

KEVICC KS3 Curriculum: Design & Technology	Subject: Product Design CAD/CAM Metalworking Module.	Key terms and vocabulary.
Year: 8 Term: Various	Topic: Working with metals/ Lantern project Exploring design from different cultures to influence the design for a lantern.	<i>Which words will be explicitly taught & how frequently will understanding be checked? How will assimilation of new vocab be checked?</i>
What is the essential knowledge from this unit? What do students need to remember and understand? <ul style="list-style-type: none"> • Understanding of design techniques that allow the development of creative concepts through sketching modelling and reflection. • Refine critical appraisal skills in relation to new design opportunities and existing product analysis. • Enrich design and manufacturing vocabulary that can be applied to a range of design contexts. (Use of ACCESS FM evaluation and notation structure). • Improve awareness of safety in relation to welding, spinning, rolling metal, spray painting and electronic manufacturing techniques, including plasma cutting. • Improve problem solving skills in evolution of lantern unit through sketching, modelling, CAD work and realisation. • Understanding the origins of metals and their extraction process. • Have knowledge of the different types of metals, their properties and uses. • Use techniques like tessellation and repeat pattern to form part if the aesthetics of the lantern. Understand how these processes can also be useful in batch production. 		<i>Vocabulary regularly tested verbally in class and also tested at end of module unit test.</i> <i>Key Words.</i> <i>Aesthetics</i> <i>Customer</i> <i>Cost</i> <i>Environmental</i> <i>Safety</i> <i>Scale/Size</i> <i>Function</i> <i>Materials</i> <i>Ergonomics</i> <i>Social and Moral</i> <i>Issues</i> <i>Inclusion</i> <i>Process</i> <i>CAD</i> <i>CAM</i>
What prior learning supports understanding of this content? The modular specialist product design and textiles units covered in Years 7 provide a foundation of research, analysis, designing and making skills that underpin the work covered by this element of the curriculum.	How does this content link to future learning? All research, analysis, design and making skills are directly transferrable to other D&T areas and curriculums. Content is linked to both the GCSE and 'A' Level courses.	<i>Duplicate</i> <i>Array</i> <i>Dimensions</i> <i>Batch production</i> <i>Tessellation</i> <i>Repeat patterns</i> <i>Plasma cutting</i> <i>Welding</i> <i>Spinning</i> <i>Rolling</i> <i>Extraction process</i>
Reading: Students are asked to research different cultures to develop design ideas for their lantern. They will be required to investigate a range of sources to gain this information. They will need to evaluate and their ideas and designs by applying ACCESS FM analysis.	Writing: Students are helped to evaluate and notate designs using help sheets based on the ACCESS FM system following discussions and questioning. Notes are made during the research, designing, development and evaluation stages of the project.	<i>Metal Ore</i> <i>Metals oxides</i> <i>Alloys</i> <i>Non-ferrous metals</i> <i>Ferrous metals</i>

Key assessments:

How will students review the information learned?

How will feedback be seen?

Students will peer assess and self evaluate ideas, skills and knowledge formally midway through the project.

Students will complete a baseline test to indicate existing knowledge of subject.

Staff will use baseline test to check progress, against formal midway and end of cycle assessments

Staff will assess work on design research & design sheets, the practical itself and evaluation and sketched improvements. Peer assessment will also occur at design stages as part of the selection process.