



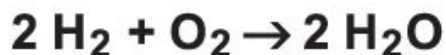
Name _____ Date _____ Per _____

Interactivity: Model the Conservation of Mass

1. Study the chemical reaction that models the reaction between hydrogen and oxygen. Then, complete the table by recording the number of atoms before and after the reaction.

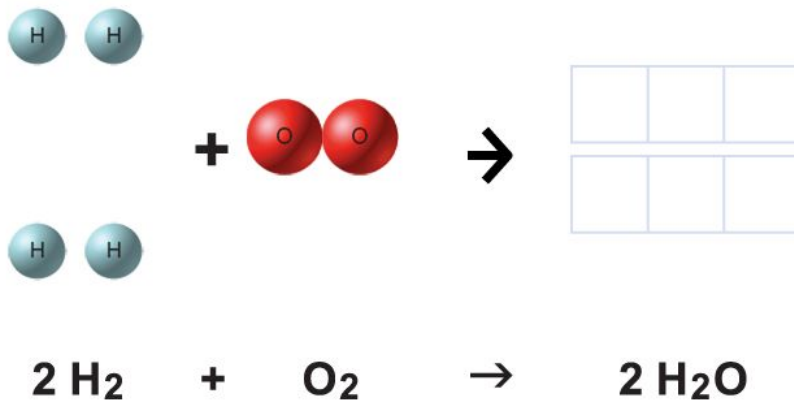
Formation of Water Reaction

| Element | Number of Atoms Before Reaction | Number of Atoms After Reaction |
|--------------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
|  Oxygen | 1. Enter text. | 2. Enter text. |
|  Hydrogen | 3. Enter text. | 4. Enter text. |



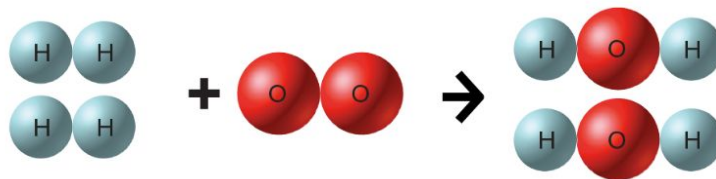
2. Model the chemical reaction between hydrogen and oxygen. **Draw** the atoms of the reactants to form **the products**. Use the equation to help you (and blue and red colored pencils.)

Formation of Water Reaction






3. Explain in the space below how the model shows that when oxygen combines with hydrogen to form water, no atoms are left over from the reaction.

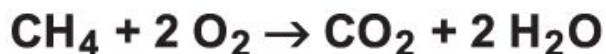
Formation of Water Reaction



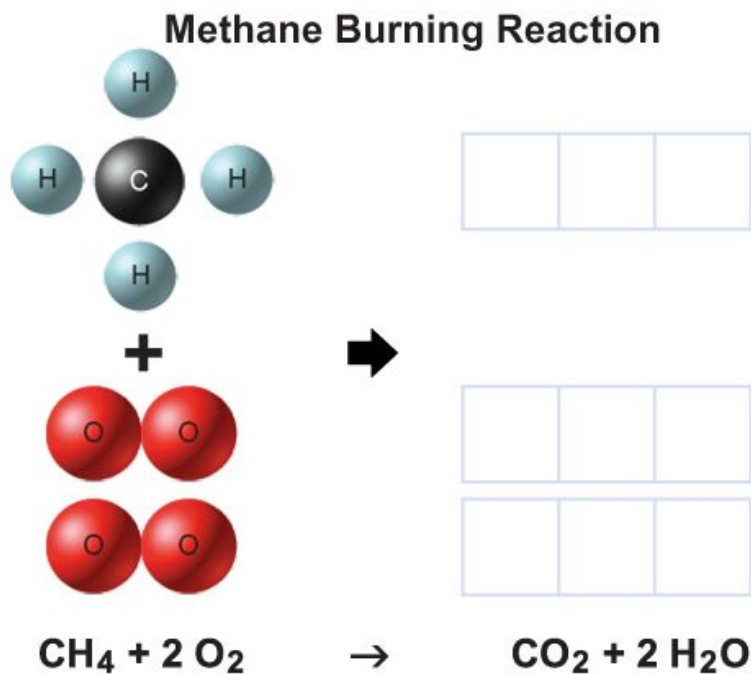
4. Study the chemical reaction that models the reaction between methane and oxygen. Then, complete the table by recording the number of atoms before and after the reaction.

Methane Burning Reaction

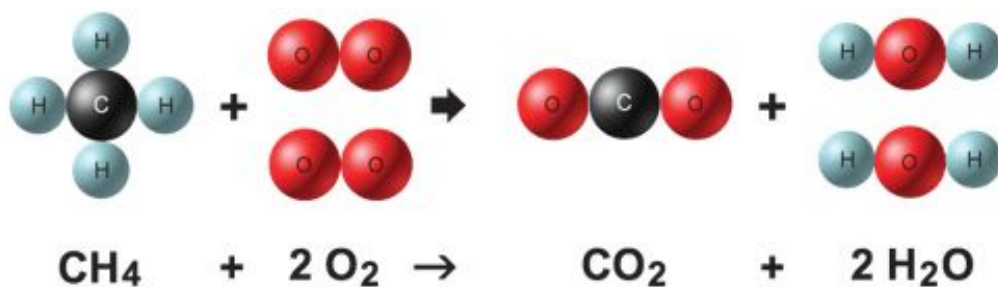
| Element | Number of Atoms Before Reaction | Number of Atoms After Reaction |
|----------------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
|  Carbon | 6. Enter text. | 7. Enter text. |
|  Hydrogen | 8. Enter text. | 9. Enter text. |
|  Oxygen | 10. Enter text. | 11. Enter text. |



5. Model the chemical reaction between methane and oxygen. **Draw** the atoms from the reactants to form the products in the reaction. Use the equation to help you (and colored pencils.)

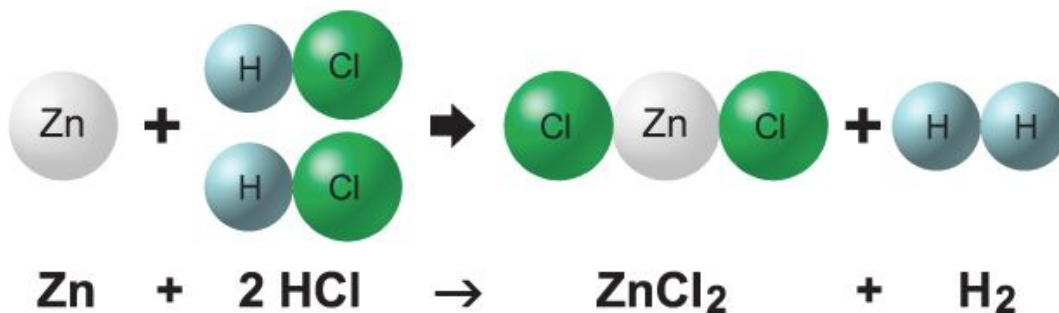


6. Explain in the space below how these models developed show that when methane combines with oxygen to form carbon dioxide and water, no atoms are left over from the reaction.



7. Zinc chloride (ZnCl_2) is used as a flux when joining metals. It also is used to fireproof and remove odor from clothing. Reacting the metal zinc (Zn) with hydrochloric acid (HCl) to produce zinc chloride and hydrogen (H_2). **Use these models shown to explain in the space below that mass is conserved when zinc reacts with hydrochloric acid.**

Formation of Zinc Chloride



Learning Target-

I can look at models of chemical reactions, and prove that the total number and the types of atoms that are in the “reactants” will be exactly the same as those in the “products” by showing they atoms just rearranged.

8.MS-PS1-5. Use a model to explain that atoms are rearranged during a chemical reaction to form new substances with new properties. Explain that the atoms present in the reactants are all present in the products and thus the total number of atoms is conserved