Year 12 and 13 Product Design Curriculum Plan							
Unit	Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities
	Knowledge	Skills	Knowledge	Skills			
Seasonal Make/ collaboration designing	• To apply understanding of design limitations/expectations to a specification • Investigation into new and emerging technologies • To understand the benefits of Rapid Proto typing (3D printing) • To apply scale to designs and making effectively • To identify the need for modelling before manufacture of a product • Scales of production	• Applying prior understanding of skills used to independent and individual tasks • Ability to design, draw and manufacture a simple 3D product • Ability to work as part of a small team to manufacture a complete working product • To improve communicational skills and teamwork • Accuracy when using a range of tools and processes when modelling • Evaluating designs to improve the end product, considering the brief, spec and client.	• Time management • Accuracy within scales • Project management • Meeting deadlines • Scales of production – industry links	• To effectively collaborate within a group utilising skill of others • Project management		• Quality of the product • Understanding of materials and their properties to select the correct one • Ability to select the right materials and tools for the different processes • Ability to understand design limitations • Accuracy of scale	• Teamwork • Logic building • Business studies • Maths – scale • Careers • Fund raising for house charities
Different Users – design challenge	• Awareness of how design is altered to suit different users • Cultural and social issues • Anthropometric and ergonomic data • Types of modelling and their use	• Practicing different modelling skills • Communication techniques (orthographic, exploded, 2-point, isometric) • CAD/CAM • Adapting designs according to client feedback • Testing of designs and making informed developments	• Leading charities that support a range of different users • Wider struggles relating to different user groups • Modelling in industry	• Advanced CAD/CAM • Utilising external companies to support the development of designs		• Research tasks • Practice questions • Designs and models assessed against the exam board mark scheme (NEA)	• Inclusion unit • Wider community
Theory	• Materials and their applications • Classification of materials • Performance characteristics: woods, polymers, metals • Biodegradable polymers • Smart and modern materials • Enhancements of materials • Polymer and wood processes • Digital design and manufacture • Health and safety • Designers and their work • Major developments in technology • Maths within PD	• Developing and creating connections between material properties and their uses. • Identifying the correct materials for products • Accurately analysing suitability of materials for products • Evaluating the work of others to improve ideas.	• Stock forms and costing • Suppliers for materials • Economic issues affecting materials	• Using alternative sources to provide case studies •		• Low stakes testing • Practice questions • Year 12 PPE (x2 papers) • Presentations to the class • Research projects	• ICT • Business studies
Lamp Project	• To investigate design over time • To understand economic reasoning behind design changes • To utilise maths to support accurate design work • To investigate finishes applied to products and why they are used for a range of materials	• To design to reflect design eras • To independently construct a high-quality product using a range of suitable machines, materials, and processes • Utilising primary and secondary resources to inform design decisions	• Wider understanding of designers worldwide • Current trends in fashion and design • Mass production of similar products	• Advanced CAD/CAM • Electronics		• End product against the exam board criteria	• Science
Community project Example: crazy golf	• Stock forms and costings • Scale • Material enhancements • Form over function • Addition and fabrication processes • Responsible design • Designing for manufacture and project management	• Manipulating materials affectively to get desired shapes • Accurately selecting the correct joining methods •	• Community events and needs relating to design	• Advanced communicational skills with external providers		• End product against the exam board criteria	• Whole school events, sports day, Hazeley Fest, Year 6 induction.
Introduction to NEA	• To investigate into the work of others to support design decisions • To conduct research relevant to the brief	• To analyse data collected to make informed design decisions	• Wider range of designers investigated • Modelling techniques used in industry	• Presentation techniques • Communication with external experts to enhance research and analyse		• Marked against the AQA specification and mark scheme.	

AO1 Identify, investigate & outline design possibilities	• To collect and understand the relevance of collecting measurements (anthropometric data etc) to in form design decisions.	• To practice a range of communicational techniques to explore design possibilities • To create models using a range of processes and materials • To create a details Specification that reflects analysis of results.					
Year 13							
Theory	• Iterative design process • User centred design • Design influences, styles and movements • Designers and their work • Social- economic influences • Major developments in technology • Critical analysis and evaluation • Protecting designs • Maths within PD	• Be able to create creative designs in response to the brief • To make links between development in technology and materials that are related to economic and wider issues • To re call key dates of iconic design examples • To develop an idea focusing on User centred design.	• To understand and recognise developments of fashion relating to economic issues • To make links between mass production techniques over time relating to economic developments • To recognise and carry out machine maintenance • To make links between fashion designers and design eras • To recognise how products are made from patterns and templates	• To select and practise a range of sewing techniques independently • To set up and operate machines with minimal guidance • To independently create CAD designs to support communication and accuracy.		• Low stakes tests • Independence and ability to recall information • Practice Questions • Year 13 PPE	• History – design styles • Economics – issues affecting supply and demand
NEA A02 Design & make prototypes that are fit for purpose	• Design communication • A range of modelling techniques • Methods of investigating and testing materials • Stock forms • Environmental factors relating to design and manufacture • Adhesives and fixings • Health and safety practices • Testing prototypes	• To apply suitable tests to materials to check their suitability • To create a wide range of ideas using several communication techniques • To select materials based on several suitability factors • Applying H&S regulations and practices expected in industry to the workshop • Crating a product that is sustainable	• International differencing safety standards • Industrial testing • Wider range of manufacturing processes including specialist techniques	• To utilise external agencies to support the development and manufacture of their product		Marked against the Exam board criteria	• Business studies • Economic • Science – materials testing
Theory	• Social, moral and ethical issues • Product life cycle • Accuracy in design • Responsible design • Quality control and Quality assurance • BSI, Iso and directives • Feasibility studies • Maths within PD	• To apply understanding of the topics to their NEA to support further understanding and reasoning. • To create a high-quality end product that QA is well planned and carried out in the NEA.	• International standards • Design roles within industry • Examples of QA in a wide range of fields • Specific examples of QA within processes	• To apply BSI inspired testing to specific products • To carry out computer simulation testing		• Low stakes tests • Independence and ability to recall information • Practice Questions Year 13 PPE	Geography – sustainability
NEA A03 Analyse & evaluate	• Critical analysis • Testing and evaluating products in industrial and commercial settings • Use of third-party testing to evaluate	• To communicate affectively with clients and user groups to collect results to analyse • To consider decisions through out the development of the prototype to reflect but also suggest future improvements.	• Wider 3rd party feedback			Marked against the Exam board criteria	Maths recording and analysing data