


Subject Curriculum Overview for Academic Year 2022/2023

Subject: 3D Design (OCR GCSE)	Subject Leader: Mrs Fox	Year Group: 10	AUTUMN TERM
Topic	Key Learning Points	Key Vocabulary	Assessments
<p><u>Product design and electronics - Stereo Speaker Project –</u> Design and manufacture mixed materials speaker surround (housing) and higher level soldering electronics skills.</p> 	<p>OUTCOME: STUDENTS WILL KNOW HOW TO DESIGN AND MANUFACTURE USING A COMBINATION OF MATERIALS, GIVING CONSIDERATION TO INSIDE WORKING ELECTRICAL COMPONENTS</p> <p>Building on independence and resilience, mastery skills from previous years and projects, (see years 7 to 9 of the DT curriculum) students work through the structured design process they are used to, to design and manufacture a stereo speaker.</p> <ul style="list-style-type: none"> • Students will work responsibly in pairs to solder their stereo speaker kit. • Students will demonstrate their knowledge of important workshop health and safety procedures by always working safely, concentrating and using protective PPE. • Students will create quality prototypes, using corrugated card board to accurately create a card model of their final design, and be able to make final development decisions from this. • Students will use CAD/CAM to create a quality outcome with detail and accuracy. • Students will continuously develop and evaluate throughout the manufacturing stages and document this as a making diary in their folderwork. 	<p>Exploration, design brief, analysis, existing solutions, client, annotation, narration, sequencing, objectives, specification, manufacture, production, cutting list, development, prototyping, corrugation, scoring, manipulating</p> <p>Joinery, finger, dowel, rebate, butt, dovetail, box, mortis & tenon, biscuit. Tri-square, hard wood, soft wood, man-made board, grain, abrasive, counter-sink, chisel, aesthetic, abrasion, hinge, panel pin, pin hammer, tension, belt sander, palm sander</p>	<p>Teacher assessed folder work progression (the design process) using a combination of verbal and written feedback, with key areas to develop.</p> <p>Teacher assessed practical looking at practical manufacturing skills and quality of product outcome.</p> <p>‘Forms’ Summative assessment at end of half term to assess understanding of key learning points.</p>

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<p>Half term 1 Completion of Stereo Speaker Project – above</p> <p>Half term 2 GCSE Coursework NEA Portfolio 60%</p>	<p>The NEA Portfolio consolidates all learning to date. Students independently explore, research, design and manufacture a product of their choosing. The portfolio showcases both practical work and their personal response to a set starting point, brief, scenario or stimulus. The project continues into Year 11 and is worth 60% of the overall GCSE in 3D Design.</p> <p>Key Skills:</p> <p>The portfolio is broken down into 4 assessment objectives:</p> <ul style="list-style-type: none"> • AO1 – Develop ideas through investigations, demonstrating critical understanding of sources. • AO2 – Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes. • AO3 – Record ideas, observations and insights relevant to intentions as work progresses. • AO4 – Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language. <p>Students will have completed most of the design process by the end of year 10, including some prototyping of their final design. Students will complete all final manufacturing, testing and evaluating, during the first term of Year 11.</p>	<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 NEA portfolio is teacher marked by January of Year 11, and externally moderated towards the end of the Year 11 academic year.</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 Mrs Fox or Mr Haden.

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, Head of Department (donna.fox@jmhs.hereford.sch.uk), with thanks.