WGSB6 A Level Options
Design Technology FAQ Information Sheet

Which exam board and courses are studied at A level?

Pearson Edexcel (Product Design)

What skills will studying Design Technology equip me with?

Studying Design Technolgy equips students with a range of skills that are valuable across various fields, combining creativity, problem solving and technical abilities. The key skills we hope to develop in our students are:

- Creative Thinking
- Problem Solving skills
- Technical Proficiency
- Project Management
- Collaboration and Communication
- Critical Thinking and Analysis
- Adaptability and Resilience
- Understanding of Materials and Manufacturing Processes
- Sustainability and Ethical Awareness

Overall, Design Technology provides a well-rounded education that blends creativity with technical skills, making students adaptable for careers in design, engineering, architecture, manufacturing, and many other industries.

Do I need a specific grade at GCSE to access A level?

There are no entry requirements to study this course at A-level, you do not need to have studied this course at GCSE. However, due to the nature of the course a GCSE Grade 5 is preferred in Math.

How is the course structured and how will it be taught?

At Wirral Grammar Boys the course is structured to provide both theoretical knowledge and practical experience, focusing on design principles, materials and manufacturing processes.
The course is divided into two main components: written exams (50% of qualification) and a non-exam assessment (NEA) (50% of qualification), often referred to as the coursework or project.

Is there a coursework component?

The NEA is a substantial design-and-make project that allows students to demonstrate their practical skills and creativity. This project involves:

- Identifying a Problem: Students choose a real-world design problem or brief based on a client or user group. This could be related to improving an existing product, addressing a need in society or creating a new innovation.
- Research and Investigation: Detailed analysis of the problem, including user research, market research and the exploration of existing products.
- Design Proposal: Development of initial ideas, sketches, and models. Students use CAD tools to create detailed drawings and prototypes of their solution.
- Development and Making: The physical creation of the final product using materials and tools, refining the design through an iterative process.

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- Testing and Evaluation: Testing the product to ensure it meets the needs of the user and the original brief. Evaluation of the success and areas for improvement.
- Portfolio: Alongside the final product, students produce a detailed portfolio documenting the entire design process, from concept to final evaluation. This portfolio is often submitted digitally and includes sketches, CAD designs, photos of prototypes and written analysis.

How well do students achieve in Design Technology?

In recent years the department has undergone a lot of positive change, and we are starting to see this though our results and progress. Our recent years' worth of results are as follows:

22/23	A*-C	50.0%
21/22	A*-C	100.0%
20/21	A*-C	100%

Will I need to do a lot of independent study?

Yes, Design Technology at A-level does require a significant amount of independent study. This is due to the nature of the subject, which combines creative, practical, and theoretical elements. The NEA, which makes up 50% of the grade, is a project that requires extensive time and effort outside the classroom. Students need to:

- Identify a real-world design problem: This often involves researching, brainstorming, and refining ideas on their own.
- Conduct Research: Students must gather relevant information on materials, processes, user needs, and existing products. This involves independent investigation, market research, and sometimes client interviews.
- Develop Prototypes: Multiple iterations of prototypes may be required, which means extra time spent in workshops or on computer-aided design (CAD) software.
- Maintain a Design Portfolio: Documenting the design process in detail is time-consuming and requires careful planning and organisation.

Much of the work on the NEA needs to be done independently, as students will often manage their project timelines, make creative decisions, and troubleshoot problems without constant teacher oversight.
While the NEA and practical skills are emphasized, 50% of the course is assessed through written exams. These cover:

- Materials, processes, and technical principles
- Design theory, sustainability, and ethical design
- Product analysis and evaluation

Independent revision is needed to thoroughly understand these topics, as classroom time may not be enough to cover the wide range of theory. Students are expected to review textbooks, study notes, and use additional resources to ensure they are prepared for the exams.
On average, A-level subjects recommend around 4-5 hours of independent study per week, but for Design Technology, this can vary depending on the stage of the course:

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• Early stages: More focus on research and learning technical skills.
• Coursework-heavy periods: Students may need to spend significantly more time (e.g., 10+ hours per week) on their NEA, particularly when prototyping or compiling their design portfolios.
• Revision periods: As exams approach, more independent time will be needed for theory revision.

In summary, Design Technology at A-level demands a lot of independent study, particularly for the NEA project, practical skills development and exam preparation. Strong self-motivation, time management, and a proactive approach to learning are essential for success in this subject.

What are typical A level subject choices alongside Design Technology?

Students who choose A-level Design Technology often select complementary subjects that align with their interests, career aspirations or university goals. The typical A-level subject choices alongside Design Technology usually fall into three broad categories: creative subjects, technical/scientific subjects and humanities/business subjects. Here's a breakdown of popular combinations:

Creative and Artistic Subjects

These subjects are popular among students interested in careers in design, architecture or creative industries.

- Art and Design: This is a common choice as both subjects foster creativity and artistic skills. Art and Design helps develop drawing, modeling, and conceptual thinking skills, which complement the design process in Design Technology.
- Photography: For those aiming at design-related careers in fields like interior or fashion design, photography helps build visual presentation skills and enhances the ability to document and showcase design work effectively.

STEM (Science, Technology, Engineering, Mathematics) Subjects

These subjects are common choices for students with an interest in engineering, architecture or industrial design.

- Mathematics: This is especially relevant for students interested in architecture, engineering or product design as it strengthens problem-solving, geometry and technical skills essential for designing structures or understanding mechanics.
- Physics: For those planning to study engineering, product design or architecture at university, Physics complements Design Technology by providing an understanding of mechanics, materials, forces, and how things work from a scientific perspective.
- Computer Science: Increases proficiency in digital technologies, coding and programming, which can enhance CAD (Computer-Aided Design) skills and is beneficial for students interested in tech-driven design, robotics or automation.
- Chemistry: If students are interested in materials science or product development, Chemistry provides insight into material properties, plastics, composites and smart materials, all of which are crucial in Design Technology.
- Further Mathematics: Some students take this subject alongside Mathematics if they have a strong interest in highly technical fields like engineering, where advanced mathematical concepts are necessary.

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Humanities and Business-Related Subjects

These subjects are valuable for students interested in the business side of design, product marketing or entrepreneurship.

- Business Studies: Ideal for students interested in product design, entrepreneurship or starting their own business. It offers knowledge in marketing, management and finance, helping students understand how to commercialize products or bring designs to market.
- Economics: For those interested in the economic factors influencing design, manufacturing and business innovation. Economics provides insight into market dynamics, consumer behavior and production costs.
- Geography: This is particularly relevant for students interested in sustainability, environmental design and urban planning. Geography complements Design Technology by providing an understanding of environmental issues and sustainable development.
- Psychology: Useful for students who want to explore user-centered design, as Psychology provides insight into human behavior, cognition and user experience, which are key elements in designing products or environments for people.

While Design Technology pairs well with a variety of subjects, the best choices depend on the student's career interests. A strong combination of creative, technical and analytical subjects helps build a solid foundation for higher education or career paths in design, engineering, architecture and related fields.

What subject related extracurricular opportunities are offered at A level?

At Wirral our A-level Design Technology students have access to a variety of extracurricular opportunities that enhance their learning experience and help develop practical skills, creativity, and career readiness.

While not all these activities are actively run by the school, we will always signpost our students to the activities and encourage their participation. These opportunities also give students the chance to explore their interests outside the classroom and strengthen their portfolios for university applications or future careers.

Participation in national and international design competitions gives students the opportunity to showcase their skills and gain recognition. Some popular competitions include:

- The Big Bang Competition: For students interested in engineering and product design. It encourages innovative solutions to real-world problems.
- Young Engineers Competitions: These competitions challenge students to design and create engineering projects, often focused on sustainability or solving specific challenges.
- Design Ventura: Run by the Design Museum, it invites students to create and pitch their product ideas, teaching them about the design process and commercial viability.
- F1 in Schools: A STEM competition that involves designing, building and racing miniature Formula 1 cars. It's ideal for students interested in engineering and aerodynamics.

STEM Clubs and Makerspaces

At Wirral we are very fortunate in the space and resources that we have available to our Design Technology students. This means that we can offer STEM clubs and our Makerspaces where students can collaborate on creative and technical projects outside of class. This space includes access to tools like 3D printers, laser cutters, and CNC machines, giving students the freedom to experiment with new designs and prototypes. STEM clubs also encourage participation in group projects, often involving robotics, coding or product innovation.

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Industrial Visits and Guest Speakers

We regularly try to arrange visits to design studios, manufacturing plants or engineering companies where students can see real-world applications of their classroom learning. Guest speakers from the design industry, such as architects, engineers, product designers or entrepreneurs can provide valuable insights into career paths and the challenges of the design world.

Portfolio Development and Exhibitions

At Wirral our A level students will host design exhibitions during Year 12 following the completion of their Architecture and then their Lighting Project, where students present their NEA projects or other creative work to peers, teachers and parents. These events help students learn how to present their work professionally and receive constructive feedback.

Other helpful information about studying Design Technology

https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/design-technology-product-design-2017.html