Purpose:
Observe how temperature affects the density of air in a closed system.

Procedure:
1. Blow up a balloon and tie the end to prevent air from escaping.
2. Using a measuring tape, measure the circumference of the balloon. Record this measurement as resting size.
3. Place the balloon in hot water for ten minutes.
4. Remove the balloon and measure the circumference. Record this measurement in the data table.
5. Now place the balloon in ice water for ten minutes.
6. Remove the balloon and measure the circumference. Record this measurement in your data table.

Data:

<table>
<thead>
<tr>
<th>Description of Balloon:</th>
<th>Balloon Circumference (cm):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting (control)</td>
<td></td>
</tr>
<tr>
<td>After hot water</td>
<td></td>
</tr>
<tr>
<td>After cold water</td>
<td></td>
</tr>
</tbody>
</table>

Analysis
1. What happened to the air molecules to make the circumference increase? To make it decrease?

2. In which balloon were the air molecules the most dense? The least dense? Explain your answers.