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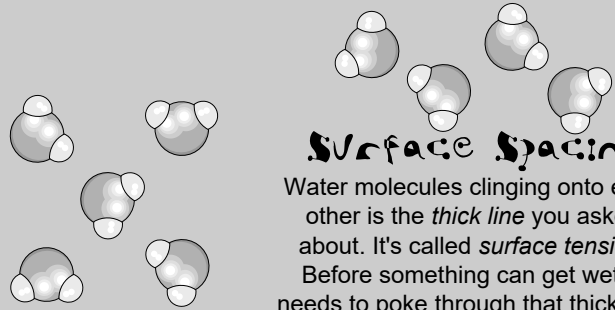


Beakman or Jax  
P.O. Box 30177  
Kansas City, MO 64112  
Questions, name & address

Dear Beakman,  
What is that thick  
line floating on top  
of water?

Wes Bouges  
Auburn, Massachusetts

## Inside Liquid Spacing



### Surface Spacing

Water molecules clinging onto each other is the *thick line* you asked about. It's called *surface tension*. Before something can get wet, it needs to poke through that thick line.

P.S. from Jax: If you ice-skate, you'll notice that the surface of ice is different than the inside of ice – it's slippery. New discoveries about water tell us that it's from frozen water molecules vibrating.

Dear Wes,  
The smallest chunks of water we can have are water molecules, and they are attracted to each other in all directions.

Inside liquid water the molecules can cling onto each other top-ways, bottom-ways, side-to-side – any way they can.

But on the surface of water, there are fewer directions for them to cling, so they grab onto each other more tightly the only way they can – sideways.

Sprinkle pepper onto a bowl of water until the whole surface is covered. Then *just touch* a bar of soap to the center of the water.

Soap breaks up all that *clinging-together*, and the pepper will jump back as the surface tension breaks.

## Experiment #2

Beakman  
Beakman Place

## Experiment #1

**WHAT YOU NEED:** All the pennies you can find - glass of water

**WHAT TO DO:**

Fill up the glass with water and place it on a level table. With your fingers close to the water, *gently* drop in pennies, penny by penny. Don't make waves when you do this. How many will it take to overflow the glass? Look closely at the water.

**SO WHAT:**

It took lots more pennies than you thought, and the water lifted *up and out* of the glass, held together by those molecules clinging onto each other – surface tension.