

UNIT 2 - BASIC PRINCIPLES OF BODY CHEMISTRY

ACTIVITY - What is Matter?

Objective:

To understand the chemical properties of matter

Materials Needed:

vinegar
steel wool
ammonia
tablespoon
two small containers
wooden matches

Strategy:

Strike Match. Observe what happens to the match as it burns.

Fill one container half -full with steel wool. Add vinegar to cover the steel wool. Let the jar stand for several days. A chemical reaction between the vinegar (acetic acid) and steel wool (iron) produces iron rust.

Pour one tablespoon of the liquid containing the rust into the second container. Mix one tablespoon of ammonia with the rusty liquid and stir. Record your observations.

Observations:

Chemical reactions do not create or destroy matter. They rearrange the combinations of atoms in matter. For example: wood in the match stick contains carbon, oxygen, and hydrogen. When oxygen in the air combines with the heat from the flame a chemical reaction occurs to form water, carbon, and carbon dioxide. Chemical reactions often give off energy for example, the chemical reaction of the burning match will give off heat and light.

The iron plus vinegar produces iron acetate. Iron acetate plus "ammonia" (ammonium hydroxide) produces ammonium acetate and iron hydroxide, the green colored substance.

Assessments:

Students will answer the following questions:

What changes occurred when the match was burned?

What happened when the iron in the steel wool combined with the vinegar?

What happened when ammonium hydroxide and iron acetate combined?

In the experiment a green substance was formed. Was a new material produced?

Why or Why not?