



Qualifications and
Curriculum Authority



Llywodraeth Cynulliad Cymru
Welsh Assembly Government



GCSE subject criteria for design and technology

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Introduction

1. GCSE subject criteria set out the knowledge, understanding, skills and assessment objectives common to all GCSE specifications in design and technology. They provide the framework within which an awarding body creates the detail of the specification.
2. Specifications must also meet the regulators' general requirements, including the common and GCSE criteria as defined in *The statutory regulation of external qualifications* (QCA/04/1293).
3. Subject criteria are intended to:
 - help ensure consistent and comparable standards in the same subject across the awarding bodies
 - ensure that the rigour of GCSE is maintained
 - ensure that specifications build on the knowledge, understanding and skills established by the national curricula for England, Northern Ireland and Wales, and facilitate progression to A level design and technology and other higher level general or vocational qualifications in design and technology, or related sectors of employment and training
 - help higher education institutions, employers and other stakeholders such as learners and parents/guardians know what has been studied and assessed.
4. Specifications in Northern Ireland must use the title technology and design and must be consistent with, and progress from, the technology and design strand of the Science and Technology Learning Area of the Northern Ireland curriculum.
5. Any GCSE specification that contains significant elements of design and technology must be consistent with the relevant parts of these subject criteria.

Aims and learning outcomes

6. GCSE specifications in design and technology should encourage learners to be inspired, moved and changed by following a broad, coherent, satisfying and worthwhile course of study and gain an insight into related sectors, such as manufacturing and engineering. They should prepare learners to make informed decisions about further learning opportunities and career choices.

7. GCSE specifications in design and technology must enable learners to:
- actively engage in the processes of design and technology to develop as effective and independent learners
 - make decisions, consider sustainability and combine skills with knowledge and understanding in order to design and make quality products
 - explore ways in which aesthetic, technical, economic, environmental, ethical and social dimensions interact to shape designing and making
 - analyse existing products and produce practical solutions to needs, wants and opportunities, recognising their impact on quality of life
 - develop decision-making skills through individual and collaborative working
 - understand that designing and making reflect and influence cultures and societies, and that products have an impact on lifestyle
 - develop skills of creativity and critical analysis through making links between the principles of good design, existing solutions and technological knowledge.

Subject content

8. GCSE specifications in design and technology must reflect the learning outcomes in the content.
9. GCSE specifications in design and technology must require learners to develop knowledge and understanding through:
- responding creatively to briefs, developing their own proposals and producing specifications for products and associated services
 - generating, developing and communicating ideas in a range of ways, using appropriate strategies
 - recognising there are moral, cultural, economic, environmental, and sustainability issues inherent in design and technology
 - using their understanding of other designers and products to inform their own practice

- planning and organising activities, and then shaping, forming, mixing, assembling and finishing materials, components or ingredients as appropriate
 - choosing and using hand and/or machine tools, equipment and computer-aided design/manufacture (CAD/CAM) facilities as appropriate to the material area
 - solving technical problems
 - reflecting critically when evaluating and modifying their ideas and proposals to improve the products throughout inception and manufacture.
10. Specifications must allow learners to specialise in one focus area to enable them to apply their specialist knowledge, skills and understanding in design and technology.
11. Specifications must provide learners with opportunities to:
- design creatively by generating, developing, planning and communicating ideas
 - make products by working safely with tools, equipment, components, materials and ingredients
 - apply systems and control, CAD/CAM, digital media and new technologies, where appropriate, to the material area(s)
 - analyse and evaluate processes and products.

Assessment objectives

12. All specifications must require candidates to demonstrate their ability to:

Assessment objectives		% weighting
AO1	Recall, select and communicate their knowledge and understanding in design and technology including its wider effects	25–35
AO2	Apply knowledge, understanding and skills in a variety of contexts and in designing and making products	45–55
AO3	Analyse and evaluate products, including their design and production	15–25

13. In Northern Ireland, the assessment objectives should be underpinned by candidates having a knowledge and understanding of energy and control.

Scheme of assessment

14. GCSE specifications in design and technology must allocate a weighting of 40% to external assessment and a weighting of 60% to controlled assessment in the overall scheme of assessment.

15. Controlled assessment must include tasks in which candidates apply their knowledge, skills and understanding in order to design and make products. Such tasks may vary in duration and the emphasis placed on particular assessment objectives may vary between tasks.

16. Controlled assessment must facilitate learners working in groups without excessive duplication of evidence. Each student must provide a uniquely definable and assessable contribution.

17. Controlled assessment must include at least one task that integrates designing, making and evaluating. The evidence required to be submitted for this task must include a

functional product or system with a concise real-time record of candidates designing, making and evaluating, and/or the equivalent and appropriate ICT evidence.

18. Question papers must be targeted at the full range of GCSE grades.

Grade descriptions

19. Grade descriptions are provided to give a general indication of the standards of achievement likely to have been shown by candidates awarded particular grades. The descriptions must be interpreted in relation to the content in the specification; they are not designed to define that content.

20. The grade awarded will depend in practice upon the extent to which the candidate has met the assessment objectives overall. Shortcomings in some aspects of candidates' performance in the assessment may be balanced by better performances in others.

Grade	Description
A	<p>Candidates recall, select and communicate detailed knowledge and thorough understanding of design and technology, including its wider effects.</p> <p>They apply relevant knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks effectively. They test their solutions, working safely and with a high degree of precision.</p> <p>They analyse and evaluate the evidence available, reviewing and adapting their methods when necessary. They present information clearly and accurately, making reasoned judgements and presenting substantiated conclusions.</p>
C	<p>Candidates recall, select and communicate sound knowledge and understanding of design and technology, including its wider effects.</p> <p>They apply knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks. They test</p>

	<p>their solutions, working safely and with precision.</p> <p>They review the evidence available, analysing and evaluating some information clearly, and with some accuracy. They make judgements and draw appropriate conclusions.</p>
F	<p>Candidates recall, select and communicate knowledge and understanding of basic aspects of design and technology, including its wider effects.</p> <p>They apply limited knowledge, understanding and skills to plan and carry out simple investigations and tasks, with an awareness of the need for safety and precision. They modify their approach in the light of progress.</p> <p>They review their evidence and draw basic conclusions.</p>