Subject:	3D PD Intent:	Our Exam Board is: Edexcel
3D Product Design	3D PD encourages students to think creatively, converting ideas and a wide range of materials into the products and services that we all need and use every day of our lives. Everything around us has been designed and this subject enables students to gain a better understanding of the world they live in and to improve and sustain this for future generations. 3D PD is a creative and technical subject which involves designing, making and problem solving and innovating for improvement. Students use the iterative design process to develop innovative solutions to realistic problems and will be introduced to a range of design, modelling techniques and CAD packages as well as being able to work in Polymers, Paper and Board, Timbers, Textiles and Metals.	

The Big Questions…

Year 12	Year 13
Analogical: What were the most influential design movements of the last 150 years? Which designers best embodied their precepts, which did not? What is the essential tension between the function of a product and it's form. Which elements of each movement make it most recognisable. How could a designer best represent those ideals within the design of a new product based on older technology? How does one design using sketches, CAD, models, a wide range of manufacturing techniques? **Designing out waste:** Why do we waste so much energy, materials and time packaging food products? How can that waste be minimised or done away with altogether? What are the buying habits of the public? How can changes be made to our habits in marketing? What materials are best suited to the storage, display and merchandising of food products? What is an in depth Life Cycle Analysis and how a Specification for a new product can better reflect good practice? **Tools, Materials Manufacture**: What knowledge do I need to tackle the A Level written paper with confidence? How can I best retain that knowledge and revise effectively? How can I best present that knowledge to my peers bearing in mind their divergent learning styles? **Major Project (June Yr 12- April in Yr 13)** -Please refer to yr13 section to the right.	**Major Project (June Yr 12- Aprli Yr 13l) – Extended Research, Design, Manufacture and Evaluate Project.** Students will produce a design folder and practical outcome in response to a need or opportunity that they have discovered, vitally designing for a client or end user with whom they are on contact. There are four parts to the assessment: **Investigate (June- Sept)** -How can we apply a range of research strategies to investigate, analyse and evaluate the contextual challenge and develop a design brief and specification? **Design (Sept- Dec)** How can we develop realistic design proposals as a result of the exploration of design opportunities and user needs, wants and values? How can we apply the iterative design process to explore, create and evaluate a range of outcomes? How can we apply a range of design strategies, communication and modelling techniques to design and develop solutions? **Make (November- March)** -How we apply a range of manufacturing processes and techniques (including CAD/CAM) to produce a quality prototype? **Evaluate (March)** -How can we test our product and evaluate it effectiveness in meeting the design specification? **Technical Aspects of Designing and Making (Sept- May)-**How are materials selected for their physical and mechanical properties? How are materials manufactured and formed into a range of products? What is the impact of new and emerging technologies? What are the environmental, social and economic challenges designers face? How does the work of past and present designers influence the design of products?

What skills will I develop?	How will I be assessed?

The A Level in 3D Product Design challenges students to understand and apply iterative design processes through which they explore, create and evaluate a range of outcomes. The qualification enables students to use creativity and imagination to design and make prototypes (together with evidence of modelling to develop and prove product concept and function) that solve real and relevant problems, considering their own and others' needs, wants and values. It gives students opportunities to apply knowledge from other disciplines, including mathematics, science, art and design, computing and the humanities.		Project work is monitored through the use of progress tracking charts and formative feedback given at the end of each project, detailing the strength and areas for improvements against the A Level assessment criteria. Homework, including exam question and flash cards, is set and marked each week and recorded in SMHW. Teacher feedback is given verbally and on assessed work so that pupils can improve their understanding before moving on to the next section of the course.
What great resources can I use?		Three ways that parents/carers can help…
The full range of hand tools, machine tools including sewing machines, sander, router, vacuum former, line bender, centre lathe, pillar drill, laser cutter, kiss cutter, scroll saw, band saw, printer. A range of programs of high standard within the suite of IT resources at College..		Take an active interest in your son or daughter's studies including reading through their work for the Major Project – if explanation is need then they must add it to their portfolio. You might also be of use when she or he is in need of a " client " or "end user ",real people who you can remain in contact with, you have a far wider circle of friends and acquaintances than they do.