

*Reviewed by Bill  
Goddard, Senior  
Lecturer, University of  
Greenwich*

## **Technology Education for Teachers**

This book is an informative reader which deals in various ways with definitions of technology education in a manner which is relevant to practitioners. It begins with an exploration of notions of technology education and moves on to deal with methodological issues both in terms of subject-based pedagogical analysis and more widely in terms of generic educational activities such as assessment and evaluation, the planning of the working environment, and curriculum development. It concludes with an overview of technology education around the world and a

discussion of the issues raised in the previous body of the book and the implications which flow from them. It is targeted at student teachers, practising teachers, curriculum managers, and administrators who are involved in technology education.

It addresses a wide range of issues which affect technology education. The editors acknowledge the uniqueness of each national education system whilst confirming their belief that there are a range of generic issues of relevance to all technology educators. Consequently the book considers the experiences and research in technology education which has been taking place world-wide and the authors of each of the eleven chapters are drawn from Australia, the UK and the Netherlands. In addition, the book addresses matters of balance between theory and practice.

It is an effective book in catering for its target audience even though that target audience is quite a wide one. Technological developments continue to take place and an educational response to them which is going to be meaningful to all categories of the target audience requires them to be informed of current key issues and to be able to make judgements based on recent research and practice. This book makes a positive contribution to this process in providing a contextually relevant exposition of matters which are important in terms of the development and delivery of technology education in schools.

This book has value to its intended users in terms of its range of coverage of key aspects of the process of planning and delivery of a curriculum in technology education. For student teachers and practising educators it is a useful text with which to inform discussions about key aspects of technology education. It brings developments in the subject area up-to-date.

In terms of supporting pupils I believe that it provides teachers with a framework within which to address the planning and delivery of the curriculum through an engagement with recent and relevant developments.

# Technology Education for Teachers

edited by John Williams and Anthony Williams

# edu

Developing a working paradigm ought to benefit pupils through their teachers having a more clear-sighted view of the nature of the subject and its potential in terms of learning outcomes. In this way teachers are also supported through being able to address pertinent issues which have a bearing on their interpretation of the subject. It is also helpful for teachers who have to deal with curriculum planning and development since it provides much evidence with which to underpin such activities.

One major strength is that the book is concise and easy to read. Each of the chapters is separately accessible and is well supported in terms of references for follow-up exploration or study. It provides a theoretical framework which is based on research and practice and it is well indexed.

I would have liked to have seen two chapters included which relate to current debates around the world. First, even though 'gender' is briefly addressed in a number of the papers and particularly in the concluding chapter concerned with issues and implications I would have welcomed a contribution purely concerned with this issue, both in terms of the curriculum offer to pupils and also in terms of the training of teachers. Second, I believe that the discussion could have been further developed by including a chapter linking technology education and the future of work.

The review copy is a paperback which is very readable and is attractively presented. It is also available in hardback. Where relevant it contains diagrammatic, graphic, and photographic evidence in support of text. It is published in Australia and there is no indication of price with my copy. It is easy to read particularly since each of the chapters focuses on particular topics. Even though each chapter stands alone the accumulative combination is coherent. The text, photographs, and illustrations are all clearly printed. This is a useful book which should inform practitioners' thinking and development.

### Technology Education for Teachers

John Williams and Anthony Williams  
Macmillan Education Pty Ltd  
ISBN: 073294077X pb  
0732940907 hb

Appropriate content	////	Generic use	==
Pupil/student use	N/A	One of a series	
Teacher resource	////	Photocopiable	
Visuals	N/A	Pupil/student activities	
Overall style	////	Cross-curricular	



*Reviewed by Melanie Fasciato, Senior Lecturer, Manchester Metropolitan University*

### Understanding Design and Technology Key Stage 2 and 3

This CD-ROM is intended for use by both teachers and pupils. It sets out to be a reference resource, a project and theme bank. There is a facility for saving to a clipboard and cutting and pasting text, pictures, grids and diagrams to produce teaching materials. There is also teacher-only access to assessment which can be recorded in two formats: by recording strands of capability or level descriptors for Attainment Targets. It can be used for in-service training, for the production of teaching and project materials and to support individualised learning for pupils.

The two glossaries (Key Stage 2 and 3) contain words which are used in the appropriate key stage text and this results in some very odd entries, for example 'Floors in China', although there are other, more generally useful entries. The entries are highlighted in the text of the CD-ROM. A basic CAD package, 'Design Tools – 2D Design', is also accessible through the glossary as well as from the projects section.

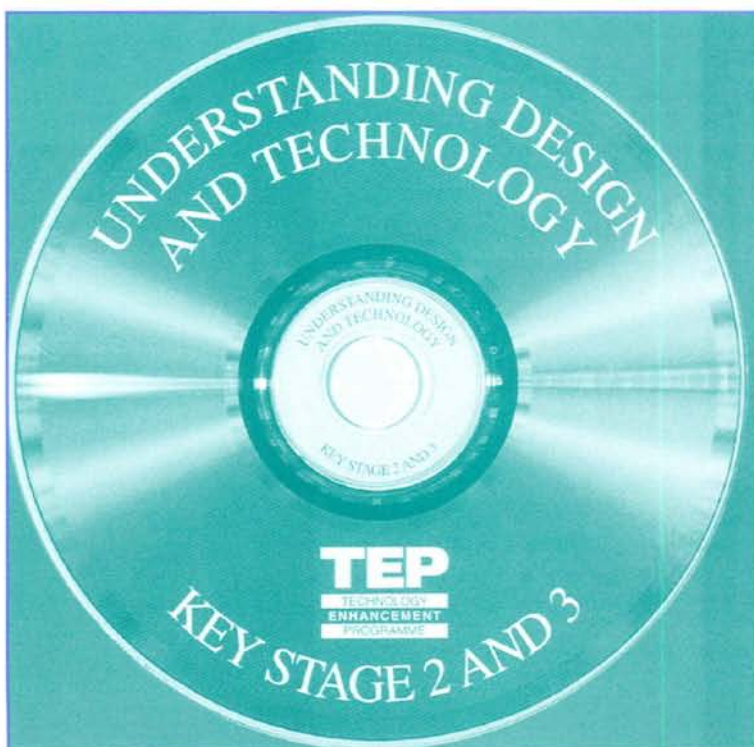
The Key Stage 2 section of the CD-ROM is organised under National Curriculum

headings – Designing Skills, Making Skills and Knowledge and Understanding. The sections are somewhat superficial, giving a flavour of the topic without very much content. In essence, they act as an extension of the glossary and a teacher would need to support learning with other reference materials. The Key Stage 3 section is organised under Designing and Making in three materials areas plus Products and Applications and Knowledge and Understanding headings linked to evaluation and quality, structures and control systems.

The projects have accompanying pupil support materials, accessed through 'clicking' on the highlighted key words. Some were not as detailed as others, and I am not convinced that there was sufficient support material to leave children alone to get on with the individual projects. There was factual information about tools, equipment and processes, but sometimes this was not well explained, (when making a puppet, where **would** you tape the head onto the art straw and would the hands and feet need to be taped to the art straw, or the ends of the strings, or both?) The Communications project concentrated on a very limited means of communications: conveying a message on paper and although as an adult involved in design and technology I could 'get the message' about communication, I don't think that children would.

I felt that the CD-ROM promised much, but was somehow disappointing. The contents are easy to access and the initial problems that I encountered were quickly ironed out by John Fawn on the Helpline, although apparently the major fault that I was encountering (a message saying 'stopped' in the bottom left corner every time I was on a particular page) was not uncommon.

There are some aspects that are extremely annoying. For example, the text is overlaid by photos and video sequences in some of the themes so it cannot be read, although admittedly it is read to you. Incidentally, the video sequence which accompanied making Chinese Dumplings had some dubious



hygiene (long hair dangling onto the preparation area) and nutrition practice (a lot of oil and salt poured into the filling mixture). The 'help clouds' are intrusive and keep 'popping up' unexpectedly when using the explain feature. There is a pressing need in educational materials for the illustrations not simply to be pictures but to support learning. The cartoon characters – girl with hammer, boy with pencil – did not help pupils to gain further understanding of the information on the page; they were decoration. Why weren't the illustrations chosen to contribute to the pupils' understanding?

There are positive features. The assessment records are useful and I was pleased to see a space for teacher comments. The clipboard is also useful as is the facility for customising materials. The major fault is that the factual content is not always as supportive or detailed as it could be. We need to stop thinking in terms of a CD-ROM being a substitute for a book and reassess the way in which materials are presented to children using IT.

**Understanding Design and Technology  
Key Stage 2 and 3**

TEP

Quaternary Education Ltd: £82.50

Orders: 01283 716400

Appropriate content	////	Generic use
Pupil/student use	///	One of a series
Teacher resource	////	Photocopiable
Visuals	///	Pupil/student activities ⇐
Overall style	///	Cross-curricular



Reviewed by  
Trevor Taylor, Head  
of Technical Faculty,  
Wyvern School

**Electronics Tasks and Assignments**

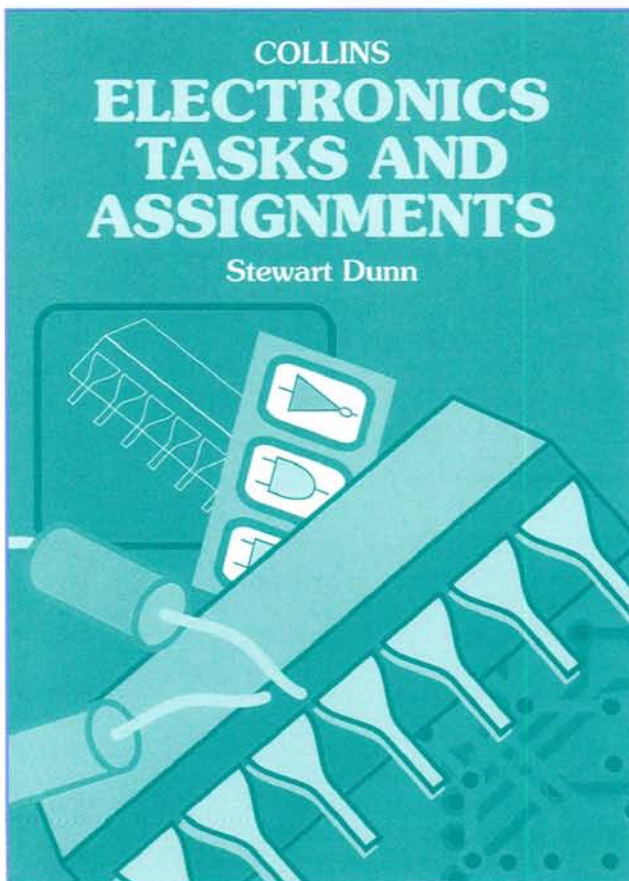
I have never liked the price tag on photocopiable books – it's always seemed too big somehow. However, since working through this latest offering from Stewart Dunn, I'm beginning to see the light. What the book offers is a medley of topics which can be used across Key Stages 3 and 4 and it is the total flexibility that appeals most of all. Or perhaps it is the consistency, or maybe the competence. No, it is the sheer convenience that has won through. I can take elements of this book and 'paste' them onto my existing scheme of work with ease and excitement. Most teachers would be prepared to use the relevant pages as published but I can see that a few would like to replace some of the detail with material more appropriate to their classes or workshops. This is possible because each page, laid out in panels of text and drawings, encourages modification by fussy teachers who want to make the next assignment absolutely relevant to their needs. In particular, the 'assignments' and the 'tasks' that go with each circuit can be tuned to the age group and time scale needed without destroying the look of the page. On the topic of looks, I would describe the layout of the

book as unusual, even homely perhaps. Maybe this is why I felt able to contemplate modifications. Most of the pages are logical, consistent but in common with many books these days, crowded. Are thick black borders 'in' this year?

What do we have to select from? 555s of course and also Op amp circuits based on 3140s, which are the up market pin compatible replacements for 741s. There is work using logic gates, thankfully not much on logic functions but instead some excellent material for Key Stage 3 that will lend itself to class wide application. What really made the photocopier move for me was a series of activities on counters and a bar graph display. Ideal for Key Stage 4, nothing new, but well laid out with clear instructions. Like all the circuits, 'bubble' text is used to explain important features and make suggestions. e.g. "Adjust to set zero" and "Adjust to set gain" are crucial clues for pupils to become less teacher dependent. Cross-references to other pages are useful but could be even more useful if they all hit the target!

What the book offers is a source of circuits that can be dipped into for Key Stages 3 and 4, but then, so do most books on electronics. However, several sections have an uncanny similarity to the *GCSE Electronic Products* courses that now abound. It is clear that designing and making assignments will be supported by this particular book, but don't look for any of the finer points on 'production'. Practical details have been given little room.

Some of the pages made little impact on me but this simply underscores the advantage of the photocopiable format. I did not and will not bother with any pages that don't apply to my setting. Instead the book allows me to select a slim and efficient set of data that kick



**Electronics Tasks and Assignments**

Stewart Dunn  
Collins Educational: £34.99  
ISBN 000327353 9  
Orders: 0141 306 3455

Appropriate content	/////	Generic use	
Pupil/student use	/////	One of a series	←
Teacher resource	✓	Photocopiable	←
Visuals	///	Pupil/student activities	←
Overall style	///	Cross-curricular	

REVIEWS



starts the next topic, and the pupils are not weighed down by loads of intimidating or distracting facts. The overriding principle is that teachers can make the book work to their strengths, not expose limitations.

The reference section covers most of the constantly needed support information: pin outs, component identification, reversing

motors, wiring in relays. All will find their way onto display boards very soon. Devotees of 'Croc Clips' and 'Quickroute' will feel at home, but computer control freaks will wonder why it was mentioned at all.

All in all, a very competent book that has opened my eyes to this format and this series in particular.

## Partnerships in Learning

**British Steel's Education Service has teaching resources relevant to Key Stages 1 to 4 with some materials covering GCSE O'A' and AS' levels, GNVQ and BTEC courses.**

The main focus is on Science, Mathematics and Design and Technology. All subjects are covered in imaginative and innovative ways.

The resources are in many formats: videos, workcards, pupil readers, text books, computer packages and games. All the resources have been developed by educationalists in a true education industry partnership.

For a FREE Catalogue of curriculum support materials, Reference Guides to the National Curriculum, GNVQs and the Curriculum in Scotland, write to:

British Steel Education Service  
PO Box 10, Wetherby, LS23 7EL,  
Tel 01937 840243, Fax No 01937 845381  
E-mail: [bsteel@twoten.press.net](mailto:bsteel@twoten.press.net)  
Internet: <http://www.britishsteel.co.uk/school.htm>

For more general information on British Steel use the main web site address: <http://www.britishsteel.co.uk>



  
British Steel

Curriculum Support  
material from British Steel



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### **Outline Scheme of Work "Working towards Capability"**

This resource is a ring-bound collection of papers which has been compiled by the Hertfordshire Design and Technology Team in response to requests for progressive guidance material for the development of design and technology within schools. Although the review copy is paper based it is clear from the introduction that the content material will be available on disk, in both PC and AppleMac format, for those schools who wish to adapt, add or delete aspects of the scheme of work. The intended target is expressed as schools who are developing their own schemes of work and for which this material provides a starting point. The material itself has been developed from the National Curriculum Programme of Study for Key Stages 1 and 2. It is clearly stated that this is a development document, one which enables schools to eventually reach the objective of adopting the content in all year groups. It also seems clear that the materials are

intended to be flexibly interpreted according to the school context.

This resource is split into year groups from Nursery and Reception through to Years 1 to 6 and each section is separately colour coded and contains four pages. There is then a Coordinator's Section, a Planning and Assessment Section, and a Resources Section. In each of the year group sections the first page of material gives an outline of the range of activities required by the Programme of Study in terms of Investigations, Focused Practical Tasks, and Design and Make Assignments. These are then followed in each case by three pages, each containing three columns, and focusing on various aspects of capability, learning objectives, and examples of expected activities. There is advice on construction kits and also an indication that this material has been developed by cross-referencing the content with proposed schemes of work for mathematics, science and art. The Coordinator's Section provides a synthesised picture of progression within each design and technology capability. The Resources Section provides an indicative list of potential resources whilst the Planning and Assessment materials give an indication of how a planning grid can be used in whole school planning of the design and technology curriculum. Since these materials are based on the development of children's design and technological capability those capabilities have been defined as being concerned with Communicating, Equipment and Techniques, Evaluating, Generating and Developing Ideas, Health and Safety, Materials and Components, Measurement, Accuracy and Quality, Planning, and Researching.

This is a very well developed resource for teachers working within this curriculum area of primary schools. It is valuable because it provides a clear and accessible framework of provision for teaching and learning needs throughout the age range. It is clearly intended to support teachers in the development of effective teaching schemes within the curriculum area and the whole

Key Stage 1 and 2 Design and Technology

## Outline Scheme of Work



**"Working towards Capability"**

**HES**  
Hertfordshire Education Services

**dt** Hertfordshire  
Design and  
Technology

age range and consequently supports effective learning strategies for the pupils.

It is very clearly laid out and the Outline Schemes of Work are easy to follow. The example activities are helpful for busy teachers since they provide a clear indication of the possible learning activities which could be used. As always there is a danger that these could be taken as prescriptive rather than indicative and subject to further development, particularly within the context of each school.

The materials are very easy to read, are well presented in a ring binder and are photocopiable by purchasers. A disk, in Apple Mac or PC format, and containing the main text of the materials, is available for £5.00 and would appear to be good value. The stepped sectioning of each of the year group colour coded sections is very helpful in enabling quick access to the materials of each year group. This is a working document which I am sure that teachers would find a very helpful resource in enabling the planning and delivery of an effective design and technology programme in Key Stages 1 and 2.

**Outline Scheme of Work "Working towards Capability"**

Hertfordshire Design and Technology: £22 plus p+p  
 ISBN: 1 899662 28 6  
 Orders: 01582 830318

Appropriate content	/////	Generic use	⇐
Pupil/student use	N/A	One of a series	⇐
Teacher resource	/////	Photocopiable	⇐
Visuals	N/A	Pupil/student activities	⇐
Overall style	/////	Cross-curricular	⇐



*Reviewed by Les Porter,  
Course Director for  
Industrial Design and  
Technology in  
The Design  
Department of Brunel  
University*

### **CADplus**

This resource is a must for any department which is seriously thinking of teaching CAD applications to their students. Over the years I have worked with many CAD packages that have been developed for teachers, but have never come across one which is specifically designed for teachers that has so many professional elements included and has such strong resource material provided with it.

The package, which is developed by Autodesk Press in conjunction with Thomas Nelson, has its roots in AutoCAD® and AutoCAD® LT, the world-wide industry standard for desktop CAD. It contains a wide range of 2-D and basic 3-D drawings and editing functions.

Two complete versions of AutoCAD® LT are supplied: Version 2 for Windows™ 3.1 and Version 3 for Windows™ 95. (The whole of my evaluation was carried out using Windows™ 3.11.)

Also available to teachers are CADplus® Demonstration Disks. These come as a Powerpoint Presentation and a Powerpoint Viewer (which must be valuable to any

department as a piece of software in its own right). This presentation is very well done and very informative to the potential buyer. The instructions that come with the application are well written and although I am a Powerpoint user, anybody who had not used the application before would have no trouble in installing and using this package. I am sure that anybody who views this presentation will be given enough stimulation to want to go ahead and purchase the full product.

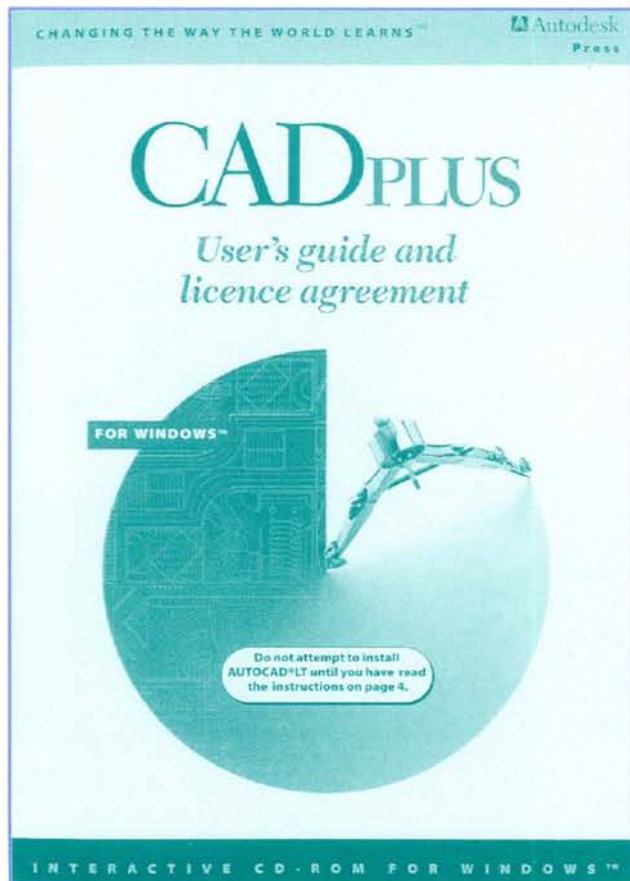
Once the full package has been purchased, CADplus® is supplied with a compact and well written user guide and licence agreement. The program material is supplied on a CD-ROM. Included on this CD-ROM is a superb application containing teacher support material. The installation process is well documented and easy to follow, but be aware that the software licence authorises the user to install the AutoCAD® software on one computer only. During the set-up procedure users need to contact a help line to obtain their authorisation code to unlock the AutoCAD® LT software. After the initial installation has been made there is no need to have the CADplus® CD-ROM in the drive in order to run the AutoCAD® LT software.

When I was running the application I found it helpful to have both the AutoCAD® LT and the teacher's pack running simultaneously and toggling back and forth between the two applications.

The teacher's pack includes:-

- an introduction to Computer-Aided Draughting and Computer-Aided Design
- teaching modules: a step-by-step introduction to AutoCAD® LT for beginners
- a set of Assignments linked to the teaching modules to view on screen or print off
- case studies showing how CAD is used in a variety of industrial applications
- a workshop version of the teaching modules which can be printed off for reference
- a guide to specialist hardware devices used with CAD.

The CADplus® teacher's pack is possibly the most helpful teacher resource that I have ever reviewed. It provides a real overview





about the features of the package and, as one would expect from an industry standard application, supplies high quality suggestions as to what the package may be used for in the commercial world. The pack is intuitive to use and the case-studies could provide ready made lessons in their own right. Autodesk, while developing this resource, has effectively thought through the learning objectives that they wished to achieve. The range of CAD applications that they show and discuss is first class. In particular two of the case studies, that of Bedfordshire Fire and Rescue Service using AutoCAD to add a new dimension to their service and Weaver Associates' development of a BT telephone using a combination of AutoCAD and stereolithography to produce their product provide fantastic insights as to possible uses of CAD. The case studies suggest further applications where, for example, AutoCAD® LT may be linked to packages such as 3D Studio where fully rendered, photographic quality drawings are produced. In the case study section the Leopard Jet of Chichester Miles with its virtual reality flying simulation and Rocket Films motion simulator and their insight into the making of "Time Gate into Egypt" gives ideas about highly specialised forms of CAD.

The teaching modules are well written and the ability to leave a module at any time and undertake an assignment is a particularly strong feature. These modules lead the user effectively through the CAD process and even if the user is not an intuitive Windows™ user the structure of the tutorials soon makes the user feel at ease with the system. Having 'Lotus Screen Camera' running while the tutorials are playing is a very effective method of undertaking the learning process as it allows the user to stop, pause or fast forward at any point during the material.

The assignments that are linked to these tutorials are of particularly high quality and I feel that one of the great strengths of this package is the way that the "levelness" of the teaching modules is directly linked to the assignment that is being undertaken.

Like all CAD packages when you start to use them at first, one tends to feel "... this has so many features that I will never be able to grasp them all..." but with this package that feeling soon goes away and as more and more assignments are undertaken the confidence of the user builds up. During this evaluation I have worked through all the teaching modules and all the assignments,

by the end of the assignments I was left feeling very happy about using the package and thinking "... I wonder if it can do...?"

The 'read me' file that is supplied is well developed and is written in a user friendly way. It gives information on how to set up printers and plotters and uses a question and answer approach such as "How can I customise my icons for the Toolbox or Toolbar?" followed by an answer. This I found very useful and liked the format.

CADplus® is not a package that you can give your students and hope that they can teach CAD to themselves. The teacher is required to really prepare how the material is going to be used and to teach vocabulary such as "array" prior to its use. It is important that the learning process is developed stage by stage and students really do undertake each of the assignments as they view the teaching modules. A word of warning here, this is not a quick process, I guess it took me something like three days to work through all the modules and the assignments while I was doing this evaluation. In my opinion it is important to print off the module notes and read them in conjunction with the tutorials, but these are good and well written and the quality of the resource is excellent.

If I have a small negative comment about CADplus® it is that of one of the narrators used in the commentary, I found the voice condescending and out of character with the high quality of the rest of the package. I thought at first that perhaps this was just me, but after one of my colleagues used the package he made the same comment.

CADplus® is highly recommended and is a resource that will prove very valuable to many Technology departments. While making that recommendation I must acknowledge the TEP for the support that they have given Autodesk while producing the Teacher's Pack - a very professional product that for once uses industry standards that students can take from their schools into the workplace.

#### CADplus

Thomas Nelson: £199.95

Orders: 01264 342992

Appropriate content	/////	Generic use	
Pupil/student use	////	One of a series	
Teacher resource	/////	Photocopiable	⇐
Visuals	/////	Pupil/student activities	⇐
Overall style	/////	Cross-curricular	



Reviewed by Richard Ager, Deputy Director of School of Mathematics, Science and Technology, University of Central England

**Technology 1**

This book is the first of four in the Australian Technology Series, designed for children in years 7–10 of Australian schools. It is published by Cambridge University Press and is available for sale in this country.

In some ways the commonality of design and technology in Great Britain and Australia is highlighted, as some of the material covered in this book is that which many Year 7 students in this country would encounter. Each chapter begins with a set of learning objectives, and is well structured with bulleted check lists, fact files, handy hints, revision sections and a wide range of activities scattered throughout the pages. It also has an index so that searching for particular information is relatively easy. The reading level is appropriate for the target audience with new vocabulary printed in bold. The book is illustrated with black and white line drawings and photographs.

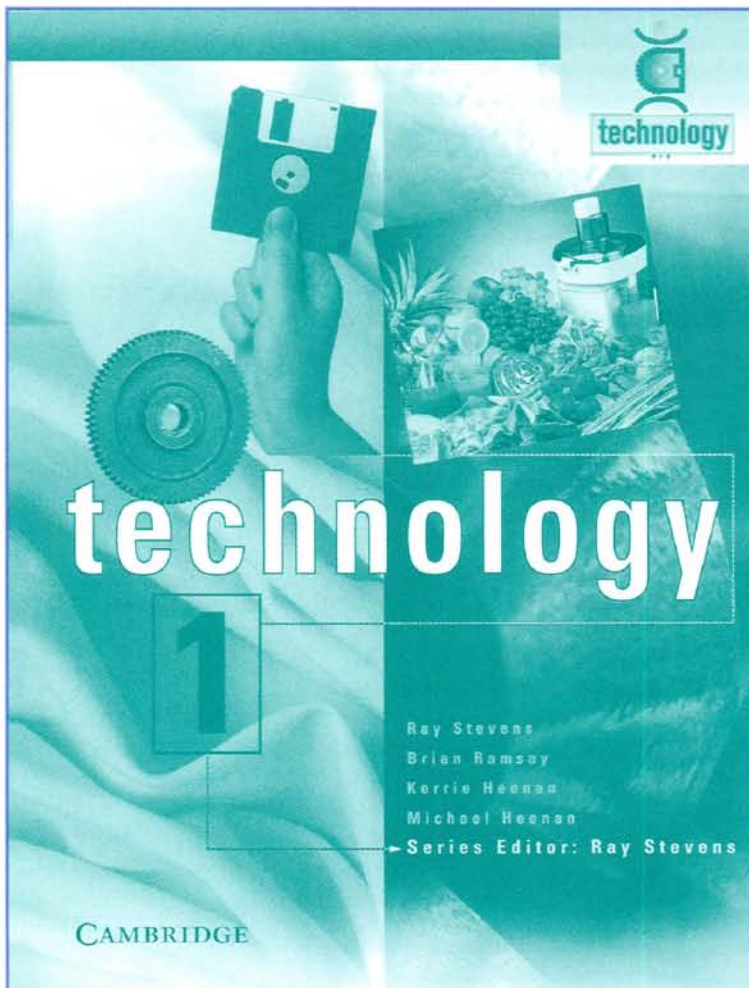
The four sections of the book are *About Design*, *Materials in Society*, *Information Technology* and *Systems*. *About Design* gives some useful features about the technology process and identifies strategies that children can use to communicate their ideas.

*Materials in Society* makes up close to half the book, covering the properties and uses of timber, plastic, textiles, food and metals. It is clearly useful to have such detail about a range of materials together in one publication, and the fact that food and textiles are there together with wood, plastic and metal highlights the fact that they are all materials that can be worked in when undertaking design and technology activities.

*Information Technology* covers communication, the historical development of computers, characteristics of a computer system and some applications of computers in the retail sector. The choice of material in this chapter seems somewhat arbitrary, although it is all up-to-date information. You would also need to consider the educational value of some of the activities suggested, for example, being asked to draw diagrams of an abacus, a tally board and Napier's bones. There is some discussion on how to use CD-ROMs for research but it is done in a very general and simplistic way, with no discussion about search strategies.

*Systems* considers the input-process-output model, energy, simple mechanisms and electrical circuits. The level of work, particularly in terms of mechanisms and electrical circuits, is more appropriate to the Key Stage 2 classroom, and there is a strong science investigation bias to the work, with only limited discussion on how the principles can be applied in a practical situation.

The chapter on Information Technology probably fits in least well with the United Kingdom National Curriculum for design and technology, as it looks at the technical aspects of IT rather than treating it as a tool that can be used in any design and technology activity. The most off putting element of the book for children will, I feel, be the Australian references, identifying for



example Road Signs in Victoria or discussing hydro-electricity in the Snowy Mountains of New South Wales.

This book finds itself up against many publications all focusing upon design and technology in the early years of secondary education. Most of the competitors are producing material specifically for the National Curriculum, and many of them are also in full colour, with the increased costs to which this leads. For these reasons it would probably be inappropriate to have multiple copies of this book available for children to use, but a couple of copies in the departmental resource base would be useful, as it covers many relevant issues in a clear and interesting way.

### Technology 1

Ray Stevens, Brian Ramsay, Kerrie Heenan, Michael Heenan

Cambridge University Press: £14.95

ISBN: 0 521 56575 8

Appropriate content	✓✓	Generic use	
Pupil/student use	✓✓✓	One of a series	⇐
Teacher resource	✓✓	Photocopiable	
Visuals	✓✓✓	Pupil/student activities	⇐
Overall style	✓✓✓	Cross-curricular	



Reviewed by David Foster, Head of Technology Faculty, Tibshelf School, Alferton, Derbyshire

**Digital Electronics**

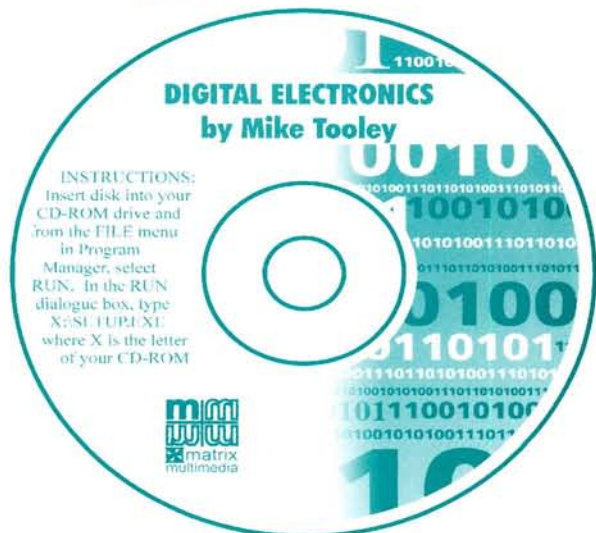
There is an increasing amount of software available to help with the problems pupils have in understanding the workings of electronic circuits. Many of us have seen and used the Crocodile Clips software which I think offers an excellent facility in the workshop or classroom. This CD-ROM from Mike Tooley is an excellent companion. It is very friendly to use and is menu driven. Pupils had no problems working their way through to find out the interesting bits. It allows even the relative novice to investigate how, for example, a set of traffic lights is controlled at a simple junction. To actually see the sequence working, step by digital step, is magical for pupils. It made me think about the hours we once spent setting up a similar demonstration with real components! What a waste of time! The benefit of the 'live circuit' is further enhanced by a spoken commentary which is available as text on a screen window. Pupils need to scroll the text as the commentary proceeds. An improvement here would be to link the text scrolling to the pace of the commentary so that the words scroll automatically. Some pupils lost their place during this part.

The language used in the commentary has been carefully considered with simpler expressions being used at the first stages of the program. Obviously, as more technically difficult concepts are talked through, the language used in the commentary is, of necessity, more complex. The voice of the commentator has some interest and is most definitely not the boring monotone evident on some other programs. This is a major plus!

Throughout this CD-ROM there are exercises with worked examples. Within the 'working circuits' it is possible for the pupil to change some of the values and see the immediate effect. A particularly good example is the half wave rectifier circuit which gives a real insight into what is really happening. A similarly excellent example very effectively explains the workings of a transformer. This has an excellent graphic display and an easy to follow commentary.

It would be very easy to see this CD-ROM used throughout GCSE and A level courses. It is an excellent resource and would not put pupils off because they felt that the content was not explained sufficiently well. All the pupils I tried this on were happy to use the program and felt supported by the style of its delivery.

There are two further CD-ROMs available from the same source. These are 'The Parts Gallery' which helps students to recognise common electronic components and a further CD-ROM 'Electronic Circuits and Components'. This allows pupils to use the 'virtual laboratories' to learn as they experiment and proceed through the sections on the CD-ROM. From my experience, pupils are fascinated by material of this quality. They have the ability to go back through the software and run that piece through again until the understanding is complete. They can test themselves with the worked examples. They can enter variables of their own and see the results. This is interaction at its best. Mike Tooley has spent a considerable time producing this CD-ROM. It is a very high quality resource and is to be recommended. I have found it to be fascinating and rewarding.



**Digital Electronics**

Mike Tooley  
Matrix Multimedia Ltd: £99/£199  
Orders: 01274 730808

Appropriate content	////	Generic use	
Pupil/student use	////	One of a series	←
Teacher resource	////	Photocopiable	←
Visuals	////	Pupil/student activities	
Overall style	////	Cross-curricular	←



### An Introduction to Usability

If you can remember using computer software in the early 1980s and compare the ease of use of today's software or, if you have struggled to operate a video recorder, then you will be aware of 'user-friendliness' in products. Why one product is easier to use than another is the basis of this book and, as the author argues, is increasingly important in today's competitive world. "Design issues – including usability – may be one of the few areas left where manufacturers can gain significant advantages over their competitors." (p. 17)

Patrick Jordan, a Human Factors Specialist with Philips Design, has written this book for "students and those whose profession is connected with the process of product creation". After an introductory chapter outlining the remit of the book, chapter 2, entitled 'What is Usability?', provides a comprehensive answer. According to the International Standards Organisation, usability is the 'effectiveness, efficiency and satisfaction with which specified users can achieve specified goals in particular environments'. (p. 5) Identifying specified users includes understanding the effect of such users' characteristics on how they are able to use the product. Characteristics include previous experience, cultural background, disability, age and gender. Guessability, learnability and experienced user performance extend understanding of the interaction between user and product. Many other factors to do with usability are discussed such as safety, financial implications, reusability, amount of effort needed and annoyance.

Having achieved an understanding of usability, this is linked to ten Principles of Usable Design. These ten principles could provide a useful check list at all stages of the design and make process. Design and technology teachers will recognise many of the elements to be considered when 'creating usable designs'. In producing a design brief pupils have been encouraged to investigate user characteristics and the contexts in which the product will be used, something which includes understanding users' lifestyles. Teachers will also recognise the process of translating these considerations into product specification.

From the description above it should hopefully be seen that the first four chapters will be useful to the teacher, chapters 5 and 6

on evaluation will be of particular value. The chapter on methods for usability evaluation gives empirical and non-empirical methods. Each method is described and the advantages and disadvantages discussed. Here are a practical, established, credible methods which can be used, or modified for use in school. For the student, or teacher researcher, this chapter provides a critical analysis of methods which are certainly evaluatory but which can also be described, not surprisingly, as research methods.

The last chapter, 'Conducting a Usability Evaluation', seems at first glance to be unnecessary after the chapter of evaluation methods. It is however an indication of the 'grounded' nature of this book, of the way it moves theory into practice. As with the previous chapter on methods, this chapter is reminiscent of good research methodology in that it points to the need for the evaluator to ask questions about constraints, types of data to be collected, how this is to be analysed and how it is to be reported. To illustrate these issues a case study is presented – the evaluation of a computer-based statistical package.

This is a book which is packed with useful information, which is clearly presented and, surprise, surprise, easy to use. It should first be read straight through and then used as a resource for checking factors when embarking on a design and make activity or when evaluating products. The index proved useful in trying to identify certain components, for example, of user specificity or carrying out evaluation.

The book does not ask questions about why certain products should or should not be made. Usability could equally well apply to using a launcher for a warhead, carrying toxic chemicals or plague bacteria as to a wheelchair. Although this is not discussed, the ideas and practice presented in the book do provide many opportunities to raise questions about value concern as, for example, when investigating user characteristics, lifestyles and the contexts in which the product will be used.

A copy of this book should be available to teachers and probably, post-sixteen students in all design and technology departments. As a design and technology teacher, I would want my own copy.

*Reviewed by Anne Riggs, Head of Science and Technology Department, University College of St Martin, Lancaster*

### An Introduction to Usability

Patrick W Jordan  
Taylor and Francis:  
£14.95  
ISBN: 00 7484 0762 6

Appropriate content // // //  
Pupil/student use //  
Teacher resource // // // //  
Visuals ✓  
Overall style // //



*Reviewed by Jonty Kinsella, Deputy Head of Department, Orleans Park School*

**How do they do that?**

As its names implies, this is a pack about commercial food production. It is available free and is endorsed by NATHE. It is now probably in all schools, and is aimed at Key Stage 3 pupils. The pack comes as a glossy A4 landscape folder, with two sections. As we are so short of commercial food production information in an accessible style, I looked forward to reviewing this as a welcome addition, not only for Key Stage 3 but perhaps for Key Stage 4 as well.

The first concern for the teacher arises when a teaching pack is 'dedicated' to a particular product. As expected the topic dealt with by Birds Eye Walls is freezing and their well known products. It is possible that some of us will be teaching a straight project on frozen foods in Key Stage 3 but I suspect this is not always the case. So the question becomes 'how can I use this when I want to teach a topic which does not actually deal with freezing?'

The first section has five colour information cards which are two-sided and photocopiable. They are:

1. Freezing Food
2. A Fishy tale
3. How do they extend the range?
4. Breaking new ground
5. New Technology, new developments.

The crucial issue for adaptation is whether any of the work or ideas within the cards are general and transferable. I identified the following as fitting in this category – for product development an innovation funnel model and a Gantt chart, a product history (albeit for fish fingers, which none the less were an amazing concept at the time of introduction), some simple sensory evaluation, an outline of a production system, packaging and labelling, a product range, and how to look forward to new markets.

Some of this pack is so product specific that less able, younger pupils may not be able to unravel the generalities, so frozen peas, fish fingers and a range of chicken dishes may be all they take out of it. But I feel that there is a potential for clever 'cut and paste' for these pupils.

The second section contains a set of five black and white activity cards. I have modified some of these to support a project in school. This uses a current Year 8 cross curricular theme of Afro-Caribbean work that is also being studied in English and History, amongst other subjects. We are spending eight lessons developing and promoting a new style 'Rice 'n Peas' dish which will be packaged for either immediate consumption or could be frozen. The 'team working' card works well. Aspects of the other cards also fit in with this work. e.g. investigation of a potential market, quality control, brand and product image, etc.

For any Key Stage 3 work I always look at the inclusion and suitability of the relevant food science and nutrition. There is none as such in this pack but reference is made to consistency, texture, low fat and salt etc. in the section on specification. A 'Healthy Option' range of new products is the basis of the product development section. The preface calls this 'the inclusion of technical vocabulary'. It is recommended that the pack is supplemented with a good nutrition text, sensory evaluation pack, and a choice of software or text to support nutritional analysis.

This pack is certainly also relevant for many Key Stage 4 pupils. Even though it is commercially funded the author has managed to avoid being sucked into the commercial imperative to any great degree. I feel it has merit and is of value for most teaching of commercial production methods and systems.

**How do they do that?**

Birds Eye Walls: Free  
Orders: telephone: 0171 453 4684 or  
fax 0171 453 4650

Appropriate content	////	Generic use	=
Pupil/student use	////	One of a series	
Teacher resource	////	Photocopiable	=
Visuals	///	Pupil/student activities	=
Overall style	///	Cross-curricular	



**D & T Routes: Graphic Products**

The book is part of the RCS series Routes and contains 110 pages of information designed to be used as a class book with 14-16 year olds. I feel the book could be used by students involved in end of Key Stage 4 examination or those who were using graphics in a supportive role or for those studying for a Certificate of Achievement.

The book has no single author, but is put together by a large team of well known names in the design and technology field. The book is all the better for this as it brings together different views and makes the book very user friendly for both staff and students.

The book is in full colour and different type styles are used for emphasis. The content is divided into four major colour coded sections. There are eight designing and making assignments, ranging from Survival to 3D T-shirts. The two, four and six page spreads are good class starting points and resources, both for the student and the inexperienced teacher. For the aware and experienced these Design and Make Assignments starting points should be most valuable.

Section 2 is Designing. In this section there is a large variety of information for both teachers and students and it ranges from sections of the design process such as generating ideas to designing skills such as the generating of lettering and formal drawing. (Although why first angle is dealt with as well as third I can't imagine). Perspective drawing is dealt with well, using good examples. Colour, nets and packaging are well covered. The section concludes with information on legal requirements and design for manufacture. Section 3 is on manufacturing and covers in detail joining cards, working in foam, systems and control and manufacture in large volumes, which

**D & T Routes: Graphic Products**

Hodder & Stoughton Educational: £9.99  
 ISBN: 0340697369  
 Orders: 01235 400 405

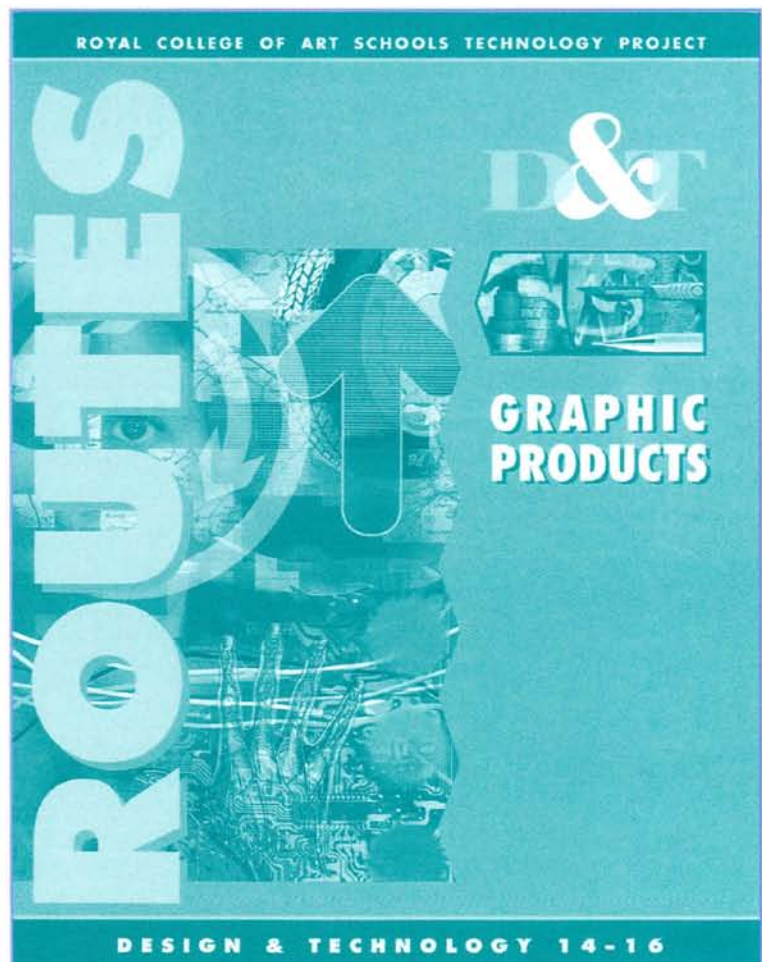
Appropriate content	////	Generic use	
Pupil/student use	////	One of a series	⇐
Teacher resource	///	Photocopiable	
Visuals	////	Pupil/student activities	⇐
Overall style	////	Cross-curricular	

includes a comprehensive section on die-cutting and CAD/CAM. The students' part of the book concludes with a detailed look at the Business of Manufacturing. The last fifteen pages form a Teachers' notes section which is very informative and valuable but should have been perforated to allow it to be detached.

The book caters well for its intended audience of 14-16 year olds – it is lively, colourful, and well presented. The student should get great value if the accompanying teaching is well planned – I do not feel it is a book which students can wade through with little help, but it is a very valuable book to back up good and thorough teaching.

I feel class books should come in under £7 but not many do these days and at £9.99, because it is so well presented, should be good value for money. In my view it is now probably the best book on the market for the 14-16 year olds in the Graphic Products area.

*Reviewed by George Asquith, Head of Technology, Greenhead School, Keighley, West Yorkshire*



REVIEWS



Reviewed by Jillian Mellor, Technology Co-ordinator, John Hunt of Everest School

**D & T Routes: Textiles**

This book needs to be used in conjunction with the *D & T Routes Core Book*. The book starts with three detailed Full Design and Make Assignments (DMAs). These are design and make challenges with supporting focused tasks and case studies. Each challenge has a general introduction then a more specific challenge for students to follow. There are some learning objectives headed 'why this activity is useful', with bullet points under the sections 'values', 'to be successful', 'how to get going'. The focused tasks and case studies give students the necessary skills and knowledge to support the challenge. The three challenges are titled 'in the mood', 'pack up and go', and 'fit and fun'. I think that this introduction will give students and teachers an insight into what is involved in a DMA and how to approach the teaching and learning – what tasks need to be focused, what we can learn from existing practices and how much original ideas and design we can expect from a DMA.

The second part of the book gives six outline DMAs which present a challenge and some bullet points for getting the students started. Titles for the DMAs include Survival, Technical textiles, Textiles talk. A useful section particularly to set challenges that sound different to the simple design brief that start Design and Make.

The third part of the book targets the manufacturing aspect of all Key Stage 4 technology courses ... designing and manufacturing. This section highlights a wide range of designing and manufacturing issues that will need to be addressed at some stage during the Key Stage 4 course.

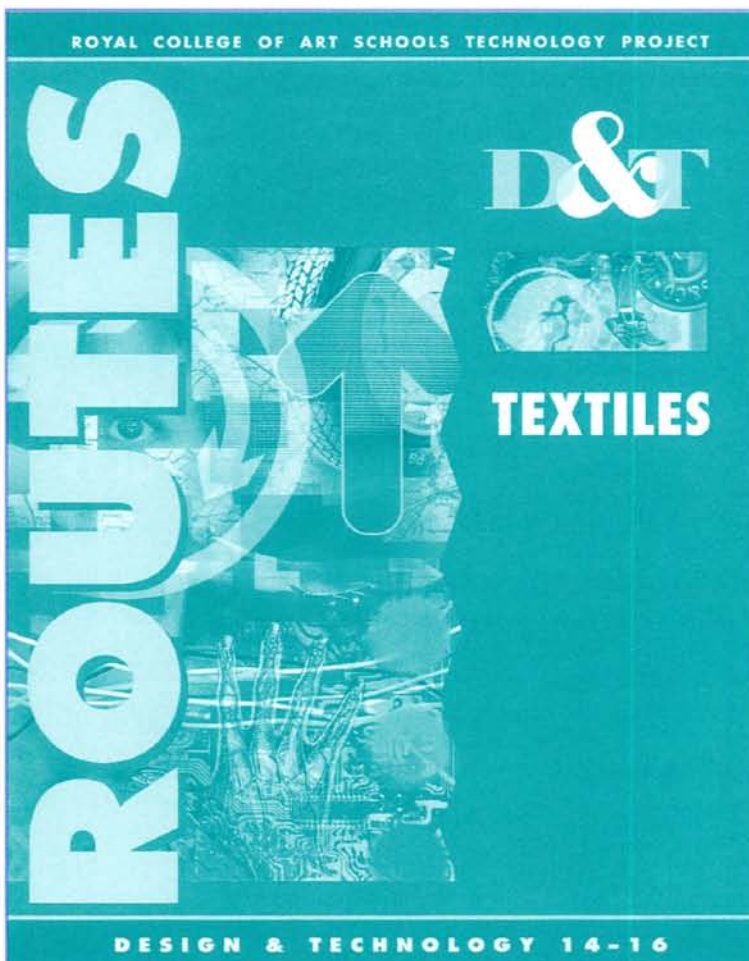
Business and manufacturing is the final section. This includes plenty of good illustrations, photographs and terms that are used in the industry.

I feel that the book is valuable within the textiles department. The sections on manufacturing are particularly enlightening. The book would support pupils and teachers. Its strengths are the sections on manufacturing, the presentation and layout are impressive and colourful, (essential in a textiles book). The case studies and focused tasks are all useful. Weaknesses are the amount of reading involved and also the cross-references to the core book.

**D& T Routes: Textiles**

Hodder & Stoughton Educational: £9.99  
 ISBN: 0340697342  
 Orders: 01235 400 405

Appropriate content	////	Generic use	=
Pupil/student use	///	One of a series	=
Teacher resource	///	Photocopiable	
Visuals	////	Pupil/student activities	=
Overall style	////	Cross-curricular	





**D & T Routes: Resistant Materials**

The Introduction states that this book is to be used with the *D & T Routes Core Book*.

The book contains:

- three Full Designing and Making Assignments (DMAs) comprising a design and make Challenge together with supporting focused tasks and case studies
- six Outline DMAs which present a design and make Challenge and some starting points to help the student to 'get going'
- Designing and Manufacturing sections with focused tasks, information and case studies to support the Design and Make, plus knowledge about industrial approaches
- a section on The Business of Manufacturing – essential if the student is following a GNVQ.

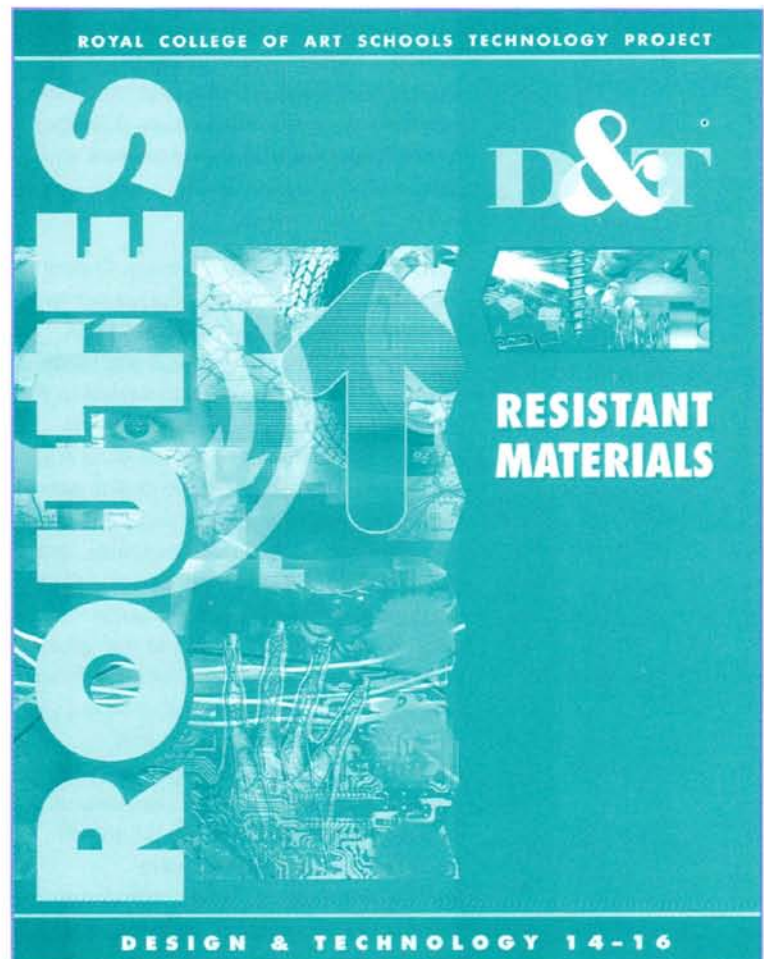
The content of each of the sections listed above is comprehensive and provides good, sound, well-illustrated material for examination syllabuses. In the section on Designing the topic is treated under the series of headings:

- Materials
- Developing design ideas – systems approach: Input > Process > Output
- Flexibility in manufacture – getting things right first time
- 'Just in time' product planning. Information on industrial processes touches on modern techniques such as Rapid prototyping and Electronic Product Definition (EPD). These terms are explained
- Quality – this is an issue 'fudged' in many books at this level, but the authors have provided a thorough treatment of

this topic using case studies and 'discussion prompts'

- Users – user-centred design with a section on Ergonomics.
- Designing for manufacture – scale of manufacture: implications of one-off or volume production; costs and prices
- Production planning – refers to the Core book and treats the topic in detail by discussing the approaches taken in case studies
- Manufacturing processes
- Control systems – applications, reasons; use of kits for simulation studies; closed and open loops, negative and positive feedback simply explained

*Reviewed by Chris Snell, Head of Department, The Cheltenham Ladies' College, Cheltenham*





- Environmental issues – reduce amount of materials, reuse, recycle (3Rs)
- Quality control/assurance.

It is effective in catering for its target audience. I anticipate that students would react favourably to the prose which is 'short and snappy'. It should give teachers a thirst for industrial placement. At the back of the book is a section headed Teacher's Notes (Student edition available without these). It discusses some use of the D & T Routes: Focus Area books and offers a Year 10 and Year 11 progression outline table. This is complemented by a quick reference table of the three full DMAs and three of the outline DMAs. The columns list Context, Special Features, Learning Outcomes (differentiation of student ability range) and Page References.

Various other topics, e.g. staff INSET suggestions and references to National Curriculum programmes of study follow. The recommendation, for example, of the use of a 'tabulated map' of main topics and inter-related activities for converting an examination syllabus into a working course, provides an opportunity for a co-ordinator to take a fresh look at existing practices and plans.

The section ends with a Glossary. Overall the book should prove a useful source for an examination course, encouraging an interest in IT aspects of Design and Make. Inclusion of one or two design exercises that demand some arithmetic and geometric input by the student, might have gone some way to demonstrating that the design side of product evolution is not just about styling and production planning. Presumably, lack of recognition of the serious part played by what may be termed as performance calculations in design, is due to the nature of syllabuses in resistant materials. Control of material costs is inextricably tied to structural and stress analysis, and mechanism design to locus geometry and dynamic analysis, etc. Whilst students of resistant materials will not be capable of more than the most rudimentary appreciation of such matters, acknowledging these is just as important as having their

attention drawn to techniques such as Rapid Prototyping and EPD.

Diagrams relate well to the text and are not saturated with gimmicky clip art. Photographs illustrate well various industrial contexts. At £9.99 it is not cheap. Presumably, the Student edition costs less, in which case it could be a worthwhile purchase, but needs to be considered in connection with the desirability or otherwise of a Core Book.

**D&T Routes: Resistant Materials**

Hodder and Stoughton Educational: £9.99  
 ISBN: 0340697377  
 Orders: 01235 400 400

Appropriate content	////	Generic use	⇐
Pupil/student use	////	One of a series	⇐
Teacher resource	////	Photocopiable	
Visuals	////	Pupil/student activities	⇐
Overall style	////	Cross-curricular	



**D & T Routes: Food**

The opportunity to choose and concentrate on one material area is an exciting prospect for most pupils. This book is informative and stimulating with a variety of design and make assignments (DMAs) to appeal to most pupils and teachers. The DMAs are, as we have come to expect from the RCA Schools Technology Project team, well thought out with opportunities for pupils to show a variety of interpretation, creativity and attainment. Those familiar with the Challenges series will already appreciate the value to pupils of the format of 'Why this activity is useful', 'Values issues', 'To be successful;' and 'How to get going' in building confidence and providing starting points for projects. There will be pupils approaching Year 10 with varying amounts of past experience in food technology, particularly if they have not used the Challenges series, and this book shows the balance between designing and making which will alleviate some of the apprehension of longer projects which must have an industrial perspective.

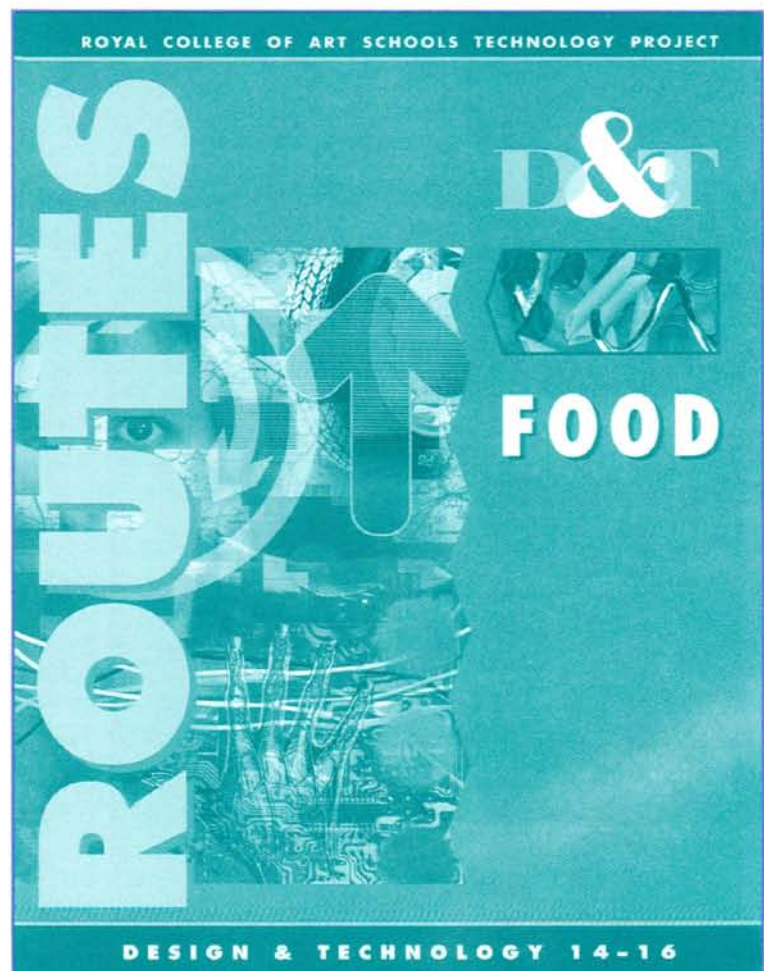
The designing section is comprehensive and identifies the strategies likely to be used when designing with food. The concept development part gives pupils ideas that they use both for their projects and the industrial perspective. The investigations as part of the understanding the characteristics of food are especially well presented. The outline information and technical information give the pupils enough information to place the investigation in context and the questions in 'Using your results' helps them to apply the knowledge gained to their designing. This knowledge of the working characteristics of food materials is achieved in an interesting manner for all pupils and there are opportunities for the more able to show a level of scientific understanding which will allow them to score more highly on the written papers at Key Stage 4. Therefore I was sorry to see the terms coagulation and gelatinisation in brackets since this is the correct technical terminology. Nevertheless, the investigations are an excellent model for teachers to follow when designing their own investigations.

The nutritional information is sufficient and teachers can use other resources to supplement those presented here. The book

fortunately provides other less easily accessible information on product life and processing in a comprehensive manner. The designing section is therefore an excellent resource for pupils and teachers at Key Stage 4.

The manufacturing section, with its emphasis on scaling up, time planning, use of systems and control, allows the pupils and teachers to identify the range of strategies that can be used in school which follow or model industrial practice. The combination of focused tasks and case studies presented should allow pupils to really understand the variety of systems used in the manufacture of food. Pupils will probably be familiar with HACCP/food hygiene and its importance within food production and will now realise that it is not the only system used. I was pleased to find in the manufacturing section that packaging was given the consideration it rightly deserves in a food technology course – one page!

*Reviewed by  
Margaret Jepson,  
PGCE Design  
Technology Co-  
ordinator, Liverpool  
John Moores  
University*





Costs are a major reason why a product or a product modification will or will not be adopted. The relationship between pricing and costing of food products in a free market economy is a difficult area for some pupils to appreciate. The factors other than the cost of raw materials which contribute to pricing could perhaps have been included and an indication of the need for profit margins could have been given more explicit consideration in The Business of Manufacturing section.

This book is a must for food technology teachers who will find it an invaluable source of tasks and strategies to support their teaching. Those who have used the Challenges series will be able to see the clear progression from Key Stage 3 that is built into the activities. Pupils will be able to use the book to support their designing and making in ways which allow them to make decisions for themselves whether on outline DMAs or their own ideas for design and make assignments.

**D & T Routes: Food**

Hodder and Stoughton: £9.99  
ISBN: 0 340 69733 4  
Orders: 01235 400 405

Appropriate content	/////	Generic use	
Pupil/student use	////	One of a series	←
Teacher resource	/////	Photocopiable	
Visuals	/////	Pupil/student activities	←
Overall style	/////	Cross-curricular	



**D & T Routes: Control Products**

This is one of a series of five Routes books produced by RCA. The book is designed to be used in conjunction with the *D & T Routes Core Book*. The Control Products book is made up of four sections and is aimed at Key Stage 4 pupils. The sections are as follows:

- three full design and make assignments with supporting tasks and case studies
- six outline design and make assignments
- a designing and manufacturing section
- a section on the business of manufacturing.

The full design and make assignments provide a stimulating challenge for students to address. They are as follows:

- design and make a product that makes use of control systems to improve the quality of life for a group of people
- identify a security need and design and make a suitable product or system
- as a team, design and assemble a model of part of a production line which uses control systems.

Each challenge provides guidance for staff and pupils on getting started, a checklist of what is required to be successful and addresses value issues. The supporting notes provide information on aspects of the designing and making process that students can use effectively within the task.

Examples of these aspects are:

- the user pyramid approach to designing
- balancing cost, time and quality
- collecting quantitative data
- identify a need.

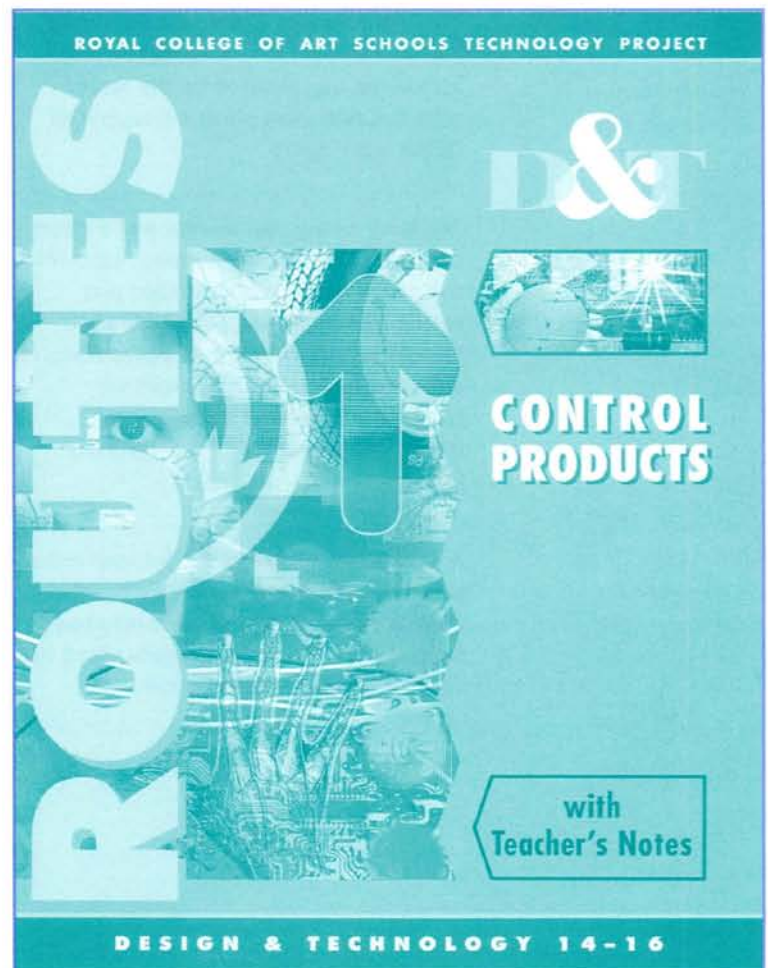
Where appropriate, references are made to supporting materials found within other sections of the control products book, or within other RCA books.

The case studies provide valuable information and inspiration to focus student thinking and provide a spring board for further research.

Each design and make assignment follows the same format which makes this section user friendly. The use of bullet points make the readability of the book easy, and supporting graphics and images bring the book to life.

The designing and manufacturing section of the book contains focused tasks, information and case studies to support students' designing and manufacturing in this focus area. This section provides the basic core content required by students to enable them

*Reviewed by Chris Wood, Teacher of Design and Technology, Selly Park Technology College for Girls, Birmingham*





to design and make effectively using control products.

The notes are succinct and are supported by lively graphics and photographs. Case studies provide good links with industry and provide a good starting point for students.

The focused tasks can be used to support and reinforce a particular area of knowledge and understanding that will be required by the student.

The section on the business of manufacturing provides further material on the manufacturing industry which is essential for students following a GNVQ Manufacturing course. It will also enhance GCSE design and technology students' understanding of industrial designing and manufacturing which is an important part of any GCSE syllabi. This section also provides succinct notes, focused tasks and case studies.

The *D & T Routes Control Products* book provides a stimulating, manageable and achievable way of delivering the control products curriculum which will support all GCSE exam syllabi.

The book is very user friendly and is clearly pitched at Key Stage 4 students. It provides a useful resource to both support and extend student thinking. The DMAs and focused tasks provide a manageable way of delivering the curriculum content for teachers, and provide students with interesting, 'bitesize' sections of control products.

A selection of photocopiable focused tasks would have been advantageous, but at £9.99 the book is an affordable resource to support and improve the success of any Key Stage 4 control products course.

**D & T Routes: Control Products**

Hodder and Stoughton Educational: £9.99  
 ISBN: 0 340 69735 0  
 Orders: 01235 400 405

Appropriate content	/////	Generic use	⇐
Pupil/student use	/////	One of a series	⇐
Teacher resource	////	Photocopiable	
Visuals	////	Pupil/student activities	⇐
Overall style	/////	Cross-curricular	

This is the *Core Book* for Key Stage 4 students in design and technology. It is supported by a *Teacher's Resource*, while five focus area books extend the series: *Food, Textiles, Resistant Materials, Control Products, and Graphic Products* and these are reviewed separately in this Journal.

The entire series is refreshingly different in approach, taking mainly novel aspects of Key Stage 4 and building them into an informative and exciting text.

*D&T Routes* builds on student understanding of manufacturing through a range of case studies and helps prepare students for GCSE style assessment. Used together, the *Core Book* and *Teacher's Resource* fully support GCSE short courses. The *Core Book*, plus the focus area books provide a complete resource for any GCSE full course and vocational equivalent.

With the current emphasis, in GCSE courses, on industrial practices and with the lack of appropriate texts to support Part 1 Manufacturing, this book is very welcome.

Pupils are taken into the book right from the first page, where they are invited to "treat the book as your personal assistant", concluding with a very useful quick reference entitled 'Where can I find help?' e.g. Planning your coursework, Industrial Manufacturing.

Graphics within the book vary from a mix of cartoon style images to some excellent photos of pupils at work. The book also includes some very appropriate manufacturing scenarios which help illustrate industrial applications. This variety makes the book accessible to very many pupils from those with language difficulties to the most able.

The strength of the book has to be its generic approach to design and technology concepts. This approach, drawing on examples from the focus areas, enables pupils to make sensible comparisons between materials. A typical example can be found in the Designing section, where

pupils' work shows how and why they used modelling to develop a range of products.

An excellent manufacturing section uses language and a visual format which makes difficult, less familiar knowledge more accessible. For example the chart which illustrates the effect of changing scales of production presents a vast amount of information in an easily understood format. Similarly a later section presents manufacturing approaches in an interesting style, with further appropriate industrial examples.

The frequent case studies give pupils valuable insights into design and technology from concept screening through to mass-production.

As a department offering a variety of GCSE/GNVQ courses at Key Stage 4, this series has proved to be a very manageable resource.

*Reviewed by Jenny Jupe, Reviews Editor, DATA Journal*

#### D&T Routes: Core Book

Hodder and Stoughton Educational: £10.99

ISBN: 0 340 67342 7

Orders: 01235 400405

Appropriate content	/////	Generic use	←
Pupil/student use	////	One of a series	←
Teacher resource	////	Photocopiable	
Visuals	/////	Pupil/student activities	←
Overall style	/////	Cross-curricular	



Reviewed by Jenny  
Jupe, Reviews Editor,  
DATA Journal

**D & T Routes: Teacher's Resource**

Many new design and technology book series are adopting the approach of including a teacher resource as part of the package. The RCA successfully used this approach with the Challenge Series and have achieved the same success with the Routes Series.

Whilst it is often difficult to find the time to take a 'back seat' and look at the 'big picture', it is invariably beneficial and worthwhile both for the individual teacher, and the team manager. The teacher resource in the Routes series offers just this, with the opportunity to reflect and plan around the following key issues:

- INSET activities
- continuous improvement
- curriculum planning
- managing a design and technology department
- teaching and learning

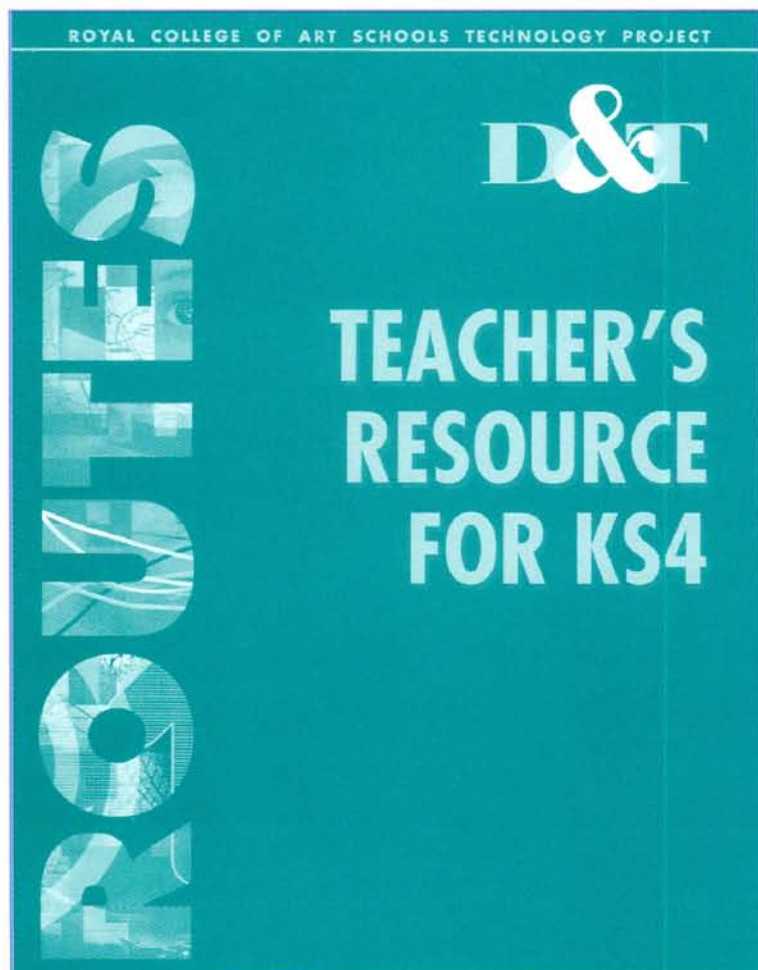
- assessment
- supporting students' designing
- supporting students' making and manufacturing.

Written by an excellent team, the resource is firmly embedded in the many examples of good practice that they have each brought to the project. As the introduction explains, the series supports various routes for students through the complexity of courses at Key Stage 4 and for teachers through the maze of requirements.

Throughout the book a series of INSET activities are strategically placed. These are not only designed to support the RCA approach, but form a valuable professional development focus, especially inspection preparation. Departments could well use the activities to enhance team building and facilitate a shared understanding of the subject.

With the current emphasis on continuous improvement, the teacher resource addresses this issue through topics encompassing monitoring and evaluation and use of base line and other data. Curriculum planning is tackled in an extremely relevant and appropriate way; page 20 is particularly useful in summarising progression from Key Stage 2 to post 16. The difficult issue of which Key Stage 4 courses to offer is dealt with in an interesting way, by looking at the whole school issues as well as the departmental issues – an approach which is often lacking in practice. The section concerned with turning a syllabus into a course is particularly useful, with the 3 phased strategy of short, medium and longer term planning. Any teacher who felt uncertain about such planning would find this most helpful. It is also good to see a similar approach being taken with regard to GNVQ specifications as support for these courses seems to have been quite thin.

The section on Managing a Design and Technology Department is extremely well written and thought provoking. I would suggest that this section is useful to all department members, but in particular those aspiring to Head of Department level.



REVIEWS

Similarly, teaching and learning issues are refreshingly tackled, particularly the references to other works of a more generic nature e.g. Waterhouse on Classroom Management.

No teacher resource can fail to mention assessment and RCA is no exception. Whilst 11 pages cannot cover in enormous detail all assessment issues it is certainly the case that the RCA have taken some of the most pertinent and given good advice. As with the entire series, it is written to support both GCSE and GNVQ and provides practical support, to make the assessment of students' work in design and technology more effective.

The final two sections are both novel in their approach and link well with the other books in the Routes series vis-à-vis effects of changing the scale of production, production systems and process flow charts.

In summary, I would recommend this book as one which individuals would want a copy of for personal continuing professional development as well as for curriculum planning and team leadership. At £20.99 this Teacher's Resource is not cheap, but what you see is what you get and you certainly get a lot for your money, including photocopiable material.

#### D & T Routes: Teacher's Resource

Hodder and Stoughton Educational: £20.99

ISBN: 0 340 67341 9

Orders: 01235 400 405

Appropriate content	/////	Generic use	←
Pupil/student use	/////	One of a series	←
Teacher resource	/////	Photocopiable	←
Visuals	/////	Pupil/student activities	←
Overall style	/////	Cross-curricular	←



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The journal has three sections:

- Research
- Curriculum development
- Reviews

The research papers published will emphasise the provision of a better understanding of design and technology and the improvement of the quality of design and technology education in schools, colleges and universities. Papers for the research section should usually be between 3,000-5,000 words though in exceptional circumstances papers of a maximum of 8,000 words will be considered. The curriculum development section has a number of sub-sections focusing on particular areas (primary, secondary, initial teacher education, special needs, etc). This section may contain reports of a less formal kind (but still analytical) on aspects of interest to those involved in design and technology. Papers for the curriculum development section should be 1,000-3,000 words long.

## Refereeing policy

Both the research and curriculum development sections of the journal are refereed and the normal academic criteria will apply. Each submission is read by the section editor and at least two other members of the editorial board, which meets three times a year. Contributors should note that there is likely to be a delay of several weeks between the acknowledgement of receipt of their work and notification of the decision of the editorial board.

Each article must be accompanied by an abstract of 100-150 words, as well as six key words for indexing. The author's name, title, current post and contact details, as well as the section for which the article is intended, should be stated on a separate sheet so that the article is suitable for double-blind reviewing. Please note that the editor-in-chief may, at his discretion, place the article in a different section from that suggested by the author.

Footnotes to the text should be avoided where possible but, if essential, should be placed at the end of the paper. Full references must be supplied for all articles in the following standard forms:

GRONLUND, N. E. and LINN, R. L. (1990). *Measurement and Evaluation in Teaching* (6th edn) New York: Macmillan.

ROBERTS, T. (1991). 'Gender and the influence of evaluation on self-assessments in achievement settings', *Psychological Bulletin*, 109, 2, 297-308.

## Submission of material

All contributions should be supplied as word-processed text on disk, in an Apple Mac or IBM-compatible PC format (Microsoft Word), with 2 typescript copies, double spaced, typed on one side of the paper. Pages should be numbered consecutively. Figures, tables and other illustrations should also be supplied on disk. Where typescript copies only can be supplied, tables and figures should be placed on separate sheets and not included within the text. Please include photographs (with captions) where possible. Any illustrations (planning sheets, pupils' work, etc) should be on separate sheets, clearly labelled, and should be as clear as possible to assist reproduction. Please have your name and contact details on a separate sheet of paper. Typescripts and disks will not normally be returned to contributors unless sufficient postage has been sent.

The author should retain a copy of the article and supporting material since the editor takes no responsibility for material which may be lost in the post.

All contributions should be addressed to:

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## Reviews

The reviews section reviews books, software (including CD-ROMs) and teaching resources which are relevant to design and technology. Material for review should be sent to the reviews editor at the above address.