

Subject Curriculum Overview for Academic Year 2022/2023

Subject: 3D Design (OCR GCSE)		Subject Leader: Mrs Fox	Year Group: 11	AUTUMN TERM
Topic	Key Learning Points		Key Vocabulary	Assessments
<p>Students began the coursework portfolio in Year 10 by designing and prototyping a product of their choosing. Students will have until January of Year 11 to complete the full manufacture and subsequent completion of the portfolio. The second coursework component will immediately follow the completion of the above portfolio. Component 2 is worth 40% of the overall GCSE grade and is an examination of practical skills.</p>				
<p>Portfolio: Design and manufacture of a chosen product</p>	<p>END POINT: Completion of the design portfolio and manufacturing of the final outcome</p> <p><i>Portfolio</i></p> <p>Within a portfolio, students will:</p> <ul style="list-style-type: none"> • Analyse the given design context and decide on a personalised project direction. • Research existing production solutions within their chosen area. • Create a specification to adhere to, targeting key design and manufacturing criteria. • Demonstrate versatile design thinking by drawing several innovative design ideas. • Develop the best design ideas showing consideration to aesthetics, functionality, usability, and original design context. • Collect and analyse target market feedback to help make final product developmental decisions. • Use CAD software to create a final 3D visual of the product, detailing material choices and accurate manufacturing measurements. • Create a prototype of the final product using corrugated cardboard to help inform of any final amendments to the design and/or production process. • Use the final design to create an accurate cutting list to order materials and components in preparation for the manufacturing stage. • Continue to analyse the product during the manufacturing and make adjustments where necessary. • Test the final product for functionality and usability, gathering feedback from the target market. 		<p>Using vocabulary mastered from previous years, students embed subject specific terminology into their coursework portfolio, to demonstrate their knowledge and understanding of this subject specialism.</p>	<p>Teacher-assessed coursework portfolio progression using a combination of verbal and written feedback, with key areas to develop.</p> <p>This portfolio (Non-Examined Assessment) is teacher marked by January of Year 11, and then externally moderated.</p>

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<p>Externally-set task</p>	<ul style="list-style-type: none"> • Accurately document the manufacturing stages in their ‘making diary’ via a photographic storyboard and annotation. • Evaluate the product using the specification targets from the earlier design stages. <p>The above portfolio is assessed in school and externally moderated by the OCR exam board using the following four key objectives:</p> <ul style="list-style-type: none"> • <i>Through investigation, develop design ideas which demonstrate a critical understanding of sources.</i> • <i>Refine work through exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.</i> • <i>Record design ideas, observations and insights which reflect aims and intentions as the design and manufacture work progresses.</i> • <i>Presentation of a personal and meaningful response which reflects the design intentions and which also demonstrates an understanding of key design elements.</i> <p>END POINT: To manufacture a product based on an externally-set brief, under exam conditions.</p> <p><i>Externally set task (40% of the requirement for each student’s GCSE qualification)</i></p> <p>Students will:</p> <ul style="list-style-type: none"> • Use their existing knowledge, understanding of the design process, and manufacturing skills to design and manufacture a personal response to an externally set brief. • Research existing solutions to make better informed design decisions. • Draw initial design ideas and develop these accordingly until reaching a working final design. • Demonstrate higher level, precise CAD/CAM and traditional woodworking skills. • Manufacture the final product in the workshop under exam conditions (10 hours) 		<p>Teacher monitoring of portfolio progression offering direction and support.</p> <p>The externally set task is internally assessed.</p>
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How parents can support learning in the subject this academic year

Students will be expected to continue with folder work at home. Students should be encouraged to be working on their 3D Design work for approximately 1 hour per week. During the manufacturing stages, students will need to download photographs of their previous lesson, and add these to their work as part of their making diary. It always saves time in lessons (and possible internet issues) if these photographs were downloaded at home. Students should be encouraged to practise manufacturing skills around the home to help build confidence and accuracy using tools.

Recommended Reading

Websites:

<http://www.mr-dt.com/> <https://www.bbc.co.uk/bitesize> <https://technologystudent.com> <https://design-technology.org> <https://designmuseum.org>

Books:

- SketchUp for Dummies – Bill Fane
- IRONCAD Assembly Drawings – Sachidanand Jha
- Universal Principles of Design - William Lidwell, Kristina Holden, Jill Butler

Points to note

Whilst we do our utmost to stock materials for GCSE students to manufacture their bespoke products, any help in sourcing these for your child would be greatly appreciated. All GCSE work remains on school site for the following academic year after manufacture. This may be collected once notifying and being agreed by the subject leader for DT. We are, as a department, doing our utmost to source responsibly for our environment; Any parents/carers within the manufacturing or design industry who would like to donate off-cuts, or materials to re-use, please contact Mrs Fox, Subject Leader (donna.fox@jmhs.hereford.sch.uk), with thanks.