



St George's School
Design & Technology: Product Design
KS5 Curriculum

<p>PREREQUISITE KNOWLEDGE & SKILLS <i>The foundations needed to thrive in this subject.</i></p>	<p>Who should study this subject? Anyone with an interest in the manufactured world around. D&T: Product Design is a forward thinking and rapidly changing subject that empowers students to intervene in the natural and man-made world. Students should enjoy the variety of lessons as well as the diversity of studio and workshop based tasks, in order to develop real world prototypes for real world problems.</p> <p>Key Skills developed during KS4: Knowledge of materials and industrial manufacturing processes; design strategies and approaches; research skills; visual communication & prototype development.</p> <p>St George's course entry requirements: In addition to the St George's Sixth Form Entry Requirements a grade 6 in GCSE D&T. A Grade 6 at Maths is useful to support the Mathematics content covered in the subject.</p>
<p>QUALIFICATION <i>Exam Board, aims and objectives.</i></p>	<p>A Level D&T: Product Design, AQA 8552 The course aims to produce students that are open to taking design risks, demonstrate innovation and enterprise whilst considering their role as responsible designers and citizens. The curriculum exposes students to real world problems and affords the opportunity to respond with high quality prototypes that serve the needs and wants of those affected.</p>
<p>ASSESSMENT <i>Internal monitoring and final assessment.</i></p>	<p>Internal Assessment: Year 12 mock Year 13 Mock Project work & Exam questions assessed throughout.</p> <p>Final assessment: NEA. Paper 1: Technical Principles - 2 hours & 30 minutes. Paper 2: Designing & Making Principles - 1 hour & 30 minutes.</p>
<p>ENRICHMENT <i>Trips & Visits, wider reading, etc.</i></p>	<p>Visits and Events: Various visits from university courses to discuss careers and university courses.</p> <p>Wider reading: Design for the real world: Victor Papanek Stuff Matters: Exploring the Marvellous Materials That Shape Our Man-Made World: Mark Miodownik</p>
<p>NEXT STEPS <i>Where this subject can take you.</i></p>	<p>Related University Courses: Architecture; engineering; mechanical engineering; design engineering; graphic design;</p> <p>Career Paths: Product Design, Engineering (Mechanical, Civil etc), Architecture, Graphic Design; Technicians, Model & Prop Makers; Set Designers; CAD Engineers;</p>

Year 12

Autumn Term	<p>Topics: Technical Principles: How are products and systems made in industry? Students will study material science and manufacturing technologies in order to understand how products and systems are manufactured. D&T Modelling & Practical Processes: How do we communicate and develop ideas to a wider audience?</p> <p>Skills: Students will develop a wide range of practical skills as well as visual communication skills (Advanced CAD, marker rendering, foam & block modelling techniques) and prototype/product development skills.</p> <p>Assessment: Practical and project work are assessed in class. Exam questions are used at the end of each of topic to assess student knowledge and progress.</p>
Spring Term	<p>Topics: Technical Principles: How do designers and engineers approach manufacturing systems and scales of manufacturing? Students will study manufacturing scales as well as examining what systems manufacturers use i.e. MPS, KANBANS etc. Mini NEA: An investigation into a design context that empowers students to explore their own ideas and solutions to real world problems.</p> <p>Skills: Students will build on the skills in the Autumn term and begin to apply these to real world problems in a set context.</p> <p>Assessment: Folder work is continually assessed and exam questions practised during and at the end of each topic.</p>
Summer Term	<p>Topics: Year 13 NEA: Sections A & B: students select their own context and problem to solve as part of their Year 13 NEA. This term they will undertake in depth primary research and write their design brief and specification. Year 13 Designing & Making Principles: Design Theory; Design Movements; Cultural and Technological influence; Product Life Cycles;</p> <p>Skills: Development of NEA skills and knowledge.</p> <p>Assessment: Year 12 Mock: Paper 1 NEA Section A & B.</p>

Year 13

Autumn Term	<p>Topics: Year 13 NEA: Sections C & D: Design and development of prototypes and realisation of design proposals: Students will design and build their prototypes based on the research from Section A & B in the Summer Term of Year 12. Year 13 Designing & Making Principles: Design processes; Critical Analysis; QA & QC;</p> <p>Skills: Development of NEA skills and knowledge. Written responses to longer exam questions requiring students to think critically, compare and contrast across synoptic questions.</p> <p>Assessment: NEA Section C & D.</p>
Spring Term	<p>Topics: Year 13 NEA: Sections D & E: The completion of manufactured products and final testing and evaluation of the proposed product. Year 13 Designing & Making Principles: Responsible Design; Project Management; National & International Standards;</p> <p>Skills: Development of NEA skills and knowledge. Written responses to longer exam questions requiring students to think critically, compare and contrast across synoptic questions.</p> <p>Assessment: Year 13 Mock: Paper 1 and Paper 2. NEA Section A - E.</p>
Summer Term	<p>Topics: Technical Principles: Revision Designing & Making Principles: Revision</p> <p>Skills: Consolidation and knowledge retrieval from previous topics.</p> <p>Assessment: NEA. Paper 1: Technical Principles - 2 hours & 30 minutes. Paper 2: Designing & Making Principles - 1 hour & 30 minutes.</p>