What You Will Study in Design and Technology at SVC

Year 7	Year 8	Year 9	Year 10	Year 11
Product Design—Workshop: Biomimicry Clock **Material Focus:** Timber/Metals **Skills:** Theory/Tools/Sketch up **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Produce a biometric inspired inspiration board • Write a design brief • Produce a range of initial ideas • Develop workshop skills and H&S knowledge • Have an understanding of timbers and metals and create a high quality product using a range of workshop tools and equipment • Develop CAD skills to produce a model to aid communication • Evaluate the biometric inspired clock outcome and consider ways to modify the design. **You will be assessed on:** Explore: Initial ideas Create: Practical outcome Evaluate: Final evaluation Knowledge: End of unit test	**Product Design—Workshop:** Device Holder **Material Focus:** Timber/Acrylic **Skills:** Theory/Tools/Linkages/CAD/CAM **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Write a design brief • Produce a specification using ACCESS FM • Understand linkages, levers and mechanisms • Produce a production plan which links to tools, processes quality assurance and H&S • Develop workshop skills and H&S knowledge • Have an understanding of timbers and polymers and create a high quality product using a range of workshop tools and equipment • Develop CAD skills to produce a model to aid communication • Evaluate the biometric inspired clock outcome and consider ways to modify the design. **You will be assessed on:** Explore: Product Analysis Create: Practical outcome Evaluate: Final evaluation Knowledge: End of unit test	**Product Design—Workshop:** Game Design **Material Focus:** Timber **Skills:** Theory/Tools/Wood joints **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Analyse a context, using ACCESS FM Key words • Write a set of meaningful ACCESS FM specifications that reflect the given context • Deeper understanding of timbers: Material selection, Seasoning and faults • Have an understanding of wood joints, fixings and finishes * • Develop workshop skills and H&S knowledge to create a working prototype • Test and evaluate the prototype and consider ways to modify the design. **You will be assessed on:** Explore: Context Analysis & Specifications Create: Practical outcome Evaluate: Final evaluation & Modification Knowledge: End of unit test	**GCSE: Product Design GCSE** **By the end of Year 10 you will be able to:** **Our world** • Explain automation • Explain the benefits and drawbacks of CAD/CAM • Explain the Just in Time process • Have knowledge of work of other Designers • Explain the properties of plastics • Explain the properties of papers and boards • **Explore a context** **Energy sources** • Give examples of energy types **Pizza Wheel Prototype** • Explain sustainability, carbon footprint and production miles • Explain Life cycle analysis and the 6Rs • Explain market pull and technology push • Understand the importance of inclusive design • Explain the properties of smart materials • Explain the process of iterative design, have knowledge of ergonomics and anthropometric data • **Sketch and communicate ideas clearly** • Produce pizza wheel prototypes **Trinket box** • Explain the sources and origins of timber • Explain the in-depth properties of timbers • Explain the need for surface finishes and the difference in wood joints • **Produce a trinket box** **Mechanisms** • Explain the different types of movements and mechanisms **Mini NEA** • Produce a Mini NEA developing portfolio skills in researching, designing and modelling. **Metals** • Explain the properties of metals • Explain methods of production • Explain systems and electronics • Produce a metal light sculpture • **Analyse and evaluate design decisions** **Textiles and Technical Textiles** • Explain the properties of textiles June 1st Start Non Examined Assessment: Complete Section A: Research -Explore the contexts - Create a user profile - Research problems - Write a summary **You will be assessed on:** • Your understanding of the content through a end of unit test, worth 25 marks • Mock exam, 100 marks • Series of homework's - Designer research - Developing a design brief and specification - Timber production plan - Product analysis - Mini NEA tasks • **A design element for each unit of work**	**GCSE: Product Design** **By the end of the Year 11 you will be able to:** • Section B - Draft design brief and spec - Final design brief and spec • Section C - Inspiration board - Product analysis - Initial design ideas - Developed design ideas - Material research - Test materials - Iteration 1– Cardboard modelling - Iteration 2– Cardboard modelling /AI manipulation - Iteration 3—Sketch up - Sketch up - Exploded drawing - Cutting plan • Section D - Production plan - Product Manufacture - Making photos and problems during manufacture • Section E - Testing & User feedback - Evaluation against the spec - Modification sheet - Final Evaluation **You will be assessed on:** • Final Exam (50% of the course) • Non Examined Assessment—NEA (50% of the course) Links to Exam (Component 1) Links to NEA (Component 2)
Product Design—Design room: Slot together animal **Material Focus:** Papers and boards/ Acrylic **Skills:** Theory/CAD/CAM **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Produce an inspiration board that inform the design process • Produce a product analysis • Produce a product specification • Develop CAD/CAM skills to produce a highly accurate finished product • Improve understanding of paper and boards • Improve understanding of plastics • Improve understanding of environmentally sensitive design • Evaluate the toy outcome and consider ways to modify the design **You will be assessed on:** Explore: Inspiration board Create: Practical outcome Evaluate: Final evaluation Knowledge: End of unit test	**Product Design—Design room:** Sustainable home **Skills:** Theory/CAD/Drawing skills **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Analyse a context • Understand the role of an Architect & Past and present Architects and their works • Produce a user profile • Have an understanding of sustainability • Produce a inspiration board • Produce high quality floor plans • Create two point perspective drawings* • Develop CAD skills to produce a 3D sketch up model to aid communication • Recall your knowledge of the unit • Evaluate the sustainable home outcome and consider ways to modify the design **You will be assessed on:** Explore: User profile Create: Sketch up model Evaluate: Final evaluation & Modification Knowledge: End of unit test	**Product Design—Design room:** Mini NEA: Organiser **Skills:** NEA/CAD/Modelling/Drawing skills **Project length:** Approx 15 lessons **By the end of the project you will be able to:** • Section A: Research and Investigation: Inspiration board, User profile & Product Analysis • Section B: Developing a Design brief & Product specification • Section C: Generating, developing and presenting design ideas: Initial ideas & developed ideas, • Section D: Producing a prototype : Card modelling and SketchUp • Section E: Analysing, evaluating the project and prototype **You will be assessed on:** Section A, Section B, Section C, Section D, Section E Knowledge: End of unit test		
	Designing Our Tomorrow **Project length:** Appox 7 lessons **By the end of the project you will be able to:** • Identify problems and ways in which existing products can be improved • Develop iterative design skills when solving problems • Develop communication skills to enhance your design work • Produce a range of ideas based upon the needs of others / client/ user centred design • Layout design sheets with annotation. Ergonomics / anthropometrics • Evaluate your design ideas with the client / user in mind and consider ways to modify the design. **You will be assessed on:** • Explore: Initial ideas	Electronic Systems **Project length:** Appox 7 lessons **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 length:** Approx 7 lessons **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:** Explore: Fibres and fabrics Create: Practical outcome	**Textiles:** Misfit **Project length:** Approx 7 lessons **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 length:** Approx 7 lessons **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		