

## About this activity

In this activity you will investigate how to make the 'best bubble' by trialling, adapting and evaluating mixtures of different liquid ingredients and finding the average lifespan of the bubbles. Just like scientists in industry, you will use your research to improve your recipe for the product... bubble mixture! You could try this activity inside or outside... or both!

### Kit List

- Washing up liquid
- Water
- 4-6 small containers (e.g. yogurt pots)
- Bubble wand (could be homemade – see examples)
- Teaspoon (could use a pipette or medicine syringe if you have one)

**Time: 30 Minutes+**

# THE BEST BUBBLE

### Important words to understand:

- industry
- liquid
- mix
- mixture
- investigate
- compare
- ratio
- repeat
- adapt
- improve
- evaluate
- product

Not sure what they mean? You could use a dictionary to check (paper or online).

**The Bubbles Company need a 'best bubble' mixture to make the longest lasting bubble. Can you make one?** 

### OUR METHOD

- We mix washing-up liquid and water together (teaspoons/pipettes/syringes)
- We use as much water as possible to keep costs low

**Make 4-6 different mixtures using different ratios of the ingredients. When you have discovered the ideal mixture, you must convince our directors that you have the best product.**

### THEY WILL WANT TO KNOW...

- How did you carry out your tests and make them fair? Think about force of breath, landing surface and size of bubble wand.
- How did you test each bubble mixture?
- What are your results?
- Average bubble lifespan ( $B1+B2+B3 \div 3$ )
- Which recipe makes the longest lasting bubbles?
- Why do you think your recipe is the best?

Write a short report or make a video to share your results with The Bubbles Company.  
Share it with us  @ciecyork

### Watch out!

- Take care not to get bubble mixture in your eyes when observing the bubbles closely.
- This activity could be quite messy if tried indoors and could also make some floor surfaces quite slippery so make sure you clean up afterwards.
- If you colour the mixture with food colouring, be aware that clothes could get messy too.

## Recording your Results

	Ratio of bubble mixture (in teaspoons/pipettes/syringes)		Life span of bubble (in seconds)			
	Washing up liquid	Water	Bubble 1	Bubble 2	Bubble 3	Average
1	:					
2	:					
3	:					
4	:					
5	:					
6	:					

### Follow up investigations:

- Design and make different bubble wands with a pipe cleaner or craft wire. Does the shape of the bubble wand make a difference?
- Does adding food colour to your bubbles affect your results?
- How could you create the biggest bubble?
- How long can you keep a bubble afloat for? Try blowing it or fanning it with some paper to keep it in the air.
- If you have some glycerine at home, how does adding this to your mixture change your results?

### Things to think or talk about:

- What makes a bubble the 'best bubble'? The largest? The longest lasting? The most bubbles from one blow?
- Are all bubbles the same? How are they different?
- Which surfaces do bubbles last longest on?
- Can you catch a bubble without popping it?
- Do bubbles float or fall?
- Why does a bubble take longer to fall than a football or tennis ball?
- Can you find anything which falls slower than a bubble?
- Take a science selfie and share it with your friends and family.



1. Get your equipment ready.



2. Check you have everything you need.

## Time to Investigate



3. Measure out your ingredients.



6. Time to report your results.



5. Adjust your recipe and try again.



4. Try your bubbles out!

# Bubble Wand Inspiration

