



Concept:

Demonstrates Charles' Law which states that, "At constant pressure, the volume of a given mass of an ideal gas increases or decreases by the same factor as its temperature (in Kelvin) increases or decreases." ¹

Procedure:

1. Pour enough liquid nitrogen in the beaker to allow you to submerge at least 1/3 of the expanded balloon.
2. Submerge the balloon in liquid nitrogen using the provided tongs and gloves and watch it shrink.
3. Take balloon out of liquid nitrogen and set aside to watch it expand back to its original size.

Notes and Extras:

- [Demo Video Link](#)
- [Gas Molecules Simulation Java Applet](#)
- [Charles's Law Flash Simulation](#)
- ¹ [Charles' Law on Wikipedia](#)

Equipment:

- Balloon
- 2000 ml Beaker
- Liquid Nitrogen
- Dewar
- Metal Tongs
- Insulating Gloves