**FPS – Types of Chemical Reactions & Balancing**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

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| ***Bellwork*** | |
| http://i.stack.imgur.com/QmjsA.png | 1. What do remember about ionic bonds? 2. What do you remember about covalent bonds? |
| 1. Remember that atoms bond together to have a full \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shell, and to create \_\_\_\_\_\_\_\_\_ substances. 2. This chapter, we will be looking at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is a process that one or more substances \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form new substances. 3. There are many different types of **chemical reactions**. Can you give an example of *two*? Write the examples below.      http://www.senecafreelibrary.org/wp-content/uploads/2014/05/Youth-14-Experiment.jpg https://i.ytimg.com/vi/OKurcQt3ZOU/maxresdefault.jpg 4. What are some things that show a chemical reaction is happening?   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. What do we call a solid formation in a chemical reaction? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. What are the parts in a chemical reaction?  ∙ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances in the chemical reaction.   ∙ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the substances that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the chemical reaction.   1. Label the formula for a reaction.  2 Al + 3Br2 🡪 2AlBr3 2. What are the five types of reactions?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction occurs when two substances, usually two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combine and form one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **A + B 🡪 AB** 2. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction occurs when one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ compound is broken down into \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances. **AB 🡪 A + B** 3. http://cdn.c.photoshelter.com/img-get/I00007tGrf3nOkRk/s/860/860/Fphoto-17628610-1RK.jpgA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction occurs when one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_takes the place of another in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **A + BC 🡪 B + AC** 4. https://reich-chemistry.wikispaces.com/file/view/TEACH_WIKI_Pb(NO3)2.jpg/32939399/TEACH_WIKI_Pb(NO3)2.jpg A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction occurs when ions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ places in \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   **AB + CD 🡪 AD + CB** 5. http://media1.shmoop.com/images/chemistry/chembook_reactions_graphik_6a.png A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction is a reaction of a carbon-based compound with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   **C3H8 + O2 → CO2 + H2O** 6. What do you think the **Law of Conservation of Mass** states? 7. We need to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chemical equations to satisfy the Law of Conservation of Mass. When balancing, we cannot change the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but we can add \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 8. When balancing, count the atoms on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side. If they are not equal, add coefficients. These coefficients \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the entire chemical formula. Then recount until reactants and products are equal.   Let’s do an example together.  \_\_\_\_\_\_CH4 + \_\_\_\_\_O2 🡪 \_\_\_\_\_\_H2O + \_\_\_\_\_\_\_CO2 Count the atoms:  Now, add **coefficients** to make them equal!!  *Reactants:* C \_\_\_ H\_\_\_\_ O \_\_\_\_  *Products*: C \_\_\_ H\_\_\_\_ O \_\_\_\_ | |

***Vocabulary list – Use your book or notes to complete the list.***

1. **Chemical reaction 🡪**
2. **Precipitate 🡪**
3. **Chemical formula 🡪**
4. **Chemical equation 🡪**
5. **Reactant 🡪**
6. **Product 🡪**
7. **Law of conservation of mass🡪**
8. **Synthesis reaction 🡪**
9. **Decomposition reaction 🡪**
10. **Single-displacement reaction🡪**
11. **Double-displacement reaction 🡪**
12. **Exothermic reaction 🡪**
13. **Endothermic reaction 🡪**
14. **Law of conservation of energy🡪**
15. **Catalyst🡪**