

Day 5 - Bubbles

Learning:

Bubbles are pockets of air that are surrounded by a thin liquid skin.

Bubbles are round when they are floating in the air.

Ideas:

<https://www.homesciencetools.com/article/how-to-make-super-bubbles-science-project/>

Group Time:

Take a close look at water, what does it look like? Does it have a certain shape? Can you see the 'skin' holding the water together? This is called surface tension and it's a very important concept when it comes to bubbles.

Experiment 1 – Water Skin

Compare blowing bubbles in water and soapy water.

What you need:

1. Disposable Cup of water x 25.
2. Disposable Cup of soapy water x 25.
3. Straws.

What to do:

1. Using the straw blow air into the water, does it produce bubbles?
2. Using the straw blow air into the soapy water, does it produce bubbles?

Explanation:

The skin of normal water is too tight and doesn't stretch enough to form a bubble. The soap in the bubble solution allows the skin of the water to stretch further and makes it possible to blow bubbles.

Experiment 2 - A Square Bubble?

What you need:

1. Pipe Cleaners
2. Bubble Solution

What to do:

1. Bend a pipe cleaner into a square. Wrap the ends around the sides of the square to hold it together. Fold the other pipe cleaner in half and loop it around one side of the square. Twist the ends together to make a handle. Use it as a bubble blower.
2. Dip the bubble blower into the bubble solution and slowly blow a bubble through it until the bubble comes loose from the wand. What shape is the bubble?

Explanation:

The bubble was round even though it came from a square! Bubbles are always round when they detach and float through the air because the skin of soap always tries to take up the least amount of space it can and still keep the same amount of air inside the bubble. The soap molecules always stretch into a round shape automatically! A round shape takes up less space than a square shape. Try the trick again, but make a wand in any shape you want - what about a star or a triangle? Do bubbles from those shapes become round too?

Experiment 3 – Cubic bubbles

<https://babbledabledo.com/science-engineering-kids-tensile-bubbles/>

What you need:

1. Pipe cleaners.
2. Straws.
3. Bubble mixture.
4. Deep containers.

What to do:

1. Make the cube using straws and pipe cleaners.
2. Put the cube into the bubble solution, then dip the straw in the bubble solution and try to blow bubbles inside the cube.

Experiment 4 – Bubble Snake

<https://www.stevespanglerscience.com/lab/experiments/bubble-snakes/>

What you need:

1. Plastic bottles
2. Cloth
3. Food colouring
4. Bubble Solution

What to do:

1. Using a pair of box-cutters (and adult supervision), carefully cut the bottom off, of the plastic bottle.
2. Cover the freshly cut hole with a piece of fabric that is similar to a washcloth or cotton sock. Use a rubber band to keep the fabric in place.
3. If you want coloured bubbles, find some liquid food colouring in your favourite colour(s). Add a few drops of the food colouring to the fabric on the end of your bottle.
4. Dip the fabric-covered end of the bottle into the bowl of bubble solution.
5. Blow into the mouth of the plastic bottle. Before you know it, you'll be creating Bubble Snakes like a pro!