STEM Year 9 Curriculum End Points and Key Vocabulary

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Ethos Links	**STEM** – Investigation process, significance of STEM in health and technology **Character –** Developing critical but kind evaluation of others	**STEM** – Using a computer language to achieve a physical interaction **Character -** resilience (it will go wrong at some point)	**STEM** – Investigation skills **Sustainability** – Making use of materials in new ways **Character –** Thinking about rights and wrongs	**Sustainability** – The environmental impact of flying **STEM –** Understanding how things fly	**STEM –** Measuring and manipulation of number **Character –** Perseverance and resilience	**STEM** – Investigation skills **Character** – Leadership and teamwork **Sustainability** – Global environmental understanding
Learning End Points	**Asteroid Impact** *How could we use STEM to survive in a survival situation?* By the end of this unit, students will know and understand: ➢ How to make rope from waste materials. ➢ How filtering can be used to create "clean" water. ➢ How to create and use a sundial.	**Physical Computing** *How can we use Python to make a device respond to us and then do something?* By the end of this unit, students will know and understand: ➢ How to identify inputs, processes, and outputs. ➢ How to code instructions for a Micro:bit to receive	**STEM in Sport** *How can technology improve sporting performance?* By the end of this unit, students will know and understand: ➢ How waves interact and travel. ➢ That sound and light are both carried by waves. ➢ What the primary colours for light are.	**The Future of Flight** *How will air transport evolve in the future?* By the end of this unit, students will know and understand: ➢ How electrical energy can be generated through a chemical reaction. ➢ How distribution of energy is unequal around the globe.	**Measuring Up!** *Can we make our own measuring devices?* By the end of this unit, students will know and understand: ➢ Forces involved in the launch of a rocket. ➢ How to use mathematics to model the flightpath of a voyage. ➢ How resources may limit the availability of food supply.	**A Future World** *How can STEM solve (or cause) issues on a global scale?* By the end of this unit, students will know and understand: ➢ How effects can be created using green screen technology. ➢ How information is transmitted digitally. ➢ How images are formed

	➢ How wastepaper can be used to make new paper. ➢ How using the motion of water, electricity can be made. ➢ The use of chemicals to make inks.	instructions and then carry out a response to external stimuli using block coding. ➢ How processes are carried out in a computer. ➢ How to generate an output from a program and from inputs.	➢ How mixing colours will create new colours. ➢ How the pitch of a sound can be altered. ➢ How an LDR can be used to affect the resistance in a circuit.	➢ How different solutions are needed for energy in different parts of the globe. ➢ How to generate electrical energy in alternative ways. ➢ How light levels can be monitored. ➢ How the use of sensors can help monitor food production.	➢ The nutrients needed in a human diet. ➢ How STEM can generate new resources from available materials. ➢ The limits of various types of communication.	and recorded. ➢ How digital technology has replaced traditional technology (eg CGI).
Key Vocabulary	Waste Reduce, reuse, recycle, reclaim Sustainability Filter Carbon	Input Output Process Coding Stimuli Physical computing	Resistance Light Sound Waves Wavelength Frequency Amplitude Primary colour LDR Circuit	Energy Electricity Sustainability Generation Distribution Farming Sensors Alternative	Forces Thrust Gravity Weight Weightlessness Diet Nutrition Radio Waves Microwaves Projectiles Trajectory	Digital Analogue CGI Green screen Optic fibres