

**That's Nice!**

STEP

CUP, £5.95

Reviewed by Ian McLintock

*That's Nice!* is a resource book in the Key Stage 3 series of the STEP 5-16 (Staffordshire Technology Education Programme) books. It has been produced as part of the overall initiative to enable teachers to deliver the existing National Curriculum.

My first impression meets the title of the book exactly — here you have a book that enables you and your pupils to establish projects with resources, produced in an easily accessible form, suitable for KS3 work in all aspects of technology. The book is divided into five sections, all targeted at delivering skills to create successful projects, through specific examples. Each section is backed up by continual references to the Data File, another of the STEP programme publications.

The first section, Creating and developing original images, looks at solving the question 'Where do new ideas come from?'. A series of colourful images and ideas are presented which could possibly motivate, but is rather too biased towards patterns and pictures.

Section two, Presenting design ideas, is much better as it puts graphic techniques into a series of project areas, such as bicycles and cycling accessories and sports and leisure equipment. It asks questions as it goes, reinforcing them with further details of the techniques used to get the results illustrated.

Modelling and prototyping, the third section, explores the range of modelling techniques available. Examples are presented through a series of projects, such as mechanisms in a Lego mock-up and the use of foam for prototyping small electrical products.

The Case studies and Design Situations follow the now established pattern, applying the ideas and skills explored earlier through specific projects. One example has already given me the background and resources to pursue a particular project I have had in mind for some time.

Throughout the book both presentation and ideas are excellent, my only reservation being the first section, which is likely to be under-used anyway with the new Orders. This is a book you should buy for your resource base even if you are not part of the STEP programme.

**Workshop Electrics**

Alex Weiss

Argus Books, £6.95

Reviewed by Alan Trueman

This book is intended as an aid for model engineers to plan a workshop in their home. In an educational environment it could be used as a source book for project work or for CDT teachers taking early retirement (if any still exist!) and setting up their own workshop.

The book deals with every aspect of supplying electricity to a workshop, from planning, safety, different types of supply, fuse ratings, wiring, outside wiring, plugs and sockets, lighting and low-voltage supplies.

I found the book both informative and interesting. It answered all the areas of doubt that anyone might have about electricity and I felt it would be helpful for any practical person about to set up a workshop.

This is a book that deals well with its subject and brings together a diversity of information that would be difficult to locate in several different books. An excellent book for the price, if only to reassure yourself that you have covered every eventuality.

**Communicating Design**

Colin Chapman &amp; Mike Finney

Collins Educational, £6.75

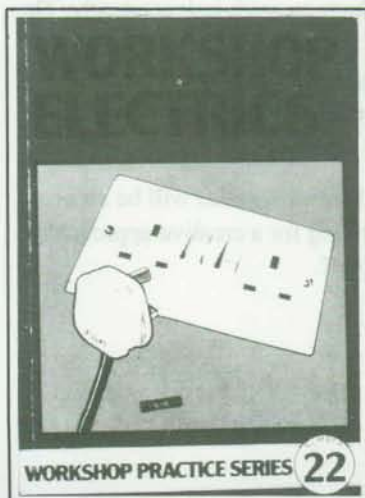
Reviewed by R. Foulger

This book is clearly designed for those in the 14 to 19 age range who are studying D&T GCSE and vocational courses.

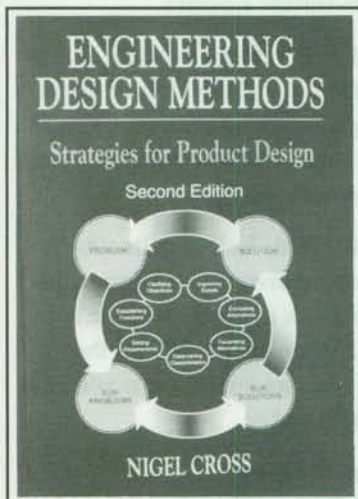
Sections are clearly and logically set out along with the various techniques necessary (CAD/CAM included) to aid the developments of a student's design, graphic and modelling skills, and extremely well documented. The techniques are highlighted by clear case studies taken from industry and show how industry makes use of specialists and special skills to improve communication. There are a few exercises to be attempted, designed to reinforce some of the more basic techniques.

This book would appear to be most useful as a reference for the more motivated student and for those taking post-16 courses, because the various sections need to be carefully read in order to make best use of them. However, the industrial case studies are particularly useful to all students.

## Book Reviews







### Engineering Design Methods

Nigel Cross  
Wiley, £15.50

Reviewed by Chris Snell

This book outlines both general and specific techniques — from brainstorming, synectics (drawing on analogy and in a sense the reverse of brainstorming) through to value engineering and analysis, culminating in the formulation of design strategies to suit particular design problems.

The author has researched and examined British and foreign publications and has put together a useful and lucidly compiled manual of design methodology. It is interspersed with examples of real product investigations. He deals, for example, with the issue of 'ill defined' or 'ill structured' design problems, aware that a wide range of criteria might have to be satisfied, with no single objective to be satisfied above all others. In this respect, sub-solutions can be found to be interconnected with each other in ways that imply a 'pernicious' structure to the problem, i.e. a sub-solution that resolves a particular sub-problem may create irreconcilable conflicts with other sub-problems. For example, the addition of heat sinks to solve troublesome heat transfer problems in electronic components conflicts with a priority requirement to keep weight down. Research studies are then undertaken in which incompatible pairs of options are identified and sets of options then regenerated containing no incompatible pairs.

Whilst experienced designers might be mistrustful of 'over-formalised' design methodologies or fancy names for old, common-sense techniques, a counter-argument bears repeating. That is that many design projects are too complex to be resolved satisfactorily by instinct and old, conventional methods. This is particularly so where the co-ordination of team effort is demanded in which several designers of different disciplines and specialists in other areas need to be in consultation with each other.

The book contains eleven chapters, numerous references, sources and an index. It constitutes a manual of design methods, presented in an open-learning format, and includes an Objectives tree, Morphological chart, Function analysis, Weighted objectives, Performance

specification, Value engineering and Quality function deployment (Japanese technique).

Although the text is suitable for students of design and professional designers, it contains much that is relevant to National Curriculum technology. It should prove of particular use when GCSE students reach the inevitable stage of getting 'stuck' with their thinking in project work.

Space does not permit full justice to be done to this book, as it contains many useful techniques. It is a book for the technology department shelf which would not be amiss in the office of an industrial designer or a market research department involved in product promotion.

### Technopacks

(Various titles, £14.95 each)

R. Ballam, L. Davies and N. Young  
*Technopacks* (PO Box 216, Epsom, KT19 9YH)  
Reviewed by Elsie Warren

These packs should prove extremely useful in departments of technology. They have been written by teachers for teachers and are aimed at Key Stages 2, 3 and 4. If you haven't yet seen them, I advise you to do so at the earliest opportunity.

I have enjoyed looking at eight of the packs, amongst them 'The Body Natural', 'Musical Textiles' and 'The Green Kitchen', all for Key Stage 3, and there are more, some of which have been featured in *Modus*. All packs are written so that teachers can be selective, picking either single lessons or groups of activities.

They are all written for mixed-ability groups and there are many obvious opportunities for extending the work. The worksheets are clear and include follow-up suggestions which encourage students to work independently. The Pupil Planners are also a bonus as they allow teachers to keep track of different levels of work and encourage students to work independently.

I am convinced that this series will be an asset for teachers looking for a creative approach to their work in D&T.



## SOFTWARE REVIEW

### Illustrated Guide to PSpice (book plus software)

Robert Lamey

International Thompson Publishing, £34.50

Reviewed by John Hanson

This book contains an unusual and pleasant experience: the software you need to use it comes free with the book. But before you all run out to try to get something for nothing (as I would) let me explain a little more about both book and program. PSpice is a computer simulation of analogue electronic circuitry. In its original form, SPICE (Simulation Program with Integrated Circuit Emphasis) it was developed at the University of California, Berkeley, for engineering students to use on mainframes and VAX mini-computers.

PSpice in a PC version produced by the MicroSim Corporation for engineers and students (\$1000+) and what you get is a stripped-down evaluation version distributed free and using many fewer components (a maximum of ten transistors) and a much smaller library of components. Despite this, it is still very usable as a teaching tool and for design and practice by students.

I think it would fit in well at colleges or university level or in specific electronics courses post 16. The subject matter includes many things that could fit into A level physics and technology: transformer circuits, diodes, half wave rectifiers, op amps, etc., but the detail and knowledge available in this material is much more than would normally be needed. The package would also be very useful to the electronics hobbyist and other interested individuals who are effectively self-taught (I was born in the year William Shockley developed the first workable transistor, and it was a lot longer ago than you might think!) and wish to improve their knowledge.

The software loads easily and works well. It has a Windows-like editor page which is easily used but is not as wimpish (sorry) as most new PC software, as you create and edit small program files to provide the software with the data about the circuit you want to model and about the sorts of output you want. It requires a little knowledge and confidence with your computer, but the book takes you through it step by step with a superb, patient and clear style. The contents will be familiar to most people with some electronics knowledge but the latter — and I hope more difficult — parts

of the book on Field Effect transistors and Colpitts Oscillators (?) certainly stretched my knowledge of electronics.

I have spent some time working through parts of the book. Whilst it's not for the electronically ignorant or the computer phobic, I found it immensely enjoyable and very informative. The graphs are great, the text is helpful, the suggested programs work and I could feel my knowledge being extended. This is a superb book for engineering or physics undergraduates and anyone interested in the detail and theory of electronics, and if I were teaching this sort of subject matter in further or higher education, I would be exploring it with a view to using it for supported self-study. I can recommend it as something which, although not easy, is worth while.

### GIRLS AS CONSTRUCTORS IN THE EARLY YEARS

#### Promoting equal opportunities in maths, science and technology

Carol Ross and Naima Browne

In National Curriculum science, mathematics and technology, girls are consistently outperformed by boys. This handbook sets out ways of involving girls in constructional activities from the start of schooling and analyses the management issues that determine their achievement.

'...looks at why girls use construction toys less often and less creatively than boys, and suggests practical ways which can help teachers to redress the balance'  
— *The Big Paper*

1994, ISBN 1 85856 002 0, Price £7.95,  
64 pages, 210mm x 210mm

### MAKING THE PLAYGROUND

#### A Key Stage 2 project in Technology, Art, English and Mathematics

Eileen Adams

This book reports on the work of pupils at Gillespie Primary School in Islington to improve the quality of their school environment. As well as its mathematical and science content the work satisfies the requirements of the new attainment targets for Design Technology in the National Curriculum at key stage 2. Truly, design education in action in the development of schools grounds!

'Useful advice for teachers who might be thinking of embarking on similar schemes.'  
— *Design and Technology Times*

1993, ISBN 0 948080 92 2  
Price £6.95, 56 pages, 210mm x 210mm

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## Guidance to Contributors

In order to provide some guidance for those who may wish to send in contributions, but are not sure if what they have is appropriate, an outline of the general requirements of articles for the journal and the particular feature of the sections are outlined below.

### ■ General

In general all contributions should be double line spaced where possible.

We can not take responsibility for those which may go astray in the post so please retain a copy yourself.

Articles can be of varying length and should identify with a particular audience e.g. teachers, HE-researchers or students, developers.

**Inclusion of the following, where appropriate, would be most helpful to the editor and the reader:**

- The name and title of author together with a contact and telephone number for the editor. In addition if you would welcome contact from readers please include a correspondence address.
- Full reference: title, author or editor, year, publisher. For Journals the title, volume no. and title of article.
- Illustrations; if taken from somewhere else please state if permission to reproduce has been gained, if not then from whom it may be gained. Other illustrations such as photos, planning sheets, pupils' work, etc. should be as clear as possible and enhance the article.
- A short paragraph, about 100 words, at the beginning of the article which describes what the article is about; follow by paragraphs which have sub-headings.

### ■ Contributions are welcomed to particular sections:

#### Personal perspectives

These should be short, about 1000 words, giving your views on D&T issues.

#### Letters

Letters too should be short and punchy. If in response to an article or letter, etc. this should be clearly referenced.

#### Resources

Reviews on how resources are used in the classroom to support and enhance D&T. These may include equipment, software, a curriculum packs, people and other organisations, etc.

#### News and notes

Information on conferences, events, initiatives, situations vacant etc.

