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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**ChargeConductorCoulomb’s law | Electric field strengthElectric potentialElectronEquipotential | InsulatorLines of forceParallel platePermittivity in free space | Potential differencePotential gradientRadial fieldUniform 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 $Fd=Q∆V$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 $E and V$with$ r$, 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 analogiesMake 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 ChangedEverything: The Life of JamesClerk MaxwellBy 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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