Week 3 Packet – Regular Chem

This is *hopefully* all the handouts we will use this week in Honors Chem. Due to the challenging logistics of this year, please offer grace if I miss a handout or if things change during the week.

You are not required to print! I understand that may not be possible for everyone. However, if you can print it will make things a little easier! **There are blank pages so it can be printed double sided.** Some printers don't print double sided, but you can tell it to print the odd pages first, take the papers that just printed and put them back in the printer tray, and then print the even pages. I am trying to figure out how I can print packets for students and hopefully leave them outside of school for people to pick up if they want a packet. As soon as I know whether or not this is allowed I will let you know!

Please note –All of these pages are on the class website, always! www.mychemistryclass.net

Please keep in mind that we are operating under the assumption that we will return to school at some point this year! So make sure you are *doing* your work, *keeping* your work, and keeping it *organized!* I will check your Interactive Notebook when we return so you want to make sure you are setting yourself up for success by doing your work now!

Signs of a Chemical Reaction Lab

1. While wearing goggles, carefully add chemicals in the combinations shown in the table below. **DO NOT MIX ANYTHING OTHER THAN IN THE COMBINATIONS SHOWN!!!!!!**
2. As you mix, record your observations and indicate whether a reaction took place or not, and if it did, what type of sign you saw. They should all be obvious! If you are unsure ask Mrs. Farmer!

Rxn #	Combine	Observations	Rxn or No Rxn?	If Rxn – what sign?	Clean up
1	RED A + B Zinc + HCl	https://youtu.be/A4XITC225uk			Rinse down the drain with lots of water.
2	ORANGE C + D Iron + $CuSO_4$	https://youtu.be/OxGjbHzxQSI			Paper clip in trash. LIQUID MUST GO IN WASTE JUG UP FRONT!!! Rinse test tube with DI water into jug up front
3	YELLOW E + F Na_2CO_3 + CaCl	https://youtu.be/kKNp0HVgmjI			Rinse down the drain with lots of water.
4	GREEN G + H KCl + Na_2CO_3	*No video – two clear liquids mixed together and nothing observable happens.*			Rinse down the drain with lots of water.
5	BLUE I + J HCl + Water ***YOU MUST ADD THE ACID TO THE WATER! ADD I to J NOT THE OTHER WAY AROUND!***	https://youtu.be/M-QMJ-JMb5I			Rinse down the drain with lots of water.
6	PURPLE Snap one of the sticks and shake!	https://youtu.be/uJgNTeBWhDk			None – Do "Rock Paper Scissors Lizard Spock" to see who takes glow stick with them ☺

Give an example of real life experiences that show each of the five signs of a reaction.

Temp change	*Light given off*	*Gas is formed*	*Precipitate formed*	*Color change*

Draw a small "pictogram" that represents each of the five signs of a reaction.
What is a pictogram? https://tinyurl.com/y724yh4t

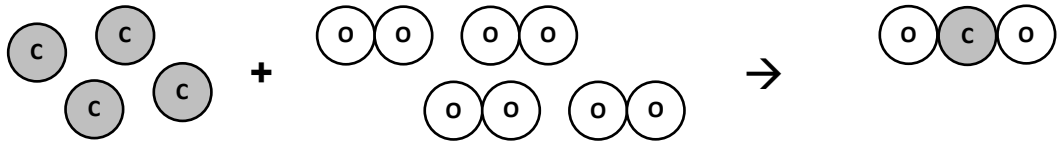
Temp change	*Light given off*	*Gas is formed*	*Precipitate formed*	*Color change*

Remember to trim paper to fit better!

Three Fundamental Chemical Laws Worksheet

Law of Conservation of Mass

1. When carbon burns it combines with oxygen to form carbon dioxide. The diagram shows some carbon atoms reacting with some oxygen molecules.

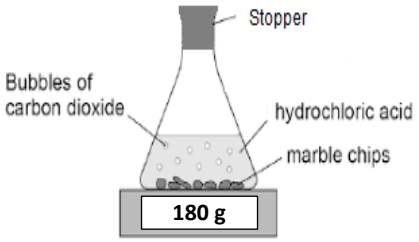


a. Finish the diagram by drawing the correct number of carbon dioxide molecules. One has been done for you already.
b. Write "reactants" and "products" under the correct sides of the diagram.
c. 12 grams of carbon reacted with 32 grams of oxygen. What mass of carbon dioxide was formed?

Circle the correct answer: 12 g 24 g 32 g 44 g 61 g

2. This diagram below shows the reaction between marble chips and acid.

Calcium carbonate + hydrochloric acid → calcium chloride + carbon dioxide + water



a. Is carbon dioxide a solid, a liquid, or a gas? _____

b. What would you expect the balance to read when the reaction is finished?

Circle the correct answer. 179 g 180 g 181 g

c. Explain your answer to part b.

3. Magnesium metal is placed in sulfuric acid inside a beaker. A chemical reaction occurs and the solution begins to bubble. The remaining liquid is a solution. The mass of the chemicals before the reaction was 10 grams, and the mass of the chemicals after the chemical reaction was 7 grams.

a. Was this an open or closed system? _____

b. After the chemical reaction the mass was less. What happened to the missing mass? Was the law of conservation of mass broken? Explain.

Law of Definite Proportions

4. Carbon dioxide has a ratio of 12 g C : 32 g O. Which of these experiments below produced carbon dioxide? Provide mathematical evidence to back up your answer.

Experiment #1: 30 g C and 88 g O *Experiment #2: 36 g C and 90 g O* *Experiment #3: 36g C and 96*

Law of Multiple Proportions

5. Circle all that demonstrate the law of multiple proportions. For the ones that are NOT demonstrating this law, explain why.

MgO	H_2SO_4	$LiO_{0.5}$	$C_6H_{12}O_6$
MgS	H_2SO_3	Li_2O	C_2H_6O

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