Scheme of Work 2020 - 2021
Subject: Engineering

Year Group: 12
Specification: AQA L3 Engineering

Lesson No	Topic & Objectives	Big Question – What will students learn?	Key Activities & Specialist Terminology (Do Now Task / Starter/Tasks/Plenary	Planned Assessment	Homework or flipped learning resources DODDLE resources	Lit Num SMSC Codes
ADP Codes: Sp2 – Students have access to outstanding learning opportunities – The department is resourced to ensure all students have access to outstanding learning experiences. C5 – Students reach full potential as barriers have been removed – All learning objectives and tasks – allow scope for differentiation – ensuring all learners are given a chance to learn and progress. Sp5 – Students take responsibility for their own learning journeys – This is encouraged and facilitated with all internal assessment tasks. Sp9 – Creating enjoyment and fascination in learning – Practical component of Engineering allows students to gain first-hand experience of curriculum content – creating a more enjoyable and fascinating learning experience. C3 – Foster a passion for learning – Specialist teachers with a passion an enthusiasm for their subjects bring first-hand experience into the classroom – fostering a passion for learning. M1 – All stakeholders' model resilience, positive relationships attitudes and behaviours – all social opportunities in lessons and behaviour expectations made clear by teachers. Attitude to lifelong learning modelled by teaching staff.						
Term One First Half						
Week 1	**Engineering materials**	Metals, first or non ferrous?	Be able to arrange materials in order of carbon content.	End of week test.	Complete powerpoint on topic	
Week 1	**Engineering materials**	Plastics what's the difference between thermosetting at thermoset.	List recycled plastics and not like plastics.	End of week test	Complete powerpoint on topic	
Week 2	**Engineering materials**	Ceramics and composites what are they and what are they used for.	Test ceramics and composites see what properties they have.	Using equipment in the workshop 2 tests the ceramics properties.	Right results in an experimental format.	

Week 2	**Engineering chemistry**	How are metals formed is it cool.	Draw the lattice that he metal creates and cooling.	Visual inspection of work	Poster	
Week 2	**Engineering chemistry**	How does corrosion effect different metals	Look at Ferris and nonferrous titles that are corroded and explain the difference in how they are affected	Worksheet	Worksheet	
Week 3	**Engineering properties**	What is the difference between mechanical and physical properties	Be able to list the different parties both mechanical and physical.	Powerpoint	Test at end of week	
Week 3	**Engineering properties**	What are the properties specific materials	Be able to list properties both medical and physical materials such as timber plastic and metal.	Poster	Visual inspection	
Week 4	**Study**	Using past exam papers questions and answer them using them created above.	Using the notes that have been created to be this week's student will, in **groups**, answer the questions on an exam paper	Exam paper	Exam paper	
Week 4	**Assessment**	Students will have the work completed in the previous lesson assessed	As a group the class will recruit each posted on the exam paper and see if they have got the correct answers.	Interaction with the whiteboard	Group work	
Week 5	**Study skills**	Working independently earth are exam past paper using your own notes	Students will independently work threw an exam paper. They will be allowed to use notes have repaired	Exam paper	Exam paper	

Week 5	**Assessment**	Students will have their work completed in the previous lesson assessed.	Individually we will go through each costume making sure each student knows the correct answer.	Interaction with whiteboard	Independent work	
Week 6	**Study skills**	Can you complete and exam paper independently	Students will complete an exam paper with the help of any notes	Exam paper	Exam paper	
Week 6	**Assessment**	Students will have the work they completed earlier assessed.	Students will have their exam paper assessed to see there progress with an exam paper using notes	Interaction with whiteboard	Working with exam conditions.	
Term one **Second half**						
Week 1	**Fusion 360**	How to extrude simple shapes.	Draw 2D shapes on the computer and extrude them in 3 dimensional shapes.	Visual inspection of work	Work saved to cloud	
Week 1	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Peer to peer assessment	Graded paper.	
Week 2	**Fusion 360**	Creating 3d images form 2d drawings	Students will be given an orthographic drawing	Visual inspection of work	Work saved to cloud	

Week 2	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Visual inspection of work	Graded paper.	
Week 3	**Fusion 360**	**Creating more than one component**	To create more than one component in the one drawing and assemble them.	Visual inspection	Work saved to cloud	
Week 3	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work. Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Visual inspection of work	Graded paper.	
Week 4	**Fusion 360**	Work on fusion to create a power bank	On fusion the students will create a power bank to charge a phone.	Visual inspection	Work saved to cloud	
Week 4	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work. Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Visual inspection of work	Graded paper.	
Week 5	**3d printing**	Students will print there power bank	Print and assemble the power bank built in the previous lesson.	Measure the final product	N/A	
Week 5	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work. Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Visual inspection of work	Graded paper.	

Week 6	**Arduino skills**	Code a simple sketch	Students will code a simple sketch to make a motor spin.	Visual inspection of moving parts.	N/A	
Week 6	**Practice paper**	Complete exam paper independently	Each student will complete an exam paper. Completed they will peer to peer assess each other's work. Each student will complete an exam paper. Completed they will peer to peer assess each other's work.	Visual inspection of work	Graded paper.	