

Year 10 – Product Design Curriculum

Throughout the year you will partake in a wide variety of mini-projects and skills sessions. This will run alongside two lessons a fortnight of theory work, guided by the Edexcel GCSE D&T Specification. Some theory work will be linked to the projects we are running, whereas some will be an additional topic taught.

Words in italics won't be on the website.	What will I learn? <i>What topics, knowledge and skills do we cover?</i>	How will I learn it? <i>What lesson activities and learning and assessment strategies are used? Assessment will ensure that students have gained the knowledge by the relevant endpoint.</i>	Why is it important that I learn this? <i>What is the purpose of learning this knowledge and skills? (This will link to the curriculum ambition.)</i>	Why am I learning this now? <i>How does this build on prior learning (inc.KS2)? How does it support future learning in the curriculum (inc. on to A level)? How does it connect with other subjects where relevant?</i>
Year 10 Half Term 1	You will be introduced to the GCSE course and carry out some design challenges to get your creative juices flowing! You will have 2 theory lessons a fortnight to start gaining the knowledge needed for the Product Design course and examinations.	You will be given challenges to complete which involve using mathematics and modelling skills. You will be assessed on the quality of outcomes and your attention to detail. Theory will be assessed regularly by using examination style questions.	Design challenges are great ways to test your creativity, logical working and quality of workmanship. A great introduction to the course. With theory, the more practise you have at using the knowledge learnt and also practising answering exam style questions, the more successful you will be in examinations.	A successful Product Designer can problem solve, give creative solutions and be able to develop ideas through modelling. Design challenges are also a fun way to build these skills. In KS3 we taught basic GCSE theory topics through the projects we delivered. This is now your chance to build on this foundation and

				understand the topics at a much deeper level.
Year 10 Half Term 2	<p>The 'Earphone Wrap'.</p> <p>You will revisit using 2D Design to create designs for the laser cutter, form plastics and you will also learn about packaging products suitable for marketing.</p>	<p>You will investigate marketing methods, colour theory, packaging symbols, safety and recycling. After creating the packaging design, your 'Earphone Wrap' will be drawn and then created using CAD/CAM. You will then learn about forming plastics through vacuum forming and heat pressing methods. You will be assessed on the quality of the final outcome but also the marketing methods you have used to engage customers with your product.</p>	<p>Understanding how to create products using the Laser Cutter will be extremely beneficial for you during your major project (NEA). It means you can repeat tasks with 100% accuracy and create detailed but impressive products using a machine. Also, every Product Designer should know how to market a product effectively so they can create products that customers will want to buy!</p>	<p>This builds your knowledge of new technologies, vacuum forming and packaging design, all feeding in to the skills needed for the NEA and theory for the examination.</p>
Year 10 Half Term 3	<p>You will learn about electronics and working with a wider base of materials such as Aluminium. You will also learn about and how to create a variety of wood joints. This project will see the design and creation of the Animal Fan.</p>	<p>The Animal fan project challenges students with new skills and also accuracy. This is not an easy project but the feedback is very positive, students really enjoy the new skills they learn during this half term. Students also create templates, calculate use and waste of the Aluminium sheet, forming/bending metals and also, they further their knowledge of electronics. All work is assessed at the end, looking at accuracy and detail, plus the creativity and challenge the student has set themselves.</p>	<p>Again, furthering knowledge and ability to work with a wide range of materials and systems, you can confidently complete the NEA, knowing that what you design, can be created within our workshops and to a good standard due to your skill level.</p>	<p>This year is all about learning your strengths and areas to develop within the subject. You will soon be selecting a challenge to take forward for your GCSE NEA, which is worth 50% of your final grade, you will want to focus on your strengths, but also set a challenge for yourself. The 'Animal Fan' is excellent in helping you see this due</p>

				to the wide range of activities involved in this one project.
Year 10 Half Term 4	<p>The Contextual Challenge</p> <p>This is a practise mini-version of the NEA.</p>	Students will be given a general context. They will need to investigate how they can solve a problem in this area and who it may involve. They will then research, design and develop an idea that will solve the chosen problem. The students will then create their idea as a fully working product.	This will not only build confidence in the students before the 'real' NEA begins, but will also help them understand the separate parts of the NEA that are needed to help them achieve a high grade at GCSE.	The NEA is worth 50% of their final mark, so it is vital the students understand how to achieve.
Year 10 Half Term 5	The completion of the contextual challenge.	Students will develop their ideas and manufacture their chosen design using as many differing techniques and materials as possible to build their skills in the workshop.	Next half term will see the start of their own NEA, the contexts are published during the June half term holiday.	This will help build their skills and abilities for completing the final NEA.
Year 10 Half Term 6	<p>The introduction of the NEA. Edexcel will publish the contexts in which you can choose one to focus your major (50% of the final grade) project on.</p> <p>The link to the website for Edexcel GCSE D&T is here: https://qualifications.pearson.com/en/qualifications/edexcel-gcses/design-and-technology-2017.html </p>	You will be led through this whole project step-by-step by your teacher. You will be shown how to complete each aspect to the best of your ability, you will be shown examples and discuss the assessment criteria every step of the way. You will have ample opportunities to ask questions and all support documents will be on Google Classroom so you can access them whenever you want. Work will be started in class but may need completing at home. We will assess	The NEA is worth 50% of your final grade. It is your major project where you will showcase all your strengths. You will solve a real-world problem to the best of your ability and hopefully achieve a mark to be taken forward which you are proud of and also which puts you in a great position for sitting your final examination.	The Contextual Challenges are published during the Spring Bank half term, we then introduce these to you on return where you then begin your NEA. This will continue until March of Year 11, so make sure you choose something you are enthusiastic about!

	You will then investigate the context to decide on an initial problem to solve.	your work after each deadline, offer general feedback (as this is all we are allowed to do) and then give a second deadline for the final completion of that section.		
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