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ELEMENTARY SCIENCE TEACHING WITH LITTLE OR NO EQUIPMENT

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Introduction

Elementary teachers seem to be ill at ease in the classroom when teaching science. Most elementary teachers tell me that they feel insecure when dealing with the laboratory aspects because they have had little training in the subject area. Most problems seem to center around activities which take time to prepare and equipment which most elementary classrooms lack or need to borrow from the Science Department. Most equipment and supplies are too expensive for any elementary curriculum to have on hand for use once or twice a year. Many elementary teachers teach strictly from the book and do not get involved with activities.

It is my contention that science classrooms must have activities; in fact, I feel that an activity a day keeps boredom away. When students can put their hands on something or participate individually, an atmosphere for learning is created.

Classroom Tested Activities

For the past four years, I have developed a series of science activities in my classroom teaching that support the teaching of science with little or no equipment. I have assembled these activities into a booklet. Each activity is written in a simple format indicating purpose, apparatus and procedure. All the activities are written in an open-ended style, with no conclusions without the help of printed materials.

The equipment needed to perform most of the activities can usually be found in most schools and need not be purchased. The time element involved in setting up the activities is minimal which alleviates the busy teacher from time consuming preparations. A typical activity is as follows:

Respiration by Absorption?

Purpose: To show how salt absorbs moisture.

Apparatus: A live fly, table salt, a waxpaper, sauce dish and water.

Procedure: Place a live fly in a dish of water until it is apparently drowned. Take the fly out of the water and place it on a piece of wax paper and cover it with salt. In a few minutes time, the fly will move about and eventually fly. What is the function of the salt?

Another typical activity may be introduced when doing a unit on ecology.

Is a Stream Polluted?

Purpose: To illustrate the presence of suspended material in water.

Apparatus: A three pound coffee can lid, black paint, string, metric measurer, tape and weights.

Procedure: Take the coffee can lid and paint quadrants on it in black. Attach a string to the center of the lid with a weight attached below. Lower the lid into the water, marking each meter of string with tape. When you can no longer see the disc you can record the depth of the wet string. Why does the lid seem to disappear? Does it disappear at the same depth in all instances?

Summary

Eighty activities of this type can be found in the booklet I have assembled. If interested, write Mr. Claison Groff, Box 154, Boxholm, Iowa 50040. Ask for *Simple Experiments With Little or No Equipment*, the price is \$3.00.

Editorial note: Mr. Groff is well-known for his ability to stimulate student interest in science. He has produced many entrants and winners in statewide competition in science fairs. His booklet is illustrated.

* * *

Rubber Bands

Have you ever had students shooting rubber bands while they were *supposed* to be doing something else? Why not channel this behavior into a learning activity? Divide the class into groups of two, each group receiving rubber bands of uniform size, a centimeter ruler and a meter stick. Have them proceed as follows:

1. Hold the ruler on the edge of the desk.
2. Hook a rubber band on the end of the ruler and pull back 12 cm.
3. Let the rubber band go.
4. Measure the flight distance with a meter stick.
5. Repeat the procedure five times and record the data.
6. Repeat the procedure, but pull the rubber band back 16 cm and 20 cm and record the data.
7. Average the distances for each trial. Average the class data. Graph the data.
8. Discuss the data and make conclusions.

Genella Shea Gerardi

New Jersey Science Teachers Association, Vol. 12(2).