

## How to Make Invisible Ink

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Objectives:

The students in grades four - six will learn how to make two types of invisible ink and write a message with each type of ink. The students will write a paper comparing and contrasting each type of ink.

Materials Needed:

### **Ink 1**

Lemon Juice  
Small glass  
Toothpicks  
Paper  
Electric Iron

### **Ink 2**

Corn Starch  
Hot Plate  
Toothpicks or Cotton Swab  
Pan  
Iodine Solution  
(1 teaspoon of iodine in 10 teaspoons of water)  
Water  
Paper  
Small Sponge

Strategy:

### Activity 1

The teacher will introduce the experiment by asking "What are some ways to write secret messages?". After the discussion, the teacher will demonstrate how to make ink #1.

PROCEDURE:

- #1. Pour a little lemon juice in a glass.
- #2. Soften the point of a toothpick in the juice.
- #3. Write a message with the juice.
- #4. Heat the message (with the iron) to make it visible. The message should appear brown.

The students will be given materials to write messages and they will use the iron to make their messages visible. The teacher will then pass out index cards (each card will have the numbers 1, 2, 3, or 4 prewritten with ink #1 by teacher). The students will make their numbers visible by using the iron to heat them and break up into groups according to their numbers.

### Activity 2

The groups will be assigned lab stations. Each station will include materials for making ink #2. The hot plate will be set up at the teacher's station.

PROCEDURE:

- #1. Mix a small amount of water with cornstarch (use about 2 tablespoons of cornstarch and 4 teaspoons of water) in the pan and stir until smooth.
- #2. Heat the mixture for several minutes. Stir. (heat each mixture separately)
- #3. Dip a toothpick into the cornstarch and water mixture and write with the mixture on paper. Let the paper dry.

#4. To observe the message, dip the small sponge into the iodine solution and carefully wipe the paper. Do not get the paper too wet. The message should appear purple.

Performance Assessment:

The students will make the invisible ink #1 and #2 and write messages to each other. They will also write an essay comparing and contrasting the two types of invisible ink.