

SURFACE TENSION

ULYSSES PHILOMATHIC LIBRARY SCIENCE AT HOME 2020

THE STEP BY STEP

1 - Fill a cup with water and, very carefully, lay a paperclip down flat on the surface. This might take a few tries, but you should be able to float the paperclip if you are gentle enough!

2 - Touch the surface of the water near the floating paperclip with a dry q-tip and the paperclip will continue to float. Touch the surface of the water with a soapy q-tip and the paperclip will sink as the soap changes the surface tension of the water.

3 - Fill a bowl with water and add pepper till the surface of the water is covered. If you dip your finger into the bowl, you'll find that the pepper sticks to your skin.

4 - Now rub your finger with soap and dip your finger back into the bowl. You'll find the pepper moves away from your finger as the soap changes the surface tension of the water and this change carries the pepper away!

ADDITIONAL QUESTIONS

Why does the paperclip sink in the clean water if you drop it in, but float if you place it down gently?

Is the surface tension of water strong or weak?

How does the soap change the surface tension? What physical changes did you observe when you added the soap?

Can you think of plants or animals that rely on the surface tension of water?

What might happen to those plants and animals if that surface tension changed?

ADDITIONAL RESOURCES

Earth Lab: what is surface tension?

<https://www.youtube.com/watch?v=5NCOnr3VSAY>

Middle School Chem: surface tension

<https://www.middleschoolchemistry.com/lessonplans/chapter5/lesson2>

MIT: Intro to Surface Tension

<http://web.mit.edu/nnf/education/wettability/intro.html>

USGS: Surface Tension and Water

<https://www.usgs.gov/media/videos/surface-tension-and-water>

Why is Surface Tension Important?

<https://www.biolinscientific.com/blog/why-is-surface-tension-important>