Year 7 Curriculum Overview: STEM

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Unit of Work	Augment Ourselves *Can we change our bodies to enhance ourselves?*	Zombie Apocalypse 1 *How could we use STEM to survive in a survival situation?*	Zombie Apocalypse 2 *How could we use STEM to survive in a survival situation?*	Movies & Magic 1 *How real is what we see on the big screen?*	Movies & Magic *How real is what we see on the big screen?*	Asteroid Impact *How could we use STEM to survive in a survival situation?*
Ethos Links	STEM – investigation process, significance of STEM in health and technology Character – developing aspects of Respect, Responsibility, Kindness	Character – listening respectfully and critically STEM – applying STEM ideas to unusual scenarios	STEM – investigation skills Character – leadership and teamwork Sustainability – making use of materials in an unusual way	STEM – investigation skills Character – leadership and teamwork	STEM – investigation skills Character – leadership and teamwork	STEM – investigation skills Character – leadership and teamwork
Knowledge	By the end of this unit, students will know and understand: ➢ How artificial limbs are used ➢ How technology can be used to enhance mental health ➢ Identify how eyesight can be tested ➢ How ideas of design can be used to develop a product ➢ Consider how technology can help us physically ➢ Make simple measurements using simple equipment	By the end of this unit, students will know and understand: ➢ How to create a simple circuit ➢ Use a mechanical device to launch a projectile ➢ Make measurements using an electronic device ➢ Use mirrors and reflection to create a periscope ➢ Use morse code in order to send and receive messages ➢ How to investigate the sound proofing properties of materials	By the end of this unit, students will know and understand: ➢ How to create a simple circuit ➢ Use a mechanical device to launch a projectile ➢ Make measurements using an electronic device ➢ Use mirrors and reflection to create a periscope ➢ Use morse code in order to send and receive messages ➢ How to investigate the sound proofing properties of materials	By the end of this unit, students will know and understand: ➢ How to identify non-contact forces ➢ How forces act ➢ How static charge is created ➢ Some of the effects of static charge ➢ How magnets interact ➢ Ways to find a magnetic field ➢ How to apply ideas about magnetic levitation to transport solutions ➢ The forces involved in rockets (link to newton's laws of motion) ➢ How stop gap motion is used to animate pictures	By the end of this unit, students will know and understand: ➢ How to identify non-contact forces ➢ How forces act ➢ How static charge is created ➢ Some of the effects of static charge ➢ How magnets interact ➢ Ways to find a magnetic field ➢ How to apply ideas about magnetic levitation to transport solutions ➢ The forces involved in rockets (link to newton's laws of motion) ➢ How stop gap motion is used to animate pictures	By the end of this unit, students will know and understand: ➢ That an asteroid impact has a potential threat to human life ➢ What happens when an asteroid hits a planet ➢ How a changed world could lead to problems with food production ➢ The need to look for alternative ways to produce food

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Skills	By the end of this unit, students will be able to develop their ability to: • Solve a problem • Think creatively • Work as part of a team • Analyse and evaluate ideas and ask whether if we can do something, should we?	By the end of this unit, students will be able to develop their ability to: • Use mathematics in a new situation • Be resilient when something is not working and modify plan accordingly • Work well with other students	By the end of this unit, students will be able to develop their ability to: • Make measurements using electronic devices • Show creativity in design • Listen to instructions • Be resilient when something is not working and modify design accordingly	By the end of this unit, students will be able to develop their ability to: • Make measurements using electronic devices • Show creativity in design • Listen to instructions • Be resilient when something is not working and modify design accordingly	By the end of this unit, students will be able to develop their ability to: • Work in teams • Be resilient in their work (it won't work first time) • Demonstrate creativity in making own animations	By the end of this unit, students will be able to develop their ability to: • Test a model • Measure the effects of an impact • Evaluate the reliability of data obtained in an investigation • Work collaboratively • Use mathematics to scale up
Key Vocabulary	Augmentation Meditation 20:20 Vision Lever	Investigation Planning Risk assessment Analysis Evaluation	Investigation Planning Risk assessment Analysis Evaluation	Static charge Force Contact force Non-contact force Magnetism Mag Lev Magnetic fields Balanced forces Animation Zoetrope	Static charge Force Contact force Non-contact force Magnetism Mag Lev Magnetic fields Balanced forces Animation Zoetrope	Solar system Gravity Asteroid Impact Model Light Vertical farming Hydroponics
Assessment	• Staff assessment • Self-Review • End of theme feedback	• Staff assessment • Self-review • Mid-theme feedback	• Staff assessment • Self-Review • End of theme feedback	• Staff assessment • Self-Review • Mid-theme feedback	• Staff assessment • Self-Review • End of theme feedback	• Peer and Self • End of theme feedback