**Year 12 Physics 2023/2024**

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| First half term : September October half term  |
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|  **KS /KS** |  **MC /CB** |
| Content  | Date finished  | Content | Date finished |
| 3.4.2.1 Bulk properties of solids |  | 3.5.1.1 Basics of electricity |  |
| 3.4.2.2 The Young modulus |  | 3.5.1.2 Current–voltage characteristics |  |
| 3.1.1 Use of SI units and their prefixes |  | 3.5.1.3 Resistivity |  |
| 3.1.2 Limitation of physical measurements |  | 3.5.1.4 Circuits |  |
| 3.1.3 Estimation of physical quantities |  | 3.5.1.5 Potential divider |  |
| **Required Practical 4: Determination of the Young Modulus by a simple method.** |  | 3.5.1.6 Electromotive force and internal resistance |  |
|  |  | **Required practical 5: Determination of resistivity of a wire****using a micrometer, ammeter and voltmeter.** |  |
|  |  | **Required practical 6: Investigation of the emf and internal****resistance of electric cells and batteries by measuring the****variation of the terminal pd of the cell with current in it.** |  |
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|  **Second half term: All of this must be covered by Xmas:**  |
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| **KS/KS** |  **MC /CB** |
| 3.3.1.1 Progressive waves |  | 3.2.1.1 Constituents of the atom |  |
| 3.3.1.2 Longitudinal and transverse waves |  | 3.2.1.2 Stable and unstable nuclei |  |
| 3.3.1.3 Principle of superposition of waves and formation of stationary waves |  | Interleaving electricity  |  |
| **Required practical 1: Investigation into the variation of****the frequency of stationary waves on a string with length,****tension and mass per unit length of the string** |  | 3.2.1.3 Particles, antiparticles and photons |  |
| 3.3.2.1 Interference |  | 3.2.1.4 Particle interactions |  |
| 3.3.2.2 Diffraction |  | *3.2.1.5 Classification of particles* |  |
| Interleaving materials  |  | 3.2.1.6 Quarks and antiquarks |  |
|  |  | 3.2.1.7 Applications of conservation laws |  |
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| Third half term: All of this must be covered by Feb half term:  |
| *term*  |
| **KS/KS** | **CBO/MC**  |
| **Required practical 2: Investigation of interference effects****to include the Young’s slit experiment and interference by a****Diffraction grating.** |  | 3.4.1.1 Scalars and vectors |  |
| 3.3.2.3 Refraction at a plane surface |  | 3.4.1.2 Moments |  |
| Interleaving waves |  | 3.4.1.3 Motion along a straight line |  |
| Required practical 3: Determination of g by a freefall method |  | **Interleaving particles**  |  |
|  |  | 3.4.1.4 Projectile motion |  |
|  |  | *3.4.1.5 Newton’s laws of motion* |  |
|  |  | 3.4.1.6 Momentum |  |
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| Fourth half term : All of this must be covered by Easter:  |
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| **KS/KS** | **CBO/MC** |
| 3.2.2.1 The photoelectric effect |  | Interleaving statics |  |
| 3.2.2.2 Collisions of electrons with atoms |  | 3.4.1.7 Work, energy and power |  |
| 3.2.2.3 Energy levels and photon emission |  | 3.4.1.8 Conservation of energy |  |
| 3.2.2.4 Wave-particle duality |  |  |  |
| Interleaving optics  |  |  |  |
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| Fifth half term: All of this must be covered by: May half tern  |
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| KS/LBO | CBO/MC |
| 3.8.1.1 -5 Radioactivity |  | 3.6.1.1 Circular motion (A-level only) |  |
| Interleaving quantum  |  | 3.6.1.2 Simple harmonic motion (SHM) (A-level only) |  |
| Inverse square law required practical  |  | 3.6.1.3 Simple harmonic systems (A-level only) |  |
|  |  | 3.6.1.4 Forced vibrations and resonance (A-level only) |  |
|  |  | Required practical 7: Investigation into simple harmonic motion using a mass–spring system and a simple pendulum. |  |
|  |  | Interleaving mechanics  |  |
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| Final half term: All of this must be covered by Summer :  |
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| KS/KS | CBO/MC |
| Consolidate practical skills  | Consolidate practical skills  |
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