

Names: _____

Period: _____

Reactions!

I. With your partner, write the following word equation as a formula equation. Balance the equation, add phase notation, and put the catalyst in the correct location.

Other group sign-off Teacher sign-off

Silver metal and copper (II) nitrate form from the addition of copper metal to an aqueous solution of silver nitrate.

Formula Equation:

II. Once you have written your equation, you will “build” the equation by constructing the chemicals from marshmallows, putting them into the correct order, drawing in any “+” signs, arrows, phase notation, etc, and making sure your “equation” is balanced.

Marshmallow Key:

white = oxygen atom
green = nitrogen atom

pink = copper atom
yellow = silver atom

Other group sign-off Teacher sign-off

Build Equation Here:

III. I will be coming around to quiz you and your partner on the following aspects of your equations. You should each be prepared to identify the following parts of your reaction:

Reactants

products

“yields”

catalyst location (if there was one)

element

ionic compound

subscript (what would it be)

coefficient (what would it be)

phase notation

Questions:

1. How many oxygen atoms are there in one formula unit of copper (II) nitrate?
2. How many formula units of silver nitrate must react with one atom of copper to create one formula unit of copper (II) nitrate?
3. What do you notice about the number of silver atoms on the reactant side of the equation compared to the number of silver atoms on the product side of the equation?
4. How many copper atoms, nitrogen atoms, and oxygen atoms would be required to make 3 formula units of copper (II) nitrate? Explain your answer.
5. What are some of the good things about this model of the reaction? List at least three ways that this model can help you see what is going on in a chemical reaction.
6. What are the limitations of this model? List at least three ways in which this model can't show what's really going on between atoms in a chemical reaction.
7. How are coefficients different than subscripts? You may use examples to help explain.
8. How does this model help to show the law of conservation of matter?
9. Check the demo on the front counter. Based on what you know about this reaction, why has the clear solution changed to a blue color? What is the gray material on the copper coil?