Fairfield High School for Girls

GCSE Physics - Year 10

Long-Term Plan 2024-2025

Calendar	Topic	Assessment	Sequencing and Coherence *concepts - themes - skills*	Literacy *reading - vocabulary - oracy - writing*
Autumn **Half Term 1**	P4 Electrical charges and fields, Potential difference and resistance, Components, Series and parallel circuits. P5 Electricity in the Home: Alternating current, Cables and plugs, Electrical power and potential difference, Electrical currents and energy transfer, Appliances and efficiency.	P4 Online test set on Educake – instantly marked and direct question feedback through Educake. P4 End of topic test GCSE style questions FT and HT. P4, working scientifically and synoptic content from P1- P3. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised. P5 Online test set on Educake – instantly marked and direct question feedback through Educake. P5 End of topic test GCSE style questions FT and HT. P5, working scientifically and synoptic content from P1- P4. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	The electricity topic builds on both the understanding of electrical energy from the KS4 Energy topic as well as prior knowledge and skills of the KS3 electricity topic. It is necessary to cover electricity in Yr10 as the remaining topics in Yr11 require knowledge of electricity. e.g P10 Electromagnetism requires prior knowledge of Electricity. P5 builds upon the knowledge of electrical circuits covered in P4. It is necessary to cover this P5 topic following P4 as students are required to be describe links between charge, potential difference and current and carry out further calculations, which would not be possible without prior knowledge of these quantities.	AQA circuits glossary used to define each key term used in this topic. Oracy task – describe how to draw circuit symbols to partner with a whiteboard – test of accuracy of communication. P5: oracy task in explaining insulation and electrical safety Extended writing

Autumn **Half Term 2**	P6 Molecules and Matter: States of matter, Changes of state, Internal energy, Specific latent heat, Gas pressure and temperature, gas pressure and volume.	P6 Online test set on Educake – instantly marked and direct question feedback through Educake. P6 End of topic test GCSE style questions FT and HT. P6, working scientifically and synoptic content from P1- P5. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	The P6 Molecules and Matter topic builds on both the understanding of P1 energy from the KS4 Energy topic and prior knowledge and skills of the KS3 C1 Particles topic. Knowledge of the states of matter and the properties of these states is required to introduce kinetic theory and to understand the changes that occur as a material changes from one state to another. Additionally, this information is required to comprehend the concept of internal energy, analysing the behaviour of particles in solids, liquids and gases as the temperature changes.	Oracy tasks: describing particle motion and state changes Extended writing
Spring **Half Term 3**	P7 Radioactivity: Atoms and radiation, the discovery of the nucleus, changes in the nucleus, Alpha, beta and gamma radiation, Activity and half-life, Nuclear radiation in medicine, nuclear fusion, nuclear fission, nuclear issues.	P7 Online test set on Educake – instantly marked and direct question feedback through Educake. P7 End of topic test GCSE style questions FT and HT. P5, working scientifically and synoptic content from P1- P6. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	P7 Radioactivity builds on both the understanding of C1 Atomic Structure covered in Yr9, recapping the structure of the nucleus, developments in the understanding of sub atomic particles and changes to the model of the atom.	Reading tasks involving nuclear decommissioning and safety Writing task: safety and nuclear risk assessments Extended writing

Spring **Half Term 4**	P8 Forces in balance: Vector and scalar, forces between objects, moments at work, levers and gears	P8 Online test set on Educake – instantly marked and direct question feedback through Educake.	It is necessary to cover forces in Yr 10 as the remaining topics in Yr11 require knowledge of forces. E.g. topic P9 requires students to recap the concept of speed and its relationship to distance travelled and the time taken.	Writing task: describing how levers and gears apply foundational ideas about moments and forces.
Summer **Half Term 5**	Moments and equilibrium, Resultant forces, Centre of mass, Parallelogram of forces, Resolution of forces.	P8 End of topic test GCSE style questions FT and HT. P8, working scientifically and synoptic content from P1- P7. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.		Key terms and vocabulary reinforced via glossary and synoptic testing.
Summer **Half Term 6**	P9 Motion: Speed, Distance-time graphs, Acceleration, Velocity-time graphs	P9 End of topic test GCSE style questions FT and HT. P9, working scientifically and synoptic content from P1- P8. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	This topic follows directly on from P8 forces in balance, explaining what happens when we have a resultant force (acceleration), and then using d-t and v-t graphs to describe the motion of different bodies.	Reading tasks: converting a description of a journey into a distance/ or velocity/time graph.