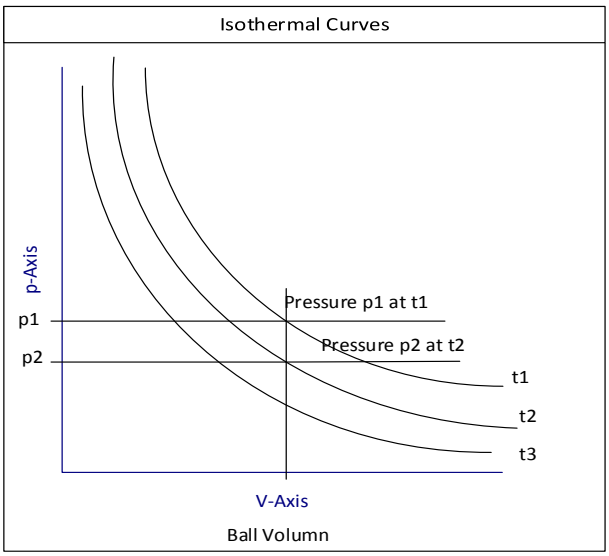
Boyle's Law:

pV = C;	C is constant when the temperature and mass are constant.
p	represents the absolute pressure
V	the volume

The relation between the pressure and volume of an ideal gas at constant temperature is shown in the isothermal curves of the graph, where p is plotted vertically and V horizontally. The curves are equilaterally hyperbolic and asymptotic to the p- and V- axis. (Examples of t curves not to scale)



Each example isothermal curve corresponds to a different temperature (t1 > t2 > t3). For each constant temperature (t), pV = C, along the isothermal curve. The constant is larger the higher the temperature. The constant is not important in this example.

Example: If a football with volume V is inflated at temperature t1, using isothermal curve t1, at the point (V,p1) the pressure p1 can be taken along the p-axis. Next by moving to the t2 isothermal curve and finding the point where V intersects with isothermal curve t2 the pressure p2 can be observed along the p-axis, and p2 will be less than p1.

This is the simplest pictorial explanation why there will be less pressure in the football ball after being exposed for a period of time to a lower temperature. (wiki Thermal Behavior of Gases)

A Ball or Mason jar lid will seal when the high temperature of jelly cools down to room temperature. Car tire pressure is lower when exposed to colder temperature.

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