



Title: CHEMICAL REACTIONS HS (4839)

Level: All Chemistry

Location: Local School

Type: Outreach

Length: 55 minutes

Limit: 1 class/period

Program Description

This program is designed to focus students' attention on chemical reactions and to increase the students' awareness of chemistry. Attention-getting demonstrations and student/teacher participation will provide opportunities to illustrate scientific concepts used in chemistry. Students will:

6) apply the principles of the atomic theory of matter
and

7) infer the nature of matter .

Standards

S8CS2 use standard safety practices for all classroom laboratory and field investigations

S8CS8 S8CS8 be familiar with the characteristics of scientific.

knowledge and how it is achieved

S8CS9 S8CS9 understand the features of the process of scientific.

Inquiry

S8P1 examine the scientific view of the nature of matter;

Vocabulary

balanced reaction

reactant

chemical reaction

synthesis reaction

analysis reaction

product

single replacement

double replacement

double replacement

endothermic

exothermic

Pre-Visit Activities

Pre-Visit Activities

Discuss the vocabulary.

Post-Visit Activity

4839 Activity: This activity addresses GPS [enter CS Standard and Element Codes]

Title: Chemical Reactions
(4839 Post-Visit Activity)

Objectives

The students will be able to:

S8CS2 use standard safety practices for all classroom laboratory and field investigations

S8CS8 S8CS8 be familiar with the characteristics of scientific.

knowledge and how it is achieved

S8CS9 S8CS9 understand the features of the process of scientific.

Inquiry

S8P1 examine the scientific view of the nature of matter;

Post-Visit Activities

The following are activities for Types of Chemical Reactions

Combustion

Steel wool oxidation

-produce a large beaker filled with oxygen from the decomposition of Hydrogen peroxide H_2O_2 using manganese oxide MnO_2 catalyst or any other catalyst

-Heat wool until glowing

-Insert in beaker flames will appear

Notes-the reaction is similar to the rusting of iron only faster

Single Replacement

Cleaning silver tarnish

-Examine the tarnish on silver (spoon) caused by reacting the silver over night with:-

a. egg yolk

b. sulphur

c. mayonnaise

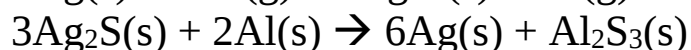
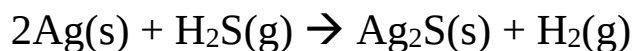
d. mustard

e. rubber band

-Place 200 ml of water in a 250 ml beaker and bring to boil

- Add 1.2 grams of baking soda to the hot beaker (the solution by bubble over the sides of the beaker)
- Wrap the spoon handle in aluminum foil and add to the beaker handle first
- After 15 minutes remove the foil and examine spoon, foil and liquid in foil

Notes



Photochemical change

- Prepare 2% silver nitrate solution by adding 2g in 100 ml of water
- place 10 ml of the silver nitrate solution in a test tube and add 2 mL of 3 M HCl.
- filter the resulting silver chloride precipitate.
- Open the filter paper and add protect half the product by covering with cardboard.
- burn a piece of magnesium ribbon close to the exposed surface and observe.