Year 8 Physics

	Autumn	Spring	Summer
	Learning Cycle 1 **Learning Cycle 2**	**Learning Cycle 3** **Learning Cycle 4**	**Learning Cycle 5** **Learning Cycle 6**
Topic	Forces	Electromagnetism	Energy / Waves
Critical Prior Knowledge	**Year 7: Forces**	**Year 7: Electromagnets**	**Year 7: Energy / Waves**
Overall Intent (Big ideas and key concepts)	• Friction and Drag • Squashing and Stretching • Turning Forces • Pressure in Gases • Pressure in Liquids • Stress in Solids	• Magnets and magnetic fields • Electromagnets • Using Electromagnets	• Work Energy and Power • Energy and Temperature • Energy transfer: Particles • Energy Transfer: Radiation and insulation • Sound Waves, Water waves and Energy • Radiation and Energy • Modelling Waves
Essential Knowledge milestones (What students must master)	• Friction and Drag are a force acting against motion • Students are able to draw a force diagrams • Students can describe one effect of a force is to change an object's form, causing it to be stretched or compressed. In some materials, the change is proportional to the force applied • How pressure behaves in liquids, gases and solids (Stress)	• Students can draw magnetic field lines and from these identify strongest point of magnetic forces (i.e. nearest poles) • Know that electromagnets can be turned "ON" and "OFF" and why this is useful	• Describe what work is • Students should be able to explain that machines make work easier by reducing the force needed i.e. levers and pulleys • State what temperature is and its relationship with energy • Conduction, radiation and Insulation • Know that waves transfer energy • The order of the EM Spectrum
Cultural Capital	• Practical techniques, health and safety, development of fine motor and dexterity skills • Communication of Science ideas and concepts	• Practical techniques, health and safety, development of fine motor and dexterity skills • Communication of Science ideas and concepts	• Practical techniques, health and safety, development of fine motor and dexterity skills • Communication of Science ideas and concepts

Assessment Points	• Regular Afl embedded into lessons • P1 Retrieval Mastery • Term 1 – Progress Assessment	• Regular Afl embedded into lessons • P2 Retrieval Mastery • Term 2 – Progress Assessment	• Regular Afl embedded into lessons • P3 Retrieval Mastery • Term 3 – Progress Assessment
ECC Student Characteristics	Through these units we will encourage students to work hard and be **resilient individuals** who **embrace challenge** and through their **creativity** and endeavours become **reflective learners.** Mastering the key concepts of each topic before being able to build on these ideas as they are interleaved through other units later in the course.		
Connection to future learning (When is this developed / revisited)?	KS4: Forces	KS4: Electrical Circuits; Electricity in the home	KS4: Energy; Waves