# Bubble Factory

by Deborah Williams


Photo: Deborah Williams

Bubbles are intriguing for people of all ages, from the young child who watches wide-eyed as a rainbow of colours appears in a soap bubble to an adult fascinated by the sounds of foam as it washes upon the beach riding on a wave.

Capturing the excitement of bubbles with experiments for children can bring in elements of science and math as well as wonder.

## What exactly is a soap bubble?

Soap bubbles are thin skins of liquid that surround a gas. If we blow a bubble with our breath, then the gas is made up of our exhale, carbon dioxide. Bubbles can stretch and are, therefore, elastic. Surface tension is an important factor in the creation of bubbles. At the surface of any container of water is what appears to be a skin that allows paper clips to float and water bugs to glide upon it. Water molecules bond together to form this stretchy surface. Adding soap to water reduces surface tension and allows for the production of longer lasting bubbles than what could be made with just plain water.

The following are three projects that can work for a variety of ages. Set up three exploration stations, indoors or out, with one of the following projects at each station. When working outdoors, keep in mind factors, such as wind, that might affect the bubbles. Remember to have lots of old towels, paper towels or newspapers and a squeegee available to wipe floors and tables with. Do not work on carpet and do be prepared for a messy, but wonderful time.

Make sure that children remember all of the rules of bubble safety. Never run on a soapy, wet surface. Avoid getting soap in your eyes, but if you do, don't rub them. The sting will go away, but rubbing with soapy fingers will only make the situation worse. And finally, only pop your own bubbles.

Keep in mind that dry is the enemy of bubbles. When blowing bubbles on a table, spread some bubble mixture on the surface. If a child attempts to put a hand through a bubble wall, make sure that the hand is covered in the bubble liquid.

## What you will need:

- 8 litres water
- 750 ml dishwashing liquid, regular strength
- 125 ml glycerin (available at the drug store)

Simply stir all of the ingredients together in a large bucket. The bubble mixture can last for weeks as long as it is covered with a lid.

## Bubble Bookmarks

Place the basic bubble solution in three small glass jars. Add several drops of food colour (available at most drug stores) to each jar and stir until the desired colour is achieved. With a straw, have the child blow bubbles in one of the jars until the bubbles rise to the top of the jar. Place a strip of thick painting paper over the bubbles, allowing them to pop on the paper. Repeat with the remaining two jars. Allow the finished bookmark to dry. If desired, laminate or cover the bookmark in plastic and punch a hole at the top to place a string tassel through.

## Fantastic Bubble Blowers

Use a medium thickness, bendable wire or pipe cleaner from a craft store to create any fun shape. The key for young children to discover is that each shape must be closed in order to blow a bubble with. Don't forget to make a handle. Have children explore how bubbles vary with each different blower created.

## Bubble Walls And Windows

Tie a thin piece of string to the end of a dowel. Repeat by tying a second piece of string to the other side of the dowel. Take a second dowel and tie the remaining string ends to this second dowel. The result is a rectangle or square with two parallel sides of string and two of wood. Dowels, or thin wooden sticks, may be purchased at a craft store. The length of wood and string is variable and depends on how large a tub of bubbles is used. Dip the stick and string into the bubble solution and slowly lift the stick out to create a wall. A bubble wall becomes a window when a second person is able to place a hand or other object through the bubble. Remember that dry is the enemy of bubbles!

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Science@TheStork.ch