Cambridge NATIONALS

Accredited

CAMBRIDGE NATIONALS IN ENGINEERING

R105, R106, R107 AND R108

RESOURCES LINK

VERSION 2

OCR
Oxford Cambridge and RSA

WELCOME

A Resources Link is an e-resource, provided by OCR, for teachers of OCR qualifications. It provides descriptions of, and links to, a variety of independent teaching and learning resources that you may find helpful.

In a Resources Link you will find details of independent resources, many of which are free: where this is the case this has been indicated.

If you know of other resources you would like to see included here, or discover broken links, please let us know. We would also like to hear from you if have any feedback about your use of these, or other, OCR resources. Please contact us at resources.feedback@ocr.org.uk.

We leave it to you, as a professional educator, to decide if any of these resources are right for you and your students, and how best to use them.

To give us feedback on, or ideas about the OCR resources you have used, email resources.feedback@ocr.org.uk

Engineering Design
Level 1/2

Resources Index

click on a resource to go to the appropriate page.

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- Developing an eco-world
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- OCR Product Design for GCSEs
- To Engineer is Human: The Role of Failure in Successful Design
- Design and Sustainability
- Trademarks
- Patents
- Top 10 emerging technologies for 2014
- 50 Coolest Products of the 21st Century

Unit R106 - Product analysis and research

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- Virtual science experiments

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- Enhance understanding of maths and science for engineering
- Virtual science experiments

Unit R108 - 3D design realisation

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- Design principles: The engineer's contribution to society
- Health and safety in the engineering industry
- Health and safety in engineering workshops
- Planning a project
- Making a Gantt Chart in Excel
- Completing the project
- Product Prototype Model Making

OCR Oxford Cambridge and RSA
Engineering Design Level 1/2
Cambridge NATIONALS

The Design Process

This web site contains detailed description and worksheets to help learners understand and explore different elements of the design process.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO1 Understand the design cycle and the relationship between design briefs and design specifications by opening up discussions on how clients may act.
Cost:	Free
Format:	Web site with PDF downloadable sheets
	http://www.technologystudent.com/designpro/despro1.htm

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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20 worst habits of clients

A list of the poor practices of clients engaging a designer on projects. The page is part of a broader website looking at graphic design, with discussions on developing an effective design brief.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO1 Understand the design cycle and the relationship between design briefs and design specifications by opening up discussions on how clients may act
Cost:	Free
Format:	Web page

http://justcreative.com/2007/12/08/worst-graphic-design-clients/

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Developing an eco-world

Attending the COP15 conference, Peter Head, Director of ARUP, shows how he is tackling climate change from creating eco-cities to promoting sustainable human development. This is a video available as part of the Open University Open Learn site.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO3 Know about the wider influences on the design of new products
Cost:	Free
Format:	Video interview and written transcript

http://www.open.edu/openlearn/nature-environment/the-environment/creative-climate/explore-the-diaries/design-diaries/developing-eco-world

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Design and Sustainability

Tracks in this podcast:

Track	Title	Description
1	Design and Sustainability	A short introduction to this album.
2	Consumer product testing	Representatives of Intertech, a pr methods of testing. **Play now ›**
3	Testing standards	Emphasising the importance of sta
4	The five principles of sustainability	The three layers of sustainability a of products on the environment. P
5	The history of a chair	An example of what is meant by t
6	The designer's role in sustainable development	Issues that a product designer sho sustainable. **Play now ›**
7	Incorporating sustainability in product design	The future challenges of sustainab could be resolved. **Play now ›**
8	The five principles in design project work	In support of how the five princip project work. **Play now ›**

A series of 8 podcasts from the Open University OpenLearn series. Each podcast is between 30 seconds and 8 minutes in length.

Supports: OCR Cambridge Nationals in Engineering Design Level 1/2
Unit R105, LO2 Understand the requirements of design specifications for the development of a new product, LO3 Know about the wider influences on the design of new products
Cost: Free
Format: Video podcasts and transcripts
http://www.open.edu/openlearn/science-maths-technology/engineering-and-technology/design-and-sustainability

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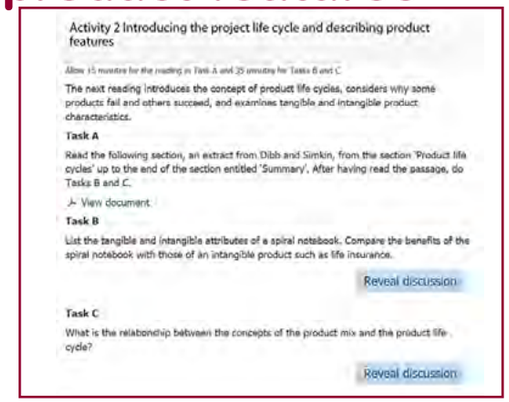
Engineering Design Level 1/2
Cambridge NATIONALS

Introducing the product life cycle and describing product features



Activity 2 Introducing the project life cycle and describing product features

Allow 15 minutes for the reading in Task A and 25 minutes for Tasks B and C.

The next reading introduces the concept of product life cycles, considers why some products fail and others succeed, and examines tangible and intangible product characteristics.

Task A

Read the following section, an extract from Dibb and Simkin, from the section 'Product life cycles' up to the end of the section entitled 'Summary'. After having read the passage, do Tasks B and C.

View document

Task B

List the tangible and intangible attributes of a spiral notebook. Compare the benefits of the spiral notebook with those of an intangible product such as life insurance.

Reveal discussion

Task C

What is the relationship between the concepts of the product mix and the product life cycle?

Reveal discussion

This exercise is taken from the Open University OpenLearn website and is part of the 'Products, Services and Branding' module. This exercise asks learners to read a description of the product lifecycle and then apply their learning to an everyday object with some hidden points available for discussion.

Supports: OCR Cambridge Nationals in Engineering Design Level 1/2
Unit R105, LO2 Understand the requirements of design specifications for the development of a new product
Cost: Free
Format: Website with embedded pdf document
http://www.open.edu/openlearn/money-management/management/business-studies/products-services-and-branding/content-section-3

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OCR Design and Technology for A level

OCR text book written for the A Level syllabus that covers the key design aspects and activities of the course.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO1 Understand the design cycle and the relationship between design briefs and design specifications by opening up discussions on how clients may act, LO2 Understand the requirements of design specifications for the development of a new product, LO3 Know about the wider influences on the design of new products
Cost:	Approximately £30
Format:	Published text book

ISBN-13: 978-0340966341

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Cambridge NATIONALS

OCR Product Design for GCSEs

OCR Product Design for GCSE, written by a team of experts, offers complete coverage of the OCR specifications. Underpinning theoretical knowledge is described using clear language, concise explanations and numerous full-colour illustrations.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO1 Understand the design cycle and the relationship between design briefs and design specifications by opening up discussions on how clients may act, LO2 Understand the requirements of design specifications for the development of a new product, LO3 Know about the wider influences on the design of new products
Cost:	Approximately £30
Format:	Published book

ISBN 9780340982006

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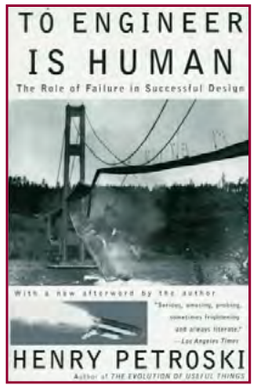
To Engineer is Human: The Role of Failure in Successful Design



Paperback book with a range of engineering case studies.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO2 Understand the requirements of design specifications for the development of a new product
Cost:	Approximately £10
Format:	Published book

ISBN-13: 978-0679734161

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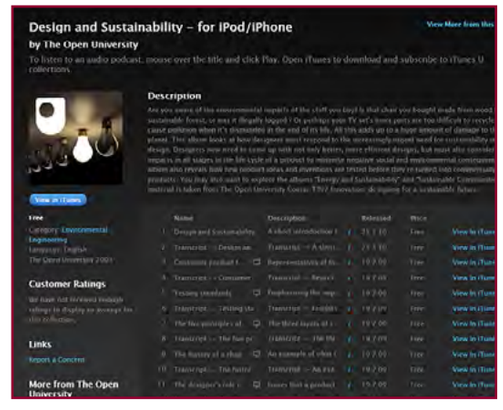
Design and Sustainability



Part of the iTunes U series. This series of video podcasts and transcripts cover a range of design and testing issues.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO2 Understand the requirements of design specifications for the development of a new product
Cost:	Free, requires an iTunes account
Format:	Video and written transcript

https://itunes.apple.com/gb/itunes-u/design-sustainability-for/id380225312?mt=10

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Trademarks

The Government Intellectual Property Office web site explaining trademarks and how to obtain them.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO2 Understand the requirements of design specifications for the development of a new product
Cost:	Free
Format:	Web pages with links to detailed material

http://www.ipo.gov.uk/types/tm.htm

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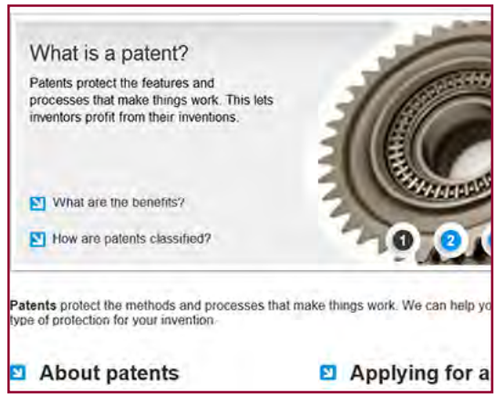
Patents



Intellectual Property Office website explaining what patents are and how to apply for them.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO2 Understand the requirements of design specifications for the development of a new product
Cost:	Free
Format:	Government website

http://www.ipo.gov.uk/types/patent.htm

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Top 10 emerging technologies for 2014

Blog on the World Economic Forum Site exploring emerging technologies for 2014.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO3 Know about the wider influences on the design of new products
Cost:	Free
Format:	Blog post

http://forumblog.org/2014/02/top-ten-emerging-technologies-2014/

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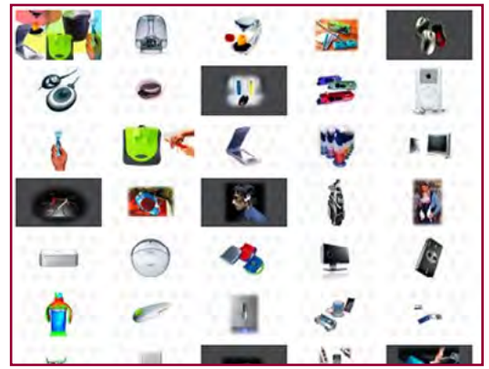
50 Coolest Products of the 21st Century



Descriptions and images of 50 winners of the IDEA, the International Design Excellence Awards, highlight the very best in design.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R105, LO3 Know about the wider influences on the design of new products
Cost:	Free
Format:	Web page, part of the Business Week web site

http://images.businessweek.com/ss/09/07/0729_IDEA_best_of/1.htm

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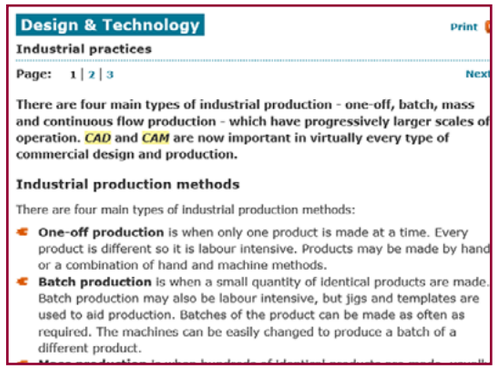
BBC Bite Size Design & Technology Industrial practices


Design & Technology
Print
Industrial practices
Page: 1 | 2 | 3
Next
There are four main types of industrial production - one-off, batch, mass and continuous flow production - which have progressively larger scales of operation. CAD and CAM are now important in virtually every type of commercial design and production.
Industrial production methods
There are four main types of industrial production methods:
- One-off production is when only one product is made at a time. Every product is different so it is labour intensive. Products may be made by hand or a combination of hand and machine methods.
- Batch production is when a small quantity of identical products are made. Batch production may also be labour intensive, but jigs and templates are used to aid production. Batches of the product can be made as often as required. The machines can be easily changed to produce a batch of a different product.

Revision site summarising the 4 key industrial production methods. Part of the design and technology section.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components
Cost:	Free
Format:	Revision website

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

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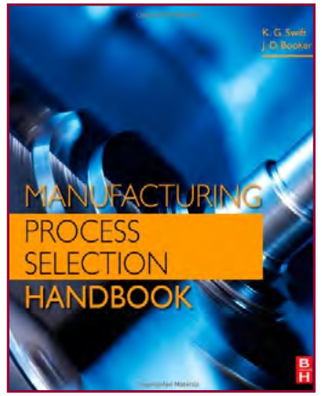
Manufacturing Process Selection Handbook: From Design to Manufacture



The text book provides engineers and designers with process knowledge and the essential technological and cost data to guide the selection of manufacturing processes early in the product development cycle.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components
Cost:	Approximately £60
Format:	Published text book

ISBN-13: 978-0080993607

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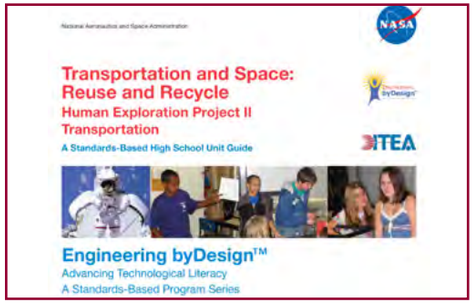
Transportation and Space: Reuse and Recycle



Teacher lesson plans based on space exploration and sustainability. Produced by NASA.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components
Cost:	Free
Format:	Downloadable pdf files

http://www.nasa.gov/pdf/475488main_HEP_II_HS_10-12.pdf

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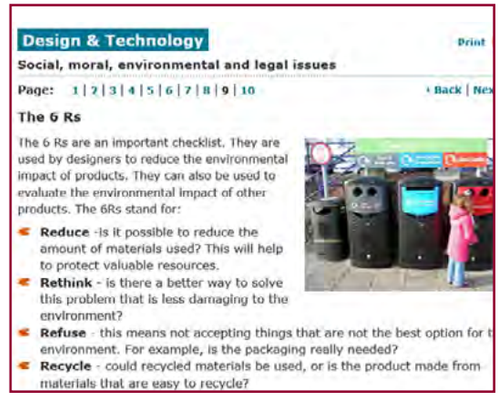
BBC Bite Size The 6 Rs



BBC Revision site, summary of the 6Rs of engineering sustainability.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components
Cost:	Free
Format:	Website targeted at student revision.

http://www.bbc.co.uk/schools/gcsebitesize/design/resistantmaterials/designsocialrev9.shtml

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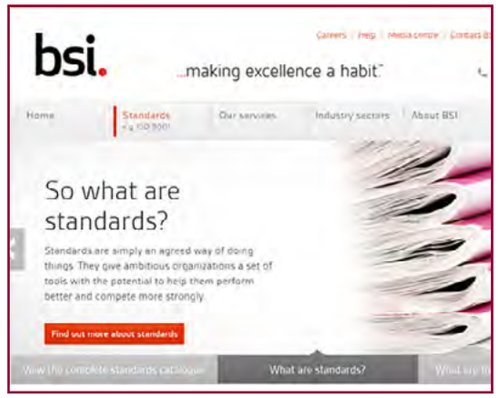
Standards



This website is operated by the British Standards Institute and offers services and information on all British Standards. There are sections for specific industries, including engineering. This web page focuses on definitions and benefits of standards.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and component
Cost:	Free
Format:	Web page

http://www.bsigroup.co.uk/en-GB/standards/

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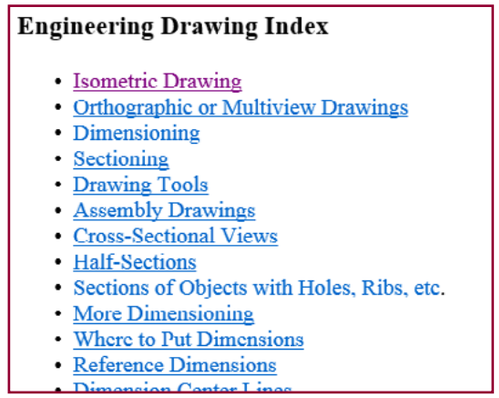
Engineering Drawing and Sketching



The web page is an online summary of engineering drawing approaches with key features and examples of each approach.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO2 Be able to research existing products
Cost:	Free
Format:	Web page with online lecture notes

http://www.me.umn.edu/courses/me2011/handouts/drawing/blanco-tutorial.html

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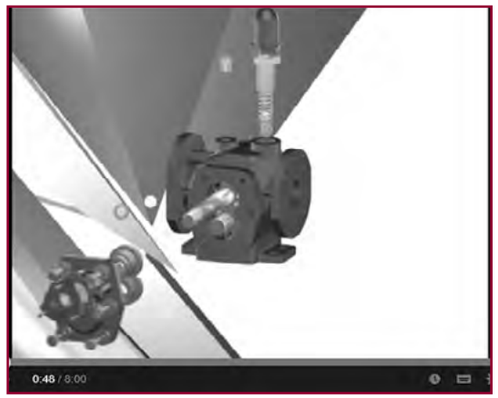
Reverse engineering by Siyanda Engineering



A promotional video for a South African engineering company explaining how they use reverse engineering.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO2 Be able to research existing products, LO3 Be able to analyse an existing product through disassembly
Cost:	Free
Format:	8 minute You Tube video

http://youtu.be/OMrUhEucc9k

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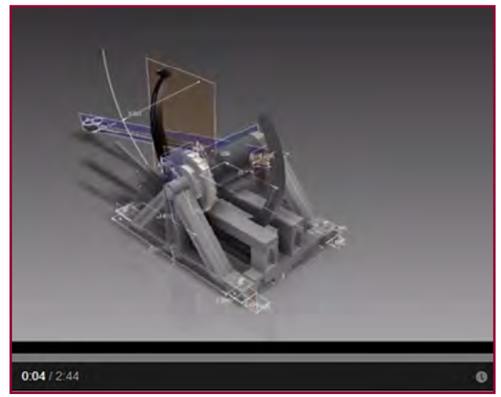
Examples of reverse engineering designs



A YouTube video montage of designs with subtle background music. No commentary. 3 minutes in length.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO2 Be able to research existing products, LO3 Be able to analyse an existing product through disassembly
Cost:	Free
Format:	Video

http://youtu.be/EI8YgBUsasU

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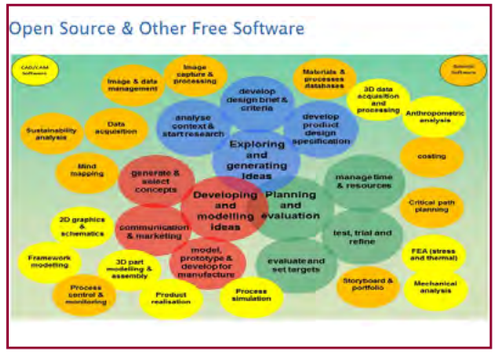
Digital D&T: Open Source and Other Free Software



A web page of links and reviews to free design software from an educational partner of the IET.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components, LO2 Be able to research existing products, LO3 Be able to analyse an existing product through disassembly
Cost:	Free Access
Format:	Web page with external links

http://www.digitaldandt.org/index.php/resources/open-source-a-free-software

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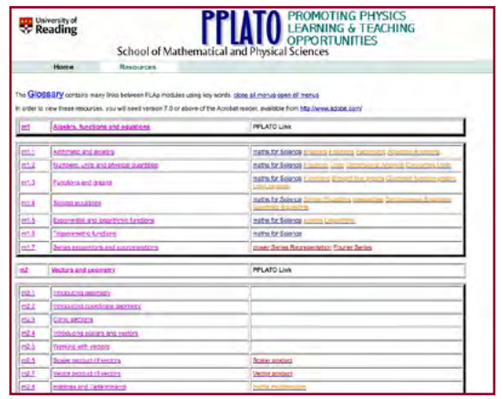
Enhance understanding of maths and science for engineering



A free to access self-learning website for supporting engineering maths and science.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components, LO2 Be able to research existing products, LO3 Be able to analyse an existing product through disassembly
Cost:	Free
Format:	Website

http://www.met.reading.ac.uk/pplato/resources/

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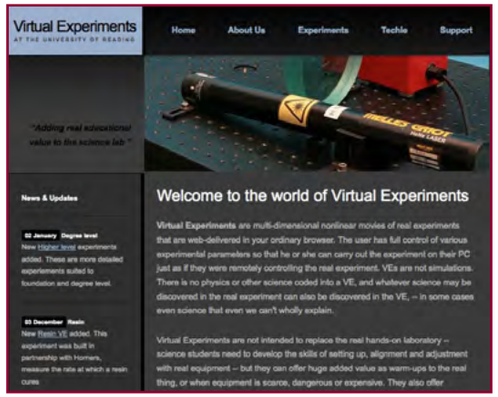
Virtual science experiments



A free to access self-learning website for science in engineering.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R106, LO1 Know how commercial production methods, quality and legislation impact on the design of products and components, LO2 Be able to research existing
Cost:	Free
Format:	Website

http://www.reading.ac.uk/virtualexperiments

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How to: Intro to Technical Sketching

A series of short YouTube videos based on technical sketching techniques.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation
Cost:	Free
Format:	Series of short videos

http://www.youtube.com/watch?v=A2k2x0OVq8A&feature=share&list=PLbFMczzFkJ8TJJZ3Gdn71KOGFpSc5ou-l&index=8

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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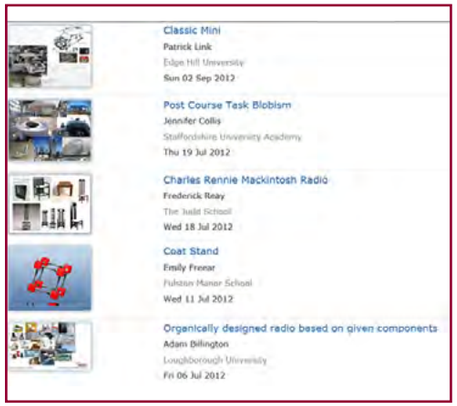
Post Course Task



A series of examples of completed design tasks from students. Over 400 projects listed.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation
Cost:	Free
Format:	Web site with links to example projects
	http://www.digitaldandt.org/index.php/post-course-tasks

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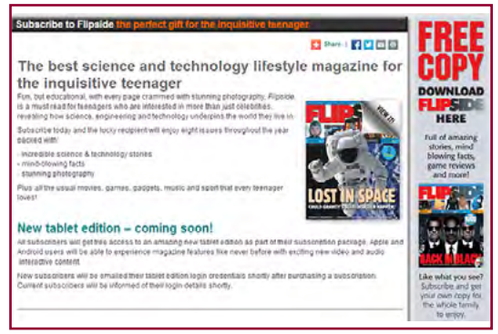
Engineering Design Level 1/2
Cambridge NATIONALS

Flipside Magazine



The IET produce an engineering magazine targeted at teenagers entering engineering. Available as physical copies or electronic versions with 8 issues per year.

Supports:	OCR Cambridge Nationals Systems Control in Engineering Level 1/2 Broad application to R105, R106, R107 and R108
Cost:	£27.50 annual subscription. Free electronic issue available from site.
Format:	Professional Institution magazine.
	http://flipside.theiet.org/subscribe/index.cfm

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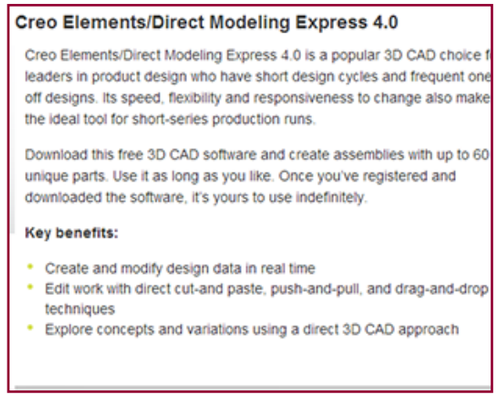
Creo Elements/Direct Modelling Express 4.0



A cut down free version of professional 3D modelling software with an indefinite licence.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free use licence, requires registration.
Format:	Downloadable windows software

http://www.ptc.com/products/creo-elements-direct/modeling-express/#3

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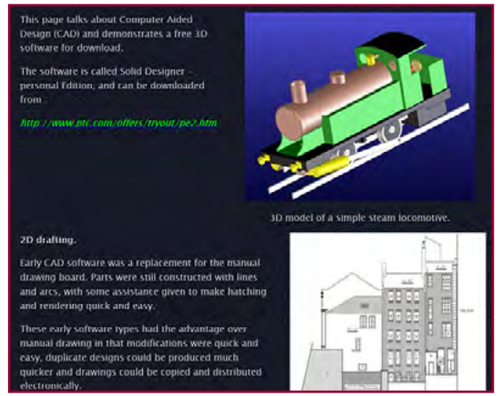
Cambridge NATIONALS

CAD and model engineering



An explanation and demonstration of CAD using free to use software.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free
Format:	Web page with description of process activities.

http://www.steves-workshop.co.uk/tips/cad/cad.htm

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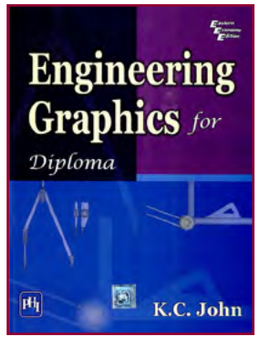
Engineering graphics for Diploma



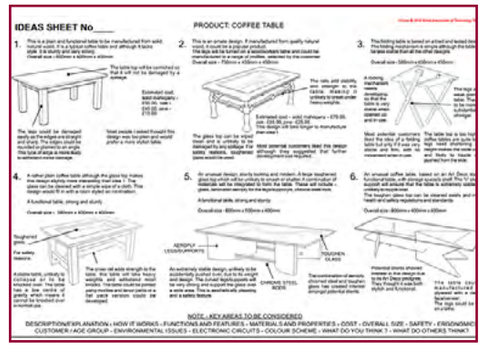
This book covers:

- the fundamentals of manual drafting, lettering, freehand sketching and dimensioning of views.
- 2D drawings like geometrical constructions, conics, miscellaneous curves and scales.
- 3D drawings, such as projections of points, lines, plane lamina, geometrical solids and their different sections
- intersection of surfaces and their developments.
- drawing pictorial views, including projection, oblique projection and perspective projections
- the fundamentals of machine drawing.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation
Cost:	Approximately £10 for hard back or £4 for e-book.
Format:	Published text book available as paperback or in Kindle edition.
	ISBN-13: 978-8120337220

OCR Oxford Cambridge and RSA
Engineering Design Level 1/2
Cambridge NATIONALS

Presenting design ideas



Printable pdf giving examples of how a design idea might be presented.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques, LO2 Know how to develop designs using engineering drawing techniques and annotation
Cost:	Free to download
Format:	PDF
	http://www.technologystudent.com/pdf5/ideas1.pdf

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5 tips on how to prepare a design presentation

A web page giving 5 practical considerations that can be used to improve the presentation of a design idea.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free
Format:	Web Page

http://99designs.com/designer-blog/2013/03/19/5-tips-on-how-to-prepare-a-design-presentation/

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Cambridge NATIONALS

Materials in Products Selection: Tools for Including User-Interaction in Materials Selection

A web page exploring how materials are selected for use in a product. The focus of the information is the rationale used in creating three tools to deliver the required results. In doing so the process for selecting products is explained.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free site
Format:	Educational website

http://www.ijdesign.org/ojs/index.php/IJDesign/article/view/129/78

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3D CAD Animation-Palletiser-Robot-Animatie-SolidWorks Catia Solid Edge NX Pro Engineer Inventor

An example of how animation can be used to present a complex design concept. You Tube Video.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO1 Be able to generate design proposals using a range of techniques LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free
Format:	YouTube Video http://youtu.be/5WVhdSwAScI

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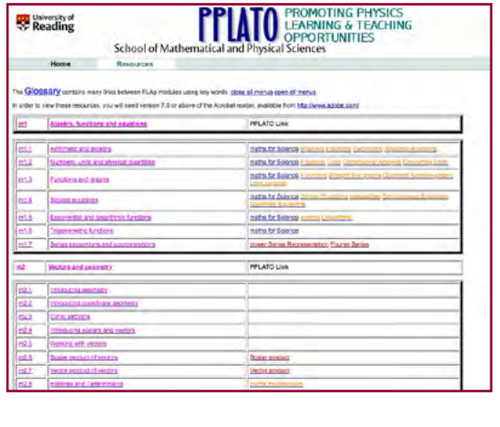
Enhance understanding of maths and science for engineering



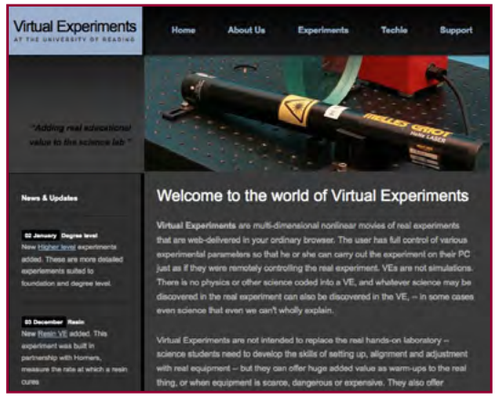
A free to access self-learning website for supporting engineering maths and science.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO2 Know how to develop designs using engineering drawing techniques and annotation, LO3 Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
Cost:	Free
Format:	Website http://www.met.reading.ac.uk/pplato/resources/

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

resources.feedback@ocr.org.uk

Virtual science experiments



A free to access self-learning website for science in engineering.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R107, LO2 Know how to develop designs using engineering drawing techniques and annotation
Cost:	Free
Format:	Website

http://www.reading.ac.uk/virtualexperiments

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Create a prototype

This website is produced by HSBC to support new business start up and provides a guided checklist on creating a prototype, exploring a range of options that could be considered.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype
Cost:	Free
Format:	Printable web page

https://www.knowledge.hsbc.co.uk/tools-and-resources/article/create-a-prototype

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at

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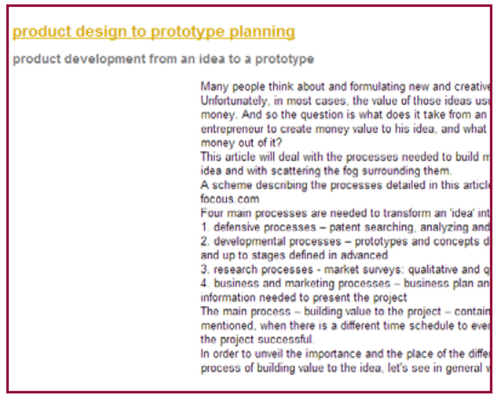
Product design to prototype planning


product design to prototype planning

product development from an idea to a prototype

Many people think about and formulating new and creativ
Unfortunately, in most cases, the value of those ideas us
money. And so the question is what does it take from an
entrepreneur to create money value to his idea, and what
money out of it?
This article will deal with the processes needed to build m
idea and with scattering the fog surrounding them.
A scheme describing the processes detailed in this articl
focus.com
Four main processes are needed to transform an 'idea' int
1. defensive processes – patent searching, analyzing and
2. developmental processes – prototypes and concepts d
and up to stages defined in advanced
3. research processes - market surveys: qualitative and q
4. business and marketing processes – business plan an
information needed to present the project
The main process – building value to the project – contain
mentioned, when there is a different time schedule to eve
the project successful.
In order to unveil the importance and the place of the diffe
process of building value to the idea, let's see in general v

A description of the process for planning a prototype activity covering:
Four main processes to transform an 'idea' into 'idea + value':
1. defensive processes
2. developmental processes
3. research processes
4. business and marketing processes
Each process is briefly discussed in the article.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype, LO3 Be able to produce a prototype, LO4 Be able to evaluate the success of a prototype
Cost:	Free Access
Format:	Web Page

http://www.b-focus.com/article.aspx?ln=en&articleId=1

OCR Oxford Cambridge and RSA
Engineering Design Level 1/2
Cambridge NATIONALS

Winning medals: does engineering design make a difference?

A teacher resource pack created by the Royal Academy of Engineers, focus is on presentation by students.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype, LO4 Be able to evaluate the success of a prototype
Cost:	Free
Format:	Downloadable pdf resource

http://www.raeng.org.uk/education/eenp/engineering_resources/pdf/Winning_medals_teacher_version.pdf

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Design principles: The engineer's contribution to society

A publication by the Royal Academy of Engineering that explores three principles of engineering design:

- Need
- Vision
- Delivery

Using a number of case studies to illustrate the principles.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype, LO4 Be able to evaluate the success of a prototype
Cost:	Free to download
Format:	Downloadable pdf

http://www.raeng.org.uk/publications/reports/rae-systems-report

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Health and safety in the engineering industry

The official HSE website for the engineering industry with topics covering:

- Workshops
- Storage and handling
- Electricity

There is an updated news feed and case studies are available.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO2 Understand safe working practices used when making a prototype
Cost:	Free
Format:	Website

http://www.hse.gov.uk/engineering/

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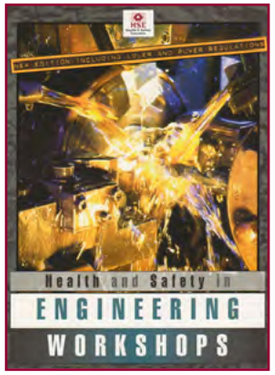
Health and safety in engineering workshops



The publication contains guidance from over 200 separate HSE publications in one easy to read and follow guide. The printed version is available to purchase or a free-to download web version is available.

Free, printable PDF worksheets are available.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO2 Understand safe working practices used when making a prototype
Cost:	£9.50 for the printed version from www.hsebooks.co.uk – free web version
Format:	Printed book or web friendly version

http://www.hseni.gov.uk/hsg129_health_and_safety_in_engineering_workshops.pdf

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Planning a project

An Open Learn module based on Planning a project with bite size elements taking the learner through the stages of project planning. Some or all of the elements can be studied.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype
Cost:	Free
Format:	Online module

http://www.open.edu/openlearn/money-management/management/business-studies/planning-project/content-section-0

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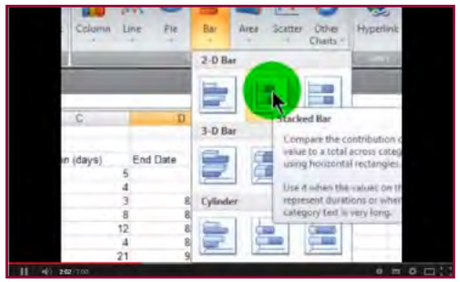
Making a Gantt Chart in Excel



Video tutorial on how to make a Gantt Chart in Microsoft Excel.
Based on Excel 2007 but is applicable to most spreadsheet software.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO1 Know how to plan the making of a prototype
Cost:	Free
Format:	YouTube Video

http://youtu.be/HQwE0Xv1IAA

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Completing the project

An Open Learn module based on Completing a project with bite size elements. These short activities focus on learning from a project that has been carried out. This includes self-evaluation and evaluating the different stages of a project.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO4 Be able to evaluate the success of a prototype
Cost:	Free
Format:	Online modules

http://www.open.edu/openlearn/money-management/management/business-studies/completing-the-project/content-section-0

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Product Prototype Model Making

A commercial model making site. Examples of prototype models from a range of materials, engineering and architectural models. Lots of images and examples of the work of the company.

Supports:	OCR Cambridge Nationals in Engineering Design Level 1/2 Unit R108, LO3 Be able to produce a prototype, LO4 Be able to evaluate the success of a prototype
Cost:	Free
Format:	Commercial sales web site

http://www.confluencecreative.co.uk/engineering-model-makers.html

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www.ocr.org.uk/cambridgenationals

Contact us

Staff at the OCR Customer Contact Centre are available to take your call between 8am and 5.30pm, Monday to Friday.

We're always delighted to answer questions and give advice.

Telephone 02476 851509

Email cambridgenationals@ocr.org.uk