Effect of Bubble Solution on Bubble Size

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**Brief:** This article was inspired by the Rose Park Math and Science Magnet Middle Prep, 5th grade STEM Class. During “Bubbleology” week students learned about a variety of topics, such as surface tension, dilutions, and the effect of temperature on molecules, through soap bubbles.

**Introduction**

Bubbles are made of soap and water.

**Hypothesis**

Does the amount of soap in the solution could affect the size of the bubble.

**Materials and Methods**

Ruler
Straws
Soap solutions
10% dish detergent liquid  5% Dish detergent liquid  2.5% dish detergent liquid
Soap solutions were created by taking the strongest solution, 10%, of soap and adding as much water to make it half the amount of soap. Then to that solution enough water was added as to make a 2.5% solution. The surface to be used was wet because we learned that bubbles like wet surfaces. Then we blew a bubble of each solution for 5 seconds and then measured their size.

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLE BUBBLE SOLUTION</th>
<th>Bubble Size Trial 1 (cm)</th>
<th>Bubble Size Trial 2 (cm)</th>
<th>Bubble Size Trial 3 (cm)</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>8 cm</td>
<td>6.5 cm</td>
<td>11 cm</td>
<td>8.5 cm</td>
</tr>
<tr>
<td>5%</td>
<td>6 cm</td>
<td>5 cm</td>
<td>5 cm</td>
<td>5.3 cm</td>
</tr>
<tr>
<td>2.5%</td>
<td>Bubble popped</td>
<td>4.5 cm</td>
<td>6 cm</td>
<td>5.3 cm</td>
</tr>
</tbody>
</table>

**Conclusion**

Bubbles blown with the 10% stock solution were bigger. They were harder to blow larger and last with the other two solutions. Less soap made smaller or weaker bubbles. In the future we would create an even stronger soap solution.

**Acknowledgements:** Laurel gives thanks to Rose Park.