Subject: Engineering

Year group: 11

Week beginning	Subject Topic	Link to exam spec	Key Learning points/big questions	Independent/Home learning	Linked Assessment	Resources	Retrieval practice (topics in LSTs according to timeframe below)
7/9	Unit introduction and expectation: **Unit aim and purpose** The purpose of this unit is for learners to analyse engineered products in order to propose design solutions to meet requirements. What are the 6 R's?		1. Teacher to deliver powerpoint outlining the expectations of each student with regards to the new unit of coursework 2. Teacher presentation on sustainability and the 6R's ▪ **RETHINK:** Do we make too many products? Design in a way that considers people and the environment. ▪ **REFUSE:** Don't use a material or buy a product if you don't need it or if it's bad for people or the environment. ▪ **REDUCE:** Cut down the amount of material and energy you use as much as you can. ▪ **REUSE**: Use a product to make something else with all or parts of it. ▪ **RECYCLE**: Reprocess a material or product and make something else. ▪ **REPAIR**: When a product breaks down or doesn't work properly, fix it.	Write notes about the 6 R's	LO1 know how engineered products meet requirements AC1.3 explain how environmental issues affect engineering applications	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfII1WpA?e=TpqDza	
14/9	Scales of manufacture		**1.** Tutor presentation: Link last weeks topic to the subject of scales of manufacture and the design of engineered products. 2. How do engineers have control over the impact a product has on the environment? • Relate to 6 R's and how design can be altered to make disassembly easier • materials can be selected to minimise environmental impact • size can be changed etc. 3. Manufacturing processes and how they determine the scale of production that a product could be made i.e. mass production 4. The importance of quality control and how this relates to the job of an engineer and product manufacture	Write notes in lesson regarding Scales of production and quality control	AC1.3 explain how environmental issues affect engineering applications	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfII1WpA?e=TpqDza	6 R's **Retrieval practice task** page 10 (grid task) 
21/9	Manufacturing processes – understanding what effectiveness means		1. Tutor presentation: Injection moulding process overview 2. Extrusion moulding process overview 3. Blow moulding process overview 4. Compression moulding process overview 5. Students to watch various videos and make use of resistant materials 2 software to	Complete pages 4, 5 and 6 of booklet over the course of the weeks lessons 	AC1.2 identify features of engineered products that meet requirements of a brief	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfII1WpA?e=TpqDza	Scales of production 6 R's

			create notes that will enable them to further understand each of these processes.		AC1.3 explain how environmental issues affect engineering applications AC3.1 describe engineering processes		**Retrieval practice task** page 10 (Column 2 Power ticket) ENGINEERING KNOWLEDGE RETRIEVAL
28/9	Task analysis – Plug disassembly and analysis Materials analysis		1. Mind map of task analysis 2. Students to demonstrate an understanding of what materials and processes could be used in the manufacture of an existing charger and what environmental impact these have 3. Take photos of an existing charger. Identify and label the different parts. Write notes explaining how the different parts (3 Pins, Cable, Casing, electronics) have to interrelate (work together) 4. Identify the material that the original case is made from. What are the properties of this material? What were the advantages of the company using the material? Were there any disadvantages. What other new or different material could they use? 5. Identify the material of another component such as the PINs or the cable. What are the properties of this material? What were the advantages of the company using the material? Were there any disadvantages. What other new or different material could they use? 6. Are any of these materials sustainable? What can the company do to make these materials more sustainable?		AC1.3 describe how engineered products function AC1.3 explain how environmental issues affect engineering applications AC2.1 describe properties required of materials for engineering products AC2.3 select materials for a purpose	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfll1WpA?e=TpqDza	Scales of production Injection moulding Extrusion Blow moulding Page 9 of booklet Page 8 of booklet – exam style questions ENGINEERING KNOWLEDGE RETRIEVAL
5/10	Manufacturing processes for a plug		1. Identify the manufacturing process used to make the original. What were the advantages of the company using this Process? Were there any disadvantages? What other new or different processes could they now use that would be better? Why would these new processes be better? 2. Identify how another part is made such as the cable or the 3 pins. What were the advantages of the company using this Process? Were there any disadvantages? What other new or different processes could they now use that would be better? Why would these new processes be better? 3. What environmental impact do these manufacturing processes have? What energy do they use? What pollution do they produce?		AC2.1 describe properties required of materials for engineering products AC2.3 select materials for a purpose	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfll1WpA?e=TpqDza	Injection moulding Extrusion Blow moulding Plug materials analysis Complete page 7 of booklet

12/10	ACCESS FM		1. **Existing Products Analysis:** Find similar products produced by other companies. Identify features of these products that meet the requirements of the brief set by Derry Accessories . Use ACCESS FM to help. **Detailed Existing Product Analysis:** For your favourite existing product produce a detailed analysis using ACCESS FM. Show how this product could meet the brief set to you by Derry Accessories. Explain what changes/improvements you would make to the product.		AC1.3 describe how engineered products function AC2.3 select materials for a purpose AC3.1 describe engineering processes	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfll1WpA?e=TpqDza	6 R's Manufacturing processes
19/10	Specification	LO3 be able to propose design solutions AC3.3 produce design specifications	2. Write a specification based on what would make a good charging product. • Clear communication • Demands/wishes • Using prepared templates • Using set criteria		AC1.3 describe how engineered products function AC1.3 explain how environmental issues affect engineering applications AC2.1 describe properties required of materials for engineering products AC2.3 select materials for a purpose	https://eggbuckland.sharepoint.com/:f:/g/Technology/EhxlkpKopKJFoc8wWa0ekXgBjwkFN3x6YahQMvJfll1WpA?e=TpqDza	Scales pf production ACCESS FM
Half term							