**Great Park Academy Science Curriculum Overview: Year 10 Physics**

In year 10 we are pragmatic and focus on preparing for GCSE exams at the end of year 11. Year 10 biology starts with a working scientifically investigation, as part of this, pupils revisit and enhance some fundamental scientific skills, developing these up to GCSE level. Biology lessons are used for these scientific skills necessary across biology, chemistry and physics and these are reviewed regularly as part of lessons, across the sciences, not least through the GCSE required practicals. Building on physics topics from Y7-9, the sequencing of topics and lessons in Y10 have been carefully crafted to support learning and long-term memory, as well as being pragmatic with regards to organizing content in preparation for the structure of GCSE exam papers.

| Year | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| 10 | 1. P3 – Particle model of matter<br>  <br>Key question of physics - How can energy be used to explain what things can do?<br>  <br>Key question of physics - From small things to big things, what is the structure of the Universe?<br><br>(a) Density<br>(b) Particle model & | 2. P2 - Electricity<br>  <br>Key question of physics - How can energy be used to explain what things can do?<br>  <br>Key question of physics - How do forces impact objects?<br><br>(a) Circuit diagrams.<br>(b) Current, potential difference and resistance.<br>(c) Electrical | 3. P4 – Atomic structure<br>  <br>Key question of physics - From small things to big things, what is the structure of the Universe?<br><br>(a) The structure of atoms.<br>(b) Radioactive hazards.<br>(c) Dangers of radioactivity.<br>(d) Uses of radioactivity in medicine (Separate physics only).<br>(e) Nuclear fission and | 4. P5 - Forces<br>  <br>Key question of physics - How do forces impact objects?<br><br>(a) Scalars and vectors.<br>(b) Contact and non-contact.<br>(c) Resultant forces and resolving forces.<br>(d) Weight.<br>(e) Work done.<br>(f) Forces & elasticity and Hooke's law.<br>(g) Moments (Separate physics only).<br>(h) Pressure (Separate physics only). | 4. P5 - Forces<br>  <br>Key question of physics - How do forces impact objects?<br><br>(a) Scalars and vectors.<br>(b) Contact and non-contact.<br>(c) Resultant forces and resolving forces.<br>(d) Weight.<br>(e) Work done.<br>(f) Forces & elasticity and Hooke's law.<br>(g) Moments (Separate physics only).<br>(h) Pressure (Separate physics only). | 5. P7 – Magnetism and electromagnetism<br>  <br>Key question of physics - How can energy be used to explain what things can do?<br>  <br>Key question of physics - How do forces impact objects?<br><br>(a) Magnets and magnetic fields.<br>(b) Electromagnetism.<br>(c) Motor effect.<br>(d) Magnetic flux density. |

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| | changes of state<br>(c) Internal energy<br>(d) Specific heat capacity<br>(e) Specific latent heat<br>(f) Gas pressure | component characteristics.<br>(d) Series and parallel circuits.<br>(e) DC, AC, wiring and plugs.<br>(f) Electrical power, appliances and efficiency.<br>(g) The National Grid.<br>(h) Charge and electric fields (Separate physics only). | fusion (Separate physics only). | (i) Speed, velocity and acceleration.<br>(j) Motion graphs.<br>(k) Newton's laws of motion.<br>(l) Forces and braking.<br>(m) Momentum. | (i) Speed, velocity and acceleration.<br>(j) Motion graphs.<br>(k) Newton's laws of motion.<br>(l) Forces and braking.<br>(m) Momentum. | (e) Induced potential.<br>(f) Transformers. |