

The Magic Finger

You will need:

- Adult help
- A small bowl or plate
- Fine pepper
- Washing up liquid
- Your finger
- Water

Let's make it!

Quick and easy experiment but still very interesting and fun. Fill up a bowl/plate with water (half way should be fine) and sprinkle pepper on the water as randomly as you can. Challenge your friends to see who can push all of the pepper to edge of the bowl. When they fail, you will take action! (if needed, sprinkle more pepper onto the water). Now squirt a little liquid soap or washing up liquid on your finger and gently touch the surface of the water. Kaboom! All the pepper seems to have gone away right to the edge of the bowl!

How?

The first question to ask is why the pepper flakes float. Why don't they sink or dissolve in the water? Well, pepper is hydrophobic, meaning that water is not attracted to it. Because of that, the pepper can't dissolve in the water. But why do the flakes float on top of the water? Water molecules like to stick together. They line up in a certain way that gives the top of the water surface tension. Because pepper flakes are so light, and hydrophobic, the surface tension keeps them floating on top. The next question to think about is why the pepper shoots to the sides when soap touches the water. Soap is able to break down the surface tension of water—that's part of what makes soap a good cleaner. As the soap moves into the water, and the surface tension changes, the pepper no longer floats on top. But the water molecules still want to keep the surface tension going, so they pull back away from the soap, and carry the pepper along with them.

