

Did you know you know you can make a **square bubble**?

TENSILE BUBBLES

Wendy Rowe, Children's Librarian/Assistant Director

Barrington Public Library, Barrington NH

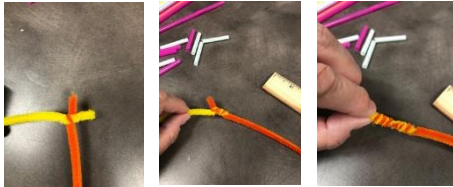
Bubble solution

Straws

Pipe cleaners



Cut your straws into 1 ½" lengths. (You could cut them into 2" lengths, but you would need a wide, deep mug to be able to submerge the whole shape into the bubble solution.)

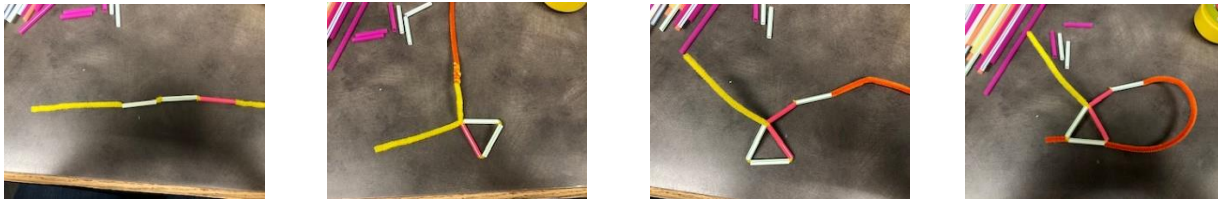


You will need two pipe cleaners connected to make the pyramid shape. Connect them by twisting the two ends together – twist together once, then separate and twist the small ends onto each piece.

These instructions are for the pyramid shape. Once you make this shape, you should be able to follow the picture steps to make the cube shape. ☺

I have included photos of the steps to make the pyramid and cube shape bubble wands on the back side.

Thread three pieces of straw onto the pipe cleaner, leaving 3-4 inches sticking out. Bend together to make a triangle and twist the pipe cleaners once where they meet, then thread two pieces of straw onto the long end. Bend that over to make a triangle next to the first one and thread the pipe cleaner through the bottom straw of the first triangle.



There will be two triangles connected. Thread one piece of straw on the long pipe cleaner and bring upward along with the other points. Twist and thread the pipe cleaner back down one of the sides to come out where the beginning piece is. Twist together the two pieces – as your handle.



Pour your bubble solution into a wide mug. Make sure you put enough in to be able to completely submerge your bubble wand. Dunk it in a few times to saturate the wand. Pull out and look at the way the bubbles stretch and connect in the middle of the shape!

Once you make the pyramid shape try the cube shape. It is a little harder to make, but the tensile shapes are fantastic! You might have to dunk it several times. Keep trying and eventually you will come up with a cool bubble that has a square opening in the middle.

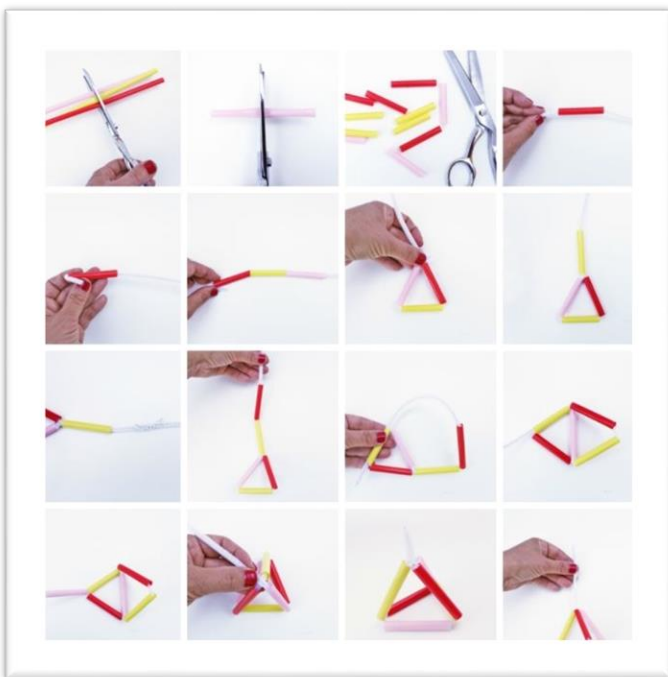


Tensile Structures. Tensile structures are formed when a material or cable is stretched and held in tension between two or more anchors. *Think suspension bridges or shade sails. They are often used to make roofs or tents.*

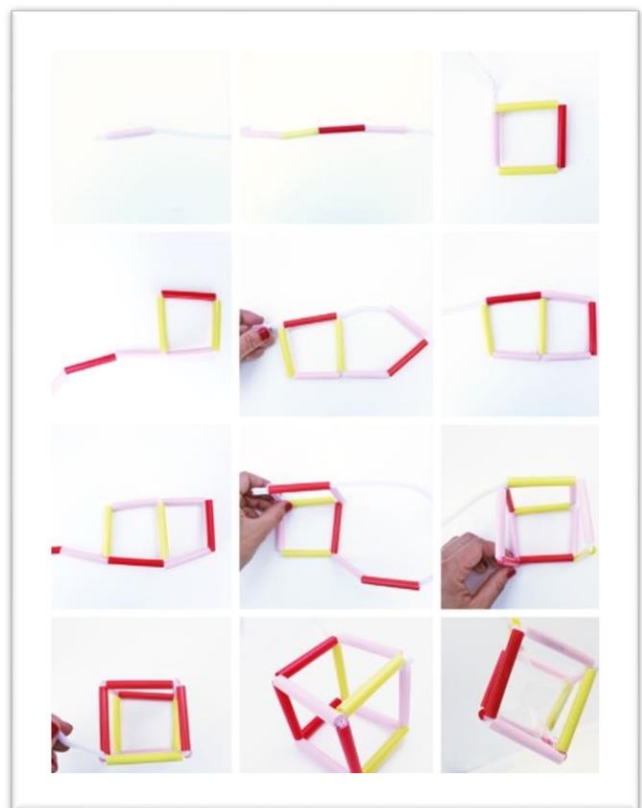


In this project you can learn structural engineering by building a 3-dimensional bubble wand, and make an inverted bubble cube that mimics a tensile structure when bubbles are formed as the soapy solution is stretched both between the rigid edges of the wand and the joints that form in the bubble solution itself.

Pyramid bubble wand



Cube bubble wand



Use this for measuring where to cut straws if you do not have a ruler at home.