

Balloon Bath

Procedure

1. **Collaborate** Work with a partner. Record your observations in the chart below.

| Balloon | Measurement (cm) |
|------------------------|------------------|
| A original measurement | |
| A after cooling | |
| B original measurement | |
| B after heating | |

2. **Measure** Draw a circle around the widest part of each balloon. Write *A* on one balloon and *B* on the other. Measure around each balloon on the lines you made. You can use a string to measure if you need to. Record the measurements.
3. **Experiment** Half fill a dishpan with water and add ice cubes. Place balloon *A* in the ice water. Gently push the balloon into the water with a ruler.
4. **Record Data** Hold the balloon under the ice water for 3 minutes. Then remove it and quickly measure the distance around the balloon as you did in step 2. Record your measurement.
5. **Use Variables** Dump out the ice water and warm the dishpan with warm tap water. Half fill the dishpan with warm tap water.
6. **Compare** Repeat step 4 using warm water and balloon *B*.

Conclusion

Write the answers to the questions below.

1. **Analyze Data** How did the balloon change when it was cooled?
When it was heated?

2. **Hypothesize** Suggest a reason why the balloons changed size.

Investigate More!

Research Jacques Charles was a French scientist and hot-air balloonist in the late 1700s. Find out about his observations of how temperature affects the volume of a gas.

