

Overview:

Students will undertake tasks and projects in Year 10 in order to ensure that they are fully prepared for the three units to be undertaken in Year 11. These involve interpreting data in order to plan and manufacture a product for the Unit 1 internally assessed Controlled Assessment, exploring how to adapt and present improvements of a product for the Unit 2 internally assessed Controlled Assessment, and the study of engineering considerations and their impact on modern day life in preparation for the Unit 3 externally assessed exam, themed on any of the topics, including theme park. Independent Learning is used throughout the course to reinforce knowledge and understanding in preparation for Controlled Assessment and the exam.

Careers in the Curriculum:

The topics covered will highlight links to careers in motorsports engineering, railway engineering, agricultural engineering, biomedical engineering, energy engineering and marine engineering.

Term	Topic	Assessment
Aut1	Course introduction Health and Safety Baseline task (involving a range of skills relating to a pair of identical aluminium dog tags) Introduce Technical Drawing. All skills required produced over four drawings	Formative assessment Each skill in the baseline task summatively assessed to allow comparison to predicted grade and set a target
Aut2	<ul style="list-style-type: none"> • Complete Technical Drawing • Introduce three units which are completed in rotation by different classes to ease use of resources • The first is a C.A.D. (Computer Aided Design) project which teaches students how to produce their technical drawings using specialist software • The second is a team mechanisms project using technical Lego, based on the potential Unit 3 Theme park rides topic • The third is a team structures project, building and testing a bicycle frame test rig, based on the potential Unit 3 Bicycle topic 	<ul style="list-style-type: none"> • Summative assessment of each drawing • Summative assessment of each drawing • Summative assessment of individual report • Summative assessment of individual report
Spr1	<ul style="list-style-type: none"> • Completion of three units from previous half term 	<ul style="list-style-type: none"> • As above
Spr2	<ul style="list-style-type: none"> • Students are taught how to use the laser cutter to manufacture parts from C.A.D. drawings, and then manufacture a mould that they can die cast pewter into to create a name tag for the following project • Students start the planning and manufacturing of the mock Unit 1 product (an adjustable LED desk lamp) to allow students to become skilled in the use of machines and equipment which may be needed for their formal Unit 1 Controlled Assessment (centre lathes, milling machines, jigs etc.) 	<ul style="list-style-type: none"> • Formative assessment of manufacturing skills
Sum1	<ul style="list-style-type: none"> • Students complete their mock Unit 1 from the previous half term 	<ul style="list-style-type: none"> • Summative assessment
Sum2	<ul style="list-style-type: none"> • Preparation for the Mock Unit 3 exam. Use of Independent Learning alongside a review of the exam board published text book content • PPE • Introduction and preparation for the formal Unit 1 Controlled Assessment 	<ul style="list-style-type: none"> • Results of the PPE are used, along with weighted results from summative assessment of tasks earlier in the year, to check progress since the baseline task, and pupils' individual areas for improvement in Year 11.

Overview:

Students complete their Unit 1 and then Unit 2 Controlled Assessments with preparation for their Unit 3 mock exam between the two, and focused Unit 3 exam preparation after. Independent Learning is used to complete and reinforce their knowledge and understanding in preparation for their exams. A different product/theme for Unit 1 and 2 is released by the exam board every year.

Careers in the Curriculum:

The topics covered will highlight links to careers in naval engineering, nuclear engineering, electrical engineering and robotics engineering.

Term	Topic	Assessment
Aut1	<ul style="list-style-type: none"> Health and Safety refresher Unit 1 Controlled Assessment involving analysis of the data provided, planning for safe manufacture, actual independent manufacture, and evaluation of success 	<ul style="list-style-type: none"> Formative and summative assessment throughout
Aut2	<ul style="list-style-type: none"> Continuation and completion of Unit 1 Controlled Assessment 	<ul style="list-style-type: none"> Formative and summative assessment throughout
Spr1	<ul style="list-style-type: none"> Preparation for the Mock Unit 3 exam. Use of Independent Learning alongside a review of the exam board published text book content PPE Preparation for, and then starting on the Unit 2 Controlled Assessment involving analysis of similar products, design of a superior solution, and planning for its manufacture 	<ul style="list-style-type: none"> Summative assessment Formative and summative assessment throughout
Spr2	<ul style="list-style-type: none"> Continuation and completion of Unit 2 Controlled Assessment Commence preparation for the Unit 3 exam. Use of Independent Learning alongside a review of the exam board published text book content 	<ul style="list-style-type: none"> Formative and summative assessment throughout
Sum1	<ul style="list-style-type: none"> Complete preparation for the Unit 3 exam. Use of Independent Learning alongside a review of the exam board published text book content Unit 3 exam 	<ul style="list-style-type: none"> Externally assessed
Sum2	<ul style="list-style-type: none"> Exam preparation and revision 	N/A