

ACTIVITY

2

CHEMISTRY AT HOME

BRILLIANT BUBBLES

●●○ MEDIUM



7-12

*Younger with help
from an adult*



30 MINS

Including prep



1

Make a
homemade
bubble mix

2

Find out why
bubbles form

3

Learn about
surface tension

ENCOURAGING TOMORROW'S CHEMISTS TODAY

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BRILLIANT BUBBLES

Surface tension is an invisible force which makes a layer of liquid act like an elastic sheet. Imagine a pond skater walking on water, its surface tension that allows them to do this!

Soap molecules reduce the surface tension between water molecules allowing the mixture to stretch. If air is blown through the soapy mixture bubbles form as air becomes trapped inside the water and soap mix.

Surface area is a measurement of the total surface of an object. The bubble shapes forms as it gives the smallest surface area for the volume of air inside it.

You will need

- 50ml washing up liquid
- 350ml warm water
- Measuring jug
- 2 tablespoons glycerine*
- 1 tablespoon of cornflour *Optional*
- Small containers
- Large tub or bowl
- Straws
- Thin wire or pipe cleaners
- Timer



*Look out for this in the baking area in supermarkets



Safety

Take care using washing up liquid as it can irritate skin and eyes.

This activity can be messy.

This activity should be supervised at all times.

Be careful not to suck any liquid up the straw.

Instructions

Activity 1

Bubbles with water

Half fill a small container with warm water. Blow into the water using a straw. Record how long the bubbles last.

Activity 2

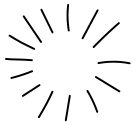
Bubbles in water and washing up liquid

- Add a teaspoon of washing up liquid to your container of warm water and mix well. Blow down the straw into the mixture and record how long the bubbles last this time.
- Soapy bubbles should form more easily and last longer.

Activity 3

Make your own bubble mix

- To make a basic mixture pour the warm water and washing up liquid into the large container and mix carefully.
- Make a bubble wand by twisting a pipe cleaner or thin wire into a circle with a handle.
- Dip the wand into your mixture and blow bubbles. Watch how long they last before popping.
- Now add two tablespoons of glycerine and mix well. These bubbles should last longer.



Challenge

Priya wants to create a super strong bubble mix for a party. Can you help her find the best combination of washing up liquid, water and glycerine for an extra strong bubble mix?

Things to keep the same

- Bubble wand.
- Amount of water and washing up liquid.

Things to change

- Amount of glycerine – try 1 tablespoon, 2 tablespoons and 3 tablespoons.

What to measure

- How long the bubbles last with different amounts of glycerine.



Extra challenges

- Try adding a tablespoon of cornflour to your mixture, what happens?
- Can you see a rainbow in the bubbles?
- Try leaving your bubble mix to settle for a few hours. Does it make better bubbles?



What's happening?

Washing up liquid lowers the surface tension between water molecules allowing the water to stretch.

Glycerine helps to stop bubbles drying out so they last longer! Don't add too much or your mixture will become sticky.

