

Book Reviews

Oxford Illustrated Encyclopaedia of Invention & Technology

Sir Monty Finniston

O.U.P ISBN 0 19 869138 6 price £25.00

This volume, one of eight in the *Oxford Illustrated Encyclopaedia*, was edited by Sir Monty Finniston. He died just a few days before the proofs of the book were ready. All who remember his clear-thinking approach to applied science and his disdain for jargon will applaud the publication of this much needed book. Its appeal will be to all ages. Six years olds will find that it opens up the world of invention and discovery, but so too will sixteen and sixty year olds. It's that sort of book. The diagrams, graphics and photographs are in excellent colour and serve to describe and explain the inevitably complex procedures in so much of what we use in everyday life. The sheer pace of technological development necessarily means that books of this kind will need frequent revision but put into a primary or secondary library this one should be pretty well physically worn out within ten years and will need replacement anyway.

The Essential Woodworker

Robert Wearing

Batsford ISBN 0 7134 7119 0 price £17.99

Here is another solid offering from Robert Wearing. In our last edition we favourably reviewed his *The Resourceful Woodworker*. More recently published *The Essential Woodworker* recaps on all those skills you may once have been taught. It is rather like having a good teacher at your elbow as you work. It is also, of course, quite possible that nobody ever taught you woodworking

procedures and so this book could be doubly valuable. In his introduction Robert Wearing describes the book as a pre-text book aimed at those working alone. It may have as its primary market those amateurs who struggle to acquire knowledge and skill in isolation. There is however some reason to see a book such as this in every secondary (and HE) library. It should prove a stimulus to good craftsmanship.

Projects & Investigations for Advanced Physics

Jim Breithaupt

Simon & Schuster ISBN 0 7501 0211 X price £8.99.

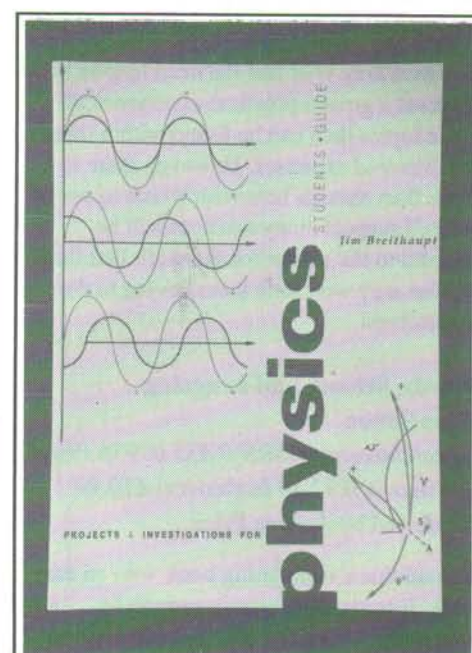
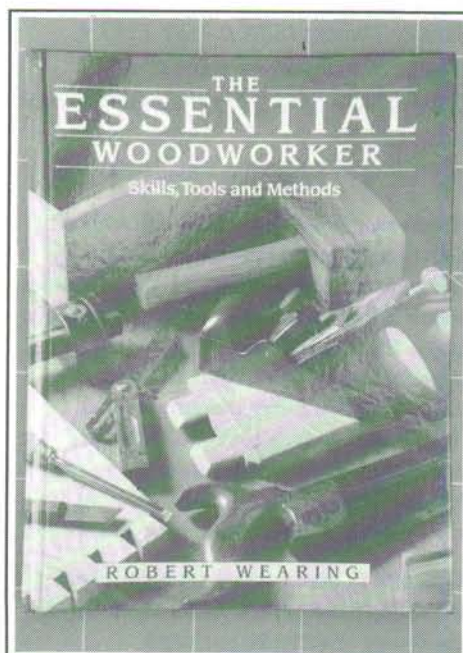
Student's Book £8.99 (0 7501 0211 X).

Teacher's Book (£15.00 (0 7501 0212 8)

Reviewed by Tim Hickson

Jim Breithaupt is an experienced teacher of Physics whose substantial *Understanding Physics for Advanced Level* is already well-known. This textbook is ideally complemented by *Projects and Investigations for Advanced Level* (Students' Guide).

Teachers of courses such as Nuffield, in which experimental work is built-in, would not find this book appropriate for their students. However, they might well find the extensive and detailed references to the use of spreadsheets and of data recorders both interesting and useful. For others, teaching to A level or equivalent, here are one hundred practical exercises under the headings Mechanics, Materials, Fields, Waves, Electricity and Inside the Atom. Some of the exercises were written to introduce key topics; many are standard



exercises that feature in most A level or equivalent syllabuses. However, even the most traditional apparatus is normally used with a new slant. A further two categories give more open-ended investigations and projects. In every case there is a description — with diagrams — of the equipment, questions to ensure students get the most out of their work, and advice on using IT.

In the first quarter of the 168 page Students' Guide, there is a very good section on estimating and handling uncertainties in measurement as well as interpreting their significance. (A minor regret is that the readings in the photographs on page 23 are not easier to see) There is a good section on using data recorders with details of VELA and EMU. A useful introduction to spreadsheets complements the specific details given with the relevant experiments. Finally there is a section on plotting and analysing graphs.

The Teacher's Guide is in three sections. The first advice on using the Students' Guide. Here ways of planning a programme of practical activities are explained; information is given on Record Keeping and on the Core Skills covered by the exercises; IT tips are provided on using data recorders and spreadsheets.

The second section covers the experiments, listing the apparatus needed and outlining the aims and opportunities provided by each. The third section — almost half of the Guide — is devoted to the continuous assessment of practical skills, and its recording. As well as IT and data-handling skills, the skills of report writing are steadily developed. Each experiment is analysed to show how it provides opportunities to assess these other skills.

Teachers may well feel the need to give their students a greater practical experience of some topics than can be found within these one hundred exercises. However, there is more than enough here with which to assess skills. I suspect many teachers will be grateful to the author for the work that these Guides may well save them having to do themselves!

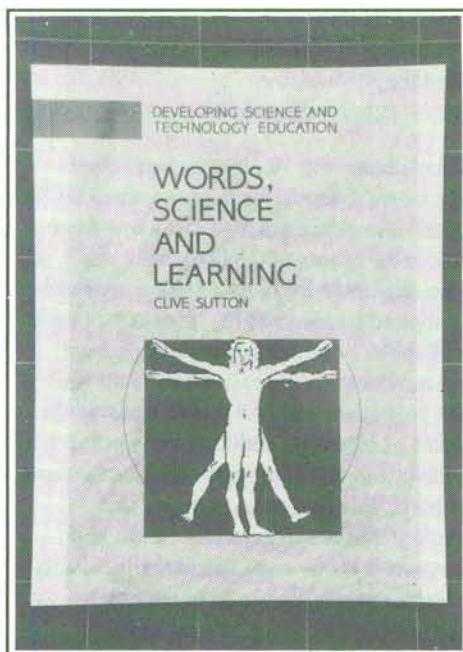
Words, Science and Learning

Clive Sutton

Open University ISBN 0 335 09956 Price (hardcover) £32.50 (softcover) £10.99

Reviewed by Andrea Price

I found this a stimulating book with an easy style. It starts innocuously enough by explaining many common scientific terms



and concludes by challenging much of the received wisdom of science teaching.

I would suggest that any established science teacher grappling with the new AT1 would find this interesting reading, although a little short on workable examples.

It should also be a valuable book for Education Students with the warning that his views on practical work should not be taken to extreme.

The author could be seen to advocate little or no practical work, which in my view is enjoyed immensely by both pupils and teachers, and also gives the teachers time to discuss ideas etc. with individual groups.

Interactions: Hotels

Tristram Shepard

Stanley Thomes ISBN 0 7487 1253 4

Hotels: Starting Point price £5.50

ISBN 0 7487 1254 2 Hotels: Support Pack price £22.50

Reviewed by Christine Twistleton

Hotels as a theme provides a rich source of human needs and opportunities for design and technological activity. This is a situation which is known to pupils but less familiar to many. Encapsulated in the approach of this material are the contexts of recreation, business and industry, community and 'home from home'. Tasks presented are wide ranging and involve outcomes using textiles, food, graphics, model making, full size construction and business applications.

Different IT applications are highlighted in the various tasks allowing for flexibility in the choice of software packages.

All these factors provide the basis for this Hotel theme, source and support package; enabling teachers to present schemes which can be undertaken by pupils across Key Stage 3 and 4.

Hotels: Starting Point: provides colourful stimulus material on all aspects of the hotel business ranging from the purpose and development of hotels, planning, design and building to marketing and image projection. Case study examples are included along with issues of safety, security, leisure, child care, special needs, conference requirements and hotels of the future.

This slim volume is very well illustrated and provides an excellent range of starting points for the Hotel theme, all brought together in a coherent presentation. One of my own thought would be to buy two copies of this book in order to be able to mount a very attractive portfolio display which would be accessible to numbers of pupils.

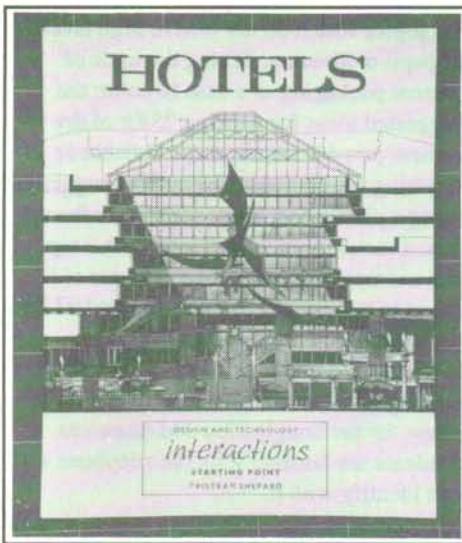
Hotels: Support Pack: is designed to follow up the stimulus of Starting Point in a variety of ways. Sheets from this book are photocopyable for class use.

Six introductory activities are provided, followed by an Activity Bank of nineteen initial ideas for extended activities. In addition, nine carefully planned, sectioned and explained Structured Tasks are presented covering the following areas:

- Designing a Hotel
- Team based task of designing a sandwich bar in a hotel reception area
- Planning an Italian restaurant
- Designing a themed bedroom
- An energy management system
- Design issues for 'Hotel Healthy'
- Child care
- Conference
- Corporate Clothing.

The Structured Tasks sheets are designed to support teachers and allow for, and in my opinion require, individual teacher development and interpretation.

A wide range of learning opportunities are offered by this material and links to other parts of the curriculum are drawn. Significant contributions to cross curricular themes are implicit. The whole pack is well presented and if you and your team are agreed on the theme of Hotels as part of your delivery of design and technology this is a valuable resource. It will save you much

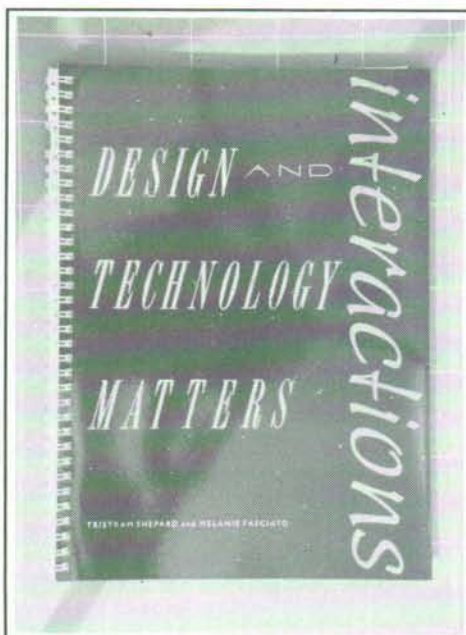


time and effort in terms of getting ideas together and provide you with a very wide variety of initiatives to choose from. Choice is an important concept in using this package because I think that successful teachers would need to be quite selective in the options they offer to pupils, in order to control the teaching and resourcing of the tasks in hand.

One of the advantages of this material is that it is flexible enough to be used in ways that can be tailored to suit your purposes.

The two books I have looked at are supported by a video consisting of four sections in order to support and stimulate the Hotel theme.

These books are really designed to work together and I would suggest that this would make the best use of them. However, it would be possible to use one without the other.



Making the most of your Lathe

Harold & Audrey Mason

Patrick Stephens, ISBN 1 85260 304 6

price £14.99

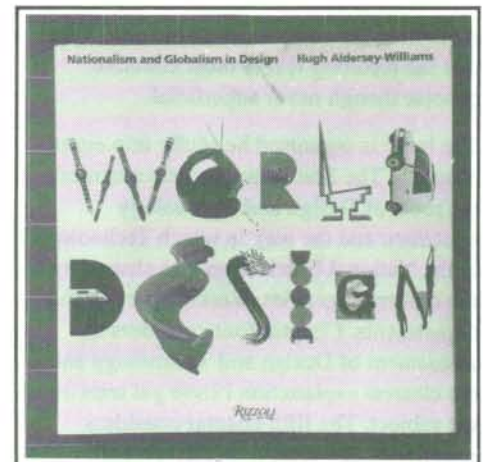
The idea behind this book, which is from the same publishing stable as all those handy workshop manuals for cars, is to learn to use the lathe by undertaking a series of practical but *useful* exercises which taken sequentially will develop reasonable competence in the use of the lathe. The *useful* exercises are in fact concerned with extending the tools and equipment so necessary if the potential of even a simple lathe is to be reached. The authors are the husband and wife team, Harold and Audrey Mason. Harold is the expert and Audrey becomes the guinea pig. Using the manuscript for the book she sets about using the lathe and producing the tools and equipment described. The book is based on the approach of 'learning by doing' and is crammed full with helpful advice of the kind that sometimes has to be dragged from skilled but uncommunicative operators. One of the most splendid features of this book is that it doesn't require the reader to have a large body of practical knowledge and technical language; everything builds up from a simple introduction and it will always be possible to track back and re-read the bits of which one is not quite sure. There is an excellent glossary and a bibliography for those who want to know even more. It is quite hard to envisage who the book is written for but I imagine that if you have a lathe, or access to one, and don't know how to use it but would very much like to learn then this could be an excellent book for you. It would suit those who know that they ought to be very conversant with the operation of a centre lathe but who somehow failed to include it in their repertoire of skills.

World Design: Nationalism & Globalism in Design

Hugh Aldersley-Williams

Rizzoli, ISBN 0 8478 1461 0 price £29.95

This is rather more than a beautiful book. It is a delight to look at and each page is a joy of layout. It is extravagant with colour and black and white photographs. All who delight in the design of artefacts, street furniture, environments, packaging and graphics will covet it. In a design department books of this type are vital to the process of building an awareness of design principles. The book reviews current design thinking within a number of nations and



major businesses but Hugh Aldersley-Williams' main aim is to show that despite a growing 'Globalism' in design there are sound reasons for fostering an approach which encourages designers to celebrate their own culture and 'Nationalism'. There is a strong case for protecting and nurturing national design identity. Beyond all that it's still a beautiful and scholarly book.

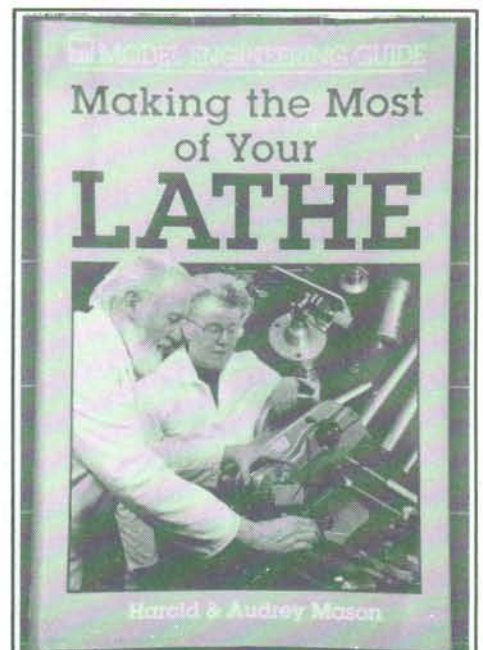
Teaching Design and Technology

John Eggleston

Open University, ISBN: 0 335 09869 X, £10.99.

Reviewed by David Dickinson.

Teaching Design and Technology is one of a series of eight titles (six of which are still in preparation) published under the banner 'Developing Science and Technology Education'. In the Preface, John Eggleston explains that he hopes his book will '... relate the momentous events of Design and Technology education in recent years to the fundamental issues that underlie them'.



Accepting the complexity of the task, I feel that the resulting text is most effective: concise though never superficial.

The book is organised helpfully into eight chapters. The first three chapters examine the roots of Design and Technology education and the way in which Technology in the National Curriculum was shaped by the different agencies, working parties and departments. Chapter four considers the assessment of Design and Technology and is the clearest explanation I have yet seen on the subject. The fifth chapter considers equality of opportunity in Design and Technological activity, the sixth, the management of the subject, the seventh offers a series of case studies exemplifying good practice and finally, the eighth, a conclusion.

While it is an eclectic work, drawing together the essence of the research findings and decision making in the years leading up to Technology in the National Curriculum (which in itself would provide a useful reference) it goes further, showing the reason why such conclusions were drawn and decisions taken against a wider educational and economic background. John Eggleston's style of writing in this book serves a number of purposes, sometimes, providing information, sometimes explaining and demystifying and sometimes, through direct questions, challenging the reader to examine his/her own teaching.

My own view is that this book deserves a wide readership. Practising teachers should find plenty to interest them. It looks like a clear favourite for the reading lists of students on initial teacher training courses,

particularly as each chapter is comprehensively referenced and each argument is supported by research. Further, any member of a senior management team wishing to acquire an understanding of Design and Technology curriculum, perhaps a yardstick, could do far worse than to read this book as a starting point.

At a penny short of eleven pounds '*Teaching Design and Technology*' may seem a little expensive (when compared with books normally purchased in class sets) but I feel that it represents good value. Incidentally, the list of authors for the whole series reads as a biggish chunk of the Who's Who of Science and technology education research. I look forward to seeing those books also.

Working Technology

Gerald Lloyd and John Trickett
Cambridge, ISBN: 0 521 42341 4, £35

Reviewed by Tim Fulford.

This publication is in a spiral bound format, consisting of 74 pages of teachers guide and student materials. Each activity has two assignments which the purchasing institution may photocopy for its own use.

Other than the bare essentials this publication contains very little by the way of introduction or explanation as to its background and suggested use. I am sure that the ideas behind the project are sound, and have been very carefully researched, however the publication feels dated and cumbersome.

The authors state that the activities are all tried and tested in schools, there was some form of evaluation which gave them the three published recommendations for teachers proposing to use the book:

- i use the assignments as a guide for producing their own similar assignments or
- ii use the assignments in a modified format or
- iii use the assignments as they are presented.

These suggestions seem to me to be very predictable for this sort of assignment based activity.

The assignments and the topics chosen are not very inspiring, but I can see that they would be of some use to teachers struggling with this area of the National Curriculum. I wish I had received this book during term time as I would have liked to try out a couple of the assignments to see how they fared under 'classroom conditions'. My reaction as a teacher is that they are fairly

dry topics which do not lead to high levels of pupil motivation. Taking the topic of cement packaging as a case in point; the suggested ideas for packing 25Kg of dry cement powder are not really suitable or inspiring suggestions. The authors suggested using a plastic bag, a jute sack, a cardboard box, a metal drum, a card tube with a tap and a simple heap! Are 14 to 16 year olds going to be inspired by cement powder? The project about telephones is a far more inspiring and real problem which students could get their teeth into, there is plenty of scope for the imagination and resources. Students are familiar with the telephone and can identify with it.

Unfortunately this is another expensive publication and is not something which a teacher should buy without seeing a copy for themselves, it certainly requires a good justification for its purchase!

The binding and the page numbering let it down, why do publishers allow the layout designers to place page numbers in the centre of the page? It is so difficult to find the desired page again!

The authors have tackled a very difficult area of the curriculum, they have not really produced resource text which I could justify purchasing for my department purely on the cost and content criteria.

