



## Are bubbles really round?

Bubbles are a serious business. Different recipes for bubble mix can be a closely guarded secret. And bubbles contain so many STEM opportunities that you probably don't even realise. This little gem is a maths activity, creating bubble mix is also a good introduction to chemistry. And the rainbow shine on the bubble is a great way to start an optics discussion about rainbows and, of course, bubbles are great fun!

When you play with bubbles have you ever REALLY looked at them? Come on, blow a few bubbles and have a look. Are they really round? Do they always form the same shape? Well, let's explore...

### Method

Make up your bubble mix in the plastic container and add a few drops of food colouring. Blow into the bubble mix using the straw to make some bubbles!

Look carefully at the bubbles. What shape are they? How many sides do the shapes on the surface have? Can you count the sides of the shapes?

You can also make some bubble art and print the pattern of the bubbles using the butchers' paper.

Note: this will only work if you are using uncoated paper. Ordinary office paper does not work – we have tried!

### Observations, conclusions, ideas

The bubbles squeeze together to form shapes that fill all the available space in the container. Most of the shapes will have six sides. A six-sided shape is called a hexagon. This is because hexagons tessellate. Tessellating means fitting together with no spaces. Other shapes that tessellate are squares, rectangles and also some triangles, but hexagons form because they tessellate and also because they form the biggest volume of air with the smallest amount of bubble mix required in the space.

So why are floating bubbles round (well, spherical)? It's the largest volume of air for the smallest amount of bubble mix.

### Equipment list

- Bubble mix or washing up liquid
- Plastic container
- Straw
- Food colouring
- Butchers' paper or other uncoated paper

### Hint

If you are using a plastic straw, put a small pin hole near the top of the straw. This prevents the bubble mix being sucked into the child's mouth.



## What's the STEM?

- Maths:** Shape and space- describe the different shapes and try and use the correct maths names for the shapes formed in the bubbles
- Chemistry:** finding the right bubble mixture
- Optics:** colours of bubbles, rainbows

## Recipes for bubble mix

- 5 cups of water
- 1 cup of dish washing liquid
- 1 tbsp of glycerine or  $\frac{1}{4}$  corn syrup

Add all the ingredients gently so you don't start bubbling early! If you don't have corn syrup or glycerine you can try adding corn starch, a tsp of baking soda. You can test your recipes using the bubble snake activity. Who knows you may contribute to the world of home science by inventing the best bubble mix recipe...?

## Extended learning

Make bubble snakes

## Book Recommendation

Warnayarra The Rainbow Snake by Pamela Lofts (Compiler), School Lajamanu (Narrator), School Children, At, Lajamanu (Illustrator)

