



SKEWER A BALLOON

Did you know that you can stick a wooden skewer all the way through a balloon without it popping?

YOU WILL NEED

- A balloon
- A wooden skewer
- Cooking oil



WHAT YOU DO

Step 1

Blow up the balloon to about two thirds its maximum capacity and tie a knot in the end.

Step 2

Make sure the skewer you are using is quite sharp and dip it in some cooking oil to lubricate it.

Step 3

Pierce the balloon with the skewer next to the knot where the rubber is most thick. Use gentle pressure and a very slight twisting motion to puncture the balloon.

Step 4

Feed it through and pierce the balloon once again at the centre of the top, where the rubber is thicker also.

Step 5

Play with your balloon on a skewer! Why not see how long you can balance it on your finger?



THE SCIENCE BEHIND IT

Everything is made from atoms. Atoms are like tiny little building blocks that are so small you cannot even see them with a microscope! Atoms join together to make molecules, for example, water is made up of lots of water molecules. The balloon you skewered is made from latex, which is natural rubber from a rubber tree.

Latex is made up of molecules called polymers, which are long chains of smaller molecules. Latex polymers are elastic, which means they are stretchy, and so when you blow up your balloon the polymers that make up the balloon are stretching so that the balloon can hold in the air.

But some parts of the balloon become more stretched out than others; try drawing some dots on a balloon using a marker pen and then blowing it up. You will notice that the dots in the middle of the balloon will stretch more than dots at the top or bottom. This is because the middle of the balloon stretches more than the top and bottom. And so, when you pierced your balloon with the skewer first through the bottom and then through the top, the polymers in these parts of the balloon were stretched out much less than the polymers in the middle of the balloon, and so the polymers were able to stretch around the skewer without letting the air out.

If you try piercing the balloon with the skewer in the middle, the polymers are too stretched out to stretch around the skewer as well, and so they will snap back to their original size again very quickly and with a bang!



Photo Credits

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