# Yr13 Physics – Unit 6.2

**MAGHULL HIGH SCHOOL – CURRICULUM MAP**

| | **Sequence** | | |
|---|---|---|---|
| **TOPIC (S)**<br>**Thermal Physics** | 1. Solids, Liquids and Gases<br>2. Brownian Motion<br>3. Thermal Energy Transfer<br>4. Specific Heat Capacity | 5. Specific Latent Heat<br>6. Ideal Gases<br>7. Boyle's law<br>8. Charles' Law | 9. Required practical 8<br>10. Molecular kinetic theory |
| **Knowledge & Skills development** | • Define internal energy and describe how it changes<br>• Describe energy changes during changes of state<br>• Calculate the energies to change the temperature or the state of a substance<br>• Describe the experimental relationships between p V T and the mass of an ideal gas<br>• Explain how to experimentally determine a value for absolute zero<br>• Use the kelvin temperature scale | • Use of the ideal gas equation<br>• Describe the assumptions made in the description of ideal gases using equations<br>• Use molar mass in calculations<br>• Knowledge of Brownian motion as evidence of the existence of atoms<br>• Appreciation that for an ideal gas internal energy is kinetic energy of the atoms | |
| **Assessment / Feedback Opportunities** | Exam questions – teacher assessed | Exam questions – self assessed | Extended writing task – teacher assessed | Deep marking of required practical in lab books | Topic assessment |
| **Cultural Capital** | • | | | | |
| **SMSC / Promoting British Values** (Democracy, Liberty, Rule of Law, Tolerance & Respect) | •<br>• | | | | |
| **Reading opportunities** | • Recommended Read: Absolute Zero and the Conquest of Cold by Tom Shachtman | | | | |
| **Key Vocabulary** | Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error<br><br>Specific, Capacity, Transfer, Potential, Kinetic, Internal, Latent, Assumption, Theory, Molecular, Molar, Heat, Temperature | | | | |
| **Digital Literacy** | The use of excel to plot graphs and analyse data<br>MSOffice365 apps including SharePoint | | | | |
| **Cross-Curricular Links** | Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators | | | | |
| **Careers** | Plumbing and Gas Engineers, Thermal Physicists | | | | |