



TERM 3 APR – JUL Planning and sequencing for manufacture	Week 1	Week 2	Week 3	Week 4-5	Week 6-12 WJEC Unit 1 Brief and Information pack Extracting information, identifying materials, processes, tools and equipment, time planning and health and safety			
LESSONS TOPIC QUESTION(S)	Mechanical design – Theme parks Understanding how modern theme parks have developed over time. What are the mechanical challenges engineers have faced in the development of new rides?	Electronic design – mobile phones/smart phones Understanding how mobile phones have developed over time. How have changes in smart technology changed the way homes function?	Research skills Analysing briefs and identifying key information. Identifying suitable products that meet a criteria.	Graphic skills Why is communication important for a designer/engineer? Sketching techniques and ideas generation.	Analyse data/engineering drawings and extract key information. Annotate key information and identify any errors in engineering plans.	Identify appropriate materials and required stock sizes.	Plan the manufacturing stages for identified components. Why is it important to plan contingency?	Modelling and testing of components Model all components in CAD. Test and evaluate materials.
Knowledge & Skills development	<ul style="list-style-type: none">• Developments and advancements in Engineering• Mechanical design• Electronic design• Smart technology• Research and analysis skills• Sketching – visual communication• CAD – Developing skills							
Assessment / Feedback Opportunities	Formative assessment – verbal, Q&A Summative assessment –Exam style questions		Formative assessment – verbal, Q&A		Formative assessment – verbal, Q&A NEA – general whole class feedback			
Key Vocabulary	Stock sizes, drilling speeds, RPM, tapping drill sizes, hidden detail, cross section							

Literacy/Reading opportunities	Extended writing – exam questions Following Engineering design briefs and plans
Cross curricular themes	Maths – diameter, radius, dimensions English - extended writing ICT – using computers and software Geography – environmental damage
Personal Development (including British Values, RSE, Citizenship)	During this term students will develop key research and analysis skills to enable them to problem solve. They will also develop their ability to communicate visually.
Careers Opportunities	Product research analyst, industrial designer, CAD designer, graphic designer