# Bubble Mania: The Un-Poppable Bubble
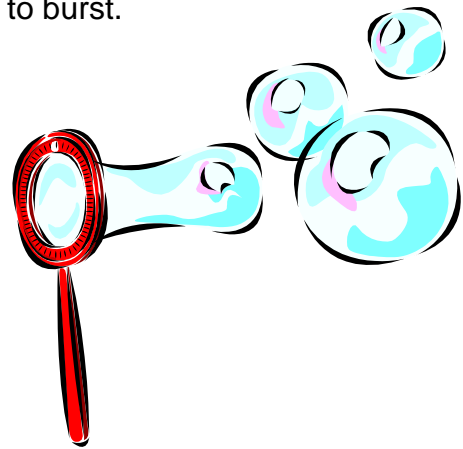
## Goals of this lesson:

Youth will:

- Create their own wand and solution to make bubbles.
- Learn why giving liquid edges to scissors create a barrier that will allow them to become a part of the bubble.
- Observe bubble movement, shape, and color.

## What You Need to Know:

Time and Time again, science has shown us that first impressions can't be trusted. Consider the bubble: At first glance, it looks like the most fragile thing in the world. Yet under the right circumstances, it can be surprising difficult if not impossible to burst.

## Materials Needed:

- 8 1/2 x 11 inch sheet of card stock
- Tape
- Scissors with Adult Supervision and Assistants
- Bowl and spoon
- 1 cup plus 2 tablespoons water
- 2 tablespoons dishwashing liquid
- 2 tablespoons glycerin
- Plastic drinking straw

## Learning Activity:

1. Create a cone shape out of your sheet of card stock. (using tape)
2. Create a bubble mixture by mixing together your water, dishwashing soap, and glycerin.
3. Dip the wide end of the cone into the bubble solution and hold it there for a few seconds to absorb the mixture. Tap off the excess liquid and then quickly dip the cone again. With the cone pointed toward the ground, gently blow a large bubble. Leave it attached to the end of the cone using our finger to cover the cone's tip.
4. Now stick the point of the scissors into the bubble. It should pop instantly. Try again, but this time first dip the scissors points into the bubble solution. They should pass right through the bubble's "delicate" skin without it breaking.

There are 2 main ways a bubble pops. The first is when it's watery wall evaporates (adding some glycerin to the bubble solution slows down this process). The second is when something dry tears a hole in the wall, as when you poke it with the bare points of a pair of scissors. Dipping the blades into the bubble solution beforehand however, gives them liquid edges, and the bubble wall simply flows around them.

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