

# Amazing Science — Handwashing (Classroom Version)

## ACTIVITY #1: Hand Sanitizer vs Soap & Water

Approximate time: 15-20 minutes. This activity may be done indoors or outdoors.

### EQUIPMENT AND SUPPLIES NEEDED



Copies of NHS or WHO handwashing steps (from “printables” file):

1 Copy for teacher

1 Copy for each student

(else teacher prints or projects copy large enough for students to see)

### TEACHER'S SUPPLIES

~8-ounce squirt bottles; or bowls/bottles + teaspoons



### STUDENTS' SUPPLIES

1 each: Large Bowl with 1-2 inches of water;  
May be placed on the ground.



<p><b>FOR TEACHER:</b></p> <p>Four plastic squirt-bottles, ~8-ounces each, respectively containing:</p> <ul style="list-style-type: none"> <li>• Vegetable oil (e.g. canola oil; or butter, or margarine)</li> <li>• Fruit juice (the thicker the better)</li> <li>• Hand sanitizer (or isopropyl alcohol; or a small amount of water, with no soap)</li> <li>• Hand-soap</li> </ul>	<p><b>FOR EACH STUDENT:</b></p> <p>1 Large bowl or small wash basin, with 1-2 inches of water or access to a sink (much slower)</p> <p>1 copy of NHS or WHO hand-washing steps (see PRINTABLES, below) or teacher prints or projects a copy large enough for all to see.</p>
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## **PRINTABLE MATERIALS (Download and Print)**

Diagram of NHS or WHO Steps for Handwashing (pdf; 250kb) -- Contains:

- Numbered steps and diagram of NHS or WHO hand-washing process

## **INSTRUCTIONS**

### **SET-UP:**

1. If using bowls/basins, have each student collect on basin, and fill it with 1-2" of water, and return to desk. If desired, bowl/basin may be placed on floor, rather than on desk.

### **ORIENTATION:**

1. Teacher informs students: there will be two substances tested: fruit juice, then cooking oil; for each substance, two cleansers will be used: hand sanitizer without water, then hand-washing soap (hand-soap) with water
2. Ask for predictions/guesses about which cleanser will work best on each substance

### **FRUIT-JUICE:**

1. Teacher passes through room, and squirts ~1 tsp of fruit juice into one palm of each student; students should rub the fruit juice all over both sides of both hands, covering every part of both hands as thoroughly as possible

### **SANITIZER ON FRUIT JUICE:**

1. Teacher tells students that they will each receive a drop of hand sanitizer, and that each student should **WAIT** before spreading the hand sanitizer, until the teacher calls out the NHS or WHO handwashing steps. Teacher passes through the room again, this time, squirting ~1/2 - 1 tsp of hand sanitizer into the palm of each student. Teacher instructs students to -- **WITHOUT USING WATER** -- follow along as the teacher recites the NHS/WHO hand-washing steps.
2. Teacher recites the NHS/WHO hand-washing steps; students perform each step when recited.
3. Teacher instructs students to check hands for residual stickiness, and for residual smell.
4. Teacher asks students whether they feel their hands are completely clean.

### SOAP & WATER ON FRUIT JUICE:

1. Teacher asks whether any students need more fruit juice on their hands; supplies as needed.
2. Teacher tells students that they will each receive a drop of hand-soap, and that each student should WAIT before spreading the hand-soap, until the teacher calls out the NHS or WHO handwashing steps. Teacher passes through the room again, this time, squirting ~1/2 - 1 tsp of hand-soap into the palm of each student.
3. Teacher instructs students to follow along as the teacher recites the NHS/WHO hand-washing steps.
4. Teacher instructs students to close into a fist the hand that holds the hand-soap, then briefly dunk both hands into the water.
5. Teacher recites the NHS/WHO hand-washing steps; students perform each step when recited.
6. Teacher instructs students to check hands for residual stickiness, and for residual smell.
7. Teacher asks students whether they feel their hands are completely clean.
8. Students should do additional washing, if needed, to clean hands thoroughly.

### COOKING OIL

1. Repeat all step above, this time using cooking oil instead of fruit juice

### DISCUSS

1. Teacher asks students to discuss which cleanser (hand sanitizer and hand-soap) worked better on each substance (fruit juice and cooking oil):
  - a. Did one cleanser work best against both substances?
  - b. Was one cleanser better against fruit juice and the other better against cooking oil?
  - c. Which cleaning method left the hands feeling most completely clean?