Curriculum Overview: Engineering Unit - Clock
Year group 8

- **What we are learning**: The topic or focus for rotation.
- **Key knowledge & skills**: What students should understand and be able to do.
- **How we assess learning**: knowledge checks, practical tasks, written responses and formal assessments.
- **Key words to know**: Vocabulary students will learn and use.

What your child will learn each rotation {9 weeks}
This overview shows the key topics, skills, and knowledge your child will be learning in **Technology Engineering Unit - Clock** in **Year 8**. It helps families understand what's being taught, how it builds on previous learning, and how you can support your child at home.

Unit	What we are learning	Key knowledge	Key skills	How we will assess learning.	Homework	Key vocabulary for this unit
9 Week Rotation	**Design** Research and analyse user needs. Identify and solve design problems creatively. Develop clear specifications for innovative, functional products Communicate ideas through sketches, plans, and models. **Make** Use specialist tools, equipment, and processes accurately. Work with a wide range of materials, considering their properties **Evaluate** Test and refine ideas against the specification. Consider user feedback and wider impacts on society	How to draw different 'views' of a 3D product How to use equipment safely and accurately To understand how materials can be used to join and secure products How to measure accurately How to fit a mechanism How to evaluate	**Design Skills** Research user needs and existing clocks. Sketch ideas and plan designs. Select suitable materials (HIPS, MDF). Balance looks, function, and comfort. **Technical Skills** Model accurately in CAD. Plan and make moulds safely. Cut, shape, and assemble MDF smoothly. **Vacuum Forming Skills** Prepare and form HIPS correctly. Trim and finish the moulded part neatly. **Making & Finishing Skills** Assemble parts securely. Join, sand, and decorate neatly. Check the mechanism works. **Evaluation Skills**	Assessment of the design making of the MDF layers and the manufacturing write-up. Assessment of the final clock	To source and scale to size, images of items to use as their raised layers for their clock faces	Adhesives – Substances used to bond materials. Aesthetics – The look and appeal of the clock design. Assembly – Putting together clock parts like the mechanism and hands. Clock Mechanism – The part that moves the hands to show time. Cutting – Shaping materials like MDF using tools (e.g. jigsaw). Decoration – Adding colour or pattern for appearance. Design Drawing – A detailed plan showing size and construction. Draft Angles – Sloped sides of a mould for easy removal. Edge Finishing – Smoothing cut edges neatly. Evaluation – Judging success and gathering feedback. Fasteners – Items like screws for joining parts. Filing / Sanding – Smoothing or shaping materials. Heating – Softening HIPS plastic for forming. HIPS – Lightweight plastic ideal for vacuum forming. Jigsaw / Router – Tools for cutting or shaping MDF. Marking Out – Measuring and drawing cutting lines. Material Selection – Choosing suitable materials (HIPS, MDF). MDF – Smooth, dense wood used for moulds. Mould – The form used for vacuum shaping plastic. Planning – Organising design and making steps. Research – Studying existing designs and user ideas. Shaping – Forming materials to the desired outline. Sketching – Drawing quick design ideas. Sustainability – Reducing environmental impact. Testing – Checking the mechanism and design work. Trimming – Cutting off extra plastic for clean edges. User Needs – What the clock's user wants and expects.

	and the environment.		Review and improve designs. Use feedback and consider sustainability.			Vacuum Forming – Shaping heated plastic over a mould with suction.