West Kirby Grammar School

Curriculum Map – Year 8 – Design & Technology

Topic Name	Term	Skills Developed	Link to NC Subject Content	Next link in curriculum	Other Notes
Structures- Mosquito Net Frame	*Group rotations*	Knowledge and understanding Design skills Modelling skills Communication Problem solving Real life scenario Thinking skills ICT skills CAD skills (2D Design and 3D SketchUp) Group work Presentation skills	• Design strategies • Developing prototypes • Material properties • New materials • Communicating design ideas • New and emerging technologies • Environmental issues • Carbon footprint • Math • Packaging (nets) • Isometric drawing	• *GCSE key skills*	• **PowerPoint presentation** • **Computers with 2D CAD drawing software** • **See project resource box** **This project also permits the learning of maths within the engineering context of deployable structures. There are a range of KS3 maths topics covered including density, nets, transformations, scale, conversions, circles, area, compound shapes and problem solving.**
Textiles Pyjamas- Focus on making and designing for other users.	*Group rotations*	• Pattern matching, tessellation, lay plan. • Reinforcing the use of the sewing machine, over locker and iron. Manipulating to create a	Make • select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture select from and use a wider, more complex range of materials,	Linked to GCSE core skills and knowledge. Y9 starts with a bardot top that uses some of the same skills.	This project increases competency in using specialist machinery and builds a good foundation for the skills required at GCSE.

		high level of finish. • Accurate measuring and stitching. • Learning how to sew the J seam. • Accurate ironing to create the waistband and casing for the elastic. Making and application of a pocket- using the bagging out technique.	components and ingredients, taking into account their properties. *Consider the needs of other users and how designs are adapted for different markets.* *Understand synthetic fibre sources, building on year 7 knowledge of natural fibre sources.*		

Product Design – Clock Project To develop a clear understanding of the types of clocks and methods of telling the time available on the market and their common applications in modern society. Selecting designs for function and creativity. History of telling time. Introduction to designing and presentational techniques. Confectionery clock style based upon the learner's favourite sweets or brand. Introduction to interior design students make mood boards and design interior prior to designing a clock for their room/space. Investigation relating three design styles: • Arts and Crafts style • Charles Rennie Mackintosh • Memphis Design Learners will engage in lecture style learning and make notes and key points and then will be given the opportunity to design a clock in that style.		• Primary research methods • Collaboration • Ability to design and select based upon creativity and enterprise. • Product analysis skills and application • Understand how designers create products for users • Understand how designers apply strategies to design ideas • Produce specifications • The work of the interior designer • Design for a client or environment • Design history	• Use research and exploration, such as the study of different cultures, to identify and understand user needs • Analyse the work of past and present professionals and others to develop and broaden their understanding	GCSE DT Design history	Opportunity to handle products from the collection box. Work with others through collaboration.

Students to convert 2D images into working 3D models. Measurement added to a working drawing, students to manufacture a 1:1. Modelling ideas, using card pupils will design three suitable (3D) designs based previous design successes. One idea will form the template for the CAD drawing.		• Data collection • Develop an understanding of anthropometrics and ergonomics • Measure and record with accuracy • Understand scale and proportion • Design in the prescribed styles • Use peer assessment to gain opinions and guide development • Interaction with home/families	• Identify and solve their own design problems and understand how to reformulate • Products that respond to needs in a variety of situations	GCSE DT	
Final design proposal Using the feedback pupils should use a modelling skill to design a final idea that meets the design and manufacturing specification. The card model should represent 1:1 scale and include all dimensions. Experimental with surface finishes and plywood. Designing for a third party. Time to convert the model into a 2D design DXF file. Teacher to setup an industrial environment. Dialogue to take place between teacher and learner. Teacher to follow the instructs and manufacturing requirements.		• Measuring skills • Scale diagrams • Understanding cut and engrave options • Understanding manufactured boards v's natural timber • Produce a working drawing • The constructed model should be deconstructed and converted into a 2d scaled drawing, showing all sizes, cut lines and engraving areas.	• Identify and solve their own design problems and understand how to reformulate to fix or make corrections when working with materials or construction techniques.	• Scale • Collaboration with third parties to manufacture • Boards • Timber • Surface finishes	

Preparing materials for surface finishing, decorative findings and working as part of a production line situation. Mini industrial workshop environment. Templates and jigs are used to ensure consistency shape and form. The implementation of QC and QA should be introduced and discussion raised regarding batch production.		• Understand how industry processes materials and applies surfaces finishes by hand and commercial practices. • Apply paint and react to changes in materials • Ability to use jigs to ensure consistency • Explain QC and QA • Explain the differences in batch and mass production • Explain why mass produced products are cheaper	• Select from and use a wider, more complex range of materials. Select from and use specialist tools, and machinery precisely, including computer-aided manufacture • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions	GCSE DT	
Testing, evaluating and modifications. Learn how to test their practical work and make informed decisions to suggest improvement and modification to the design and manufacture. Compare against the specification and original design challenge. Edward De-Bono six thinking hats exercise to assist in evaluation.		• Application of testing, devising a testing strategy • Apply analytical skills • Engage in peer assessment, inkling SWOT and six thinking hats • How to modify and adapt design based upon feedback • Suggest and make improvements	• Test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups • Global markets • Fair trade	•	

		• Consider and address consumer concerns including end of life plan and sustainability • Consideration of mass production methods	• Ethics		

Food & Nutrition	*Group rotations*	See separate Food & Nutrition folder.			