

Can You Float a Needle on Water?



What You Need

- 1 glass of water, nearly full
- 1 sewing needle, or a small paper clip
- 1 small square of tissue paper
- 1 drop of soapy water

Try This!

1. Place a small square of tissue paper on the surface of the water in the glass.
2. Gently place your sewing needle (or small paper clip) on the tissue paper, using it as a temporary 'raft'.
3. Let the tissue paper sink to the bottom of the glass. The needle (or paper clip) should remain floating on top of the water.
4. When the needle or paper clip is floating nicely on top of the water, add one drop of soapy water. What happens?

Surface tension, due to the cohesive force between water molecules, supports the needle or paper clip. (You may have seen insects striding across the surface of a pond, using the same principle.) As soon as you add soap to the water, the soap molecules spread across the surface of the water, getting between water molecules and reducing the cohesive force enough that the surface can no longer support the needle or paper clip.