Design and Technology

GCSE 2012

D&T: Industrial Technology

Teachers' Handbook

J304/J044

Version 1

November 2012

www.ocr.org.uk/gcse2012

OCR

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INTRODUCTION

OCR's GCSE in Design & Technology: Industrial Technology entered first teaching in September 2009.

We have improved the quality of our GCSEs for teachers and students alike. We've made improvements in two key areas: updated and relevant content and a focus on developing students' personal, learning and thinking skills.

In addition and in response to reforms announced by the Government and in response to Ofqual mandated changes to GCSEs, unitised assessment of this qualification is being replaced by linear assessment from September 2012. This means that candidates commencing a two year course from September 2012 will take all of their GCSE units at the end of the course in June 2014.

The main changes are:

- Controlled assessment and examinations will be summative
- Examinations provide opportunity for extended writing and more varied question types
- All GCSEs will meet the requirements of the Equality Act.

OCR offers a range of support materials, developed following extensive research and consultation with teachers. We've designed them to save you time when preparing for the specification and to support you while teaching them.

It is important to make the point that this Teacher Handbook plays a secondary role to the specifications themselves. The GCSE Design & Technology: Industrial Technology specification is the document on which assessment is based: it specifies what content and skills need to be covered. At all times therefore, the Teacher Handbook should be read in conjunction with the Specification. If clarification on a particular point is sought, then that clarification must be found in the Specification itself.

SUBJECT SPECIFIC GUIDANCE

This document is to support delivery of GCSE Design Technology: Industrial Technology - J304 and GCSE (Short course) Design and Technology: Industrial Technology - J044.

It is hoped it will be useful in planning the delivery, teaching, learning and assessment opportunities.

There are three units available for Design and Technology: Industrial Technology. They are:

- Unit A541: Introduction to designing and making
- Unit A543: Making quality products
- Unit A545: Sustainability and technical aspects of designing and making

These are suggestions to show how the subject might be delivered. They are a snap shot of the breadth and range of learning opportunities that could be developed in this subject area. They could be used as a starting point for developing inspiring and innovative courses that meet the needs of students.

UNIT A545: SUSTAINABILITY AND THE TECHNICAL ASPECTS OF DESIGNING AND MAKING

This unit of the GCSE course aims to develop your knowledge and understanding of sustainability, environmental concerns, cultural, moral and social issues. You will work through this unit in your chosen subject/material area of

- Industrial Technology

You will look at how design and technology has evolved though product analysis of products from the past and the present within your specialist subject area.

You will need to consider how future designs/ products will impact on the world in which we live. By looking at old and new products you will gain awareness and understanding of trends and innovations in design and manufacture, labeling, packaging and the impact that the design of such products is having on the environment, society and the economy.

Moral, cultural, economic, environmental and sustainability issues are inherent in design and technology.

Candidates will need a knowledge and understanding of:

- Designing and making quality manufactured products
- Planning production with consideration of the use of time and resources
- Performance characteristics of different materials including 'Smart' and modern
- Tools and equipment, including new technologies, used to make quality manufactured products
- Processes and techniques used to make quality manufactured products, both decorative and functional
- The impact that the use of graphic products has on the environment, including the need to consider sustainability
- Health and Safety issues.

BANDED MARK SCHEME

It is to be expected that in Section B of the paper two questions will require detailed written responses and will be answered through a banded mark scheme. Banded mark schemes do require a more detailed and technical answer that uses the correct subject specialist terminology and also takes into account the use of spelling, punctuation and grammar.

For example:

Level 1 (1-2 marks)

A basic analysis, showing some understanding. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of grammar, punctuation and spelling may be intrusive.

Level 2 (3-4 marks)

Adequate analysis, showing understanding. Candidates can provide a description using some specialist terminology although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation.

Level 3 (5-6 marks)

Thorough analysis, showing clear understanding. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate will demonstrate the accurate use of spelling, punctuation and grammar.

0 = No response worthy of credit

RESOURCES

http://www.designcouncil.info/educationresources/studies/manufacturing.html

http://www.bbc.co.uk/schools/gcsebitesize/design/resistantmaterials/processindpracrev1.shtml

http://www.design-technology.org

http://www.data.org.uk/

http://www.designandtech.com/

www.technologystudent.com

www.design-technology.info

http://www.secondarydandt.org/

Understanding Industrial Practices in Design and Technology: Resistant Materials Technology by Jet Mayor (ISBN - 9780748790210) published Nelson Thornes Ltd

GCSE Design and Technology Resistant Materials: Revision Guide (Design & Technology Revision) (Paperback) Richard Parsons ISBN 1841467928 Publisher: Coordination Group Publications Ltd

GCSE Design & Technology Revise Study Guide (Paperback) Rick Davis ISBN 1858059399 Publisher: Letts Educational.

OTHER FORMS OF SUPPORT

In order to help you implement the new GCSE Design & Technology: Industrial Technology specification effectively, OCR offers a comprehensive package of support. This includes:

PUBLISHED RESOURCES

OCR offers centres a wealth of quality published support with a fantastic choice of 'Official Publisher Partner' and 'Approved Publication' resources, all endorsed by OCR for use with OCR specifications.

PUBLISHER PARTNERS

OCR works in close collaboration with three Publisher Partners; Hodder Education, Heinemann and Oxford University Press (OUP) to ensure centres have access to:

- Better published support, available when you need it, tailored to OCR specifications
- Quality resources produced in consultation with OCR subject teams, which are linked to
- OCR's teacher support materials
- More resources for specifications with lower candidate entries
- Materials that are subject to a thorough quality assurance process to achieve endorsement

Hodder Education is the publisher partner for OCR GCSE Design and Technology: Industrial Technology.

Hodder Education is producing the following resources for OCR GCSE Design and Technology: Industrial Technology.

OCR Industrial Technology for GCSE: Student's Book
David Carlson, Harry King, Steve Pinnock, Editor: Bob White
ISBN: 978 0340 98202 0
Published: 29/05/2009

OCR Design and Technology for GCSE Teachers Research DVD Barbara Dinicol, Meryl Simpson
ISBN: 978 0340 991 213
Published: 26/06/2009

APPROVED PUBLICATIONS

OCR still endorses other publisher materials, which undergo a thorough quality assurance process to achieve endorsement. By offering a choice of endorsed materials, centres can be assured of quality support for all OCR qualifications.

ENDORSEMENT

OCR endorses a range of publisher materials to provide quality support for centres delivering its qualifications. You can be confident that materials branded with OCR's "Official Publishing Partner" or "Approved publication" logos have undergone a thorough quality assurance process to achieve endorsement. All responsibility for the content of the publisher's materials rests with the publisher.

These endorsements do not mean that the materials are the only suitable resources available or necessary to achieve an OCR qualification. Any resource lists which are produced by OCR shall include a range of appropriate texts.

PROFESSIONAL DEVELOPMENT

The 2012-13 OCR Professional Development Programme offers more accessible and more cost effective training, with the same valued content that you expect from us.

At OCR, we are constantly looking for ways in which we can improve the support we offer to teachers. Most recently we have been considering the increasing challenges that schools face in releasing teachers

for INSET, and how OCR can make its professional development programme more accessible and convenient for all.
From September 2012, our new improved programme will include:

- FREE online professional development units available when and where you want them
- FREE live web broadcasts of professional development events
- FREE face to face training for GCSE controlled assessment and GCE coursework
- A series of 'not to be missed' premier professional development events.

For more information, please email training@ocr.org.uk or visit www.ocr.org.uk/training.

OCR SOCIAL

Visit our social media site (http://www.social.ocr.org.uk). By registering you will have free access to a dedicated platform where teachers can engage with each other - and OCR - to share best practice, offer guidance and access a range of support materials produced by other teachers; such as lesson plans, presentations, videos and links to other helpful sites.

INTERCHANGE

OCR Interchange has been developed to help you to carry out day to day administration functions online, quickly and easily. The site allows you to register and enter candidates online. In addition, you can gain immediate and free access to candidate information at your convenience. Sign up at https://interchange.ocr.org.uk

FREQUENTLY ASKED QUESTIONS

UNIT A541: INTRODUCTION TO DESIGNING AND MAKING

Is this a compulsory unit?
This unit is compulsory for a GCSE in Design and Technology: Industrial Technology (J304).

What is this unit worth?
This unit is worth 30% of the GCSE in Design and Technology: Industrial Technology (J304) qualification.

What is the entry code for this unit? The entry code for this unit is A541. How is this unit assessed?
This unit is internally marked and externally moderated. Teachers should use the published marking criteria for Unit A541.

How should the design folders for unit A541 be presented?
Using a range of presentation skills, including CAD, digital photographs and traditional drawing skills.

Will candidates be able to re-enter units?
Yes. Controlled assessment units can be carried forward with the moderator mark from one session to the next i.e. June 2014 to June 2015. There is a separate 'carry over' code to re-enter the unit.

What is the difference between A541 and A543?
A541 should be a prototype that is capable of being tested. A543 should be a product manufactured in the intended materials and completed as a finished and operational product.

Is any teacher help or other help allowed?
The work should be that of the student. Teacher and other help should be acknowledged by the student in a bibliography and the teacher assessment should take into account external support for a student's work as appropriate.

Is there a text book for this unit?
Yes. The recommended text book is GCSE Design and Technology: Industrial Technology published by Hodder. This book covers all three units of the GCSE in Design and Technology: Industrial Technology (J304) qualification.

UNIT A543: MAKING QUALITY PRODUCTS

Is this a compulsory unit?
This unit is compulsory for a GCSE in Design and Technology: Industrial Technology (J304).

What is this unit worth?
This unit is worth 30% of the GCSE in Design and Technology: Industrial Technology (J304) qualification.

What is the entry code for this unit?
The entry code for this unit is A543.

How is this unit assessed?
This unit is assessed by a 20 hour controlled assessment task.

How should the design folders for unit A543 be presented?
Using a range of presentation skills, including CAD, digital photographs and traditional drawing skills.

Is this unit assessed by a visiting moderator?
No. Candidates are required to take a minimum of two clear photographs of the product, which must be included in the design folder. The moderator will then request a sample of folders. There is no moderation visit.

What is the difference between A541 and A543?
A541 should be a prototype that is capable of being tested. A543 should be a product manufactured in the intended materials and completed as a finished and operational product.

Is any teacher help or other help allowed?
The work should be that of the student. Teacher and other help should be acknowledged by the student in a bibliography and the teacher assessment should take into account external support for a student's work as appropriate.

UNIT A545: TECHNICAL ASPECTS OF DESIGNING AND MAKING

Is this a compulsory unit?
This unit is compulsory for a GCSE in Design and Technology: Industrial Technology (J304).

What is this unit worth?
This unit is worth 40% of the GCSE in Design and Technology: Industrial Technology (J304) qualification.

What is the entry code for this unit? The entry code for this unit is A545. How is this unit assessed?
This unit is assessed by a 90 minute written test. The test is externally set and marked.

What is the structure of the test?
The test is divided into sections A and B and is worth 80 marks. Section A consists of fifteen short answer questions. Section B consists of three questions requiring answers that may involve sketching, annotation, short sentences or more extended writing. Each of the section B questions is worth 15 marks.

Is the test tiered?
No. All candidates take the same test.

Are exemplar test questions available?
Yes. Exemplar questions are available on the OCR website and past test papers will also be made available on the website.

Is there a text book for this unit?
Yes. The recommended text book is GCSE Design and Technology: Industrial Technology published by Hodder. This book covers all three units of the GCSE in Design and Technology: Industrial Technology (J304) qualification.

Contact us

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Telephone 01223 553998
Facsimile 01223 552627
Email general.qualifications@ocr.org.uk

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