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| **What will we be learning?**  **Capacitance**  Acquisition with solid fill | **Why this? Why now?**  Previous Learning  Charge and current, Energy, power and resistance, Electrical Circuits, Stars, Cosmology, Newton’s Laws of Motion and Momentum, Gravitational Fields  Future Learning  Electric Fields, Magnetic Fields.  Enquiry Processes  Identify Variables, Collect Data, Present Data, Analyse Patterns, Manipulate Equations, Draw Conclusions, Justify opinions and conclusions. | **Key Words:**  Capacitor  Capacitance  Dielectric  Farad  Exponential decay  Logarithms  Time constant  Smoothing |
| **What will we learn?**  Charging and discharging of capacitors in terms of the flow of electrons  The unit of the Farad  Calculating capacitance in series and parallel  Investigation of circuits containing capacitors  P.D. – charge graphs for capacitors  Energy stored by capacitors  Charging a capacitor through a resistor  Applying capacitance equations for charging and discharging  **Misconceptions in this topic**   * The abbreviation for Capacitance is C which can be confused with charge which is Q * The units for capacitance are Farads (F) but the units for Coulombs (charge) are C!! | |
| **What opportunities are there for wider study?**  Careers – Electrical Engineer, Electronic Engineer, Aviation, Defence Specialist, Astrophysicist, Theoretical Physicist, Space Engineer, Rocket Scientist, Astronaut, Satellite Designer.  STE(A)M – For details of courses and opportunities look at:  <https://highcliffe.sharepoint.com/sites/LearnSTEM> | |
| **How will I be assessed?**  End of Topic Assessment, A2 Paper Assessments | |