

## EXPLORER ACTIVITY SHEET

### You Will Need

- a bowl of water
- a large tray
- 2 or 4 plastic drinking straws
- a piece of kite string that is about 40 inches long

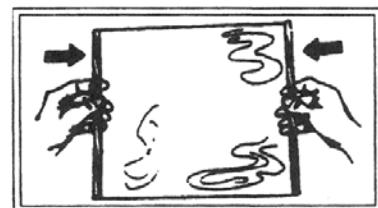
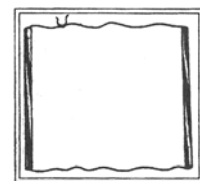
### Blowing Bubbles

1. Can you blow a bubble in water? Try it. Place one end of a straw beneath the surface of water in a bowl. Blow gently through the other end of the straw. What happens? How long do the bubbles last? What do you think would happen if you tried this with soapy water? Let's find out.
2. Pour enough soap solution into a flat tray so that it would completely cover a straw. Then take a clean straw and place one end of it beneath the surface of the soapy water. Blow gently through the other end. What happens? How are the bubbles the same as the ones you blew with just plain water? How are they different?



### Making a Bubble Launcher

1. Cut a piece of string so that it is about 40 inches long. Thread the end of your string through two straws (reuse the ones you worked with before or use new ones), and then tie the two ends together into a knot. The straws and string should form a rectangle as shown in the diagrams.
2. This activity can get messy, so it is a good idea to do it outdoors. It works best when there are no strong breezes and the weather is warm. If you are doing this activity indoors, spread lots of newspapers on the table and on the floor to help catch spills and to prevent uncarpeted floors from getting dangerously slippery from soapy water.



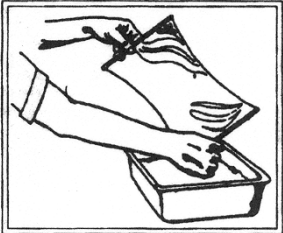
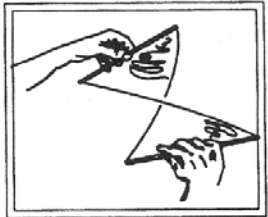


## MAKING BUBBLES

*Summer Science Fun*

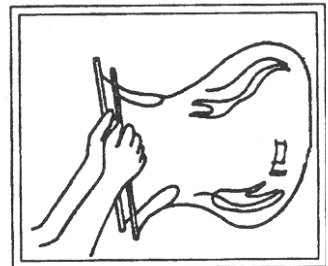
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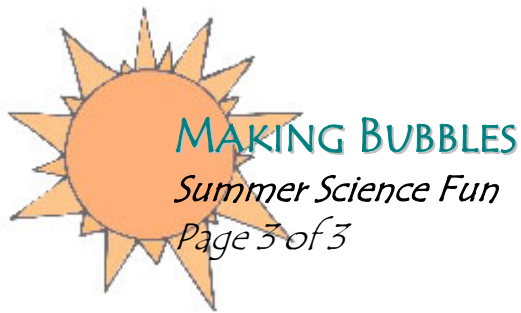
### Exploring a Soap Film

1. Dip your string-and-straw frame into the soap solution. Let it soak for a few minutes. Now hold the straws close enough together so that the string is loose. Pull your frame out carefully. It will help if you tip the straws, so that the extra soap solution inside the frame and the straws drips back into the tray.
2. Hold up your frame so that it makes a taut rectangle with the straws vertical. Move the two straws together slowly. What happens to the bottom string? Does the weight of the soap film push the string down? Can you feel the string move?
3. Hold your frame up so that you have a large soap film like a windowpane, but don't pull the string too tight. Find a partner. Have your partner pull gently on the bottom string with soapy wet fingers. What happens when your partner lets go of the string? Then have your partner hold the soap film frame while you pull on the string. How does it feel when you pull on the string? What other experiments can you try with this soap film?
4. Twist the two straws in different directions to see what happens to the soap film. What different shapes can you create?

### Launching Bubbles

1. If your soap film has broken or has dried out, dip your string-and-straw frame, or your bubble launcher, into the soap solution again. Bring it out of the liquid carefully. Hold the frame up and wave it through the air to make a giant bubble! Don't get discouraged if you don't make a bubble on the first try. You will probably need to practice. Timing is important in making bubbles successfully. When you wave your





soap film through the air, it may help if you bring the two straws back together at the end of your swing to close off your bubble. Or you may be able to close off your bubble by giving the frame a sudden swirl at the end of your wave. Practice several techniques until you find one that works. Be patient and don't give up! The big, beautiful bubbles are worth it!

### Communicating Science

After you have launched some bubbles yourself, stop and watch others. Watch what happens to the soap film as it fills with air. What kind of shapes does it usually make? When the bubbles pop, do they pop on the top or the bottom? Write your observations, questions, and explanations in your science journal. Share your journal with others and compare their observations and explorations with your own. Can you answer one another's questions? Where would you find the answers? Are there more explorations you could do to try to get answers?