

Spread of Infection Activity

INTRODUCTION:

This is a hands-on activity that simulates the spread of a disease.

STUDENT/CLASS TIME REQUIRED:

40 minutes

MATERIALS (for a class of 24):

- (24) 3oz paper or plastic cups
- (24) disposable pipettes (If pipettes are unavailable, students can carefully pour a small amount of the liquid between cups.)
- 10 mL of 0.1 M NaOH (0.4 grams of NaOH dissolved in enough water to make 100 ml of solution) **or** 10 mL of 10% solution of Liquid Drano (10 mL of Drano plus 90 ml of water)
- water
- phenolphthalein solution (indicator for basic solutions)

TEACHER PREPARATION:

- Fill 23 of the cups with 10 mL of water.
- Fill the last cup with 10 mL of NaOH solution. Keep track of this cup but do not mark it in any way. This is the “infected” cup.

TEACHER PROCEDURE:

1. Hand out cups and pipettes. Keep track of which student receives the NaOH but do not indicate to the student that this cup is different from the other.
2. After students have made exchanges of fluids, walk around and place several drops of phenolphthalein solution into each student's cup. A bright pink color indicates an infected cup.

STUDENT INSTRUCTIONS:

1. Obtain a cup with fluid from your teacher.
2. To simulate the possible spread of infection through sneezing or coughing, you will exchange a small amount of fluid with a classmate by doing the following:
 - a. Place the pipette in your cup and fill it with solution.
 - b. Place your pipette OVER (not in) the cup of the person you are exchanging with and squirt your solution into the other cup.
 - c. Record the name of the person with whom you exchanged fluids in the table below.
3. Repeat step 2 with two other students.
4. After you have exchanged fluids with three other classmates, your teacher will place phenolphthalein into your cup. If your cup turns pink, you are infected.

First Exchange	
Second Exchange	
Third Exchange	

ANALYSIS:

Originally, there was only one infected cup. As a class, share infection and exchange data to determine who had the original infected cup.