St Andrew's
NIHIL SINE LABORE

Curriculum Map	Subject	STEM	Year	8

Unit	Summary	Skills	Assessment	British Values and SMSC	Career links	Cross-curricular links
Construction for the future	Students will investigate how Engineering has been used to overcome big challenges within the construction industry. Students will then put these methods into practice to overcome a set of group practical challenges.	Collaboration, Creative thinking, Critical skills, Testing, Development based on data & tests, Evaluating.	Students will be assessed on the short project given at the end of the SOW.	Mutual Respect – working together and respecting everyone in their group equally.	Mechanical engineer, structural engineer, civil engineer, architect	**Mathematics**: Calculating measurements, dimensions, and material quantities for construction projects. **Science:** Understanding the principles of physics and materials science relevant to construction. **Design and Technology:** Applying design thinking and practical skills in construction projects.
Keeping away from landfill	Students will examine a range of products manufactured industry in mass quantities that are causing big issues in land fill. They will research and design alternative purposes for each of them.	Collaboration, Creative thinking, Critical skills, Testing, Development based on data & tests, Evaluating.	Students will be assessed on the design and model of their final recycled piece.	Moral – Students will examine the moral obligations we have for the planet with landfill and how we can turn the issue around.	Mechanics, Technicians, and Machinery Maintenance Workers. Material Recovery Facility Managers. Route Managers. Design engineering, product designers, conservationists.	**Science:** Understanding the environmental impact of products and the science behind recycling processes. **Mathematics:** Analysing data related to waste production, recycling rates, and cost-effectiveness. **Design and Technology:** Applying design principles to repurpose and create new products from discarded items.
Robots of the Future	Students look at how technology has developed over the last 50 years and consider what developments will happen in the next 50 years. They will investigate what jobs robots may do in the future and design a robot to fulfil a chosen task.	Collaboration, Creative thinking, Critical skills, Testing, Evaluating.	Students will be assessed on their final robot design, it's function and ability to perform that task.	Social – Students will consider the pros and cons the development of robots would have on society.	Electrical engineer, design engineer, product designer	**Science**: Understanding the technology behind robotics, artificial intelligence, and automation. **Mathematics**: Utilising mathematical concepts for programming and design of robotic systems. **Design and Technology:** Applying design thinking and engineering principles in robot creation.