Curriculum Subject: Physics KS4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 10	**P2-Particle Model and Matter (Paper 1)** • PARTICLES Looking at particle models for Solids Liquids Gases • PARTICLES Extending particle model for changes of state • ENERGY Understanding Change of State graphs where a constant temp means a change in PE of particles • SKILLS re-enforcing triangles and maths skills with regatds to simple re-arranging of E=MxL and M=DxV, but extending to more complex re-arrangements of E=MxCxT and PV=const • PRACS – Density & SHC Options Round 2	**P3-Atoms and Isotopes (Paper 1)** • PARTICLES revision of Chemistry key ideas on Atomic Structure • PARTCLES linking Alpha, Beta & Gamma to bits of the atom • SKILLS Half Life Calcs and interpreting graphs • SKILLS Balancing simple decay equations • ENERGY – making the link between Nuclear power stations and Fossil fuel power stations, including pro's and cons	**P4-Electric Circuits (Paper 1)** • ELECTRICITY Introducing the key ideas of Current Voltage & Resistance, and how they link together • ELECTRICITTY Looking at how V, I and R are affected by Series & Parallel Circuits • SKILLS re-enforcing triangles and maths skills with regatds to simple re-arranging of Q=I x t and V= I x R, but introducing prefixes like kV and mA. • PRACS – Resistance in a wire and I-V Chars introducing ideas of interpreting graphs and proportionality.	**P5-Electrical Safety (Paper 1)** • ELECTRICITY Mains Electricity comparing battery current and mains current wrg ideas of charge flow. • ELECTRICITY Explaining Static Electricity examples wrt atomic structure. • SKILLS re-enforcing triangles and maths skills with regatds to simple re-arranging of E=P x t, E= V x Q and P=I x V, but introducing prefixes like MV and GW.	**P6-Electromagnetic Radiation (Paper 2)** • WAVES Exploring ideas of Frequency and Wavelength wrt EM Spectrum • WAVES Extending ideas of reflection and absorption wrt Colour • SKILLS more triangles with Magnification = image/object BUT combined with the graphical representation of Ray Diagrams too • PRACS Reflection / Refraction and Black Body Radiation	**P7-Wave Properties (Paper 2)** • WAVES Introducing ideas of transverse and longitudinal waves. • WAVES – re-enforcing ideas of Amplitude, Wavelength, Frequency & Period • WAVES Re-enforcing ideas of Reflection and Refraction wrt Sound, Ultrasound and Earthquake waves • SKILLS more triangles with V=F x W and D= V x t, but entending to exponential numbers and F=1/T • PRACS – Waves in Solids, Liquids & Gases
YEAR 11	**P8-Forces and Motion (Paper 2)** • FORCES Draw and interpret D-t and V-graphs • Explain how Newton 1-3 affects motion • SKILLS re-arranging multi step CALCS (vat, fma,dvt, pmv & F=mv/t) • SKILLS –drawing tangents to curves • FORCES identifyiong scalars, vectors &resolving vectors • FORCES explaining how Forces in car crashes are affected by t & p • PRACS F=ma	**P9-Forces Stretching and Pressure (Paper 2)** • FORCES- contact & non-contact forces • SKILLS re-arranging multi step CALCS (Fke, Wmg, FPA, Pdgh, WFD, EPE ½ kesquared) • SKILLS graph drawing • PRACS Stretching Springs • SKILLS errors – random, systematic & uncertainty	**P11-Magnets and Electromagnets (Paper 2)** • ELECTRICITY revision of currents AC/DC generation • FIELDS Field line N-S • FORCES using I & B & Flemings LH to link forces on wires in Mag Field • SKILLS re-arranging F=BIL, PIV, PI2R, VpNpVsNs • Extended writing (Plotting fields, Mag devices, motors)	**P10-Space (Triple only) (Paper 2)** • FORCES Describing objects in Solar System • FORCES Describe life cycle of stars linked to fusion • FORCES Describing circular motion wrg to forces speed velocity acceleration • WAVES Explaining how wavelength frequency are affected by motion • Maths skills – use of exponential numbers • Extended writing	**-Revision** • Paper 2 Revision APRIL PRACS + MATHS Skills • Paper 1 Revision PRACS & MATHS Skills • Lunchtime revision Jan-May • On-line websites	**External exams** **PAPER 1 3rd week MAY** **PAPER 2 2nd week JUNE**

St Bede's Curriculum Design Principles
Within subjects:***PHYSICS KEY IDEAS*** *FORCES:WAVES:ENERGY:ELECTRICITY:FIELDS:PARTICLES & SKILLS* (depth, relevance, sequencing, spacing)

Between subjects: breadth, cultural capital, coherence, progression, interlinking