Suzy's World

Surface Tension - Why does rain fall in drops?

Fact

- The water particles on the outside of a group drop cling together really tightly. This is called surface tension.
- When water vapour in the sky cools down it turns into liquid water. Clusters of water particles form a drop that eventually gets so heavy that gravity pulls it down to fall as rain. Gravity pulls the drop into the shape we see.

Do you know

- Small insects can walk on water because the surface tension of water is strong enough to hold their weight.
- It's surface tension that holds the water coming out of a tap in the shape of the pipe.
- The particles in water are moving all the time. The colder the temperature the slower the particles move until they stop moving at 0 degrees Celsius.

Experiments you can do

Make a bulge of water. The water will spill over so do this at the kitchen sink.

<u>What you need:</u>

1 glass of water
A container with more water
1 teaspoon

<u>What you do:</u>

Fill the glass with water right to the top. Predict how many teaspoons of water you will be able to add to the glass before it spills. Write your prediction down then gently add more water, teaspoonful at a time, until the glass overflows. Was your prediction correct?

Surface tension is what keeps the water particles clinging together in an overfull glass. When the tension becomes too strong when one too many drops of water are added the tension breaks and water spills down the side of the glass.

Other Investigations

Try blowing bubbles with a bubble ring and plain water. What happens? The water particles are not very stretchy without soap so you won't be able to make any bubbles. Try it again with bubble mixture. How much can you get the water to stretch now? How big can you make the bubbles? What happens if you blow slowly? What happens if you blow really hard? Are they always the same shape? Why would that be? What other questions could you ask about bubbles and surface tension?

Jokes

What runs but has no legs? Water