Bubble Trouble

Science in the home!

'Kitchen Science' is a collection of activities that people can do at home, with everyday ingredients available from the supermarket or chemist. We want to show that science does not have to be done in a laboratory, by people in white coats. Instead, science is involved in all aspects of people's lives.

Create a bubble snake!

You will need

- Washing up liquid
- a sock
- a mixing bowl
- Water
- elastic band
- empty plastic bottles

What to do:

1. carefully cut the plastic bottle in half (you will use the top end for this experiment)
2. Place the sock over the cut end of the bottle, and secure it with an elastic band
3. Mix the washing liquid with the water (one part washing liquid to one part water)
4. Dip your sock bottle into the liquid
5. Remove the excess liquid and blow into the neck of the bottle.

Follow this clip on Youtube (courtesy of ITV This Morning) for more ideas about how to create your own science experiments at home:
https://youtu.be/Bhp_jSAV5Dg

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Notes:

- This investigation is messy, so have cleaning materials available including absorbent cloths, towels and aprons.
- Bubble mix is very dependent on the outside environment (temperature, humidity, etc.).
- Although it is always tempting to run messy bubble activities outside, remember that bubbles do not like air that is too dry, or too much wind. On hot days mist the air with a plant water mister to help the bubbles last longer. In winter try placing a couple of bowls of water near radiators for an hour before you start the activity. And never attempt to blow bubbles in an air-conditioned room.

The Science:

A water molecule is made up of hydrogen and oxygen atoms that are attracted to each other. This attraction also causes surface tension, an attractive force that occurs on the surface of liquids. This means that if you try and blow a bubble using just water it will not work. When soap molecules (from washing-up liquid) are added to water this reduces the surface tension and enables you to blow bubbles. Bubbles will always form a sphere because this shape has the smallest surface area for the volume of air in the bubble, and so takes the least energy to form.

Deepen your learning:

- Which blower makes the best bubble?
- Which mixture makes this bubble the best?
- Can you make bubbles from just water?
- Do you think you could make the bubbles even better? How?
- Did you change anything that you were doing along the way? Why?
- Do you think there are other ingredients that you would want to try?
- What else could you use to blow a bubble?

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