**Graphical user interface

Description automatically generated with medium confidenceMolecules and Matter** (Phys)

RAG your understanding.

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|  | **Start of Topic** | **End of Topic** | **Revised** |
| **Required Practical** - I can investigate, using appropriate apparatus, the densities of regular and irregular solid objects and liquids, making and recording appropriate measurements. |  |  |  |
| P.3.1.1.a - I can calculate the density of a material by recalling and applying the equation:  ρ = m/V |  |  |  |
| P.3.1.1.b - I can recognise/draw simple diagrams to model the difference between solids, liquids and gases. |  |  |  |
| P.3.1.1.c - I can use the particle model to explain the properties of different states of matter, and differences in the density of materials. |  |  |  |
| P.3.1.2.a - I can recall and describe the names of the processes by which substances change state. |  |  |  |
| P.3.1.2.b - I can use the particle model to explain why a change of state is reversible and affects the properties of a substance, but not its mass. |  |  |  |
| P.3.2.1.a - I can state that the internal energy of a system is stored in the atoms and molecules that make up the system. |  |  |  |
| P.3.2.1.b - I can explain that internal energy is the total kinetic and potential energy of all the particles in a system, and that heating increases the energy of these particles, either raising the temperature of the substance, or changing its state. |  |  |  |
| P.3.3.1.a - I can explain that the molecules of a gas are in constant random motion, and that the higher the temperature of a gas, the greater the particles’ average kinetic energy. |  |  |  |
| P.3.3.1.b - I can explain, with reference to the particle model, the effect of changing the temperature of a gas held at constant volume on its pressure. |  |  |  |
| ***P.3.3.2.a - (Physics only) I can explain, with reference to the particle model, how increasing the volume in which a gas is contained can lead to a decrease in pressure when the temperature is constant.*** |  |  |  |
| ***P.3.3.2.b - (Physics only) I can calculate the pressure for a fixed mass of gas held at a constant temperature by applying, but not recalling, the equation:***  ***p V = constant*** |  |  |  |
| ***P.3.3.3.a - (HT Physics only) I can explain how work done on an enclosed gas can lead to an increase in the temperature of the gas, as in a bicycle pump.*** |  |  |  |