Co-op Academy Walkden

Co-op Academy Walkden Subject Curriculum Overview 2022/23

KS3 Design and Technology

Year Group		AU1	AU2	SP1	SP2	SU1	SU2
7	**Core Theme**	Industry, Materials & Processes.		Design		Design, Industry, Materials & Processes.	
	Intent	To understand and apply the knowledge, skills and practices of the Design/Manufacture industry.		To understand and apply the knowledge and skills of design and manufacturing processes.		To understand and apply the knowledge and skills of processes and materials used to develop outcomes.	
	Unit of Work	**Materials** An in-depth look at the different materials used in industries, their properties and uses: ● Metals ● Smart Materials ● Paper/boards ● Fabrics ● Concrete/mortar **Joining Techniques** Practical opportunity to develop skills in a variety of joining methods using: ● Wood ● Fabrics ● Metals ● Polymers		**Design & Communication** An insight into hand sketching techniques, shading, rendering and modelling will help develop design skills. A basic introduction into CAD/CAM skills will help students to visualise and develop design ideas and model outcomes. **Materials** An in-depth look at the different materials used in industries, their properties and uses: ● Metals ● Smart Materials ● Paper/boards ● Fabrics ● Concrete/mortar		**Systems & Control** Practical opportunity to develop electrical and mechanical systems and understanding how these systems are used in real life contexts. **Finishing Processes** Practical opportunity to develop skills in apply and maintaining a product finish. Knowledge of how different finishes are chosen and developed. **Careers** Developing a knowledge of the different career roles and pathways within the Technology, Engineering and Construction industries.	

		Finishing Processes Practical opportunity to develop skills in apply and maintaining a product finish. Knowledge of how different finishes are chosen and developed.		**Design Evolution** How design evolves from a client deciding to create something to feeding in technological advances, choosing sustainable options to developing on past ideas using research and product analysis.	
	Cultural Capital	**Wider Community** Students will be informed on Health & Safety practices that take place within any workplace and understand the impact of these. They will also be able to make informed choices with regards to sustainable products and how they affect the environments around them. **SMSC** An overview into design evolution will allow students to understand the 'why' of product design and how SMSC considerations are applied and essential.	**Personal Development** Students will develop skills and knowledge of finishes that can be used in real life contexts within the home and the local environment. Eg. Painting a wall/fence. Developing these skills should promote self-confidence and social mobility.	**Personal Development** Students will develop skills and knowledge of joining and design that can be used in real life contexts within the home, local environment or provide them with future employment attributes. Developing these skills should promote self-confidence and social mobility that will have a positive impact on the students. **Experiences** Providing students with experiences into the latest technological advancements will enable students to fully immerse themselves into the curriculum.	**Physical and Mental Wellbeing** Students will develop a detailed knowledge of different materials and how these affect us and the human body/mind. Eg. Asbestos; the dangers and risks. Cobalt Hip Replacements; effective but highly poisonous. **Wider Community** Understanding British products, systems and processes within the different industries will enable students to engage with adult life and employment as an informed and responsible person.

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8	**Core Theme**	Starting a New Project		Development of Design		Design Challenges	
	Intent	To apply the knowledge, skills and practices of the initial stages of the design process.		To develop design ideas and use a range of techniques to communicate the development.		To use a range of skills and knowledge to meet specific design challenges.	
	Unit of Work	**Assignment Brief** An overview of the	**Building Development - Concept Ideas**	**Materials Testing** Identify suitable	**Modelling** Practical	**Graphics** An overview into the study	**Interior Design** Identify a focus on one

		starting stages of the Design Process. - What is an assignment brief? - Clear links to trades/job roles, analysing the brief - Planning of project (RIBA Plan of Work) - Setting out a design brief and specification **Research - Design Ideas** An opportunity to develop research skills to inform / inspire design ideas. Focus on: - shape, materials, sustainability, function - past designers, form, feel, style	Practical opportunity to use a range of techniques to create design ideas that meet the criteria set out during the first stage. - Sketches - focusing on shape, layout, style. - Annotations: basic ideas for function, sustainability, services, materials, colours, finishes, joining.	sustainable materials that could be incorporated in the design ideas. Research/ Test materials that could be used in the construction of the design, including rationale for material choice. Health & Safety considerations for design ideas. **Technical Drawing** Opportunity to produce a technical drawing of the proposed design idea.	opportunity to create/design a model/ prototype of the design idea. Develop and adapt the model using a range of techniques (questionnaires, feedback, testing) to inform the process. Develop and adapt the model using a range of media and materials/ techniques.	of graphics / branding for a product. - typograph - colours - customer appeal - promotional material - signage - repeat patterns - slogans Create graphical designs for the product establishing a clear theme. Designers Neville Brody- Nike	specific area of the product - focus on design swatches, colours, textures, layout, function. Create specific concept / developed sketches and annotations to communicate ideas and include rationale for choices.
	Cultural Capital	**Personal Development** Students will apply their skills and knowledge of design that can be used in real life contexts connected to the home, local environment. Developing these skills should promote self-confidence and that will have a positive impact on the students. **Experiences** Opportunity to visualise real life product designs - TRIP	**Wider Community** Understanding British products, systems and processes within the different industries will enable students to engage with adult life and employment as an informed and responsible person. **SMSC and BV** Students will engage in designs that are suitable for their specific needs and tailored towards local area context.	**SMSC** Full working drawings require students to understand the technical considerations (H&S, SMSC) of a design and ensure these are applied and meet british standards and conventions. **SMSC and BV** Students will develop an understanding of what materials are easily sourced and sustainable for a british product.	**Academic Success** Students will have the opportunity to build on the iterative design process that corresponds with a range of KS4 course elements.	**Wider Community** Taking into account the needs and context of the local community and how to address these. **Academic Success** Applying a range of skills and knowledge from different aspects of life to develop their understanding of how graphics can be influential.	**Social Mobility** The students will ensure that they meet a range of design challenges by incorporating experiences that promote social mobility and are inclusive of all types of people.

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9	**Core Theme**	Plastics				Timbers	
	Intent	Design, make, evaluate project Clock project To understand how to design for a client, create a logo/theme and packaging.		Design, make ,evaluate project		The purpose of this unit of work is to build on the prior learning and develop: - planning and preparation for practical tasks within Construction - completion of practical and tasks within Construction - evaluation of processes within Construction	
	Unit of Work	**<u>Clock Project</u>** Pupils receive a design brief from their client. Initial research of existing products and a moodboard, will lead onto a specification and design ideas for their products. Communication skills will be taught in order for them to produce a high quality final idea. Pupils will learn new CAD skills using 2D design to develop their final product which will then be produced using CAM and practical skills. This project will follow the iterative design process and include continuous evaluation and development.		**<u>Graphics/Textiles Packaged Product</u>** Pupils are given a design brief from their client.The final outcome will be a fabric neck tube (buff),that they will have embellished. Learners will then design and make the packaging for the Textiles based product that is environmentally friendly. Initial research will be carried out. Through initial ideas and development work, pupils will explore typography, logo's, nets, colourways and waste and use CAD/CAM to create their packaging and surface pattern techniques These will be explored using CAD software , hand sketching and modelled prototypes.		**<u>Joinery Project - Practical Skills</u>** Window Frame - Completion of a small wooden window frame for use in a domestic dwelling: - accuracy of wood joints - ability to follow technical drawing - finishing skills Written Portfolio: - Plan / timescale - materials/cost - tools/equipment/H&S - Evaluation - Health & Safety Legislation - Written Exam	
	Cultural Capital	**<u>Personal Development</u>** Problem Solving: Pupils need to develop their own solution to the design brief. They will need to work through their ideas, overcoming problems to achieve a working solution. Developing these skills should promote self-confidence and a sense of achievement. **<u>SMSC</u>** Pupils will have an understanding of how product designers consider SMSC when designing and the effects on the environment when designing products.		**<u>Personal Development</u>** As stated from the Design and technology programme of study "High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation." Students learn to be imaginative and creative, are able to problem solve, learn to take risks and become resourceful. Students learn about health and safety within industries. **<u>SMSC</u>**		**<u>Personal Development</u>** Students will develop skills and knowledge of construction joinery skills that can be used in real life contexts within the home, local environment or provide them with future employment attributes. Developing these skills should promote self-confidence and social mobility that will have a positive impact on the students.	

			They will learn to understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers and product developers.	