

Secondary Curriculum Information Pro-Forma

Subject:

Design Technology – Product Design

Subject Leader:

Mr V Patel

YEAR 7	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
Term 1 (September – October)	Introduction to Product Design Tomorrows Technology Today	<ul style="list-style-type: none"> • Design Cycle • Design Principles • Graphical Communication techniques • Entrepreneurship 	<ul style="list-style-type: none"> • Developing Creativity • Nurturing Teamwork • Generating and developing ideas
Term 2 (November – December)	Lighting up the world, one design at a time	<ul style="list-style-type: none"> • Understanding of tools, materials and processes. • Design Process • Creative development 	<ul style="list-style-type: none"> • Select and use range of tools, equipment and processes safely and accurately. • Planning • Evaluating
Term 3 (January – February)	Puzzling Problems	<ul style="list-style-type: none"> • Designing for clients • Research • CAD/CAM 	<ul style="list-style-type: none"> • Design Process • Joining techniques • Desktop Publishing
Term 4 (March – April)	Working with Plastics	<ul style="list-style-type: none"> • Material Properties • Working with tools to mark out • Measuring Shaping and forming plastics 	<ul style="list-style-type: none"> • Marking out • Shaping and forming • Workshop and machine safety • Finishing techniques
Term 5 (April – May)	Exploring the world of CAD/CAM Architecture and 3d modelling	<ul style="list-style-type: none"> • CAD- 2D Design and solid works • Understanding design proposals • Market research • Design eras/ Futurism 	<ul style="list-style-type: none"> • Working properties of modelling materials • Making skills • Computer Aid design skills
Term 6 (June – July)	Local Foods and Global skills	<ul style="list-style-type: none"> • Health and Safety in the kitchen • Safe and effective use of professional Equipments • Food and nutrition 	<ul style="list-style-type: none"> • Cooking methods • Nutrition • Planning • Weighing and Measuring

YEAR 8	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
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Term 1 (September – October)	Plastics and their properties Desk Tidy Project	<ul style="list-style-type: none"> • Properties of Plastics –Thermo and thermosetting plastics • Shaping and forming techniques • Modelling • Design Process • Responding to briefs and client requirements 	<ul style="list-style-type: none"> • Designing • Marking out techniques /Scoring • Drilling • Finishing • Evaluating
Term 2 (November – December)	Technology through time Clock Project	<ul style="list-style-type: none"> • Design process • Creativity development methods • Properties of woods • CAD/CAM 	<ul style="list-style-type: none"> • Drawing inspiration for design • Selecting and using tools to shape/form and finish hard/soft woods and manufactured boards.
Term 3 (January – February)	Man Made metals Pewter Casting Project	<ul style="list-style-type: none"> • Understanding the working properties of metals. (Ferrous and non-ferrous) • Tools and processes to shape and form metals and wood. • Machining techniques • Finishing techniques. 	<ul style="list-style-type: none"> • Heating, Shaping and Forming metals • Differences between Metals • Selecting and using tools to shape/form and finish metals. • Moulding and Casting techniques.
Term 4 (March – April)	Making memories Photograph Holder Project	<ul style="list-style-type: none"> • Planning, • Researching • Designing for clients • Making • Understanding joints • CAD/CAM 	<ul style="list-style-type: none"> • Computer Aided design techniques • Researching and critiquing. • Design Development process.
Term 5 (April – May)	Industrial Design Principles Design and Realisation/ Modelling	<ul style="list-style-type: none"> • Design Process • Industrial Practices • Design and Making principles. • Modelling techniques and materials • 3d Printing 	<ul style="list-style-type: none"> • Writing and designing to specifications. • Sustainable design • Cultural influences • Analysis
Term 6 (June – July)	Local Foods and Global skills Baking and Cooking focus	<ul style="list-style-type: none"> • Health and Safety in the kitchen • Safe and effective use of professional Equipment's • Food and nutrition • Global Cuisines 	<ul style="list-style-type: none"> • Cooking methods • Knife skills • Measuring • Nutrition • Classifying foods.

YEAR 9	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
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Term 1 (September – October)	Introduction to Product Design 1 st world Problems – understanding ever evolving world of design Shopping Trolley Project	<ul style="list-style-type: none"> • Design Process • Product Analysis • Research • Design Development • Modelling 	<ul style="list-style-type: none"> • Research and development process • Product analysis • Design development and critiquing • Modelling • Finishing
Term 2 (November – December)	Fast and Furious Design Motorised buggy project	<ul style="list-style-type: none"> • Properties of Timber • Processes to shape and form woods • Electronics and circuits. 	<ul style="list-style-type: none"> • Soldering • Understanding aerodynamics • Fixings • Circuitry
Term 3 (January – February)	Sustainable Design A global priority Wind turbine/ Structures Project	<ul style="list-style-type: none"> • Sustainable design • Ethical Design • Energy and renewable resources • Triangulation and structural understanding 	<ul style="list-style-type: none"> • Research • Critiquing • Aerodynamic design and experimentation
Term 4 (March – April)	Metal Mayhem Pewter Casting project Industrial Practices	<ul style="list-style-type: none"> • Properties and characteristics of metals. • Casting processes • Shaping, forming and finishing techniques. • Industrial practices and uses. 	<ul style="list-style-type: none"> • Product analysis • Research and evaluative skills. • Selecting and using tools to shape/form and finish metals
Term 5 (April – May)	Exploring the world of CAD/CAM Trinket Box Project	<ul style="list-style-type: none"> • Computer aided design • Design Process and briefs • Design development techniques • Properties and characteristics of softwoods • Moral and Ethical design principles. 	<ul style="list-style-type: none"> • Selecting and using tools to shape/form and finish hard/soft woods and manufactured boards. • Industrial practices • Designing for global consumer markets
Term 6 (June – July)	Local Foods and Global skills Cuisines of the world.	<ul style="list-style-type: none"> • Health and Safety in the kitchen • Safe and effective use of professional Equipment's • Food and nutrition • Global Cuisines 	<ul style="list-style-type: none"> • Cooking methods • Knife skills • Measuring • Nutrition • Classifying foods.

YEAR 10	Theme Title	Key Areas of Knowledge Acquisition	Key Skills and Processes Learned
Term 1 (September – October)	Entering the world of product design. GCSE Course outline and introduction.	<ul style="list-style-type: none"> • Introduction to PD • A history of product design • The effect of technology on PD • Drawing/modelling & preparation techniques 	<ul style="list-style-type: none"> • Design Process • Product Analysis • Restyling Techniques • Research, Critiques and Personal insights
Term 2 (November – December)	Maze Project. Design and Make Assignment. Practical Skills Focus	<ul style="list-style-type: none"> • Classification, properties, resources, stock sizes and combinations of paper & card. • Selecting and using tools and processes to shape, form and finish products. • CAD/CAM 	<ul style="list-style-type: none"> • Working with softwoods and thermo plastics • Planning • Marking out • Various woodworking tools. • Finishing techniques and applications. • CAD software

Term 3 (January – February)	Understanding Materials Woods, Metals, Plastics, Smart Materials	<ul style="list-style-type: none"> • Consumer issues: fair testing, quality, standards, consumer groups • Branding: Brand loyalty • Safety: own and users, risk assessment • Materials: classification, properties, sources, stock sizes, combinations 	<ul style="list-style-type: none"> • Selecting and using tools to shape/form and finish a variety of materials. • Research and evaluating skills. • Exploring working properties and functions of materials for different purposes.
Term 4 (March – April)	Mobile Phone Holder Project	<ul style="list-style-type: none"> • Applications and influence on new products • Human factors: Anthropometrics, ergonomics, special groups, adjustments • Sustainability: 6Rs, Green design, product miles, carbon footprint, life cycle, responsibilities, etc. 	<ul style="list-style-type: none"> • Design Brief/ Analysis • Design Development And realisation • 3D Design • Restyling and modelling • Developing Proposals • Selecting and using tools to shape/form and finish a variety of materials.
Term 5 (April – May)	Coursework Project: 12 weeks Design and Make Design and Manufacture and Industrial Practices	<ul style="list-style-type: none"> • Introduction to commercial production: scales, organisation, costs • Standard components • Product maintenance • Quality: QA/ QC, tolerance, manufacturing. Spec • ICT in manufacturing: JIT, automation • Research planning for CAT 	<ul style="list-style-type: none"> • Modelling • CAD/CAM • Finishing • Forming • Casting • Moulding • Evaluating
Term 6 (June – July)		<ul style="list-style-type: none"> • Research task • Design criteria: ACCESS FM, CAFEQUE • Design strategy one (appropriate to CAT) 	<ul style="list-style-type: none"> • Planning • Researching • Developing design ideas. • Making