

TERM 1

DURATION	CHAPTER	TOPICS	PRACTICALS
WEEK 1 – 2	11.1 – 11.2	ELECTROSTATICS <ul style="list-style-type: none">▪ Charge (friction, attraction and repulsion, polythene and cellulose acetate rod)▪ Charge by induction▪ Lightning conductor▪ Electric fields and forces (point charges, parallel plates)	
WEEK 3 - 8	12.1 – 12.10	CURRENT ELECTRICITY <ul style="list-style-type: none">▪ Define static charge and electric current▪ Conventional current and electron current flow▪ Conductors and insulators▪ Circuit diagrams▪ Series and parallel connection of conductors▪ Measuring electric currents and charge▪ Kirchhoff first law▪ Potential difference and voltage▪ Resistance (ohms law, parallel and series, types of resistors)▪ Conductor graphs▪ Circuit calculations▪ Ammeter and voltmeter▪ Resistivity	Conductivity of solids and liquids Ohm law/finding resistance Resistivity of a wire Carbon resistors Component conducts in both directions (diode)
WEEK 8	13.1 – 13.3	ELECTRONS, IONS AND CELLS <ul style="list-style-type: none">▪ Cells and batteries (simple, dry and zinc-carbon)	
WEEK 9 - 11	14.1 – 4.3	MAGNETISM AND ELCTROMAGNTISM <ul style="list-style-type: none">▪ Magnets▪ Magnetic induction▪ Theory of magnetism▪ Magnetic fields and forces▪ Magnetic fields in wire and coils (solenoids)▪ Electromagnet (soft iron core, electric bell)▪ Electric currents in magnetic fields (Fleming Left Hand rule)▪ Electromagnetic induction (Lenz, Faraday, Fleming Right Hand rule)	Plotting magnet field I double if R double

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WEEK 11 - 12	15.1 – 15.7	MAGNETISM AND ELECTRICITY AT WORK <ul style="list-style-type: none"> ▪ Electromagnets for lifting ▪ Demagnetism ▪ Electric bells and relays ▪ Moving coil loud speaker ▪ Moving coil galvanometer ▪ Direct motor ▪ Dynamo / alternator ▪ Transformer (transferring electrical power) ▪ Electricity in the home (wire colour code, fuses, earth wires, fuses, breakers) ▪ Rectification ▪ Stability (neutral, unstable, stable) 	Demo: Electromagnetic forces Making transformer
WEEK 13 - 14	HANDOUTS	LOGIC GATES <ul style="list-style-type: none"> ▪ Symbols and truth tables ▪ Combination of logic gates and equivalences 	

TERM 2

DURATION	CHAPTER	TOPICS	PRACTICALS
WEEK 1 - 3	17.1 – 17.2	ATOMS <ul style="list-style-type: none">▪ Describing atoms (models of atoms)▪ Geiger and Marsden experiment▪ Particles building atoms (protons, electrons, neutrons)▪ Isotopes and atomic masses▪ Shell model and periodic table	
WEEK 4 - 5	18.1 – 18.3	RADIOACTIVITY <ul style="list-style-type: none">▪ Mention Marie Curie work▪ Three kinds of radiation (safety precautions, properties)▪ Cloud chamber, Geiger-Muller tube▪ Radioactive decay of atoms and half-life▪ Nuclear reactions and calculations▪ Radiation and humans▪ Radioisotopes▪ Nuclear energy (effect and cost on environment)	Model of radioactive decay (dice)
WEEK 6 - 7	9.1 – 9.2 10.5	WAVES <ul style="list-style-type: none">▪ Types of waves▪ Wave parameters▪ Reflection, refraction, diffraction▪ Superposition (constructive and destructive interference)▪ Sound waves (amplitude, loudness, propagation, ear)▪ Light waves (young experiment, diffraction grating)▪ Electromagnetic waves (electromagnetic spectrum, types of e.m. waves, source and use)	
WEEK 8-END		REVISION <ul style="list-style-type: none">▪ All topics covered in 4th and 5th form▪ Past paper under CXC conditions▪ Completing <u>ALL</u> SBA	Rebound of table tennis ball (project)