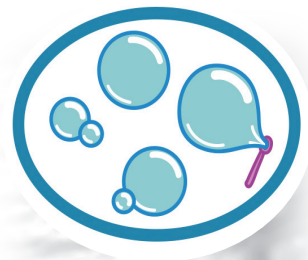


Bubbles



Instructor Required

1. Define the following terms:
 - a. Soap bubble
 - b. Hydrophilic
 - c. Hydrophobic
 - d. Surface tension
 - e. Minimum energy
 - f. Minimum surface
2. How do the following weather factors affect the life of a bubble and how?
 - a. Humidity
 - b. Temperature
 - c. Wind
 - d. Precipitation
3. Make a model or drawing of a soap molecule. Show why the molecule is either hydrophilic or hydrophobic.
4. List safety rules about bubble blowing
5. Surface Tension
 - a. Explain what causes surface tension.
 - b. Conduct an experiment to determine if soapy water has higher or lower surface tension.
6. Wands:
 - a. Explain what types of material work best for the loop of large bubble wands.
 - b. Construct a wand to make large bubbles.
7. Components:
 - a. What water quality works best for bubbles? What impurities negatively affect bubble quality?
 - b. What soaps are best for bubble solution?
 - c. What is the purpose of glycerin or corn syrup in a solution?
 - d. Learn a formula for a bubble solution and mix a batch of bubble solution.
 - e. Evaluate your bubble solution and make a better recipe if necessary
8. Experiments:
 - a. Show what happens when bubbles meet bubbles? How does this illustrate minimal energy and minimal surface?
 - b. What causes colors in a bubble? Demonstrate constructive and destructive interference.
 - c. What shape are bubbles and why? Do an experiment to illustrate the answer.

Skill Level 2

New in 2015