

# [N5 will increase. the kelvin scale changes](https://assignbuster.com/n5-will-increase-the-kelvin-scale-changes/)

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N5Physics assignment Nathan Harbinson AimToinvestigate the correlation between the pressure and volume in a gas when themass is constant.

In order to find this we would need to alter either pressureor volume. UnderlyingphysicsGases arebuilt up of several particles. These particles are in a state of constantmotion.

Because of this, they collide with the walls of their container. Thesecollisions create pressure. This means that when the volume is altered thepressure will also change.

Pressure canbe measured using    P = pressure PaF = force NA = area m2 Using this information we know that when areais decreased the pressure will increase and when force is increased thepressure will increase. The Kelvin scalechanges 0 degrees Celsius into -273 degrees kelvin. This theory allows us toknow that the volume of a gas is 0 at -273K this is useful as it allows us towork out the volume of a gas using temperature.   MethodA fixed masswas trapped in tube with oil at the bottom.

Along the tube was a scale showingthe volume inside. Then using a foot pump we decreased the volume and took ameasurement of the pressure inside the tube using a pressure gauge. We did thisfor five values of volume and wrote a table of results.  Air Volume cm3 Pressure 1   (kPa) Pressure 2    (kPa) Pressure 3   (kPa)   Average Pressure (kPa) 1/v   10 256 253 259 259 0. 1 15 180 180 180 180 0.

07 20 148 130 130 130 0. 05 25 109 100 91 100 0. 04 30 80 83 77 80 0. 03  Using theseresults we plotted and drew a straight line graph. See next page for second source graph.                                                     AnalysisThis graphshows that when volume decrease the pressure increase and vice-versa.

Thiswould suggest that the pressure and volume in a fixed mass are inverselyproportional. My second Source is also a straight line graph going through theorigin. Its shows us that volume and pressure are also inversely proportional. ConclusionThe aim ofmy experiment was to find out if there was a correlation between Volume andpressure in a fixed mass. My graph and experiment results show that there is adefinite correlation between the two. EvaluationIn order tomake my experiment as accurate as possible we took three tables of results forpressure. This in turn meant that we used an average when plotting our results.

This meant our results would be accurate as we would have more values to co-operate.