THE CROSSLEY HEATH SCHOOL

Technology Department – KS3/4 Curriculum Planning 2025-27

Year Group	Scheme of Work / Discipline	Knowledge	Skills &Techniques
7	DT / Graphics *Drawing skills, CAD - Token - Metals*	• How to produce presentation drawings • How to depict objects/designs in 3D • CAD CAM advantages and disadvantages • Ferrous metals and Non-ferrous metals, including aluminium, copper, pewter and brass. • Properties of materials including ductility, malleability and conductivity. • Careers in Engineering. • University vs Apprenticeships	• Perspective drawings (1 & 2 pt) and crating • Enhancement techniques, such as line weighting, rendering. Etc. • Techsoft 2D Design CAD introduction. • Design Process • Casting and finishing of metal products.
	DT/Engineering *Automaton*	• Health & Safety – Risks & Hazards, Safety procedures and Safety signage • Introduction to design process and alternative creative techniques • Mechanisms – basic types and functions • Timber – material classification, properties, and processing	• Introduction to practical skills and processes using wood working hand tools • Introduction to machines – use drill, sander, fretsaws • Wood finishing techniques
	Food & Nutrition *Health and Safety, Eatwell guide*	• Health and Safety in the kitchen • Danger prevention • Knife holds – bridge and claw • The Eatwell Guide • Recipe adaptation and evaluation	• Work safely and hygienically in a kitchen environment • Demonstrate safe use of knives • Apply heat in different ways – hob, oven • Apply the principles of the Eatwell guide • Cook a repertoire of predominantly savoury dishes
8	DT *Levers and Linkages*	• Mechanisms – types and functions. Building upon Y7 • Converting motion types transferring force, motion and velocity. • Applications	• Prototyping different linkage mechanisms • Iterative design process of ideation, prototyping, evaluate and reiterate
	Engineering / DT *Nightlight*	• Health & Safety – Safety procedures Soldering & recap. • Power sources, classification & properties • Understanding basic discrete component and their symbols, circuits, and circuit design • Influences in design Art nouveau, De Stil, Deco & Memphis.	• Introduction to soldering and PCB's • Revisit/Extension use of CAD/CAM – laser cutter • Practical skills and finishes for plastics and timbers
	Food & Nutrition *Handling meat/alternatives and the 4 C's*	• The 4 C's - cleaning, cooking, chilling and Cross contamination • Principles of working with raw meat • Understanding different culinary traditions • Impact of temperature on bacterial growth	• Selecting, preparing, and manipulating of ingredients • Preventing cross-contamination • Using utensils and applying heat across a wider range of ingredients • Recipe research, development and adaptation
9 Rotations until March	DT- Product *3D CAD* *Four-legged Friend*	• 3D CAD Modelling and techniques • How to use iterative design process when modelling • Understand designing for end users – applying anthropometrics • Material knowledge – revisit Polymers • Revisiting Health and Safety in workshop	• Introduction to 3D CAD techniques with OnShape • Use CAD to Design a flat animal friend • Cutting, shaping, and finishing techniques • Testing and evaluating design ideas and outcomes • Production techniques to produce models • Independent use of Laser Cutter
	DT – Engineering *Microprocessor Control* *Animated friends*	• Problem solving – System blocks • Components and symbols revisit • Introducing Microprocessor control • Apply computer science programming theory into real world practical applications • Introduce sketch modelling techniques	• Designing within criterion • Designing and making own housing adaption • Soldering skills and revisit components • Applying polymer manufacturing skills to make a product
	Food & Nutrition *Food Provenance*	• Why food is cooked. • Food poisoning bacteria • Farming methods • Moral/ethical issues within food/ingredient selection	• Multiple processes during practical lessons • Use of a wider range of utensils and equipment • Adapt recipes due to own beliefs and opinions
	DT – Products Option Project Zoomorphic Lamp	• Joining techniques • Fabrication • Construction • Finishing	• Workshop skills – marking out and making with precision • Tools processes, Health and Safety in workshop.
	DT – Engineering Option Project Adjustable Lamp	• Researching existing products • Problem solving • Discreet integrated circuits • Individual Project planning	• Designing within criterion • ReCap on Marking out skills, • Accurately producing wood adjustable joints • Soldering skills and revisit components

	Food & Nutrition Option Project Food Science & Choice		**Food Science:** • Methods of heat transfer • Functional characteristics of carbohydrates • Investigation of ingredient functionality **Food Choice:** • Religion and culture • Allergies and intolerances • Seasonal ingredients and recipes	• Relevant research skills • Comparison of ingredients and processes • Presenting information in a range of ways • Adapting recipes for different needs • Controlling contamination risks
10	DT – Product Design	HT1 and 2 - The Great Step	• Modern fabrication methods KDF's CNC routering - Joining techniques · Benefits of stencils, templates and jigs · Fabrication · Construction · Finishing • Bauhaus/ Memphis	• Iterative design process – Exploring ideas through research communication design ideas and prototyping a product of choice. Manufacture of flatpack stool
		HT3 and 4 - Teenage Lifestyle	• Influence of others (Dieter Rams, Jony Ives, Braun, and Apple) • Evaluate and analyse to assist in designing. • Classification of materials – polymers, origins, applications and stock forms, end of life. • Developing understanding of NEA process • Investigating work of others -key designers and companies. • Iterative design process to design and prototype desktop media unit. • Broad range of a variety of workshop processes including deformation techniques to produce quality outcome. • Use of production aids – jigs and formers to ensure precision in production	Conversion, classification, stock varieties and working with range of timbers and polymers. • Use of iterative design process NEA Research skills – work of others • Iterative design – communication of ideas • 3D modelling with CAD and Trad skills • • Bag press forming • Vacuum forming • Laser cutting
		HT5 - Get a grip	Soft modelling prototyping techniques	Modelling and prototyping
		HT6 - Starting NEA Coursework	• Introduction to contexts and themes • Analysis of problems • Folder organisation	• Product analysis • Client requisites • Initial ideas
	DT - Engineering	HT1 - Metals	• Metal sources, forms and commercial manufacturing processes • Metal Wasting & Shaping processes • Testing procedures	• Casting and mould production • Bending, shaping and finishing Metals • CAD Testing of an object
		HT1/2 - 3D CAD Home robot	• Ideation through CAD • Rendering and Presentation drawing • Additive Manufacturing processes	• Applying and extending CAD skills to design from scratch • Production of quality client presentation drawings
		HT2/3 – Mechanisms- Interactive display	• Revisit /extension of mechanism knowledge • knowledge and an understanding of main types of mechanisms • Revisit 2D CAD and CAM (laser cutter)	• Design and modelling from card • Test and improve solutions • Manufacture a working prototype
		HT3 - Electronics Designing circuits Bluesky	• System design and circuit diagrams • System parts and uses • look at similar devices that perform the same function including disassembly/product analysis	• examine different ways of doing things • making judgements about the effectiveness of existing solutions. • Design working prototype
		HT 4/5 - Microcontrollers MiNEA Robot Challenge	• Introduction to microcontrollers - PIC (Programmable Integrated Circuits) • Introduction to Programming skills • Mechanical systems • Designing to constraints	• Applying mechanical systems to produce movement • Attaching and programming autonomous movement with PICS
		HT6 - NEA Coursework	• Introduction of new contexts • Folder production and organisation, client recognition • Applying analysis of solutions to choose Project • Initial designs	• Production of Coursework folder and initial analysis, client requirements and initial ideas
	Food	Food, Nutrition and Health	• Macronutrient: Carbohydrates, Proteins & Fats • Vitamins: Fat soluble & Water soluble • Minerals: Functions - Main sources, effects of deficiency and excess	• Preparation of meat/fish/alternatives • Exploring nutritional modification & fortification • Recipe development • Enrobing and gelatinisation
		Food Science (Mock NEA1)	• Understand scientific principles (controls, processes etc) • Functional characteristics of macro nutrients • Planning investigations following research	• How to carry out research • Conducting and recording investigations • Comparing outcomes
		Food Choice	• Understanding the needs of different clients • Applying nutritional principles • Marketing and advertising	• Adapting recipe for different needs • A range of high skilled dishes • Interpreting nutritional information

		Food Safety and Food Preparation (MOCK NEA2)	• Food poisoning bacteria • Developing a menu suitable for a specific client • Awareness of life stage, dietary group or culinary tradition	• Plan, prepare and cook complex recipes • Wide range or utensils and equipment used • Nutritional profiling • Showcasing preparation and technical skills
		Revision	• 6 areas of the theory course • Function characteristics of ingredients • Recipe faults/improvements • Moral and ethical food issues	• Different approaches to written assessments • Key practical skills • Revision methods • How to apply theoretical knowledge to practical scenarios
11	DT	NEA coursework	• Continuing with NEA coursework, until March • Revision for exams	• Analysis, Research, Brief, Specification, Ideas, development, manufacture, evaluation. Role of the client and 3rd parties • Testing & evaluation (client and 3rd parties)
	Engine	NEA Coursework	• Continuing with NEA coursework until March • Revision for exams	• Analysis, Research, Brief, Specification, Ideas, development, manufacture, evaluation. Role of the client and 3rd parties • Testing & evaluation (client and 3rd parties)
	Food & Nutrition	NEA Coursework Units and revision	• Ingredient functionality within a provided brief • Effect of heat, acid, sugar etc on final product • Working characteristics investigated and tested • Research and plan to meet the provided brief • Focus on life stage, dietary group or culinary tradition • 6 areas of the theory element of the course	• Research, plan and carry out investigations • Analyse, evaluate and present results • Plan, prepare and cook 3 dishes in 3 hours • Development and adaptation of dishes • Produce and follow a time plan • Answering high mark questions • Revision methods and techniques
12	Product Design	H/Term 1 Theory & Wood skills - Stool	• Designers, design movements, and influence	• Exam techniques and process as well as core theory
			• Use of hand tools & finishes	• Practical wood joints.
		H/Term 2 Theory & Wood forming techniques	• Material properties • Timbers, properties, manufacturing processes, joints, & finishes	• Polymer properties, manufacturing processes, and finishes
			• Steam bending timber • Additional timber processes and manufacturing methods	• Techniques and process as well as core theory
		H/Term 3 Theory & Metal skills – Carabiner Polymers & modelling skills, Citizen Competition	• ICE – Citizen competition designing to a brief • Working within a team	• Presentation skills • Research skills
			• Metal properties, heat treatments, manufacturing processes, and finishes	• Following a production plan to tolerance • Hand & Machine skills to produce an aluminium Carabiner.
		H/Term 4 Theory & Papers & Boards – Origami Lamp Intro to NEA	• Papers & boards properties, manufacturing processes and finishes. • How to choose a suitable NEA context	• Composites, modern & smart materials • How to devise briefs from contexts
		H/Term 5 Theory & NEA	• Introduction to contexts and themes • Analysis of problems • Folder organisation	• Product analysis • Client requisites • Concept solutions
		H/Term 6 Theory & NEA	• Design and make principles content	• How to answer exam style questions
			• Continuing with NEA coursework	• Research, Brief, Specification, Client Ideas and feedback
13		Term 1 Theory & NEA Production	• Technical principles content	• How to answer exam style questions
			• Continuing with NEA coursework	• Solution development, modelling and prototyping, Working drawings and planning
		Term 2 Theory & NEA Production	• Revision for exams	• Practise exams techniques
			• Continuing with NEA coursework	• Prototype manufacturing, testing and evaluation
		H/Term 3 Theory	• Revision for exams	• Practise exams techniques