

AUTUMN 1

Forces: scalars & vectors, contact & non-contact forces, gravity & weight, work done, elasticity, moments & turning effects of forces, pressure in a fluid, up thrust, speed, acceleration, displacement/time graphs, velocity/time graphs, terminal velocity, Newton's laws of motion, momentum and car safety.	Waves: wave types, measuring waves, reflection & refraction.	Prior Learning KS3 Forces – Push, Pull and Twist, Using a force meter, Friction, Speed. KS3 Waves – Reflection.
--	--	---

AUTUMN 2

Waves (cont.): Sound Waves, Uses of waves for exploration, Electromagnetic spectrum, uses and dangers of EM waves, lenses, Black Body radiation.	Prior Learning KS3 Waves: Sound waves, Frequency & Pitch, The Ear and hearing loss, Visible Spectrum, lenses, the eye.
--	---

SPRING 1

Magnets: magnetic materials, magnetic fields, electromagnets and their uses, The Motor Effect & Fleming left hand rule, motors & loudspeakers, The Generator Effect Inc. microphones, transformers.	Prior Learning KS3 Non-Contact Forces: Magnetic materials and behaviour, Electromagnets, Uses of Electromagnets.
---	---

SPRING 2

Space: The life cycle of stars, orbital motion and orbits, the Big Bang Theory, Red Shift.	Revision Topics 1-4: Key definitions and knowledge, equations to memorise, Past paper questions.	Prior Learning KS3 Universe: Size of space, Our place in the Universe, Day & night, The Seasons.
--	--	---

SUMMER 1

Revision Topics 1-8: Key definitions and knowledge, equations to memorise. Past paper questions to develop exam technique.	Prior Learning Pupils will have been exposed to content in year 9, 10 and year 11.
--	---

CAREERS LINKS

<ul style="list-style-type: none"> Accelerator Operator Applications Engineer Data, Analyst Design Engineer High school Physics teacher IT Consultant Lab Technician Laser Engineer Optical Engineer Research Associate Software Developer Systems Analyst Technical Specialist Web Developer

CHARACTER LINKS

<ul style="list-style-type: none"> Motivation, resilience, and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Evaluation of ideas and process and seeking improvement through better knowledge and techniques (intellectual virtues). Consideration and construction of moral and ethical arguments in Science (moral virtues).

KEY ASSESSMENT DATES

End of topic tests are completed in addition to exam assessments in Oct, Dec and April according to the KS4 assessment calendar.
--