CURRICULUM OVERVIEW FOR YEAR 9 D&T: PRODUCT DESIGN

Phase	1	2	3	4	5	6
Topic	**Design & make 1: Packaging redesign**	**Design and Technology in our world**	**Design & make 2: Eco-camera**	**Polymers, Modelling & Ergonomics**	**Design & make 3: Tea light holder/branding**	**Natural, man-made woods & metals**
Knowledge	Colour theory, functions of packaging, aesthetic issues, 4 colour printing process, adhesives, use of CAM equipment	Sustainability, life cycle analysis, SIX R's, ecological and carbon footprint, renewable and non-renewable energy sources	Product life cycle, consumer choice, technology push, market pull, advantages and disadvantages of CAD/CAM, use of CAM equipment	Properties of polymers, forming polymer processes, modelling materials, anthropometrics and ergonomics	Examples of woods, working properties of 4 woods, strength, grain, structure, finishes, composition of woods	Categorisation and properties of hardwoods, softwoods, man-made woods, ferrous, non-ferrous metals, finishes, stock forms
Skills	Visual communication, practical activities (cutting, shaping and smoothing materials), interpretation of diagrams and symbols, verbal feedback, health and safety precautions, quality control during manufacture, CAD designing for CAM					
Key Marked Piece (Summative Assessments in bold)	Product analysis, specification, 2D design ideas, final artefact	**End of phase assessment**	Task analysis, product analysis, specification, 3D design ideas, CAD design	**End of phase assessment**	Practical ability, design ideas, final artefact	**End of phase assessment**
Vocabulary	• CMYK • Primary colours • Secondary colours • Protect • Promote • Store • Plotter • Offset lithography	• Environment • Sustainability • Fossil fuels • Recycle • Non-renewable • Renewable • Biomass • Geothermal • Hydroelectricty • Oil • Gas • Coal	• Computer Aided Design (CAD) • Autodesk Inventor • Dimension • Computer Aided Manufacture (CAM) • Digital render • Modelling • Injection moulding	• Thermoforming • Thermosetting • Vacuum forming • Line bending • Anthropometrics • Ergonomics • 90th percentile • Polymorph • Styrofoam • Corrugated cardboard	• Man-made wood • Plywood • Medium Density Fibreboard (MDF) • Softwood • Pine • Hardwood • Mahogany • Grain • Board • Dowel • Mould	• Hardwood (deciduous) • Softwood (coniferous) • Grain • Strength • Ferrous • Non-ferrous • Alloy • Aluminium • Steel • Hardness • Ductility