

# Making Germs Scatter

by Val Drapeau  
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## Length:

- Set up: 2 minutes
- Observations: Instant!  
(1 minute total)

## Materials

- 1 cereal bowl
- Water
- Black pepper (ground, not peppercorn from a grinder)
- Dish soap or hand soap

## Academic Subject(s):

- Science, Chemistry

## This lesson supports areas of Early Childhood Development & K - 2 Curriculum:

- Understanding of cause and effect - i.e. adding the soap to the pepper water makes the pepper scatter to the edge of the bowl. (5 - 7 years) **Here's why:** Soap is able to break down the surface tension of water. That is why soap is a good cleaner! As the soap moves into the water, the surface tension changes and the pepper flakes no longer float on top. However, the water molecules still want to keep the surface tension going, so they pull away from the soap, and carry the pepper along with them to the edge of the bowl.

Germs? Gross! I can't see them so what are those anyway? Germs are tiny organisms that can cause disease. Health experts stress the importance of explaining germs to young children in order to help promote basic hygiene practices in the future.

In this unprecedented time of families seeking to stay healthy with the novel coronavirus, it is imperative that our children learn the value of proper hand washing. How do we help our kids understand why hand washing is important though? **This quick and easy science experiment will show them why germs run from soap**, and everything you need to demonstrate this is already in your home! Kids will remember the moment the germs scatter in this powerful reminder to wash their hands.



## Directions:



**Step 1:** Fill a standard cereal bowl with room temperature or cold water (make sure the water is not hot as to avoid burning the child's finger later in the process).



**Step 2:** Shake the black pepper into the water bowl until the surface is evenly covered. Try not to sneeze! The pepper flakes should float, not sink, upon the surface of the water. Stirring is not needed. Encourage your kiddos to help with this step!



**Step 3:** Have the child write down what they think will occur, (often called a hypothesis), in a notebook. Ask them questions such as: "What do you think will happen when you touch your soapy finger to the water?" "How will the pepper flakes react?"

**Step 4:** Have the child dip their finger into the dish soap or hand soap container until the tip of their finger is covered. You could also pour a small amount of soap into a second small bowl for the child to rub their finger into.



**Step 5:** Have the child place their soap-covered finger into the center of the pepper water and watch how the pepper instantly spreads to the edge of the bowl! This will happen quickly so make sure to watch closely!

**Step 6:** Discuss with them whether their hypothesis was correct. Ask children what this experiment teaches us about washing our hands and it's importance. This experiment is easily repeated; just wash the cereal bowl, dry and duplicate the steps again!

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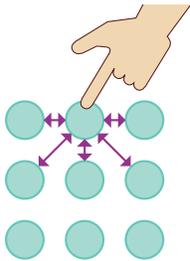
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## Vocabulary Words:



### Hypothesis:

A proposed explanation made on the basis of limited evidence as a starting point for further investigation



### Surface Tension:

The tension of the surface film of a liquid caused by the attraction of the particles in the surface layer by the bulk of the liquid, which tends to minimize surface area



### Germs:

Tiny organisms that can cause disease. These organisms are so small they cannot be seen by the human eye.



### Hygiene:

Practices to maintain health and prevent disease through cleanliness.