

Materials

- Small Bowl
- Water

- Pepper
- Dish Soap



Fill a small bowl up with water and shake some pepper flakes on the water. Are the pepper flakes sinking or floating? Why do you think they are floating? This is due to surface tension or the fact the water molecules are sticking together and that the pepper is hydrophobic or the water is not attracted to them.



Get a bit of soap on the tip of your finger and touch it lightly on to the



top of the water. What happens to the pepper flakes that are near you finger? Keep touching the water in different areas and see what happens.



The pepper flakes move away because the soap breaks the water's surface tension, and as the water moves away it takes the pepper flakes with it. The fact that soap breaks down surface tension is one of the reasons that soap is so useful for cleaning and washing your hands.



Try floating a light object (like a sewing needle) in a bowl of fresh water. Then, add 1 drop of liquid soap and watch the object immediately fall to the bottom of the bowl -- the idea is the same! Without the water's surface tension, the object can no longer stay afloat.