Richmond School & Sixth Form College
Being the best we can be

Year 10 BTEC Engineering

Year 10 students start their Engineering coursework in September. The course is made up of three components, two of which are internally assessed and one which is an external assessment that will take place in February/March. Year 10 requires students to explore and practise the techniques needed to complete the coursework tasks, whilst revising and preparing for the external assessment. The coursework is unit based, with assignments broken down into individual tasks. Students present their evidence using practical investigations and IT based presentations. The two components completed in Year 10 are:

- Component 1: Exploring engineering sectors and design applications (30%)
- Component 3: Responding to an engineering brief (40%)

Methods of deepening and securing knowledge:	
Spaced practice	Throughout Year 10 students will be given tasks to complete to ensure that they are learning the knowledge needed to be successful in the component 3 exam. This will include researching processes and materials, analysing data and results, and identifying improvements that can be made to existing engineering products. This spaced practice will mean that students are well prepared for the questions and scenarios that may be presented during the external assessment.
Retrieval practice	Year 9 is an introduction to Engineering and ensures students have practised the process of completing projects with the level of detail required to be successful in the BTEC qualification. Students will need to learn information and skills taught in Year 9 and apply them to their coursework and external assessments in Year 10. This may be analysing different sectors, using tools and equipment correctly or analysing data.
Elaboration	Due to the nature of the work required for the Engineering qualification, students are encouraged to elaborate on their answers and ideas at all stages of the course. Students must look at Engineering drawings and highlight errors or fine details, making them suitable for manufacture. Elaboration is key to ensuring that the projects are successful.

	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
Topic(s)	**C1: Exploring engineering sectors and design applications** - Research engineering sectors - Links between large and small companies	**C1: Exploring engineering sectors and design applications** - Continue research of engineering sectors - Choose a focus and analyse the	**C3: Responding to an engineering brief** - Preparation for external assessment - Practice assessments	**C3: Responding to an engineering brief** - Students prepare for and complete the Component 3 external assessment	**C1: Exploring engineering sectors and design applications** - Exploration of engineering skills and processes	**C1: Exploring engineering sectors and design applications** - Students complete LB of C1 - Following formative

		interconnections between engineering sectors and products	- Analysing mark schemes and feedback on previous papers - Introductory materials issued	- Once completed, students continue with C1	- Research of specialist organisations and functions - Compile a report linking the roles within engineering organisations	assessment, students make changes
Assessment	- Introductory research slides assessed	- Research of sectors and the links between sectors and products	- C3 Practice questions and papers		- Feedback on LA and on-going LB	- Formative and summative assessment of C1
CEIAG *(Careers)*	- Research of engineering sectors		- Research of engineering sectors, careers and products developed		- Research into the roles of Engineers within various sectors - Awareness of careers in Engineering	- Research into the roles of Engineers within various sectors - Awareness of careers in Engineering

Independent Learning:
There is individual independent learning for students in Year 10 relating to the stage of the coursework/component students are working on. As there is an external assessment testing is on-going and to recap previous knowledge and skills, students will be expected to complete practice pieces and theory questions to ensure retrieval and spaced practice is taking place. Some tasks may be linked with the on-going coursework; ensuring students are completing research or finishing tasks off in their own time.