OXFORD AQA
INTERNATIONAL QUALIFICATIONS

The international exam board *that puts fairness first*

OxfordAQA International GCSE

Design and Technology: Product Design (9252)

Switching guide

Switching from AQA GCSE Design and Technology (8552) or Cambridge iGCSE (0979).

For this new International GCSE, OxfordAQA have developed a specification which retains the best of the existing AQA specification, which is the most popular in England, whilst streamlining the content and providing a focus on product design. At the same time introducing some new concepts and approaches to learning to make it more appropriate for international schools.

Teachers will find the specification will allow them to blend both theoretical knowledge with practical experiences to make delivery of the content both enjoyable and worthwhile.

The structure of the specification allows students to acquire a breath of knowledge of materials and processes allied with an understanding of designing to meet the requirements of a detailed brief.

Topic by topic comparison

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
Overall structure		
Subject content is divided into four parts. **Core technical principles** where all materials are compulsory. **Unlike 8552, there is no textiles content in this specification**	Subject content is divided into four parts. **Core technical principles** where all materials are compulsory. This includes textiles.	Subject content is divided into five sections; **Two common content** • Product design • Preparing your candidates for the project, this relates to Component 2
Specialist Technical Principles which has **four** options, although more than one can be studied. • Papers and boards • Timber based materials • Polymers • Metal based materials	**Specialist Technical Principles** which has **six** options, although more than one can be studied. • Papers and boards • Timber based materials • Polymers • Metal based materials • Textiles • Electronic and mechanical systems	**Three specialist options** • Resistant materials • Systems and control • Graphic Products
Designing and making principles	**Designing and making principles**	
NEA Design and make task.	**NEA Design and make task.**	**Component 2 Project**

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
Assessments		
Written paper 2 hours Section A (core technical principles) 20 marks (10%) MCQs and short answer Section B Specialist technical principles 30 marks (15%) Section C Designing and making principles 50 marks (25%) Design and make task 100 marks (50%)	Written paper 2 hours Section A (core technical principles) 20 marks (10%) MCQs and short answer Section B Specialist technical principles 30 marks (15%) Section C Designing and making principles 50 marks (25%) Design and make task 100 marks (50%)	Two papers, total 2 hours 15 mins Product design Compulsory 50 marks, 25% Optional paper one of • Resistant materials • Systems and control • Graphic products Each 1 hour, (25%)
General overview		
Although all three qualifications are similar, there are some significant differences. The AQA and OxfordAQA specifications share many aspects. The AQA GCSE is studied by two thirds of students in England at GCSE and is highly regarded by schools. The OxfordAQA specification closely follows the AQA structure and represents the latest thinking in this area of the curriculum. The main differences are the common core for Oxford AQA does not include any textiles, and Specialist principles in the AQA specification AQA includes both Textiles and Electronic and mechanical systems, but Oxford AQA does not. This slimmed down approach allows more straightforward questions and provides students with a less complex question structure. Cambridge and Oxford AQA are similar in content, but Cambridge offers separate papers for specialist principles as options, this poses issues of comparability of difficulty between the various options.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
The OxfordAQA written paper does not include optional papers or questions. Although there are options within some questions reflecting the choice of specialist technical content. All questions in the specialist principles part of the paper are written so that students studying any of the specified materials areas can respond using their knowledge of the materials they have studied, which avoids the problems caused by having options, where student can opt for the area they have not studied or the difficulties of ensuring all questions are of equal difficulty or level of demand. The OxfordAQA and AQA written papers are taken in a single sitting, which avoids any difficulties in identifying two separate examination sessions. The difference being that AQA is only available annually, while the OxfordAQA has two opportunities to sit the paper. In May/June and November, Cambridge has a similar arrangement. The time in the examination room for students is shorter with both AQA and OxfordAQA at 120 minutes in a single sitting. Cambridge has two sessions of 75 minutes and one hour, resulting in an additional 15 minutes but with the same weighting (50%) as both AQA and Oxford AQA.		
Design and make task/project mark allocations		
Identifying & investigating design possibilities (10 marks) Producing a design brief & Specification (10 marks) Generating design ideas (10 marks) Developing design ideas (20 marks) Realising design ideas (30 marks) Analysing and evaluating (20 marks)	Identifying & investigating design possibilities (10 marks) Producing a design brief & Specification (10 marks) Generating design ideas (20 marks) Developing design ideas (20 marks) Realising design ideas (20 marks) Analysing and evaluating (20 marks)	Identification of a need or opportunity with an analysis leading to a design brief (5 marks) Research into the design brief resulting in a specification (10 marks) Generation and exploration of design ideas (20 marks) Development of proposed solution (15 marks) Planning for production (10 marks) Product realisation (30 marks) Testing and evaluation (10 marks)

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
NEA overview		
In the NEA although both AQA and Oxford AQA are very similar, there are two differences in the mark allocations with more marks given to making at 30 marks, which is the same as Cambridge, and fewer to generation of ideas, which often naturally blurs with development, simplifying assessment. As a result, there are some differences between the two assessment criteria. All specifications / syllabuses weight the coursework component referred to as either the design and make task (Oxford and AQA) or project (Cambridge). The criteria are similar, with Cambridge giving less importance to Identifying of a need or opportunity and researching into producing a design brief at 15 marks compared with both AQA and Oxford at 20 marks. This aspect of the course work can be time consuming, but forms a critical part of the design process, as it allows the student to fully realise what needs to be produced to satisfy user or client requirements. Cambridge allocates fewer marks for development than either Oxford or AQA but has an additional criterion for production planning which is subsumed into development with the other two. However, this means there are less marks available with Cambridge for evaluation and analysis, both 20 marks with Oxford and AQA, these are regarded as being higher level skills providing access to the higher grades. Cambridge places more emphasis on the final product, the other two regarding this aspect as being part of the whole process and allocation marks more holistically. Cambridge is rigid in its interpretation of what is to be submitted for the project compared with Oxford or AQA. This could affect the creativity of the outcome. Cambridge and Oxford AQA provide more marks (30), for the practical experience of making a prototype or product than AQA (20). This is an important aspect of the subject and provides experiences that support much of the learning concerned with materials, tools and processes.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
The subject content		
Part A **Core technical principles (20) marks** A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding; • new and emerging technologies • energy generation and storage • developments in new materials • systems approach to designing • mechanical devices • materials and their working properties. This covers paper and boards, natural and manufactured timbers, metal and alloys, polymers	**Part A** **Core technical principles (20) marks** A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding. Very similar to Oxford AQA but has more material-based content in Materials and their working properties as knowledge of textiles is required.	**Common content: Product Design (50marks)** Paper 1 Needs drawing equipment including drawing board and tee squares.
Part B **Specialist technical principles (30 marks)** Choices of paper and boards - similar to Cambridge Graphic Products papers and boards • timber based materials • metal-based materials • polymers. No requirement to study all three, but taking more than one widens both experience and opportunity when answering questions on the written paper	**Part B** **Specialist technical principles (30 marks)** The categories through which the principles can be delivered are: • papers and boards • timber based materials • metal-based materials • polymers • textile-based materials • electronic and mechanical systems.	**Papers 3, 4 and 5 (50 marks) optional.** Paper 3 Resistant materials • Section A answer **all** questions • Section B answer **one** question Paper 4 Systems and control • Section A answer **all** questions • Section B answer **one** question Paper 5 Graphic Products • Section A answer **all** questions • Section B answer **one** question

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
Part C **Designing and making principles (50 marks)** • investigation, primary and secondary data • environmental, social and economic challenge • design strategies • communication of design ideas • prototype development • selection of materials and components • tolerances • material management • specialist tools and equipment • specialist techniques and processes.	**Part C** **Designing and making principles (50 marks)** • investigation, primary and secondary data • environmental, social and economic challenge • the work of others • design strategies • communication of design ideas • prototype development • selection of materials and components • tolerances • material management • specialist tools and equipment • specialist techniques and processes.	**Part 1 compulsory common content** • Observe need/requirement • Design/brief/specification • Identification/research • Generation of possible ideas • Selection/organisation • Evaluation • Implementation and realisation • Health and safety • Initiation and development of ideas, and recording of data • Communication of design ideas • Use of technology in design and making • Design and technology in society • Practical design application • Environment and sustainability • Control
The Cambridge examination format is significantly different to the approach used by both Oxford AQA and AQA. The Cambridge product design paper on is essentially a design paper testing understanding which is covered in part three of the Oxford and AQA papers under the heading of Designing and making principles. However much of this the Cambridge drawing examination content is content that would naturally form part of the NEA with both AQA and Oxford AQA, which removes the need for it to be tested again in an examination paper. Compared with AQA, OxfordAQA does not require students to study the work of designers or design companies in preparation for a written examination as this would be covered when looking at the work of others when completing the design and make task in the NEA. It does introduce more emphasis on drawn communication of design ideas in Part C.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
3.1.1 New and Emerging Technologies. Both Oxford and AQA share the same content, with automation, robotics as well as buildings and tools and equipment, Cambridge looks at how computers are used in design and making with CAD-CAM and CNC machine operation in Common content: Product Design. Again AQA/Oxford have a section devoted to Production techniques and systems. Enterprise is common across both Oxford and AQA looking at ways of establishing and maintaining effective businesses, such as crowd funding and using the internet for virtual marketing. Cambridge does not directly reference these activities but has a general heading of Design and technology in society where there is mention of economic issues, but not in depth. Sustainability looks at resource consumption, again AQA and Oxford are the same, Cambridge has a detailed section of the syllabus under Environment and sustainability covering both materials, recycling and energy sources. AQA/Oxford deal with this under 3.1.2 Energy generation and storage with more detail. AQA/Oxford extend this aspect by looking at issues such as considering trends in new technologies, respecting the views of others when designing and designing for the elderly or disabled. AQA/Oxford require students to understand important issues such as the need for designing for maintenance and the impact of planned obsolescence.		
3.1.3 Developments in new materials. Both AQA and Oxford look at new technologies including modern materials such as Graphene, and the ever-increasing use of smart materials and composites which are used in the advanced technologies of ship and aerospace manufacture. Cambridge covers this in an optional unit - Resistant materials.		
3.1.4 Systems approach to designing. All of AQA/Oxford and Cambridge include systems in terms of input, switches and sensors, process including microcontrollers, and simple outputs. Cambridge has a specialist unit, while OxfordAQA has a restricted list and no specialist learning in part B. AQA does have specialist content in the option choice of material in section B of 8552.		
3.1.5 Mechanical devices. Levers, linkages and rotary systems are common to both OxfordAQA and AQA. Cambridge has a specialised option which includes mechanical systems along with some compulsory key content. AQA had a specialist learning option in part B for electronic and mechanical systems.		
3.1.6 Materials and their working properties. Four material areas are covered including papers and boards, natural and manufactured timbers polymers, metal and alloys, this is less than AQA 8552 which also includes textiles and approximates to the similar content in the Cambridge Resistant materials specialist option.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
3.1.6.2 Material properties. Both physical and working properties are specified. This links with 3.2.2 Forces and stresses which goes beyond the simple understanding of compression, tension, shear and bending included by both Cambridge and AQA by adding stress and strain which is also included in the Cambridge Systems & Control – Structures option.		
3.2 Specialised principles. The approach here differs between Oxford AQA and Cambridge, Oxford provides different examples relating to the specialist material chosen, from paper and boards, timbers, metals and polymers. Student's only need to study one in depth. Cambridge separates paper and boards entirely into a separate specialist option, Graphic products. Timber, metals and polymers (plastics) are grouped together as Resistant materials. This approach is different to English Design and Technology GCSEs such as AQA 8552 where material areas are grouped together.		
3.2.4 Sources and origins. Students are expected to understand where the materials they use come from, again AQA and Oxford AQA have very similar content. Material processing, including seasoning and conversion are covered by all three within the specialist learning.		
3.2.6 Stock forms, types and sizes. Stock forms are included in the Oxford AQA specification under Specialist principles for each of the named material area of timbers, metals, polymers and paper and boards, this is the same as AQA8552, Cambridge does not use the term stock forms but refers to pre-manufactured components in the joining and assembly section of the resistant materials specialist option.		
3.2.7 Scales of production. Both AQA and Oxford share the same content, Cambridge is similar but omits continuous production, which is an important aspect of modern manufacturing.		
3.2.8 Specialist techniques and processes. Both AQA and Oxford include a comprehensive list of manufacturing processes as part of Specialist learning, Cambridge tends to list hand methods specialist leaning, Cambridge concentrates more on hand methods with more modern industrial methods such as 3D printing and lasers being mentioned in connection with the project.		
3.2.9 Surface treatments and finishes. All three bodies place emphasis on understanding the role that surface finishing plays in design and making products. This occurs twice in AQA and oxford in both the specialist and designing and making principles. In the optional Cambridge Resistant materials option, it can be found in finishing.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
3.3 Designing and making principles		
3.3.1 Investigation, primary and secondary data. Oxford AQA and AQA8552 have identical content, which includes market research, investigations and producing design briefs and manufacturing specifications. Cambridge has some similar content in the common content: Product design in Identification/research although with less detail, e.g. anthropometric data. Much of this content is found in the common content; preparing your candidates for the project.		
3.3.2 Environmental, social and economic challenge. Oxford AQA and AQ have almost identical content, with Oxford introducing resource depletion, Cambridge links this with sustainability and limited lifetime products that are covered elsewhere in the OxfordAQA specification.		
3.3.3 Design strategies. Oxford AQA and AQA have identical content, Cambridge has a section of common content related to the generation of possible ideas but does not explore a number of design strategies in the way the others do.		
3.3.4 Communication of design ideas. OxfordAQA and AQA have a comprehensive list of methods that can be adopted, Cambridge has a condensed list which lacks detail.		
3.3.5 Prototype development. Oxford and AQA provide a comprehensive list of requirements for successful prototype development, Cambridge uses the term product or solution in all its criteria with the exception of the graphics design option, where prototype is the term in use. This indicates further development of the design than required by a prototype. Which in turn has time implications.		
3.3.6 Selection of materials and components These need to be addressed through the specialist principles learning materials areas adopted for section B in the case of both Oxford and AQA, the nearest content in Cambridge is within the Resistant materials option, but does not identify what parameters would be used.		
3.3.7 Tolerances. Both AQA and Oxford provide content that directly addresses the use of tolerances when manufacturing, Cambridge has a different approach with a section on setting, measuring and marking out and testing in the resistant materials option, this does include a reference to datums.		
3.3.8 Material management, An important aspect of working with materials is explicitly referenced by both AQA and Oxford. It is not covered in the Cambridge syllabus apart from marking out.		

OxfordAQA Specification (9252)	AQA Specification (8552)	Cambridge International Examinations (CIE) iGCSE Syllabus (0979)
3.3.9 Specialist tools and equipment This is mentioned across all three specifications including health and safety aspects.		
3.3.10 Specialist techniques and processes This will have been covered in the optional sections of the Cambridge syllabus and within the specialist principles part of both AQA and Oxford AQA specifications, where it covers all aspects such as shaping, fabricating and finishing.		