

Mystery Powders Classroom Kit

Overview:

The Mystery Powders Classroom Kit is an inquiry-based kit designed to give students the opportunity to perform basic chemical tests on several different powdered substances.

Students test one of four different powders: baking soda, Fruit-Fresh (ascorbic acid), cornstarch, or baking powder, and observe and record the chemical reaction when exposed to water, bromthymol blue, iodine-potassium iodide, and acetic acid (vinegar). Students also test an unknown “mystery powder” and determine its chemical content on the basis of previous observations. This kit is designed to accommodate a class of 32 students working in eight groups of 4.

Content Standards:

This kit is appropriate for second year Brownies and all Juniors.

Physical Science

- properties of objects and materials
- Properties and changes of properties in matter

Objectives:

The activities in this kit are designed to help students

- Observe chemical changes
- Perform a standard test for the presence of starch
- Use an acid-base indicator and observe the results
- Observe the production of carbon dioxide gas as an acid reacts with a bicarbonate
- Record data
- Distinguish four powdered substances on the basis of their chemical properties
- Identify chemicals in common household products
- Use knowledge gained to identify an unknown substance