

learn by doing *from the Westchester Children's Museum*

# Bubbleology

Everyone knows that children love bubbles. Bubbles are made of soap and water, cost less than a dollar and provide hours of fun. Bubbles suggest whimsy, merriment and frivolity.

But can playing with bubbles be educational? In short – yes!

Bubbles can teach us about surface tension, geometry and buoyancy. In fact, the term bubbleology refers to “the science of bubbles.” Next time you get out the bubbles, try one of these experiments:

## Exploring Bubbles

You will need...

- **Bubble solution** (made by mixing eight tablespoons of dish soap with a quart of water; higher priced dish soaps work best)
- **Wand** (a wand can be made with – pipe cleaners, plastic containers with the bottom cut out, hangers, paper towel tubes, straws, any item with an opening where a soap film can form)
- **Shallow tray**



Then pour some bubble solution in a tray and begin to experiment using different types of wands...  
Blow a small bubble, a big bubble, blow lots of bubbles!

- Which type of wand works best, why?
- Is it easier to blow a bubble using a long wide tube, such as a paper towel tube, or a short narrow tube, such as a straw?
- Use a pipe cleaner to make a rectangular or triangular shape. What shape is the bubble?



## And Explore Surface Tension with Bubbles

Use a wand to blow a bubble...

- Can you put your finger through the bubble?
- Touch a bubble with a wet finger and then a dry one. What happens when you use the dry finger?
- Try again using a wet and dry straw. You will discover that dry objects will make a bubble break. Soap films are very thin and when a dry object touches a bubble, the soap film will tend to stick to that object, putting a strain on the surface tension and the bubble will burst.

Note: Bubbles are good clean fun...but messy!  
Cover the surfaces and floor in the areas that you are using, or better yet,  
experiment in a place you don't mind getting wet - maybe outside.