

Circle of Hands

Teaching With Toys

Introduction

A very quick and simple classroom activity can be performed to show that our bodies, being made of ionic solutions and permeable membranes, can act as conductors of electricity. Don't worry—you won't feel a thing!

Concepts

- Conductivity

Materials

Battery-operated, electric “peeping” chick or other novelty

Metal electrodes

Safety Precautions

The materials used in this activity are considered non hazardous. Wash hands thoroughly with soap and water before leaving the laboratory. Follow all laboratory safety guidelines. Please review current Material Safety Data Sheets for additional safety, handling, and disposal information.

Procedure

1. Form a circle of hands around the class.
2. Open the circle at one point and have those two students hold the “peeping chick” between them, each touching only one of the two metal leads on the bottom (see Figure 1). *Note:* Ensure that the two students are not touching each other at any other point.
3. When the circuit is complete, the chick will “peep.”
4. Use this method to test the conductivity of insulating and conducting items such as plastic, paper, or metal strips.

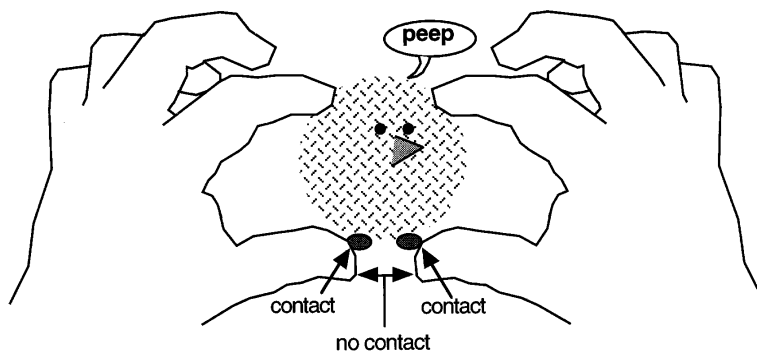


Figure 1.

Disposal

Please consult your current *Flinn Scientific Catalog/Reference Manual* for general guidelines and specific procedures governing the disposal of laboratory waste. The materials used in this activity may be reused.

Discussion

Inside the “peeping chick” is a small battery. Inside that battery are two chemicals, one with a stronger tendency to attract electrons than the other. But with the electron path between these two chemicals blocked, the electrons must flow out through the circuitry in the chick, then through the entire class (one cell at a time!), then back into the chick’s circuitry and back into the battery. Since part of the chick’s circuitry involves a small computer chip connected to a speaker a completed circuit is easily confirmed by a “peep.”

Connecting to the National Standards

This laboratory activity relates to the following National Science Education Standards (1996):

Unifying Concepts and Processes: Grades K–12

Evidence, models, and explanation

Content Standards: Grades 5–8

Content Standard A: Science as Inquiry

Content Standard B: Physical Science, transfer of energy

Content Standards: Grades 9–12

Content Standard A: Science as Inquiry

Content Standard B: Physical Science, interactions of energy and matter

Flinn Scientific—Teaching Chemistry™ eLearning Video Series

A video of the *Circle of Hands* activity, presented by Jeff Hepburn, Mike Heinz, and Penney Sconzo, is available in *Teaching With Toys*, part of the Flinn Scientific—Teaching Chemistry eLearning Video Series.

Materials for *Circle of Hands* are available from Flinn Scientific, Inc.

| Catalog No. | Description |
|-------------|--------------------------|
| AP4602 | Metal Electrode Set |
| N0089 | Nickel, Electrode, Pkg/6 |

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.