

DESIGN AND TECHNOLOGY: PRODUCT DESIGN

SPECIFICATION

A Level Eduqas Design and Technology: Product Design 603/1178/2

OBJECTIVES OF THE COURSE

An A Level in Design and Technology offers a unique opportunity in the curriculum for learners to identify and solve real problems by designing and making products or systems.

Design and Technology is an inspiring, rigorous and practical subject. This specification encourages learners to use creativity and imagination when applying iterative design processes to develop and modify designs, and to design and make prototypes that solve real world problems, considering their own and others' needs, wants, aspirations and values.

CONTENT AND ASSESSMENT

Component 1: Design and Technology in the 21st Century

Written examination: 3 hours

50% of qualification

Learners take a single examination in the Product Design Specialism.

The examination includes a mix of short answer, structured and extended writing questions. It will assess learners' knowledge and understanding of technical principles as well as designing and making principles in the following areas:

- Designing and innovation
- Materials and components
- Processes
- Industrial and commercial practice
- Product analysis and systems
- Human responsibility
- Public interaction – marketing and research

It will also assess their ability to analyse and evaluate design decisions and wider issues in design and technology.

Whilst study of this content will prepare learners for the Component 1 assessment (examination), it will also develop knowledge and understanding that can be applied in Component 2 (the design and make project).

Students will study all of the content specified, to ensure they have a broad knowledge and understanding of design and technology. The majority of the content will be initially covered in the first year of the course through a range of theoretical focused lessons and short practical tasks. The second year of the course will have a focus on the design and make project along with some integrated theory lessons.

Component 2: Design and Make task

Non-exam assessment: 80 hours

50% of qualification

This is a sustained design and make task, based on a contextual challenge set by the exam board. It will consist of a design portfolio of evidence supporting a practical make element. The project will assess candidates' ability to:

- Identify, investigate and outline design possibilities
- Design and make prototypes
- Analyse and evaluate design decisions and wider issues in design and technology

Assessment Criteria		Marks
(a)	Identifying and investigating design possibilities	15
(b)	Developing a design brief and specification	15
(c)	Generating and developing design ideas	25
(d)	Manufacturing a prototype	25
(e)	Analysing and evaluating design decisions and prototypes	20
Total		100

The project requires students to demonstrate the integration of designing and making skills, knowledge and understanding.

This component is marked in school and moderated by the Eduqas.

SUBJECT STUDY REQUIREMENTS:

- Have a critical understanding of the wider influences on design and technology, including cultural, economic, environmental, historical and social factors.
- Be open to taking design risks, showing innovation and enterprise whilst considering their role as responsible designers and citizens.
- Develop intellectual curiosity about the design and manufacture of products and systems, and their impact on daily life and the wider world.
- Develop the capacity to think creatively, innovatively and critically through focused research and the exploration of design opportunities arising from the needs, wants and values of users and clients.
- Develop knowledge and experience of real world contexts for design and technological activity.
- Develop an in-depth knowledge and understanding of materials, components and processes associated with the creation of products that can be tested and evaluated in use.
- Be able to make informed design decisions through an in-depth understanding of the management and development of taking a design through to a prototype/product.
- Be able to work safely and skilfully to produce high-quality prototypes/products.
- Develop the ability to draw on and apply a range of skills and knowledge from other subject areas, including the use of mathematics and science for analysis and informing decisions in design.

The course enables students to identify market needs and opportunities for new products, initiate and develop design solutions, and make and test prototypes. Learners should acquire subject knowledge in design and technology, including how a product can be developed through the stages of prototyping, realisation and commercial manufacture.

Students should take every opportunity to integrate and apply their understanding and knowledge from other subject areas studied during key stage 4, with a particular focus on science and mathematics and ICT.

Students need to have both academic and practical ability.

SPECIAL FEATURES OF THE COURSE

This course is suitable for anyone considering further study or a career in a design or engineering field or architecture. It is also for students who wish to broaden their post 16 studies and gain a fuller understanding of the world in which we live and to develop as discerning consumers, able to make informed choices.

Product Design is a vehicle for developing and demonstrating key skills which will prove useful and transferable to the students' main area of study. These include analysis, problem solving, project management, ICT and manual dexterity.

There are opportunities to integrate work-related activities into the course and form links with industry and commerce. For example, students could enlist the help of the Royal Academy of Engineers or talk to a manufacturer about their design. Research may also involve trips to design museums.

