

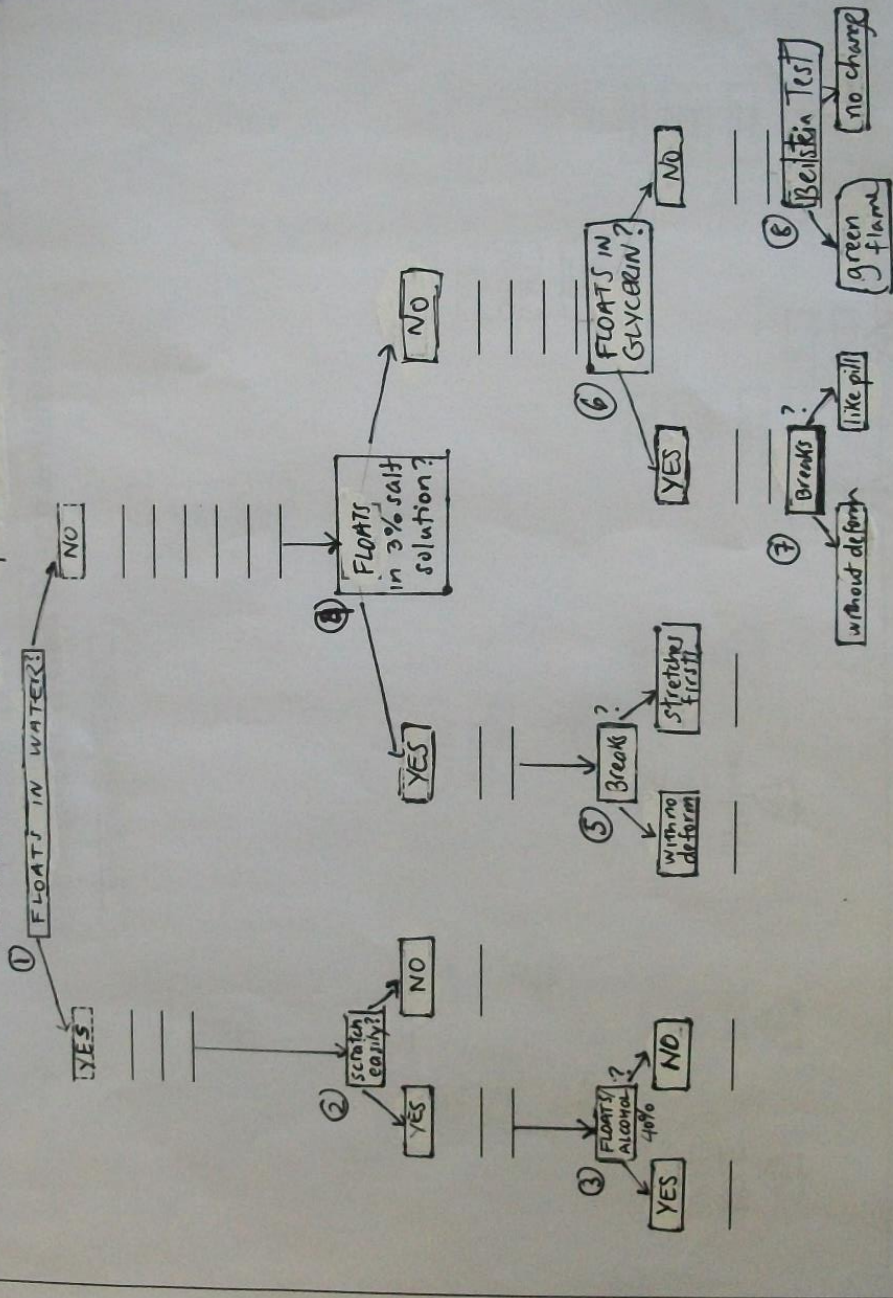
**ST Lab 3.6**  
**Identification of Plastics**

**Materials:** 9 different color-coded samples of plastic representing 9 types (white, dark blue, light blue, beige, yellow, orange, red, transparent, green);  
Water; 3.5% salt solution; 40% ethanol; glycerin (students need about 100 ml of each solution); 3 cm of thick copper wire; beakers wide enough for floating test tongs; Bunsen burner

**Purpose:** to identify 9 different plastics, using physical and chemical characteristic tests

1. Test to see which 3 of the 9 plastic samples float in water. Record your results in the flow chart.
2. In the flow chart, identify which 2 of the 3 samples that floated in water scratch easily.
3. The two samples that scratch easily should be tested in 40% alcohol. Which one floats and which one does not? Answer in the flow chart.
4. The ones that did not float in water should be tested in salt water. Which 4 do not float. Which 2 do? Answer in the flow chart.
5. Of the pair that float from step (4), identify which one breaks without deforming, and which one breaks in a stretching manner. Answer in the flow chart.
6. Of the four pieces that did NOT float from step (4), identify which pair floats in glycerin. Answer in the flow chart.
7. Of the pair that does float in glycerin, which one breaks like a pill? Answer in the flow chart.
8. The two that did not float in step (6) with glycerin, should be subjected to the Beilstein test:
  - (a) Using tongs, hold a copper wire in a Bunsen flame until the copper metal changes color.
  - (b) Then quickly sink it into the plastic piece.
  - (c) Place the wire back into the flame. Does it turn green? Answer in the flow chart.
9. Match the colors with the type of plastic shown in the first chart.

# Identification of 9 plastics



Use the two above charts to link the colors to the type of plastic. Use the # and letters!

A) white \_\_\_\_\_  
 B) dark blue \_\_\_\_\_  
 C) light blue \_\_\_\_\_ E) yellow \_\_\_\_\_ G) red \_\_\_\_\_ I) green \_\_\_\_\_  
 D) beige \_\_\_\_\_ F) orange \_\_\_\_\_ H) transparent \_\_\_\_\_



