SEE PRE-LAB
EXTRACTION AND FILTRATION

INQUIRY LAB

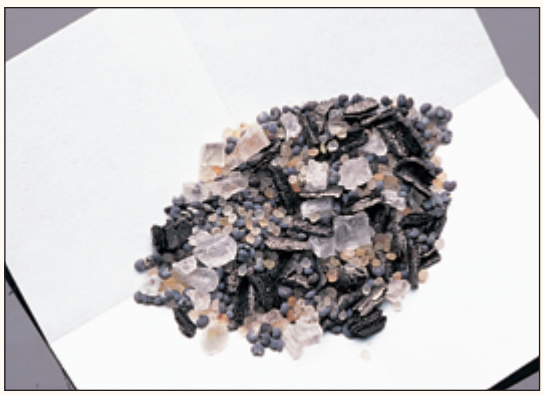
Mixture Separation

OBJECTIVES

- ***Observe*** **the chemical and physical properties of a mixture.**
- ***Relate*** **knowledge of chemical and physical properties to the task of purifying the mixture.**
- ***Analyze*** **the success of methods of purifying the mixture.**

MATERIALS

- **aluminum foil**
- **cotton balls**
- **distilled water**
- **filter funnels**
- **filter paper**
- **forceps**
- **magnet**
- **paper clips**
- **paper towels**
- **Petri dish**
- **pipets**
- **plastic forks**
- **plastic spoons**
- **plastic straws**
- **rubber stoppers**
- **sample of mixture and components (sand, iron filings, salt, poppy seeds)**
- **test tubes and rack**
- **tissue paper**
- **transparent tape**
- **wooden splints**



BACKGROUND

The ability to separate and recover pure substances from mixtures is extremely important in scientific research and industry. Chemists need to work with pure substances, but naturally occurring materials are seldom pure. Often, differences in the physical properties of the components in a mixture provide the means for separating them. In this experiment, you will have an opportunity to design, develop, and implement your own procedure for separating a mixture. The mixture you will work with contains salt, sand, iron filings, and poppy seeds. All four substances are in dry, granular form.

SAFETY

For review of safety, please see **Safety in the Chemistry Laboratory** in the front of your book.

PREPARATION

1. Your task will be to plan and carry out the separation of a mixture. Before you can plan your experiment, you will need to investigate the properties of each component in the mixture. The properties will be used to design your mixture separation. Copy the data table on the following page in your lab notebook, and use it to record your observations.

PROCEDURE

1. Obtain separate samples of each of the four mixture components from your teacher. Use the equipment you have available to make observations of the components and determine their properties. You will need to run several tests with each substance, so don't use all of your sample