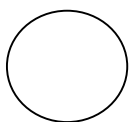


Chemistry Foundations Ws #2: Matter

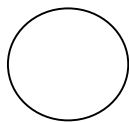
1. What is matter? Of what is matter composed?

The "stuff" of which the universe is composed, it has mass and it occupies space. It is composed of tiny particles called atoms.

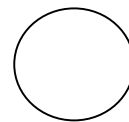
2. Draw and "atom" picture of a solid, a liquid and a gas. Describe the essential differences between them.



Solid



Liquid



Gas

3. What is the difference between a chemical and a physical property?

Physical properties - characteristics of a substance that can change without it becoming a new substance. i.e. odor, color, volume, state, density and melting/boiling point

Chemical properties describe the way a substance may change or react to form other substances

4. What is the difference between a chemical and physical change?

Use the following list for questions 5-9.

- | | |
|-----------------------------------|--|
| a. Table salt dissolves in water | f. Sugar ferments to form alcohol. |
| b. Water boils at 100°C. | g. Gallium metal melts in your hand. |
| c. You bake a cake. | h. Platinum does not react with oxygen at 25°C |
| d. A tree is struck by lightning. | i. A silver tea set gets black with tarnish over time. |
| e. A diamond is very hard | j. Hydrogen peroxide fizzes when applied to a wound. |

5. Which letters represent a chemical property? **f, h, i, j**

6. Which letters represent a physical property?

7. Which letters represent a chemical change? **c, d, f, i, j**

8. Which letters represent a physical change?

9. Copper is a reddish-brown metal that is easily stretched to make wires. Are these characteristics examples of physical or chemical properties of copper? **physical**

10. When copper metal is heated in concentrated nitric acid, the copper dissolves to form a deep blue solution, and a brown gas is evolved from the acid. Are these characteristics examples of physical or chemical changes?