



# Power of washing your hands (with pepper)!

*Parents always tell us to wash our hands to get rid of germs. Proper hand washing requires soap to help get the germs away. This experiment shows you what happens to those germs using pepper to represent germs!*

## Overview & Purpose

Germs are everywhere. There are good germs, bad germs, and neutral germs. Keeping your hands clean can help you avoid getting sick and feeling bad. This experiment will show you the importance of washing your hands! Washing your hands works by chemically removing "microbes" from your hands. Soap is what is called a "surfactant", which breaks down the oils and dirt on your skin. Water then rinses the broken-down oils and dirt away. The pepper in this experiment is a representation of germs. The hand soap will show what happens to those germs when mixed.

**Microbes** - living things that are too small to be seen with the naked eye. They are normally viewed using a microscope. Bacteria, viruses, and some molds are examples of microorganisms. Most microorganisms are essential to life on Earth.

**Surfactant** - A **surfactant** is a chemical that lowers the surface tension of a liquid. Less surface tension lets the liquid soak into things better, and can also let bubbles form easier. A liquid that bubbles and soaks into things is better at cleaning, so surfactants are used in soap.

## Ingredients

- 1 Shallow bowl
- Water to fill the bowl
- Pepper
- Hand soap

## Get started

1. Fill a shallow bowl with water until just the bottom of the bowl is holding water.
2. Add pepper until it's visible on the surface of the water. This is the representation of germs, so don't be afraid to add as much pepper as you'd like.

3. Dip your finger into the hand soap until coated.
4. Once your finger is coated with hand soap, dip your finger into the water with pepper.
5. Observe what happens to the pepper!

### Questions:

- Why did the pepper behave the way it did when you dipped your finger?
- Can you imagine microbes (aka germs) responding the same way using soap on your hands?
- Do you think washing your hands with soap will help getting rid of germs? Why or why not?

