STEM Year 8 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 skills **Character** – Leadership and teamwork **Sustainability** – Making use of materials in an unusual way	**STEM** – Using coding to make devices that respond **Character** – Perseverance	**STEM –** Understanding how light and sound are generated **Sustainability** – Using light in vertical farming	**STEM** – Investigation skills **Character** – Leadership and teamwork **Sustainability** – Making use of materials in an unusual way	**Character** – Listening respectfully and critically **STEM** – Applying STEM ideas to unusual scenarios	**STEM** – Investigation skills **Character** – eadership and teamwork
Learning End Points	**STEM on a desert Island** *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.	**Physical Computing** *How can we program 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 instructions	**Engineering Entertainment** *How is light and sound used?* 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.	**Sustainable Futures** *How can we use STEM to help us provide an environmentally sustainable 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	**Mission to Mars** *What engineering, scientific, and mathematical skills would we need to move to another planet?* 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	**Engineering the Movies** *How can we make the effects we see in the movies?* 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 to create and use a sundial. ➢ 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.	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.	unequal around the globe. ➢ 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.	availability of food supply. ➢ 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