

Book Reviews

ENERGY IN THE CURRICULUM

SCSST, £12.50

Reviewed by Alan Trueman

What a marvellous resource for a primary classroom for key stages 1 and 2! This folder offers a structured approach to teaching Energy and looks at energy in four contexts: in the pupils' homes, their school, their neighbourhood and their world. Each section has cross-curricular suggestions which integrate technology with nine other subject areas.

All the topic areas are activity based, each having some observation and recording plus design and make activities. An attraction of this resource is that teachers can photocopy the pupil activities which are appropriate to their class. Produced by SCSST in conjunction with SATRO and the Coal Board, the aim of the pack is to look at energy in context and its primary objective is to help schools prepare for the business and industry aspects of the National Curriculum. At the back of the pack is a map of all the activities and how they fit into the curriculum.

I consider that this is an excellent purchase for the price asked.

INTRODUCING ELECTRONICS

SCSST, £25.21 + VAT

Reviewed by Chris Snell

It is refreshing to receive a usable package for electronics that actually gives pupils a good working experience of the subject. This package consists of a resource book of support and activity sheets, all freely photocopyable, case studies and a 15-minute video. The support sheet format prompts a consideration of the topic (Symbols and Circuits to Sensors and Warning Systems) and component area (batteries, bulbs and switches to 741 Op amps). While the pack will be of great use to KS2 teachers who have had little training in electronics, it still retains rigour demanded by KS3 & 4. Useful practical tips for complete novices are given without sacrificing credibility; simple multi-switch bulb circuits introduce the concept of truth tables to be introduced painlessly, for example, with any reader being barely aware of its introduction and development.

The material is also beneficial in that it warns of the consequences of mistakes rather than merely describing a perfect system. In circuits

using a more diverse range of components, apparent malfunctions and their cure are also covered: 555 chips can inject 'glitches' (voltage spikes) into supply lines, for example, undetectable without specialised equipment. These glitches can cause erratic behaviour in other chips in the same circuit; the cure is to 'decouple' the 555 with 100nF and 10nF capacitors, and all circuits using 555 chips show how this is done.

The case studies have been carefully chosen and written with an economy of style. As exemplary material it provides even the most unimaginative teacher with ideas for further development and a basic feel for what could be accomplished by a sufficiently inspired pupil of even very modest ability. Extension ideas challenge the lateral thinking of 'high flyers', encouraging them to explore further. Finally, the video provides a useful focus for the whole package.

Taken overall, this is a useful, self-contained practical supplement to a D&T course that will stand with or without a complementary course treating the more numerate aspects of electronics. I would recommend it to all KS2, 3 & 4 teachers.

MATERIALS: A DATABASE

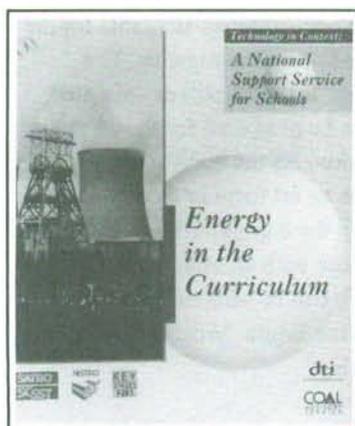
SCSST, £16.50

Reviewed by Bill Goddard

This package for KS2, 3 & 4 consists of a computer database and text for teachers and pupils. The database provides a wide range of information on a variety of materials and also enables them to be identified by keying in their properties.

The ten-page text describes the detailed categories of the database and an indication of the range of useful data-handling operations which pupils could carry out. For teachers it gives advice and ideas on using the database, on getting started, and on adding and selecting data, and examples are given relating the use of the database for design and make tasks as well as for science activities.

The database processes are clearly laid out in the text and two exemplar design and make tasks indicate how it can be used in support of each activity. For example, pupils could be given the task of researching the full database for materials most suitable for use in the school workshop. They can search records for different types and the suitability of materials





and look for more detailed analyses of materials properties. Commonly available forms, finishes, uses, cutting, shaping and joining methods can also be found on the database.

Fifty-two materials are available on the database and it is possible to add information to the records. It is also possible to reduce the quantity of data available so that excessive information is not provided. Although the text could be more helpful in providing system requirement information for using the database, this is a useful resource for teachers to use to enable pupils to have access to suitable information and could be a valuable addition to a technology resource base.

THE INVENTION KIT

Dorling Kindersley, £50
 Reviewed by Faith Graham

The kit consists of the Inventions book from the well known 'Eyewitness Guides' series plus a teacher's book, set of project planner cards, help cards, wallchart and poster. The package is offered as a resource for integrated and cross-curricular learning for the 9-14 age group. I found it well presented and full of interesting, clear and colourful illustrations. The section on using the teacher's book is complex and detailed, although it contains little coverage of the Programmes of Study.

The linear process of think, plan, do and think again is promoted as the key means of working through the pack. Assessment and evaluation are viewed as 'key elements in beginning and completing any project or learning task' and inform the planning of future learning. Whilst making the link between assessment and future learning is commendable, the association of evaluation with completing an activity is misleading. The building and testing a model Help card details the learning process, what you will need to make the model and how to make and test it. Improvements to the model are decided upon through discussion and not treated as a first idea which needs pupils to go through the learning process again in a similar way as pupils would with the design process. The recommendations sound very prescriptive and do not enable pupils to realise their own design modifications or gain an understanding of the properties of materials in order to select appropriate ones for their task.

The package works as a vehicle for integrated and cross-curricular learning but is limited in its contribution to the whole curriculum. It is a very useful resource with the current National Curriculum and will be particularly helpful with the new orders for D&T as indicated in the latest draft proposals.

WORLD REVIEW OF TEXTILE DESIGN

The Textile Institute, £15
 Reviewed by Ms W. Taylor

The Textile Institute, along with International Textiles, have produced the third issue of the World Review of Textile Design. It reviews the past and present and looks to future developments in textile design. This is a very exciting issue to read and particularly useful for KS4 students, but sixth-form students too will find it immensely useful. It should be placed in every sixth-form library.

THE THERMAL-INSULATION PROPERTIES OF FABRICS

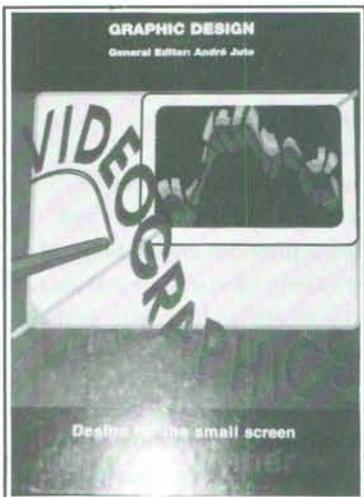
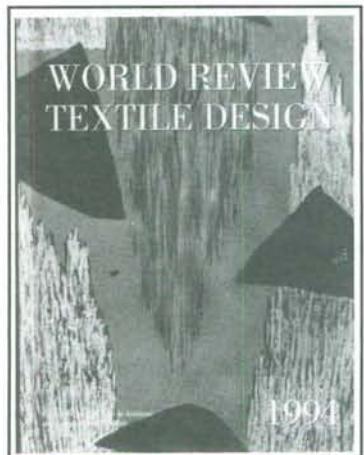
J.O. Ukponmwan
 The Textile Institute, £15
 Reviewed by Ms W. Taylor

This is well worth reading for textile technology teachers. The Textile Institute produces research and developments in textiles which can prove useful at KS3 & 4. The book takes the reader through the complexities of thermal insulation in a very clear and precise manner. The experiments and tests could easily be carried out at Key Stages 3 & 4.

VIDEOGRAPHICS

Hugh Skinner
 Batsford: £17.99 ISBN: 0 71347 401 7
 Reviewed by Ian Wilford

This book came as a complete revelation compared with the normal run of books reviewed in this section. The subject so aptly covered is graphic design in the computer age, emphasising the opportunities available for the young computer-literate amongst us. The accent of the book is on the still or animated graphics that can be produced for the computer screen or television. As the book so rightly points out, this is an art form in its own right and it suggests to the computer-literate designer how those with an imaginative, flexible approach can be offered marvellous opportunities in the future. Video graphics is only just beginning.



The book uses fifteen projects as illustrations of what is possible through this medium; some are in text, most in graphics and the book is about ideas, to be read and enjoyed. Simple yet effective limitations are described and used to great effect: text should be short and snappy, for example, and limited to six words per line and six lines per slide. Such rules should be avoided at one's peril. Another is never to leave the user with nothing happening: use messages such as *Please wait a moment* instead.

The book clearly outlines the art of videographics and the journey through it, of which many of us are still unaware.

PRODUCT DEVELOPMENT AND DESIGN PRACTICE

UIAH:

\$40 ISBN: 9 51938 432 4

Reviewed by Dr John Hill

This expensive little volume (72 pages and soft covers) is one of three books in the series *Design Management — a key to success*, compiled from lectures given at the MGMT conference held in 1989.

Product development can be divided into two parts: firstly specifying what will be developed and secondly, product realisation. Seven of the book's nine sections are case studies illustrating the central importance of the design specification phase and include Bahco hand tools, Nokia mobile phones, Martela office furniture and the Philishave rotary shaver. In such a short volume, the case studies certainly whet the appetite and leave you wanting to know more.

The first chapter is the most interesting, dividing product design specification into two phases: the longer exploratory product research phase during which creativity is encouraged, and the rapid product development phase during which it is forbidden, and then lists the elements and tasks for each phase. The final section calls for an increased use of computers and CAD by industrial designers.

Summing up, this is an interesting collection of short articles which leaves you wanting to know more, but too expensive to recommend for purchase by schools.

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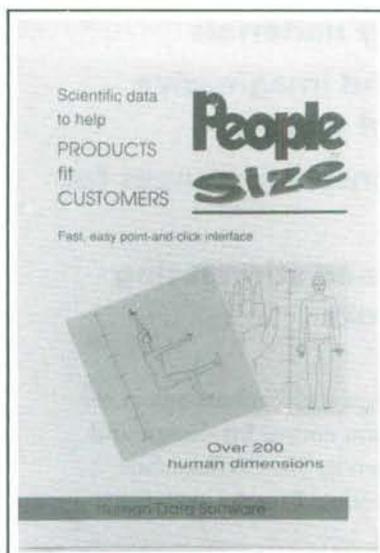
Software Reviews

PEOPLE SIZE — HUMAN DATA SOFTWARE

Friendly Systems Ltd, £149
Hardware: IBM compatibles
Reviewed by John Hanson

This program fooled me, mainly because the packaging and manual were so attractive that I dived straight in without reading the instructions properly. When I failed to install it (the instructions were on page 5 but I hadn't got that far), a phone call to the publisher produced some excellent support. It also fooled me because I thought it was another anthropometric program that would allow my pupils to print out some deformed representation of human beings. It turned out to be much more valuable: a large database of human dimension measurements laid out in a very interesting and attractive way. Because the program runs in Windows 3.1 the graphics are good and the menus laid out in a clear and usable way.

The handbook is mainly about installation, but the extensive on-line help facility and the program's simplicity make it very easy to use. I enjoyed experimenting and could find a lot of uses for anyone concerned with design. It should cause potential designers to think about the statistical range of human measurements and provide them with a useful tool. It is an excellent piece of software that could find many uses in technology teaching and could help the development of ergonomics and anthropometry in the technology curriculum, but it is expensive so thought would be needed before purchase. Friendly Systems might find that more schools would be able to make use of their friendship if the software was priced under £100.



CORTEX — THE PERSONAL EXPERT SYSTEM

Resolution Software, £35 (£5 for 30-day evaluation)
Hardware: IBM compatibles
Reviewed by John Hanson

This program is an expert system shell which allows you to create your own expert system file for anyone (yourself included) to use. It is a good, well written, text-based program which went easily onto the computer and worked immediately. I received a 50-page, densely written manual with my disc, containing good explanations of installation, running and creating data files and the concept of an expert system. I like the idea of sending out a manual with a limited duration disc because you have all the information necessary to understand the program.

This is a very good illustration of an expert system at a very reasonable price and anyone who wishes to illustrate expert systems in a school or college would find it useful.

My problem with software like this, however, is why would anyone want to use it? My understanding is that these systems pool a greater amount of knowledge than a single individual can bring to a problem, perform consistently and allow inexperienced users to deploy knowledge and expertise in a subject. If this is the case then 'Personal expert system' is a contradiction in terms. Expert systems should also be self-learning and extend themselves by use, but this program requires the implementer to add alterations and amendments to the datafiles. This means that the users — particularly many of the teenage cyberpunks that I teach — will find that the expert system is wrong, and this will not impress them.

If you want to illustrate Expert Systems this is a good, simple and cheap way of doing it, but be careful of the messages you are giving out. Your pupils may come away with the false idea that reality is a lot less interesting than fantasy. I would be much more impressed if the author could supply a lot more datafiles on interesting topics, new to most pupils, and arrange for the program to learn from its mistakes.