

Dr Jo Science



Bubbles and Potions

Activity Pack

Festival of Tomorrow

Please share photos of your investigations on Twitter, Facebook or Instagram tagging @DrJoScience and use the #ScienceFromHome #DrJoScience hashtags.

Please do not share or copy these resources.



Bubbles and Potions



We will be exploring bubbles, blowing bubbles, observing bubbles and their properties, making fizzing potions, colour changing potions, harnessing the power of bubbles to inflate balloons and make mini lava lamps.

Kit List

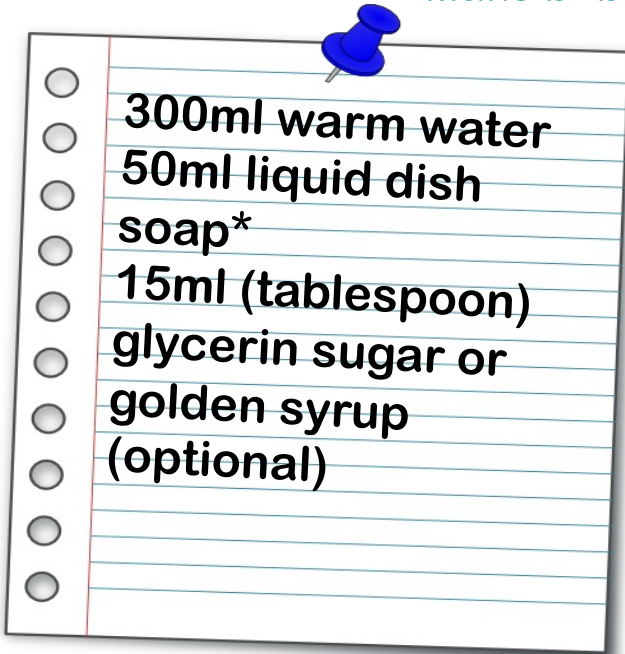
To carry out ALL of the investigations, you will need:

- Bubble mixture, or water and washing up liquid (optional add a couple of drops of glycerin)
- Bubble wand
- Straw
- Bowl
- Glass or clear plastic cup or beaker
- Fizzy water
- A few raisins or unpopped popcorn kernels or grains of rice
- Glass or clear plastic cup or beaker x 3-5
- Sodium bicarbonate (not baking powder)
- Teaspoon
- Vinegar
- Optional – lemon juice
- Optional – orange juice
- Optional – red cabbage water or blue pea tea
- Balloon (un-inflated), or latex-free glove
- Small empty bottle eg fruitshoot/water or plastic beaker
- Cooking oil
- Food colouring

If you would like the children to join in with one of the activities during the session, I suggest having glasses/clear plastic cups of fizzy water and a few raisins.

You may prefer to just choose one or two activities for the children to do as a follow up. Instructions will be provided.

Make bubble mixture



- Dissolve the glycerin or syrup into the water water
- Slowly add the dish soap* and mix
- Take care not to make it foamy and bubbly
- Cover with a lid and leave overnight for best results

*cheap washing up liquid works best, try to avoid the "ultra" ones

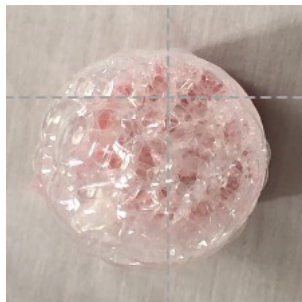


Image: cleanpng.com

Blow bubbles



Images: cleanpng.com



Use a bubble wand to dip in the liquid then blow through the loop. You could try out lots of different objects to blow bubbles.

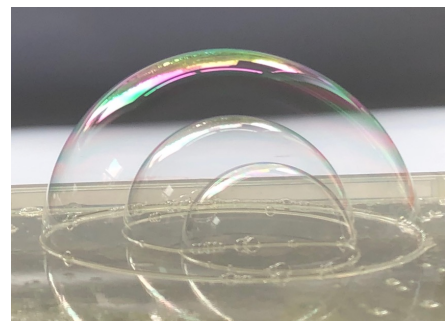
Can you blow

- the biggest bubble
- a bubble on your hand
- Different shaped bubbles?

Can you blow bubbles in the bowl using a straw?

Careful – don't suck!

Bubbles in bubbles



Can you blow a bubble inside a bubble?

Wet the surface before you start and coat the straw in bubble mixture.

Carefully blow a bubble, then insert the straw again and blow a smaller bubble inside. How many bubbles can you blow inside a bubble?



Adult supervision required. Please take care. You are responsible for your own safety.

Creative commons © Jo Montgomery 2022 @DrJoScience www.drjosciencesolutions.co.uk

Fizzy drinks and Dancing Raisins

Pour a glass of lemonade or fizzy water and observe the bubbles.

Where are they? What are they doing?



- Drop in a raisin or two (or popcorn kernel or grains of rice) and watch what happens.
- Where are the bubbles?
- What's happening to the raisins?
- Do you know why?

Fizzing Potions

This acid-alkali chemical reaction can be explored in the popular 'volcano' reaction. This looks great in a test tube, but a small glass or beaker, or small bottle will also work well.

- 1 teaspoon sodium bicarbonate
- pour in a little vinegar

The acid in this acid-alkali reaction is found as a liquid in the vinegar (acetic acid).

Bubbles of carbon dioxide are produced and can be seen as the effervescent fizzing!



Testing other liquids for acidity



Try testing other household liquids to see if they react with the sodium bicarbonate. If they are acidic, you will see bubbles of carbon dioxide forming. You could try water, fizzy drinks, fruit juices etc.

Capture the carbon dioxide!

Use the acid-alkali reaction of vinegar and sodium bicarbonate and capture the carbon dioxide produced in a balloon!



- Pour a small amount of vinegar into an empty drinks bottle
- Put a spoonful or two of sodium bicarbonate into a balloon and shake to the rounded bottom
- Carefully place the neck of the balloon over the neck of the bottle, ensuring that the bicarbonate stays in the floppy end of the balloon
- When secure (you may need to hold onto it), gently lift up the balloon so that the bicarbonate falls into the bottle
- The sodium bicarbonate reacts with the vinegar to produce bubbles of CO_2
- This inflates the balloon!



Fizzing Potions

Some Further things to investigate

Colour changing potions



Add some red cabbage water or blue pea tea to a glass or clear beaker.

What happens when you add some vinegar?

What happens when you add some sodium bicarbonate?

The colour change is caused by acidic or alkaline chemicals.

Colourful lava lamp



Put some vinegar and food colouring in a glass and pour a thick layer of oil on top.

Sprinkle on some sodium bicarbonate. As it sinks it will react with the vinegar, forming bubbles of CO_2 which rise through the oil layer, taking some of the coloured vinegar with it, before sinking again.





Bubbles and Potions



We will be exploring bubbles, blowing bubbles, observing bubbles and their properties, making fizzing potions, colour changing potions, harnessing the power of bubbles to inflate balloons and make mini lava lamps.

Kit List

To carry out ALL of the investigations, you will need:

- Bubble mixture, or water and washing up liquid (optional add a couple of drops of glycerin)
- Bubble wand
- Straw
- Bowl
- Glass or clear plastic cup or beaker
- Fizzy water
- A few raisins or unpopped popcorn kernels or grains of rice
- Glass or clear plastic cup or beaker x 3-5
- Sodium bicarbonate (not baking powder)
- Teaspoon
- Vinegar
- Optional – lemon juice
- Optional – orange juice
- Optional – red cabbage water or blue pea tea
- Balloon (un-inflated), or latex-free glove
- Small empty bottle eg fruitshoot/water or plastic beaker
- Cooking oil
- Food colouring

If you would like the children to join in with one of the activities during the session, I suggest having glasses/clear plastic cups of fizzy water and a few raisins.

You may prefer to just choose one or two activities for the children to do as a follow up. Instructions will be provided.