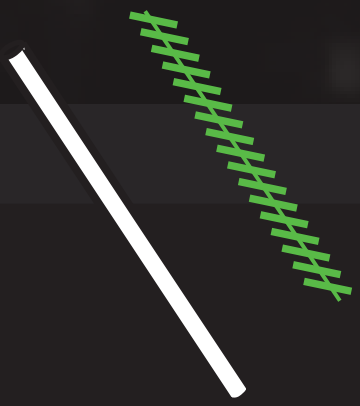
SCIENCE SHOW OFFS

SQUARE BUBBLE

RESOURCES NEEDED

- **6 pipe cleaners**
  Also works with string.
- **6 straws**
  Don't use straws that have a concertina bend.
- **Bowl**
  It needs to be wider and deeper than the straw cube
- **Bubble Mix**
  You can make your own by mixing some glycerine with dish washing liquid.



EXPERIMENT

SET-UP

- Clear a table and place a big bowl of bubble mix on it. Have a towel nearby to clean up any spills.

STEP 1

- Cut all of the straws and pipe cleaners exactly in half. Take three pieces of pipe cleaner and twist one end together to form an open pyramid shape. Repeat with all pipe cleaners, so that you have four pyramids.

STEP 2

- Thread a piece of straw onto each leg of each of the open pyramids.

STEP 3

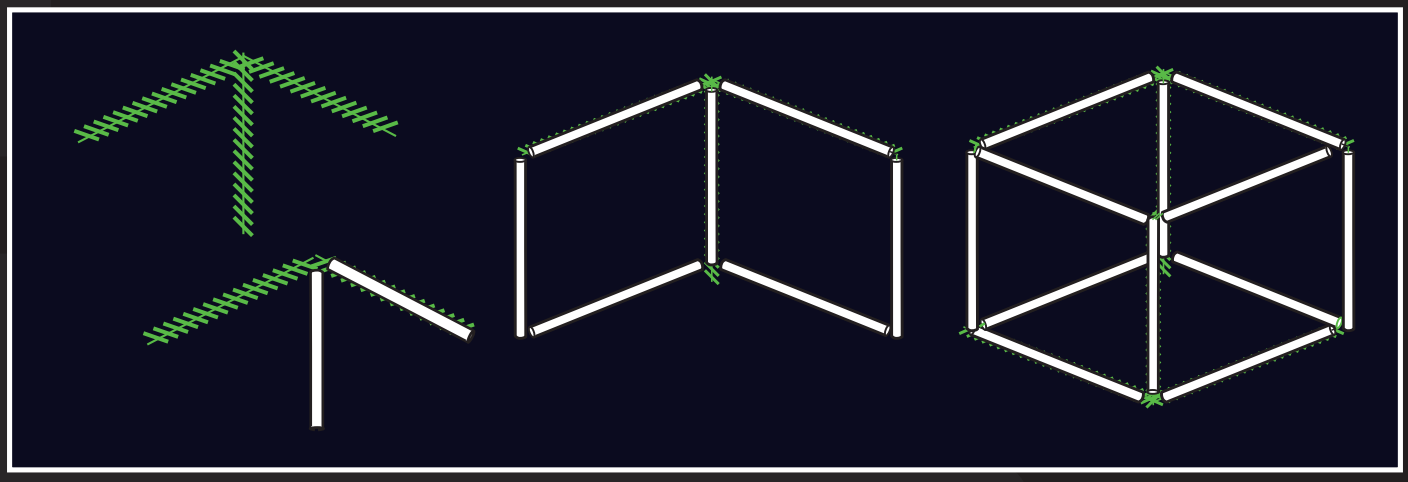
- Take the pyramid components and pull the legs into right angles. Fit each component together so that the straws meet in order to make a cube. To secure your cube, wind the pieces of pipe cleaner together.

STEP 4

- Submerge the cube in the bowl of bubble mix

STEP 5

- Lift up the cube carefully. If you manage to get a soap layer on every side of the cube, the surface tension of each side will pull the layers into a small cubic bubble in the middle!



DISPOSAL AND CLEAN UP

- All materials from this Science Show Off can be reused, so keep them in a box for later!

RISK MANAGEMENT

RISK	MANAGING THE RISK
Bubble mixture can get in eyes.	Make sure there's a towel, and plenty of water to rinse eyes if need be.

SCIENCE EXPLAINED

Bubbles form when air is trapped inside a thin film of soapy water. A good bubble mix has enough soap and glycerine to prevent water from evaporating quickly, which allows bubbles to last longer. Bubbles are round, as this is the shape with less surface area to enclose the air in them. In this Science Show Off, we stretch the soap into a cubic shape, but notice, each side of the cube is still rounded, as bubbles layers will always have a curved outer structure.

REAL WORLD EXAMPLES

The reason that bubbles are round, is also the reason why stars and planets are round. Liquids and gases will naturally form this shape unless other forces act upon them, because, as we explained above, this is the form that has the least surface area. Stars are made of gas, and planets start out full of either gas or magma, which is why these objects are spherical.

PARENTAL GUIDANCE

Science Show Offs should take place with appropriate adult supervision.

COMPETITION

To enter the Science Show Offs Competition, go to;
otagomuseum.nz/scienceshowoffs

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CURIOUS MINDS
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