What You Study in Design and Technology

Year 7	Year 8	Year 9	Year 10	Year 11
Product Design: Photo Frame Project **By the end of the project you will be able to:** • Create a specification and carry out a product analysis • Explain what CAD / CAM is and use software effectively to model design • Name the different materials and tools used to make your photo frame • Create a mood board relevant to your user • Produce a range of initial sketches and to communicate your design • Use a range of finishing techniques. **You will be assessed on:** • 2D Design sticker design • Specification • Product Analysis • Initial ideas • Mood board • Your practical outcome • Your theory knowledge	**Product Design: Clock Project** **By the end of the project you will be able to:** • Understand how biomimicry can inspire design, research patterns found in nature to produce initial ideas. • Understand the advantage and disadvantages to using CAD software • Name the different materials and tools used to make your clock • Create a metal fish key ring using a range of techniques, learning about metal types. • Use a range of finishing techniques **You will be assessed on:** • Patterns in nature • Initial ideas • 2D Design & Sketch up • Evaluation and modifications • Your practical outcome • Your theory knowledge	**Product Design: Money Box Project*** **By the end of the project you will be able to:** • Explain the properties of Acrylic and how the strip heater can be used with polymers • Explain how the laser cutter works well enough to produce a product (CAM) • Explain why we model and test **You will be assessed on:** • Your practical outcome • Your understanding of tools and processes **Product Design: Device Holder*** **By the end of the project you will be able to:** • Explain the different types of mechanisms such as linkages and levers • Explain the properties of timbers • Name the different materials and tools used to make your device holder • Create a specification • Create a workshop skills keyring • Create a device holder using a range of techniques and finishes, learning about classifications of timbers and wood joints. • Create a Sketch up model of the device holder • Evaluate the device holder outcome and consider ways to modify the design. **You will be assessed on:** • Specification • Evaluation and modifications • Your practical outcome • Your understanding of Tools and processes	**Product Design GCSE** **By the end of YR 10 you will be able to:** • Explain the properties of plastics • Explain the benefits and drawbacks of CAD/CAM • Produce an acrylic key ring • Explain the process of iterative design, have knowledge of ergonomics and anthropometric data • Explain all factors linking to sustainability • Explain the properties of smart materials • Sketch and communicate ideas better • Produce pizza wheel prototypes • Explain the in-depth properties of timbers • Explain the need for surface finishes and the difference in wood joints • Produce a trinket box • Produce a Mini NEA developing design portfolio skills in researching, and designing • Produce models to communicate ideas and act on user feedback • Explain the properties of metals • Understand electronics • Explain the different scales of manufacture • Produce a metal sculpture • Explain the properties of textiles and papers and boards • Produce a stress doughnut or book mark • Analyse a company or designer in depth **You will be assessed on:** • Your understanding of the content (A series of knowledge checks at the end of each unit of work.) • Mock exam • Independent Company / Designer research (Series of homeworks) • The practical outcome from each unit of work	**Product Design GCSE** **By the end of the YR 11 you will be able to:** • Explain what a system is and use the equation needed • Explain the different mechanical devices and use the equations needed • Write a comprehensive specification for your project • Consider a range of design strategies to communicate your design development • Manufacture a fully functioning, high quality product • Undertake critical testing and evaluation of your product **You will be assessed on:** • Final Exam (50% of the course) • Coursework (50% of the course) Links to Exam (Component 1) Links to NEA (\Component 2)
Architecture Design Project **By the end of the project you will be able to:** • Evaluate existing designs– Product analysis • Produce a range of initial sketches and use isometric drawing to communicate your design • Use CAD to create accurate architectural drawings **You will be assessed on:** • 3D Modelling • Initial ideas/ orthographic projection • Design analysis • Specification points	**Designing Our Tomorrow Project** **By the end of the project you will be able to:** • Explain what a context is • Explain why user wants/needs are so important when designing • Explain why feedback is so important when prototyping • Explain what problem solving is **You will be assessed on:** • Your Prototype / Improvements and Evaluation	**Electronic Systems Project** **By the end of the project you will be able to:** • Explain what the four different types of components are and their jobs (Inputs Outputs) • Explain the differences between microcontrollers and microprocessors • Design a range of circuits **You will be assessed on:** • Knowledge of systems / Components and circuits (based on core electronics questions)		
Textiles: Pencil Case Project **By the end of the project you will be able to:** • Name the basic textile equipment and processes • Explain the differences between natural and synthetic polymers **You will be assessed on:** • Your practical outcome	**Textiles: Misfit Project** **By the end of the project you will be able to:** • Explain the important of sustainability • Explain what a life cycle analysis is • Name different fabrics and components **You will be assessed on:** • Your practical outcome	**Textiles: Food Sculpture Project** **By the end of the project you will be able to:** • Explain the properties of a range of smart materials • Explain the properties of a range of modern and technical materials • Name different fabrics and components **You will be assessed on:** • Your practical outcome		