St Andrew's
NIHIL SINE LABORE

Curriculum Map	Subject	Physics	Year	11

Unit	Summary	Skills	Assessment	British Values and SMSC	Career links	Cross-curricular links
P8 Forces in balance	Vectors and scalars, forces, resultant forces Centre of mass Higher: Free body diagrams, *Triple only: Moments and equilibrium, levers and gears*	Definitions and explaining observations Practical: Finding CoM of irregular object. Using formulae Higher: Drawing accurate Free body diagrams	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca P8 Scalars and vectors kerboodle literacy task	Scientific community Explaining the world	Building and construction Mechanics – car design Research and develop ment :Design – stability and mobility devfices Athletes – balance and centre of mass Sport psychologist	P1 P16 DT: Resistant materials and Product design Mathematical calculations: moments, resolving forces English – literacy History – Isaac Newton
P9 Motion	Speed, acceleration Motion graphs	Recall and use of equation for speed, acceleration and deceleration Describing distance-time and velocity-time graphs Analysing graphs and gradients & distance travelled Higher: tangents	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca	Speed limits, speed cameras, prosecution: Social: recognise legal boundaries and, in so doing, respect the civil and criminal law of England	Police – speeding Formula one design Athletes/Sport psychologist Speed records	P1 & P8 PE speed, velocity and acceleration Maths: calculations, graph plotting and data analysis
P10 Force and Motion	Force and acceleration Weight and terminal velocity Stopping distance Elasticity Higher: momentum and conservation *Triple Higher only: Impact force, safety measures*	Recall and use of formuale F = ma; W=mg. Explaining observations Practical: Hookes' law Higher: Explaining inertia. Use of complex formula for acceleration *Identifying and explaining how safety measures work*	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca Required practical: investigating force and acceleration P10 Newton's laws kerboodle literacy task	Impact of law on society (driving – highway code) Understanding consequences of behaviour Scientific community & historical evidence	Police – road traffic accidents and collisions Medicine – affect of collision and impact force Ballistics – gun recoil and momentum Elastic material engineer/technician- product design Health and safety – risk assessor	Synoptic - P8 P9 P6 P1 Maths: calculations PE: Forces, weight DT: Resistant materials and product design English – literacy History – Isaac Newton
P11 Force and pressure – Triple only	*Pressure and surfaces.* *Atmospheric pressure* *Higher only: Liquid pressure.* *Upthrust and floatation*	*Define pressure on surfaces and gas pressure from the atmosphere.* *Recall and use pressure formula.* *Practical: investigating upthrust and explain* *Higher only: Explain pressure in liquids.* *Use and carry out multi – step calculations of complex formula .*	*Low stakes testing* *'Do Now' tasks* *30min End of Unit test* *Optional Kerboodle* *Checkpoint quiz & Seneca*	*Scientific community* *British industry and invention* *BREXIT*	*Deep sea divers* *Mountain climbing – paramedics -altitude sickness* *Hydraulic engineering* *Shipping container business* *Aeronautical engineer* *Marine engineer; RAF* *Medical equipment production; Travel industry: flights; Meteorologist*	*P6 Density and gas pressure* *P8 Contact forces* *Maths calculations* *Food tech, pressure cooking* *Geography: Earth's atmosphere*

P12 Wave properties	Wave properties, wave speed, echoes Higher only: Reflection and refraction *Triple Higher only:* *Sound and ultrasound* *Seismic waves*	Describe & explain types of waves and properties Use equations Measure speed of sound Required practical: Investigating & measuring wave speed Evaluate impacts of sound on health Explain how ultrasound is used Analyse earthquake data	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca Required practical: Investigating waves in a solid	Music production – heritage Scientific community Creativity Tolerant of the views of others	Life guard/ RNLI; Deep sea diver; Royal Navy; Sound engineer, Sonographer Vet/zoologist Audiologist/ENT consultant Dentist – ultrasound use Seismologist Oceanographer Speech and language therapist	P9 Speed equation P14 Reflection and refraction of light Maths calculations Music Geography: Earth structure and earthquakes
P13 Electromagnetic waves	EM spectrum Wave speed Higher only: signals and carrier waves	Describe properties, uses and hazards of EM waves Higher only: Explain use of carrier waves, optical fibres and X ray therapy	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca Required practical: Absorption and emission of infrared radiation	Mobile phone use in children – Impact of actions on others Tolerant of the views of others	Forensic scientist Communications Medical Physicist Pathologist Radiographer Dentist Security Fibre engineer Firefighter	Synoptic *P2 Triple* P7 P12 Biology – DNA and mutations, diseases Maths Food tech – use of IR and microwave Art and photography – Music - radio
P14 Light – Triple only	*Reflection and refraction of light* *Colour* *Lenses*	*Describe& explain the law of reflection* *Draw accurate diagrams* *Link wavelength to colour* *Describe types of lenses and their uses* *Practical skills* *Use magnification formula.*	*Low stakes testing* *'Do Now' tasks* *30min End of Unit test* *Optional Kerboodle* *Checkpoint quiz & Seneca*	*Scientific community* *Use of light – fascination in learning about themselves and the world*	*Photographer* *Optometrist* *Optical manufacturing* *Fashion/textiles* *Tv/film production* *Dentist – mirror use*	*P12 P13 P16* *STEM Space – using telescopes* *Red - shift*
P15 Electromagnetism	Magnetic fields of magnets, Earth and current carrying wire Higher tier only: Motor effect *Triple only:* *Electromagnets* *Triple Higher only:* *Generator effect, alternating current generators and transformers.*	Describe field patterns and induced magnetism. Explain factors affecting solenoid strength. Higher only: Use Fleming's LH rule. Use and carry out multi – step calculations of complex formula.	Low stakes testing 'Do Now' tasks 30min End of Unit test Optional Kerboodle Checkpoint quiz & Seneca	Environmental impacts -Recycling scrap metal Renewable resources Impacts of actions on others Tolerance of the views Rule of law and democracy	Navigation Robotic engineers MRI technician Mechanic Sea bed mapping/Oceanographer National grid power station Electrician Scrap yard firm Nuclear engineer	P3 P1 P5 Geography – Earth magnetic field and compasses DT – resistant materials and product design Maths
P16 Space – Triple only	*Solar system* *Life cycle of stars* *Planets and satellites* *Expanding Universe – beginning and future* *Higher only: Orbits*	*Describe the solar system formation, Explaination – solar system – stars – elements – orbits* *Evaluate evidence of the origin of the Big Bang and the expanding universe – red shift* *Predict the future of the sun and the universe.*	*Low stakes testing* *'Do Now' tasks* *30min End of Unit test* *Optional Kerboodle* *Checkpoint quiz & Seneca*	*Scientific community* *Reflective of own beliefs & tolerant of others* *Respect* *Fascination with universe*	*Astronomy/astrophysics* *Astronaut ISS*	*P8, P10, P13 P14* *RS – origins of the universe*