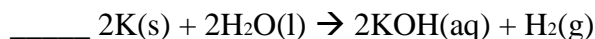
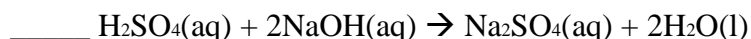
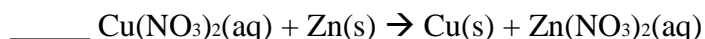
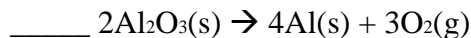
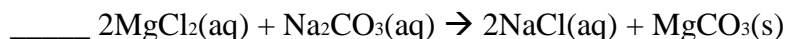
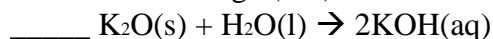
Double exchange reaction (p. 371)

Combustion reaction (Lesson 6 video notes)

Combination reaction (p. 369)

You will need to be able to recall each type of chemical reaction without assistance, classify example equations, predict products or reactants when given part of the reaction, and balance the final equation.

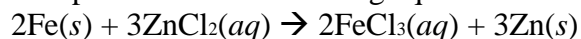
1. Classify each of the reactions below as combination (C), decomposition (D), single exchange (SE), double exchange (DE) or combustion (B aka burning).



2. Predict the products and write the correct balanced equation for the single exchange reaction between aqueous lithium bromide and fluorine gas. Remember that elemental fluorine is diatomic and its symbol is F_2 .

3. Predict the products and write the correct balanced equation for the double exchange reaction between aqueous sodium chloride and aqueous silver nitrate. One of the products will be a solid containing silver and the other will be a solution.

4. Explain how to use the reactivity series to determine whether or not a single exchange reaction will take place. Use the following equation as evidence.



Part 2: Understand and apply the concept of weighing by counting (Activity Lesson 8)

You will need your Lesson 8 handout.

5. Explain how you can use mass to count large numbers of objects.
6. How many grains of rice are in a sample that weighs 2500 grams? A sample of 100 rice grains has a mass of 2.21 grams.

Part 3: Scientific Notation (Lesson 9)

Write the number using scientific notation.

8400 = _____

27000 = _____

0.023 = _____

0.00019 = _____

0.00000000500 = _____

Write the number in expanded form.

$3.82 \times 10^4 =$ _____

$2.5 \times 10^{-2} =$ _____

$1.2091 \times 10^5 =$ _____

$6.342 \times 10^{-3} =$ _____

$8.5 \times 10^{12} =$ _____

Part 4: Understand the relationship between mass and moles (Lessons 9, 10, and 11)

Distinguish between Avogadro's number and the mole.

7. What is a mole? What is Avogadro's number? How are the two related?
8. How do you find the molar mass of any element? Give one or two examples. Include correct units.

Round molar mass to one decimal and show answers to #10 in correct scientific notation.

<p>9. Find the molar mass of the following compounds</p> <p>a. KNO_3</p> <p style="text-align: right;">K: N: O: _____</p> <p>Molar mass $\text{KNO}_3 =$</p> <p>b. Na_2SO_4</p> <p style="text-align: right;">Na: S: O: _____</p> <p>Molar mass $\text{Na}_2\text{SO}_4 =$</p> <p>c. $\text{Al}_2(\text{CrO}_4)_3$</p> <p style="text-align: right;">Al: Cr: O: _____</p> <p>Molar mass $\text{Al}_2(\text{CrO}_4)_3 =$</p>	<p>10. How many moles are in 12.5 g of each compound? SHOW WORK.</p> <p>a. KNO_3</p> <p>b. Na_2SO_4</p> <p>c. $\text{Al}_2(\text{CrO}_4)_3$</p>
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