Year view Subject: Physics				For further information, please see the KS3 Curriculum Booklet
Year 7	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Introduction to physics, Measuring & units, Bouncing ball investigation **Forces Topic** Forces – interaction pairs, Mass & weight, Hookes's law, Work done	Practical skills – measuring, planning investigations Maths skills – converting units, graphs, calculations involving mass & weight	Investigation plan write up	
Autumn Term 2	Energy changes on deformation, Friction, Review of forces topic / revision **Density, Moments, Pressure Topic** Density, Floating & sinking	Maths skills – calculations involving density, volume, mass	Test - Forces	Links to Y7 solids, liquids, gases topic (density)
Spring Term 1	Moments, Investigating levers, Pressure – measuring & units, Atmospheric pressure, Pressure in liquids, Upthrust & buoyancy, Floating & sinking experiment, Hydraulics	Maths skills – use of SI units, calculations involving pressure, force, area. Hydraulics calculations Practical skills – carrying out practical, following instructions	Test – Density, Moments & Pressure	
Spring Term 2	**Energy Topic** Energy stores, Energy Transfers, Sankey diagrams & efficiency, Renewable & non renewable energy resources Work done & power, Domestic fuel bills, use & cost, Cooling experiment, Heat & temperature	Maths skills – efficiency calculations, work done calculations, costs. Practical skills – recording data		Links to Y9 energy topic
Summer Term 1	Conduction; Expansion Convection; Radiation	Revision techniques	Test - Energy	
Summer Term 2	Space Topic Days & years Sundials Solar & lunar eclipses Solar system – force of gravity Our sun as a star Astronomical distances	Maths skills – gravity, force, weight calculations	Year 7 Exam	Links to Y7 forces topic

Year view Subject: Physics				For further information, please see the KS3 Curriculum Booklet
Year 8	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	**Motion & Forces Topic** Speed, distance, time; Distance time graphs; Forces & effects – speed & direction; Relative motion	Maths skills – calculations involving speed (average), distance, time, interpreting graphs		Links to Y7 forces topic
Autumn Term 2	Review of Motion & forces topic **Waves Topic** Wave properties; Light waves & reflection; Light waves & refraction; Dispersion through a prism; Light transferring energy; Colour	Practical skills – using ray boxes, plotting ray diagrams, collecting data & importance of repeat readings	Test - Motion & forces	Links to Y11 light and lenses
Spring Term 1	Sound waves; Speed of sound in air; Echoes; Auditory range, ultrasound; Review of topic	Practical skills – repeat readings	Test - Waves	Links to Y10 waves topic
Spring Term 2	**Electricity Topic** DC circuits: diagrams, current, series & parallel circuits, Measuring current, Potential difference, Resistance Resistance investigations & problem solving; Other electrical components Static electricity – types of charge	Maths skills – resistance calculations, problem solving. Practical skills – setting up circuits, using meters		Links to Y7 Energy topic
Summer Term 1	Resistance investigations & problem solving; Other electrical components Static electricity – types of charge Static electricity – types of charge Static electricity – electric fields Review of topic	Maths skills – resistance calculations, problem solving. Practical skills – setting up circuits, using meters	Test - Electricity	
Summer Term 2	**Magnets & Electromagnets topic** Magnetic poles & fields Magnetic effect of a current Electromagnets DC motors	Practical skills – using a plotting compass, making electromagnets, testing strength of electromagnets	Year 8 Exam Magnets Test	

Curriculum Map 2022 onwards

Year view Subject: Physics			For further information, please see the KS4 Curriculum Booklet	
Year 9	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	**Atomic Structure** Development of the model of the atom (4.4.1.3) Questions on atomic structure (4.4.1.1) (4.4.1.2) Reasons for instability: Strong vs electrostatic force (Extension) Decay chains (4.4.2.2) Half-life theory (4.4.2.3) (4.4.3.2) Uses in nuclear power stations and medicine (4.4.3.3)	Mathematical analysis, safety, Use of models Complex graphing and evaluation		Chemistry also cover this topic at this time
Autumn Term 2	Nuclear Fission (4.4.4.1) Nuclear Fusion (4.4.4.2) **Energy** Energy stores and energy pathways (4.1.1.1) (4.1.2.1 1st section) Work done = force x distance (4.5.2) Law of conservation of energy (4.1.2.1) Heat Transfer by Conduction (4.1.2.1 2nd section)	Practical Skills Mathematical – solving equations Mathematical modelling and approximation	Atomic Structure Test Past exam questions	Links to force year 8 and energy year 7
Spring Term 1	Heat Transfer by Conduction RP2 (4.1.2.1 2nd section)Power (4.1.1.4) Revision for Test; Specific heat capacity RP1 (4.3.2.2) (4.1.1.3) Specific Latent heat of vaporisation experiment (4.3.2.3)	Calculations on Work, Power, Efficiency Required Practical	Energy Calculations Test Past exam questions Required Practical 1	Link to density year 8, atomic structure year 9 and chemistry
Spring Term 2	SLH calculations; Heating / cooling graphs (4.3.2.3) National and global energy resources (4.1.3)	Practical Skills Mathematical – solving equations	Energy Resources Test Past exam questions	Links to Y7 energy topic
Summer Term 1	**Particle Model of Matter** Introduction & states of matter (4.3.1.1) Density RP5 (4.3.1.1) Hydraulic systems (Revision from KS3) Floating and sinking (4.5.5.1.2)	Practical Skills Mathematical – solving equations Microscopic to macroscopic modelling Revision and Exam technique	Required Practical 5 End of Year Exam	
Summer Term 2	Pressure in gases (4.3.3.1 & 4.3.3.3) Pressure Law (demo) (4.3.3.1)	Practical Skills Mathematical – solving equations	Particle Model Test Past exam questions	

Curriculum Map 2022 onwards

Year view Subject: Physics			For further information, please see the KS4 Curriculum Booklet	
Year 10	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	**Forces**: Introduce speed = distance / time experiment (4.5.6.1.2) Introduce vectors & velocity = displacement / time (4.5.6.1.3) Using ticker tape: experiment (or demo) Introduce v2=u2 + 2as (4.5.6.1.5)	Practical Skills – analysis of motion – 2nd order Mathematical – solving equations of motion	Motion Test Past exam questions	Links to Y7 forces topic
Autumn Term 2	Introduce Newton's 1 & 3 (4.5.6.2.1) (4.5.6.2.1) Additional time for RP if required; Newton's second Law data logging demo (4.5.6.2.2) Resolving forces (4.5.1.4) Practice vector diagrams	Practical Skills Mathematical – solving equations Required Practical Exam technique	Past exam questions	
Spring Term 1	Terminal velocity-experiment or demo (4.5.6.1.5) Factors affecting braking distance (4.5.6.3.3) **Electricity** : Circuit symbols, Electrical Charge and current (4.2.1.2) I-V Relationships (RP4) (4.2.1.4)	Practical Skills Mathematical – solving equations Required Practical Exam technique	Forces Test Required Practical 4 Past exam questions	Links to Y8 Electricity topic
Spring Term 2	Factors affecting resistance of a wire (RP3a) Additional time for RP if required Resistance of an LDR practical (4.2.1.4) Series and parallel circuits (4.2.2) Solving problems involving series and parallel circuits (4.2.2)	Practical Skills Mathematical – solving equations Required Practical Exam technique	Electricity Test Required Practical 3a	
Summer Term 1	**Waves**: Introduce oscillations using pendulum, Measure frequency, wavelength and speed of waves RP8 (4.6.1.2) Seismic Waves 1 (4.6.1.5) EM spectrum Uses and Applications (4.6.2.1) (4.6.2.4) Properties of EM waves 2 (4.6.2.3) Waves in air, solids and liquids (4.6.1.1-2 & 4-5) **RP8:** Electromagnetic waves (4.6.2.1-4) Black body radiation (4.6.3) **RP10**	Practical Skills Mathematical – solving equations Required Practical Exam technique	End of Year Exams Required Practical 8 Required Practical 10	Links to Y8 waves topic
Summer Term 2	Sound Waves (revision) (4.6.1.4) Seismic Waves 2 (4.6.1.5) Properties of EM waves 1 RP10 (4.6.2.2) Blackbody radiation (4.6.3)	Practical Skills Mathematical – solving equations	Waves Test Required Practical 10 Past exam questions	

Year view Subject: Physics			For further information, please see the KS4 Curriculum Booklet	
Year 11	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	Light & lenses (4.6.1.3 & 4.6.2.5-6) **RP9** **Applied Forces**: Momentum (4.5.7) Forces and elasticity (4.5.3) **RP6** Moments, levers and gears (4.5.4)	Practical Skills Mathematical – solving equations Revision and exam technique	Light and Lenses Test Applied Forces Test Required Practical 9 Required Practical 6 Past exam questions	Links to Y8 waves topic
Autumn Term 2	**Electromagnetism, mains electricity & electric fields:** Revision of magnetic fields (4.7.1) Electromagnetism (4.7.2.1) The motor effect (4.7.2.2-4) Induction, transformers (4.7.3)	Practical Skills Mathematical – solving equations Exam technique	Past exam questions Topic test Y11 mock exams	Links to Y8 magnetism
Spring Term 1	The National Grid (4.2.4.3) Mains electricity / power (4.2.3.1-2 & 4.2.4.1-2) Electric fields (4.2.5)	Practical Skills Mathematical – solving equations Revision technique Exam technique including answering longer questions	Electromagnetism Topic Test	
Spring Term 2	**Space Physics** (4.8)	Mathematical – solving equations Exam technique – answering longer questions	Space Test Past exam questions	
Summer Term 1	Revision for GCSE	Exam technique – answering longer questions	Past exam questions	
Summer Term 2	External exam			

Curriculum Map 2022 onwards

Year view Subject: Physics			For further information, please see the KS5 Curriculum Booklet	
Year 12	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	**Teacher 1:** Use of SI units & their prefixes; Limitations of physics measurements; Estimation of physical quantities; Basics of electricity **Teacher 2:** Scalars & vectors; Moments; Motion along a straight line	CPAC practical skills Maths skills throughout topics	Topic Tests Required Practical 3 Past exam questions	Links to GCSE forces topic
Autumn Term 2	**Teacher 1:** Current-voltage characteristics; Resistivity; Circuits **Teacher 2:** Projectile motion; Newton's laws of motion; Momentum; Work, energy & power	CPAC practical skills Maths skills throughout topics	Required Practical 5 Topic tests Past exam questions	Links to GCSE electricity topic
Spring Term 1	**Teacher 1:** Circuits continued; Potential divider; EMF & internal resistance **Teacher 2:** Conservation of energy; Bulk properties of solids**;** The Young modulus	CPAC Practical skills Reviewing & revision skills Maths skills throughout topics Exam technique	Required Practical 4 Topic tests Past exam questions	
Spring Term 2	**Teacher 1:** Constituents of the atom**;** Stable & unstable nuclei**;** Particles, antiparticles & photons, Particle interactions**;** Classification of particles; Quarks & antiquarks **Teacher 2:** Progressive waves; Longitudinal & transverse wave;, Principle of superposition & stationary waves	CPAC practical skills Maths skills throughout topics Exam technique	Required Practical 1 Topic tests Past exam questions	Links to GCSE atomic structure topic
Summer Term 1	**Teacher 1:**Application of conservation laws; The photoelectric effect; Collisions of electrons with atoms, Energy levels and photon emission, Wave particle duality **Teacher 2:** Interference; Diffraction; Refraction at a plane surface	CPAC practical skills Maths skills throughout topics Exam technique	Required Practical 2 Year 12 exams Past exam questions	
Summer Term 2	**Teacher 1:** Capacitance; Capacitor charge & discharge; Parallel plate capacitor; Energy stored by a capacitor; Thermal energy transfer **Teacher 2:** Circular motion, S.H.M, S.H.M systems	CPAC practical skills Maths skills throughout topics Exam technique	Required Practical 9 Past exam questions	

Curriculum Map 2022 onwards

Year view Subject: Physics			For further information, please see the KS5 Curriculum Booklet	
Year 13	**Knowledge/Content**	**Skills**	**Assessments/Checkpoints**	**Comments**
Autumn Term 1	**Teacher 1:** Ideal gases; Molecular kinetic theory model; Fields, Newton's law **Teacher 2:** Forced vibrations & resonance; Rutherford scattering, α, β and γ radiation; Radioactive decay; Nuclear instability	CPAC practical skills Maths skills throughout topics Exam technique	Required Practical 8 Required Practical 7 Topic tests Past exam questions	
Autumn Term 2	**Teacher 1:** Gravitational field strength; Gravitational potential; Orbits of planets and satellites **Teacher 2:** Nuclear radius; Mass & energy; Induced fission; Safety aspects; Newton's corpuscular theory of light	CPAC practical skills Maths skills throughout topics Revision techniques Exam technique	Required Practical 12 Year 13 mocks Past exam questions	
Spring Term 1	**Teacher 1**: Coulomb's law; Electric field strength; Electric potential; Magnetic flux density **Teacher 2:** Significance of Young's double slits experiment; Electromagnetic waves; Wave particle duality	CPAC practical skills Maths skills throughout topics Reviewing & revision skills Exam technique	Required practical 10 Topic test Past exam questions	
Spring Term 2	**Teacher 1:** Moving charges in a magnetic field; Magnetic flux and flux linkage; Electromagnetic induction **Teacher 2:** Electron microscopes; The Michelson-Morley experiment; Einstein's theory of special relativity	CPAC practical skills – final endorsement Maths skills throughout topics Reviewing & revision skills Exam technique	Required practical 11 Past exam questions Topic tests	
Summer Term 1	**Teacher 1:** Alternating currents; The operation of a transformer; Cathode rays; Thermionic emission of electrons; Specific charge of the electron; Principle of Millikan's determination; Review & revision **Teacher 2:** Time dilation; Length contraction; Mass & energy; Review & revision	CPAC skills Maths skills throughout topics Reviewing & revision skills Exam technique	Past exam questions A Level exams	
Summer Term 2	**Teacher 1 and 2** Review & Revision	Reviewing & revision skills Exam technique	A Level exams	