

2 Make square bubbles

Build a frame to capture straight-edged bubbles.

What you need

- Scissors
- 6 pipe cleaners
- 6 paper straws
- Large bowl
- 7 litres of water
- 60ml of washing-up liquid

How does it work?

A soap bubble is made of a very thin film of soapy water, surrounding a volume of air. Because of a force called surface tension – which is caused by the water molecules being attracted to each other – the soap film is pulled tightly into a shape with the smallest outside surface. That is why free-floating bubbles always form spheres. The same rule applies with your frame – the soap film pulls tight to produce the smallest area possible, in this case, flat sheets that meet at an angle of 120°. You'll find this special angle in other places too. Honeybees make hexagonal honeycombs because this pattern uses the least amount of wax.



1 Cut six pipe cleaners and six straws in half and lay them out next to each other. You should have 12 pieces of each.



2 Take three pieces of pipe cleaner and twist the ends together. Fan them to make a tripod. Repeat to make four separate tripods.



3 Slide a straw over the end of each pipe cleaner, making sure a little bit of pipe cleaner pokes out the ends. Trim the straws if needed.



4 Build a cube by twisting together all the exposed ends of pipe cleaners. You may need an extra pair of hands to help with this step.



5 In a large bowl, mix water and washing-up liquid. Gently stir the soapy liquid. This is your bubble mixture.



6 Dip your straw frame into the mixture, to cover it completely. Then slowly pull it out. Do you see a cube-shaped bubble caught in the centre?