

## Worksheet to teach balancing equations

Name \_\_\_\_\_

### Directions:

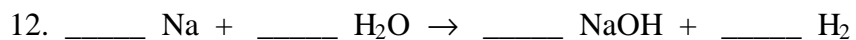
1. Start Internet Explorer or Netscape and go to [www.dorjegurung.com/chemistry/IB\\_year1/balancing\\_equation\\_games/index.htm](http://www.dorjegurung.com/chemistry/IB_year1/balancing_equation_games/index.htm).
2. Click 'Directions'. Read and understand the directions.
3. Click 'OK'.
4. Click on 'Simple Equations.'
5. Try entering some numbers in the text boxes in front of each molecule. What happens?
6. If you forget the directions, click on the 'How to Play the Game' link. Click 'OK' when you finish reading them to return to the game.
7. When you think you have typed the right numbers in all the boxes, click the 'Balanced' button.
8. If you didn't get it right, try again.
9. If you did get it right, then fill in the correct answers on this worksheet for #1.
10. Repeat steps 7-9 for the other 10 questions.
11. Now do the two problems on the back of this worksheet. You can draw the molecules just like the program did to figure out the answer. (Don't worry about getting the correct connections between the atoms in the molecule or formula.)

### Questions

Fill in the blanks below as you go through the game. This is so I have a record that you did your assignment.

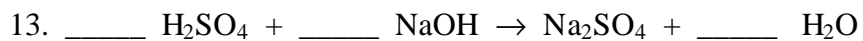
1. \_\_\_\_\_ Fe + \_\_\_\_\_ S → \_\_\_\_\_ FeS
2. \_\_\_\_\_ H<sub>2</sub> + \_\_\_\_\_ Cl<sub>2</sub> → \_\_\_\_\_ HCl
3. \_\_\_\_\_ Mg + \_\_\_\_\_ O<sub>2</sub> → \_\_\_\_\_ MgO
4. \_\_\_\_\_ O<sub>2</sub> + \_\_\_\_\_ H<sub>2</sub> → \_\_\_\_\_ H<sub>2</sub>O
5. \_\_\_\_\_ HgO → \_\_\_\_\_ Hg + \_\_\_\_\_ O<sub>2</sub>
6. \_\_\_\_\_ Ca + \_\_\_\_\_ H<sub>2</sub>O → \_\_\_\_\_ Ca(OH)<sub>2</sub> + \_\_\_\_\_ H<sub>2</sub>
7. \_\_\_\_\_ CH<sub>4</sub> + \_\_\_\_\_ O<sub>2</sub> → \_\_\_\_\_ CO<sub>2</sub> + H<sub>2</sub>O
8. \_\_\_\_\_ Na<sub>2</sub>O<sub>2</sub> + \_\_\_\_\_ H<sub>2</sub>SO<sub>4</sub> → \_\_\_\_\_ Na<sub>2</sub>SO<sub>4</sub> + \_\_\_\_\_ H<sub>2</sub>O<sub>2</sub>
9. \_\_\_\_\_ N<sub>2</sub> + \_\_\_\_\_ H<sub>2</sub> → \_\_\_\_\_ NH<sub>3</sub>
10. \_\_\_\_\_ Al + \_\_\_\_\_ O<sub>2</sub> → \_\_\_\_\_ Al<sub>2</sub>O<sub>3</sub>
11. \_\_\_\_\_ KMnO<sub>4</sub> → \_\_\_\_\_ K<sub>2</sub>O + \_\_\_\_\_ MnO + \_\_\_\_\_ O<sub>2</sub>

Draw the molecules just like the program did to figure out the answer to #12 and #13.



Fact for #12: Sodium metal, Na, is stored in kerosene so it won't react with water vapour. When added to water it reacts quickly to make hydrogen gas.

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Fact for #13: This is an example of an acid base reaction. Acid + base → Salt + Water