Curriculum Map: Physics Year 8

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content Declarative knowledge 'I Know'	Topic: Energy and Waves Know definitions for the key terms: work, lever, input force, output force, displacement, deformation Know the factors affecting the thermal energy of an object Know that energy transfers from a hotter object to the cooler object Know the 3 key ways that thermal energy is transferred Know how microphones and loudspeakers work Know some real-life uses of ultrasound Know some properties of longitudinal and transverse waves		Topic: Forces Know the factors affecting the size of drag forces and friction Know what happens to an object when the resultant force acting on it is zero Know how materials behave as they are stretched or squashed Know what happens to the length of a spring when the force on it changes Know why objects either sink or float depending on their weight and the upthrust acting on them		Topic: Electromagnets Define the key terms voltage, current, resistance, electrical conductor, electrical insulator, series circuit and parallel circuit Know how current and voltage change when components are added in series and parallel circuits Know how electromagnets work and the key factors that affect the strength of the electromagnet Know that like poles repel and unlike poles attract Know that field lines flow from the north-seeking pole to the south-seeking pole	
Skills Procedural Knowledge 'I know how to'	Know how to draw a diagram to explain how a lever makes a job easier Use the formula work done = force x distance moved to calculate energy transfer for objects moving horizontally Plot graphs to show the pattern of temperature change against time		Know how to sketch the forces acting on an object when there are contact forces acting Know how to conduct an experiment to show that springs obey Hooke's Law Know how to use the formula fluid pressure or stress = force/area		Know how to draw circuit diagrams Know how to build series and parallel circuits Know how to use the formula V=IR Know how to make an electromagnet	
Strategies Conditional Knowledge 'I know when to'	Evaluate the advantages of different levers in terms of the force needed and distance moved Evaluate a claim about insulation in the home or for clothing technology Deduce what happens when two waves combine		Evaluate how well sports or vehicle technology reduces frictional or drag forces Using force and extension data, compare the behaviour of different materials in deformation		Evaluate series and parallel circuits for particular uses Evaluate models of current/resistance Evaluate the design of a device using an electromagnet	
Key Questions	How are you transferring energy as you read? What happens in terms of energy when you are watching television, or charging your phone? How can you reduce your electricity bills? What is ultrasound, and how do we use it? What damage does electromagnetic radiation do to the human body? Why do bottles of water act like lenses?		Why is there so little friction on some surfaces, like ice, but not others, like wood? Why do you get put on weighing scales before you do a bungee jump? Why don't earthmovers sink?		Why do you sometimes get an electric shock when you touch a car door? How can one light in your house go out but the rest still be on? What is happening in a wire when current flows? Which device in your house protects you from a dangerous electric current, and how does it work? How can you make a magnet strong enough to lift a car? Why does a compass point north?	
Assessment topics	End of topic test (after 7 lessons of topic) and this will be re tested at the end of the term.		End of topic test (after 6 lessons of topic) and this will be re tested at the end of the term.		End of topic test (after 9 lessons of topic) and this will be re tested at the end of the term.	

Cross curricular links/Character Education	Music – sounds waves Maths – calculations Chemistry – energy transfer Technology – insulating/conducting materials		Chemistry – particle model Maths – calculations		Maths – calculations Technology – using circuits to create things	