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**LANGDON PARK SIXTH FORM**

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| **Subject: Physics** | **Year: Y13** | **Topic: 3.7.3 Electric Field** |

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| ***What and Why*** “What is Coulomb’s law? How can we describe an electric field in a radial and uniform field? Why does the field strength follow an inverse square law relationship? James Clark Maxwell investigated the relationship between electric and magnetic fields” |

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| **Key terms**  Charge  Conductor  Coulomb’s law | Electric field strength  Electric potential  Electron  Equipotential | Insulator  Lines of force  Parallel plate  Permittivity in free space | Potential difference  Potential gradient  Radial field  Uniform field |

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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Home learning** | **Extension – Cultural Capital and Reading** |
| **3.7.3.1:** I can define Coulomb’s law.  Comparison of magnitude of gravitational and electrostatic forces between subatomic particles.  **3.7.3.2:** To draw field lines around charges in radial and between parallel plates.  I can define the electric field strength  I can derive the term  I can describe the trajectory of moving charged particle entering a uniform electric field initially at right angles.  **3.7.3.3:**  I Understanding of definition of absolute electric potential and the work done in a moving charge.  I can graphically represent with, determine the potential gradient.  I can define and draw equipotential around regular and irregular charges. | Use the Oxford AQA A2 textbook p.85 to 105. Look at other textbooks in the library for alternative ideas, explanations and diagrams.  **YouTube Videos:**  (1) [Electric Charge and Electric Fields](https://www.youtube.com/watch?v=VFbyDCG_j18)  (2) [EQUIPOTENTIAL SURFACES](https://www.youtube.com/watch?v=mJxAlNAiTds)    **Websites:**  <https://phet.colorado.edu/sims/html/coulombs-law/latest/coulombs-law_en.html>  <https://courses.lumenlearning.com/physics/chapter/18-5-electric-field-lines-multiple-charges/> | **Practicals:**  (1) Demonstration: Van der Graaf generator  (2) Demonstration: Electric field lines between parallel plates  **Assessment**:  Minitest on Electric Fields (3rd week Oct)  Multiple choice test on Gravitational and Electric Fields (4th week Oct) | (1) Review the key terms and definitions  (2) Produce a mind maps of the equations used in Gravitation and Electric fields and their analogies  Make notes on each topic and complete the exam style practice questions | (1) Find out about the work of  James Clark Maxwell  (2) Research Tesla coils  **Reading:**  The Man Who Changed  Everything: The Life of James  Clerk Maxwell  By Basil Mahon |

**Pre-assessment content review**

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| I feel secure in | I need to focus on | My action plan |

**Pre-assessment skills review**

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| I feel secure in | I need to focus on | My action plan |

**Post-assessment review**

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| Weaknesses in content knowledge | Skills I need to focus on | My action plan |
| Retest / review – teacher and student comment | | |

**Revision planning**

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| Spec point | Notes complete | Revision materials | Past paper Qs | Timed conditions |
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