Programme of study for Year 11 GCSE Physics

Autumn (1st term)	Autumn (2nd term)	Spring (1st term)	Spring (2nd Term)	Summer (1st term)	Summer (2nd term)
Topic: **Radioactivity end of topic assessment and feedback** **P10 Forces and motion** Lesson 1 – Force and acceleration Lesson 2 – Weight and terminal velocity Lesson 3 – Forces and braking Lesson 4 – Momentum Lesson 5 – Using conservation of momentum Lesson 6 – Impact forces Lesson 7 – Safety first Lesson 8 – Forces and elasticity **P13 Electromagnetism** Lesson 1 – Magnetic fields	Topic: **P13 Electromagnetism** (continued) Lesson 3 – Electromagnets in devices **Practical** Lesson 4 – The motor effect **Mock exams** Lesson 5 – The generator effect Lesson 6 – The alternating-current generator Lesson 7 - Transformers Lesson 8 – Transformers in action Lesson 9 – Consolidate/assess **P14 Light** Lesson 1 – Reflection of light	Topic: **P 16 Space** Lesson 1 – Formation of the Solar System Lesson 2 – The life history of a star Lesson 3 – Planets, satellites, and orbits Lesson 4 - The expanding universe Lesson 5 - The beginning and future of the Universe Lesson 6 – Space - Consolidate/assess **End of chapter assessment** **Revision sequence of learning TBC**	Topic: Revision for GCSE Physics exams. Skills(students should be able to do): AO1: Demonstrate knowledge and understanding of: 1) scientific ideas 2) scientific techniques and procedures AO2: Apply knowledge and understanding of: 1) scientific ideas 2) scientific enquiry, techniques and procedures. AO3: Analyse information and ideas to: 1a) interpret 1b) evaluate 2a) make judgements 2b) draw conclusions 3a) develop experimental procedures 3b) improve experimental procedures	Topic: Revision for GCSE Physics exams. Skills(students should be able to do): AO1: Demonstrate knowledge and understanding of: 1) scientific ideas 2) scientific techniques and procedures AO2: Apply knowledge and understanding of: 1) scientific ideas 2) scientific enquiry, techniques and procedures. AO3: Analyse information and ideas to: 1a) interpret 1b) evaluate 2a) make judgements 2b) draw conclusions 3a) develop experimental procedures 3b) improve experimental procedures	Topic: Revision for GCSE Physics exams.

Lesson 2 – Magnetic fields of electric currents	Lesson 2 - Refraction of light Lesson 3 - Light and Colour Lesson 4 – Lenses Lesson 5 - Using lenses Lesson 6 - Consolidate/assess				

Skills (students should be able to do): AO1: Demonstrate knowledge and understanding of: 1) scientific ideas 2) scientific techniques and procedures	Skills (students should be able to do): AO3: Analyse information and ideas to: 1a) interpret 1b) evaluate 2a) make judgements 2b) draw conclusions 3a) develop experimental procedures 3b) improve experimental procedures	Skills (students should be able to do): AO2: Apply knowledge and understanding of: 1) scientific ideas 2) scientific enquiry, techniques and procedures.			

Building understanding: Rationale / breakdown for your sequence of lessons:

The inclusion of "The electromagnetic spectrum" provides students with a broader understanding of the various types of electromagnetic waves and their applications in different areas of science and technology.

In physics, the topic sequence continues with "Forces in balance," which introduces students to the concept of forces and their equilibrium. This topic lays the foundation for understanding the principles of motion and force that follow. This builds on their knowledge from KS3 on the big idea of forces.
The subsequent topic, "Motion," allows students to explore the kinematics of objects, including the study of velocity, acceleration, and forces acting on moving objects. This topic provides a solid understanding of the fundamental concepts of physics.

Moving on to "Force and motion," then “force and pressure” students delve into Newton's laws of motion and the relationships between forces, mass, and acceleration. This topic allows students to apply their understanding of forces and motion to real-world scenarios.

Reading / High Quality Text:

Teachers will set home learning using lesson materials. Some of these will be assessed. This will be indicated.

Reading / literacy:

Students are encouraged to prior reading on topics. In lessons students are taught how to construct answers through use of writing frames and exemplar answers where extended writing is required and command words and keywords that are relevant to the topic are consistently assessed in lessons through questioning and written question practice.

Numeracy:

- Recognise and use expressions in decimal form: Recognise and use expressions in standard form; Use ratios, fractions and percentages; Make

estimates of the results of simple calculations

- Handling data: Use an appropriate number of significant figures; Find arithmetic means; Construct and interpret frequency tables and diagrams, bar charts and histograms; Make order of magnitude calculations
- Algebra: Understand and use the symbols: =, <>, >, ∝ , ~ ;Change the subject of an equation; Substitute numerical values into algebraic equations using appropriate units for physical quantities
- Graphs: Translate information between graphical and numeric form; Understand that y = mx + c represents a linear relationship; Plot two variables from experimental or other data; Determine the slope and intercept of a linear graph; Draw and use the slope of a tangent to a curve as a measure of rate of change
- Geometry and trigonometry: Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects; Calculate areas of triangles and rectangles, surface areas and volumes of cubes

Enrichment / opportunities to develop cultural capital (including careers, WRL and SMSC):

- Trips during science week
- Science week
- Science club
- STEM club