REVIEW SECTION

Design and Technology Frames
Reviewed by Mark Hudson, Director of Technology, Thomas Telford School, Shropshire

This paper backed spiral bound booklet consists of a series of photocopiable 'Frames', a total of over 40 in all. These 'Frames' are intended to provide structure and sequence to the designing and making activities of students.

The key headings are: Considering Ideas, Designing, Planning and Making, Health and Safety, and Evaluation.

The booklet also provides structured sheets to encourage students in the development of a range of cognitive skills. The stated intention of the booklet is to provide students with a structure to encourage autonomy from the teacher in the process of writing and recording.

Most of the sheets provide prompts and lead statements that invite the students to respond in the frame provided. There is no indication of the target age or key stage in the booklet. The level of language is suitable for much of Key Stage 2, all Key Stage 3 and students with special needs will find the vocabulary non-technical and accessible. There is no artwork other than the logo that appears on each sheet.

The documents cater for both individual work and team or group activities.

The booklet and the 'Frames' are commendable in that they provide students with a structure and providing that the structure provided matches the teacher's aims for the documentation of the project, would prove useful to many. This is not an answer to the production of design folio, nor does it purport to be, it would need to be used in a considered way and with students who would find the rigidity of its structure a way forward in their design work.

The pages are printed both sides and when copied the reverse image appears as a shadow on the document – thicker and better quality paper would have prevented this.

There was a time when teachers would have welcomed a quality, copy free resource such as this. Now, most schools will be able to produce sheets of similar quality matched to their own structures and projects to support those who would benefit from this form of guidance in their work. This is not a cheap booklet at £16.96 and it may not offer all that teachers seek, many will take the principles and adapt and modify them for their own situations.

Design and Technology Frames
Mary Green
Folens Publishers: £16.96 (pb)
ISBN: 1 86202633 5
Orders: 01582 472100

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

Folens **Frames** for **Writing**

Design and Technology Frames

Initially next design

To sum up

COPIABLE

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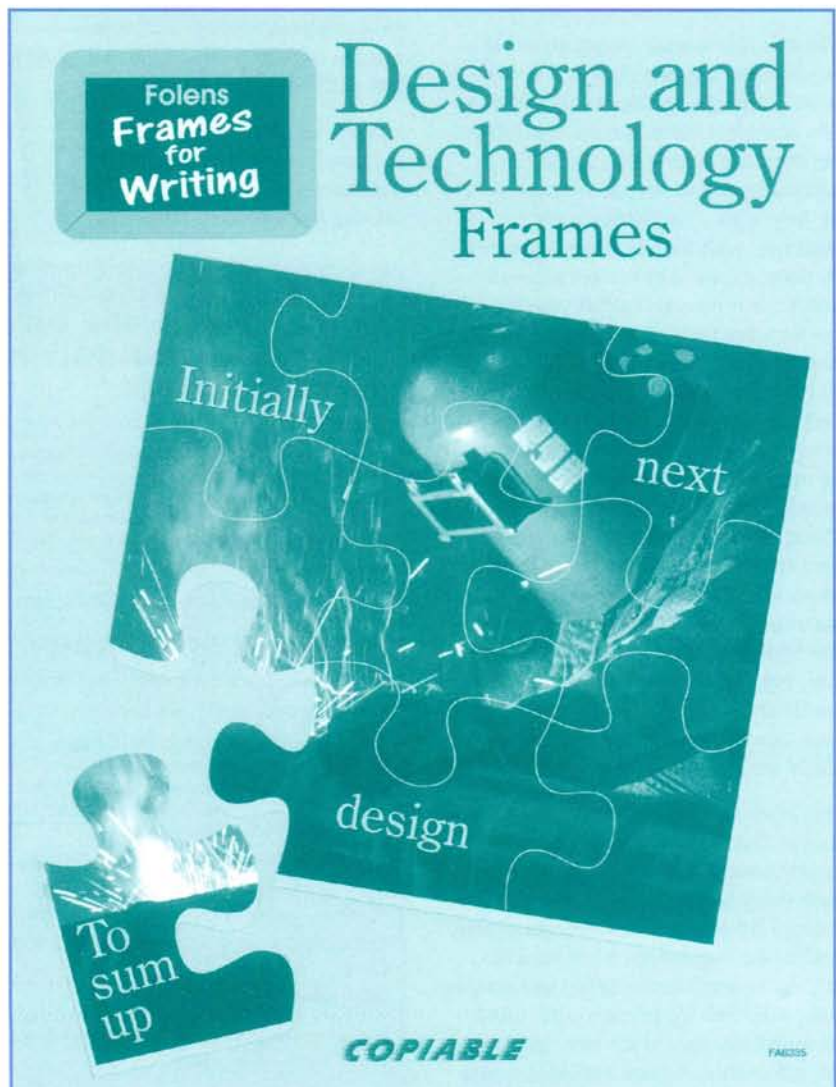
REVIEWS

Discoveries

Reviewed by Melanie Fasciato, Senior Lecturer; Manchester Metropolitan University

This teachers' book for Key Stages 1 and 2 is full of ideas for ways to link science with designing. After an initial introduction that looks at display, lettering, techniques, tools and safety, glues and food hygiene, there are 14 sections, each based on a separate topic. These are divided into resources, starting points, investigations, assignments, evaluation, extension activities and language opportunities. Each topic has a scientific or technological basis, for example the project on candlesticks focuses on stability and that on wheeled toys looks at push/pull forces. Some of the assignments labelled 'making' appear to have more to do with designing, but since designing at Key Stages 1 and 2 is often carried out through making, perhaps a false distinction between designing and making is being made here.

The title *Discoveries* is appropriate as much of the learning promoted by the book is through investigations. There are few new ideas, most are 'old chestnuts', but these are presented in a very accessible way which encourages teachers to 'have a go'. The format is very attractive, with the text being supported by photographs of individual pieces of children's work and displays which confirm that these projects have actually been tried out successfully with children. The line drawings are usually accurate and clear and are used to give advice and practical guidance to teachers who may be unfamiliar with some of the technological and scientific content. Timid teachers, teachers who want an easy option (don't we all at times!) and those who want to get designing and making into their science will welcome this book with open arms. Co-ordinators who want to get their staff excited and confident about designing and making may also find several of these projects useful for staff development days.

One of its strengths is the section in each project that deals with language opportunities. While not exhaustive and sometimes bordering on the mundane (write a list of instructions/design a safety leaflet) the suggestions are at least an attempt to integrate designing and making more fully into the primary curriculum through links beyond the obvious ones of art and science. A useful addition would

have been more numeracy opportunities, since there are several obvious ones in most topics. The clock project suggests making a graph to show findings, but this could also have been done to express the findings of other investigations. In addition there are opportunities for mental maths, for example: How heavy is the fish before we attach the magnets? We know that the fish needs four magnets to hold it up. If the fish was half as heavy, how many magnets would it need to hold it up? There are several very welcome multi-cultural references (puppets, pattern making, wheeled toys) and these fit comfortably into the projects, rather than being 'add ons'.

I am a little unhappy about the use of terms such as 'pneumatic forces' and the fact that not all of the levers in the Jack in the Box project were first class levers as stated, several were second class. On a more positive note, there is reference to the use of appropriate ICT, for example for information gathering, the use of photocopiers to enlarge and reduce images, of paint programmes and of cut and paste to make repeat patterns.

Overall, the text is clear and mainly accurate, it is highly accessible by beginners in primary designing and making and old hands alike. It is

Discoveries
Katherine Cuthbert
Belair Publications: £9.99
ISBN: 0 947882 79 0
Orders: 01582 472788

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

attractive and well structured. While this is not really a design and technology text book, it is a book which brings both designing and technological principles into the primary curriculum. It is to be applauded for this. Given the poor welcome that design and technology still gets in many schools, perhaps this is a good way forward. At least the examples of children's work are more typical than those in the 1997 SCAA *Expectations* publication!

At £9.99 for a rather thin A4 paperback, I think that it is rather expensive, particularly given the quality of the recent (free) QCA materials, but it does have the advantage of full colour on over 50% of the pages. This is a book that I would recommend primary teachers to at least look at.

REVIEWS

Progression in Primary Design and Technology

Reviewed by Dr Robert Bowen, Course Leader, Department of Primary Education, Nottingham Trent University

This is a book that would be valuable to all design and technology curriculum leaders and should be required reading for those undergoing initial training. Its title might lead you to think that it will provide a pre-determined list of items that illustrate progression in aspects of the subject. This is far from its approach. Using this book (it is a book to be 'used' rather than read cover to cover) will enable the user to explore the concept of progression, identify experiences for children that provide clear lines of progression and assist teachers in planning to achieve those progressive experiences. More than this, by exploring the concept of progression within the subject, it provides methods of investigating the nature of the subject itself. It is not a 'do it like this' approach but one that provides guidance for working things out for yourself. Reading it after much recent material telling me what I must do came as a breath of fresh air!

The book is clearly written and its graphic layout is largely successful. A very minor quibble is the location of the 'Teacher Activities' within the text. I found that the placing of these spoiled the flow of the discussion on occasions and I think they would have been better placed at the end of each chapter.

The design of the book as a professional development resource works well and its interactive structure is very effective in making the reader think about the issues. It encourages teachers to explore the concept of progression by personal investigation and by working alongside children. It describes a good range of activities which can be used directly or adapted. For example 'Teacher Activity 14 (page 58), which is to do with problems children have with cutting, could equally be undertaken with problems children have with drawing skills or in using kits. Many of these activities provide techniques for exploring issues that are difficult to get at by discussion alone and provide the user with a very useful range of investigative 'tools'. It would be very useful to curriculum leaders and teachers in training when planning activities that encourage the exploration of their understanding of the subject and the concept of progression within it.

Chapter 4 (the final chapter) is different in character to those preceding it. It moves the user away from focusing on progression in specific aspects of the subject to a consideration of assessment and planning across the subject. This more general summation of the ideas discussed previously brings together the strands of argument very effectively and identifies some of the essential elements that teachers are required to address by the National Curriculum.

This very practical and empowering book provides a good contribution to the on-going debate about the nature of progression in primary design and technology. Importantly, it takes a practitioner approach and seeks to enable the classroom teacher or teacher in training to think about the nature of progression and how they can enable the children in their care to progress effectively by generating better understanding about the nature of the subject.

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

Progression in Primary Design and Technology
Christine Bold
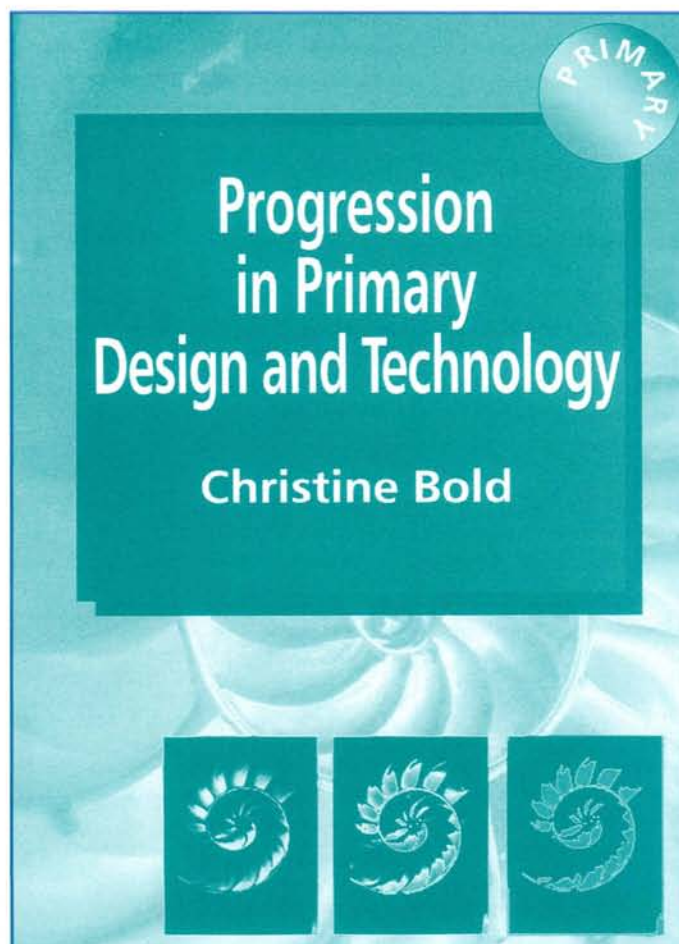
REVIEWS

Primary Design & Technology: Introducing Birds and Conservation to the Curriculum

Reviewed by Bridget A. Egan, King Alfred's College, Winchester

The RSPB Education service has produced a wealth of curriculum materials over the years, in an effort to persuade teachers to include attention to environmental issues such as conservation, with particular attention to birds, into their teaching. This booklet is one of the most recent series offering activities within the National Curriculum. As a long-time supporter of environmental projects, with a concern to raise and inform children's interest in the natural world and the environmental issues that we face locally, nationally and globally, I was interested to receive it for review.

The resource consists of a set of 10 designing and making activities, five suggested as suitable for Key Stage 1 and five for Key Stage 2. Each activity includes some background information for the teacher, a brief, photocopiable sheets (e.g. design sheets, bird silhouettes) and a set of suggestions of potential design solutions. There are also suggestions for extension work. At the beginning of the booklet, curriculum maps match each activity to key aspects of the National Curriculum statements for England and Wales, and for Scotland.

The activities proposed in these materials are familiar to anyone who has been aware of the RSPB's educational work over the years. For someone new to an interest in birds, or in conservation, they do bring together a range of useful ideas. However, the writer has succumbed to the temptation to offer an almost exhaustive range of design solutions, so that it is left to the sensitivity and ingenuity of the teacher to find ways to set briefs (e.g. using recycled materials for constructing

bird feeders) without pre-empting all the child's design decisions. Some of the task suggestions need careful and critical scrutiny. For example, there is little point in the booklet's offering a set of questions and answers for an 'electronic quiz': the whole point here, in terms of enabling children to learn more about birds, would be for them to carry out research and construct a set of questions on the basis of their discoveries. Similarly, the 'weather vane' activities ignore consideration of balance and moments which make these artefacts quite difficult for young children to make successfully. One might also ask what is left to be designed in the way of a nesting box for small birds, when the ideal constructed solution is offered. In addition, the suggestions of materials and tools some of the activities reveal the tension between what would be suitable materials for a useful outcome (e.g. exterior grade plywood for a bird table) and what it is reasonable to expect primary schools to stock, or children of that age to be able to manipulate. Suggestions for the Key Stage 2 version of a weather vane, for example, ignore the fact that most children in primary school do not yet have the manual control to use a coping saw efficiently, and most schools are unlikely to maintain supplies of sheet metal, whereas many schools do have

small and efficient electric vibrating saws which are well within the capability of a 9- or 10-year old to use! Some of the extension activities are not well matched to the key stage for which they are proposed.

In terms of offering help to the classroom teacher, I would have preferred a resource which laid out clearly the preliminary work in terms of suitable focused tasks, and product evaluation, to be done prior to designing and making. The curriculum maps, while they are helpful in terms of enabling teachers to write plans, are optimistic in terms of the deigning skills they claim to support. Moreover, this appears at a time when the National Curriculum for England and Wales is in mid-revision. Most useful in this resource is the reference material, rather than the design activities.

Free resources and materials are always welcome, although caution should be exercised in adopting such resources without careful analysis and re-tailoring to the needs of the particular school, class and teacher. This particular resource leaves quite a lot of such work for the teacher to do in order to make it useful.

Primary Design & Technology: Introducing Birds and Conservation to the Curriculum

Gareth Honeyford
RSPB Education: Free
ISBN: 1 901930 05 X
Orders: 01767 680551

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

RSPB EDUCATION *for lessons that take off*
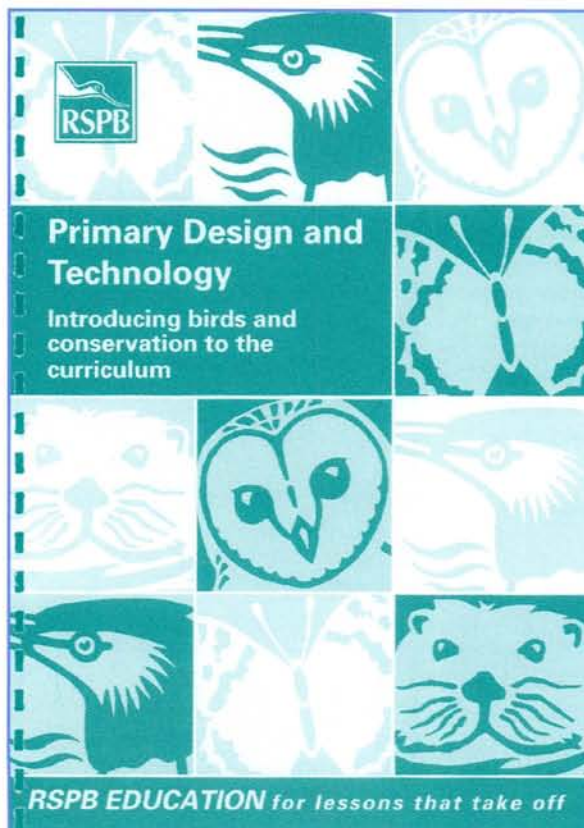
REVIEWS

Food Tables and Labelling

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

This is a new and thoroughly updated edition of the 'blue' versions. As in many nutritional publications, new concepts and ideas are included in a language appropriate to A Level. It is aimed at Key Stage 3, GCSE and A Level examinations in a range of subjects: home economics, food technology, biology and chemistry. As before, 75% of the text is food tables, with explanations and background information forming the remainder.

The biggest difficulty in teaching the use of food tables is always the contradiction in the need for scientific correctness and the way pupils learn. As teachers in school, we now have so little time for teaching nutrition that if pupils really understand the notion of a 'nutrient' and further comprehend a 'diet' and then make the leap to 'at risk nutrients' and then use the idea quantitatively we are doing well indeed. Technology after all requires a move on from understanding to the using and implementing of the concepts. My review will be based on this premise – the need for pupils at the specified stages to use the tables for the purposes of both nutrition and food science within food technology courses.

The content is divided into seven sections, much the largest being the tables of 'nutrient content of foods per 100g'. I must applaud the authors in at last combining our friends in the fold-fibre, non-starch polysaccharides, sugar and starch. Perhaps it would be more useful for our purposes if vitamin D were included rather than in a separate table, and iodine was only mentioned in the context of 'good sources' rather than included for such a few foods.

The foods analysed number 856, alphabetically arranged from advocaat to Yorkshire puddings and includes beef
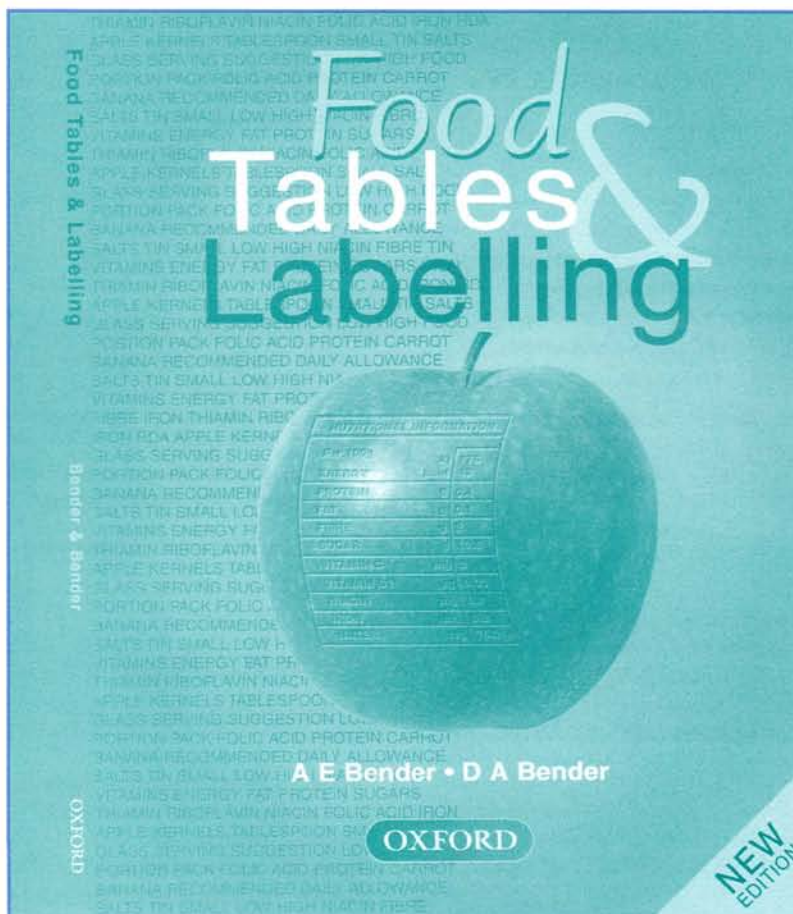
burgers from Burger King and MacDonald's and pizzas of many varieties. The headed columns start with 'average portions' for the foods, rather than with 'energy', a great help for teaching purposes although pupils need to remember that the table is per 100g, not per portion.

There are some suggestions, however, which may improve the booklet for teaching purposes, and which should not broach the bounds of scientific rigour. Could a method be devised for showing those foods (few) which are a really useful source of a nutrient for the general population, and vice versa, at the top of each headed column? Could 'energy' be treated separately from the nutrients, as many pupils often misunderstand and assume that it is a nutrient. Could helpful collective names be devised for some foods so that they are found more quickly e.g. rather than cola, these drinks and the variants could be named as children call them all 'Coke!' Pastas similarly? I wonder at the need for some entries when space is limited – bilberries, bloaters, bream, pigs trotters, hearts etc., whilst many foods that children eat regularly are omitted – lasagne (other than the pasta

itself), bolognese sauce, cheesecake, simple sandwiches etc. With modern computer programs could these have been included on a calculated basis even if they are not included in the 5th edition of McCance upon which these tables are based? Also in the main table, could the naming of yellow spreads be addressed? Children insist that they are all butter, and naming them margarine at less than 81% fat is not helpful considering the labelling requirements.

The small labelling section is probably long and detailed enough to supersede the labelling text that is the stable mate of the old editions. There is a useful list of E numbers with their name and function. I would have liked to see definitions of the terms used by manufacturers to describe products, e.g. low fat, 95% fat free etc.

Other useful tables include those for height, weight and growth, imperial and metric units, volumes, cups and temperature conversions. The preface gives Internet addresses for nutritional information and there are supporting computer programs.

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

REVIEWS

Exploring Materials CD-ROM Education Pack

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

The pack comprises a 60-page booklet and CD-ROM. Aimed at students of A Level chemistry, A Level Physics and GNVQ Science, it would also prove a useful supplement to GCSE and A Level Technology.

Sponsorship has enabled the extensive resources of companies such as UK Steel Industry and ICI to be drawn upon, providing a natural insight into the many facets of industry – from raw material extraction and processing, design, product manufacture, to materials research and the career paths (including A Levels, training etc.) of a number of different employees engaged in a diversity of work from design to accountancy.

The booklet is in six sections and explains the functions/features of the CD, including a repeat of the installation instructions found in the CD fly leaflet. (viz., MS Windows 95, 98, 3.1 or Windows for Workgroups, Apple Mac).

Instructions and commentaries are well served by clear screen images and glossary, with suggestions of different ways in which the CD may be used, e.g.:

1. library resource
2. IT training
3. teacher demos
4. showing molecular models – which can be rotated using on-screen controls (particularly Sodium Chloride Model in the Resource folder)
5. data handling exercises in the Resource folder
6. quizzes.

Exploring Materials CD-ROM Education Pack

David Sang and Janet Taylor
Science Museum: £40 + VAT
Orders: 0171 938 8000

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

Aspects of materials science appear in most advanced courses in physics and chemistry and GNVQ courses. The principal ideas are dealt with strongly in this course.

The activities and databases in the CD are grouped under three broad headings:

1. What are materials?
2. Selecting materials.
3. Making things.

The foregoing more or less covers Sections 1 and 2 of the booklet.

Section 3
Activities (1–7)

1. Properties and uses – CD-ROM orientation exercise for the student.
2. Processing materials – blow moulding of ABS through to extrusion of aluminium to forging glass.
3. Classification of materials – metals, polymers, ceramics and composites.
4. Pairing off materials – open ended exploration and discussion exercise.
5. Mini-museum display – exercise for students to prepare a display presenting over-arching ideas of materials science.
6. Consuming concerns – environmental impact. Ideas stimulated by the Making a T-shirt game.
7. Database quiz.

Section 4
Assignments provide extended activities for students. Access to sources other than the CD-ROM might be required. In some cases suggested laboratory work could form part of the assignment. Aimed at A Level and GNVQ, but several can be readily adapted to suit younger students.

Each assignment has students' and tutor's sheets.

Assignments (1–7)

1. Body builder – making cars.
2. Hot foot – science of sport shoe design.
3. Designer fibres – Polymers: from T-shirt design through to molecular structure. Also: introducing a chemical engineer, outlining her progress from A Level to university

through to work place responsibilities.

4. What makes a good coin? Analysis of the function of coins.
5. Fizzy drinks containers – fabrication, chemical stability, aesthetics.
6. New materials for old – artificial body parts.
7. A closer look – examination of logarithmic scale. Looking at imaging technique – optical and electron microscopes, X-ray and electron diffraction, to atomic force microscopes and scanning tunnelling.

Section 5
Careers activities examines careers of seventeen people – from archaeological scientist, chemist, through to design engineer and trainee accountant.

Section 6
Reference section includes indexes to databases, careers in materials science and engineering, published resources, useful addresses.

Comments
A very well researched and formulated work. It benefits from being the joint production of two authors in which excesses or omissions of a sole author are avoided. The careful structuring of the user manual/booklet, clear descriptions and diagrams, make it straightforward for pupils to use. I found the CD-ROM absorbing. Animation of manufacturing/processing sequences and ability to rotate molecular models add reality to the work and provide the kind of insight and feel for materials that a textbook cannot.

At £40 +VAT it is good value and should form part of the resource materials available in a school or sixth form college, enabling staff to direct students' attention to particular topics without needing to provide explanatory notes.

REVIEWS

Skills in Resistant Materials Technology

Reviewed by Mark Hudson, Director of Technology, Thomas Telford School, Shropshire

This publication consists of a student book and a teacher resource pack of photocopy free task sheets and extension activities. The student book is structured to provide support for students working through both focussed practical tasks and design and make assignments. The book is more biased towards providing support to students engaged in FPTs with work sheets covering a range of research and practical activities. It is focussed on resistant materials and covers some aspects of electronics and systems and control. It makes no attempt to make or establish links with other contributory areas of design and technology.

The student book proposes no projects but the teacher resource pack has a number of structured activities supported by work sheets. A clearly laid out sheet provided links between the student and teacher resource pack and resources required to support activities are also listed. The student book has a number of quiz type activities, the answers to which are given in the resource pack. A valuable addition is a student skill record which would enable the monitoring of key practical skills. The photocopy free materials are well designed and should copy with good clarity.

The student book is colourful, well illustrated and has a good range of artwork formats and photographs. The text is clear and uncluttered and well served by the index. A glossary of terms is provided.

The book is not intimidating and students will find it accessible and approachable. Teachers will find the book a useful classroom resource encouraging

independent research and developing students' knowledge and skills. It will cover most aspects of a resistant materials Key Stage 3 course touching upon many of the programmes of study.

The book brings little new material to the subject in its approach, content or style. It does however condense a lot of basic subject skills and knowledge into a single publication that does not attempt to provide design and make activities. Rather than use a number of books to resource activities in the workshop or classroom many teachers may find this publication meets most of their skills based activity needs and reinforces and supports DMAs rather well. At £7.99 it is not an expensive publication and at £16.50 the teachers' resource pack provides a usable range of supportive material and thus represents fair value.

For the teacher seeking a simple book that will free up time and support a number of aspects of student activity in this area of design and technology this book will be an ideal addition to a department's library.

If you are seeking a structured course with DMAs, FPTs and links across the subject then look elsewhere as this book will not meet your needs. It is then a complimentary book to perhaps support other more comprehensive books or a series of books, which probably contain the same materials. Its principal attraction will be that it condenses this knowledge and skills material into one publication, presents it simply and clearly and supports it with work sheets.

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

SKILLS IN
RESISTANT MATERIALS TECHNOLOGY
Peter Gale

Heinemann
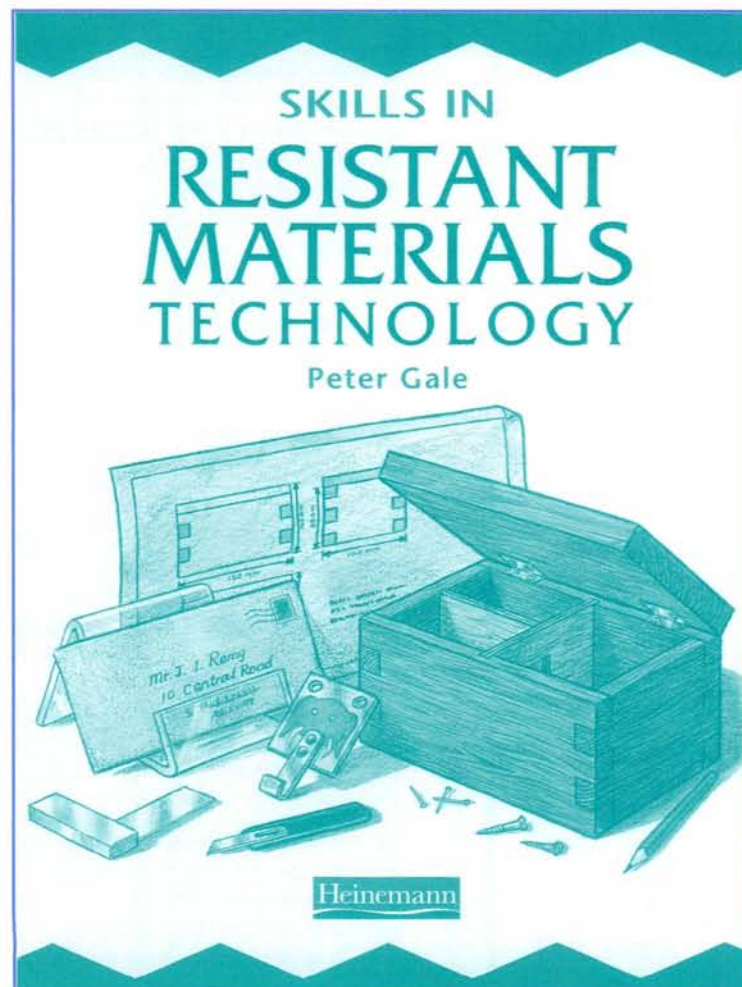
REVIEWS

Do3D

Reviewed by Les Porter, Course Director for Industrial Design and Technology at the Design Department of Brunel University

Do3D™ is produced by Superscape and is marketed by Anglia Multimedia. It is everything that you would expect from the amalgamation of two companies with high reputations in the field of educational software.

Do3D provides the user with the tools to create exciting interactive worlds on their PC. The software allows students to use their creativity to design anything from interactive bedrooms to surreal cities, it allows them the opportunity of bringing their imagination to life. The software provides the user with a point-and-click interface and includes extensive libraries of Virtual Clip Art (VCA), including, objects, textures and sounds. What's more, the students do not need to be experienced computer users, they just need to have a bit of imagination.

Do3D is designed to be installed on Intel based PC. Running Windows 95, 98 or Windows NT 4.00 or later. As a minimum, the software requires 16MB of RAM and 30MB of hard disk space. If you are running the minimum system your worlds may run slowly. The software supports 3D graphics cards through DirectX™5.0. During my initial evaluation I trialled Do3D on a desktop standalone machine running Windows 95. Here it ran without any problems. Later, parts of the trial took place on an NT machine and here I had some difficulty in running the software. Anglia Multimedia and Superscape provided me with first class support and in a couple of days they had resolved my NT problem.

As students progress and become interested in the Internet, they can publish their worlds on the World Wide Web or the Virtual World Wide Web and view
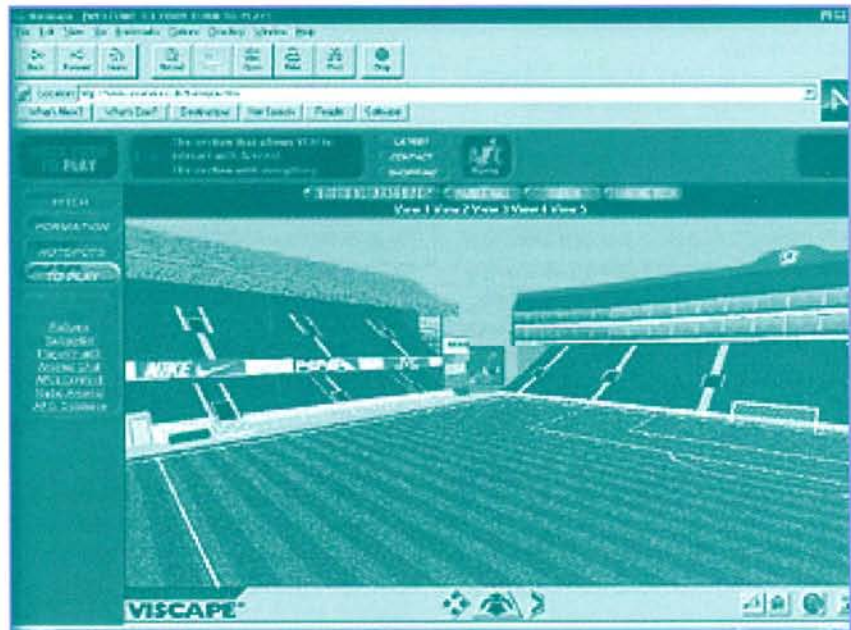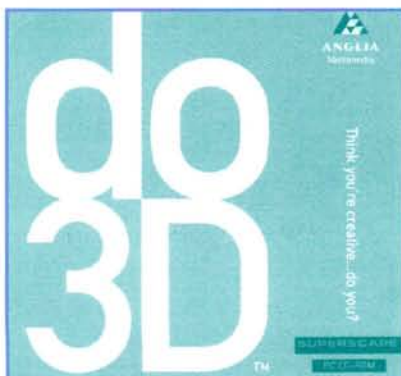
Virtual World of Arsenal Football Club

them using Superscape's Viscape™ browser plug-in.

Do3D is one of the most desirable pieces of creative software I have ever had the pleasure to evaluate. It is a must for students who are following A-Level in Graphical Communication and the potential that it will provide for those students studying for GCSE in graphic products is huge. I intend to use it with my undergraduate students, I see Do3D as a very valuable and impressive piece of software.
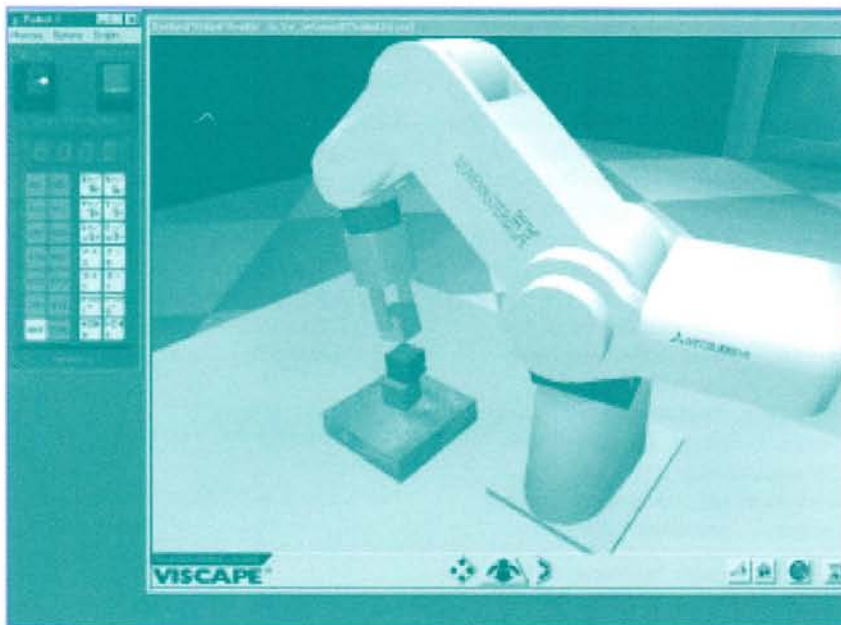
The user manual that is supplied in the CD-ROM case is more than adequate. It provides the user with an overview of the product, talks in detail about installation procedures and gives the user a tour of all the toolbars and the icons within the software – I couldn't wait to get started!

Once loaded I found the 'tip of the day' very helpful and it provided me with lots of valuable information. It whet my appetite to learn more, which surely is what good education is about. During my trial I used the on-line tutorials diligently and although it is possible to use the tutorials while at the same time creating virtual worlds, the possibility exists to print off the tutorials, which some may find a better way of working.

For me, starting with the city centre was my first adventure into 3D worlds. The play mode is the default and this allowed me to experience a 3D outcome early on in my trial and gave me some idea of what could be developed at later stages.

As I have already said the help tutorials are well constructed, but one particularly helpful point is that every now and again the user is given the opportunity to 'play a movie' to show how a task should look when completed. At first I found using the 'fly' icon and the movement bar a little difficult, but unlike other similar products that I have worked with, Do3D gives you the option of resizing your world and returning to your original start point – you soon get used to the concept anyway! Building your world is all about 'drag and drop' which is so easy to do, but it is also easy to loose your datum points. Page 7 of the first tutorial is particularly strong and provides the student with the knowledge of how to tell if their object is colliding with the ground. The toolbar has a very useful icon called "What's This?" If an object has been 'dragged and dropped' onto 3D world and you want to find more about the object and its properties, just click the object and a pop-up description appears.

For once in my life I decided to work right through the tutorials and experience the software as it was intended. As I worked through the tutorials, the learning curve obviously became steeper, but every so often a new dimension was added to keep my interest alive. For example in the second tutorial 'Bob' was placed into my virtual world. As soon as he was placed, adjusted and given the opportunity to walk, my imagination of what I could do with this package ran wild.

REVIEWS

Virtual World of Denford Machine Tools

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

to sample sounds, create them, rescale them and crop sounds for their own sites. On top of all this it has advanced graphics to produce effects such as fog, transparancies, lighting effects, smooth shading and so much more.

You have probably heard me say before that "we must allow our students to be creative and that we must not keep providing knitting patterns for them to build their competence upon". Well Do3D certainly allows them to be creative, but if I do have a slight reservation it is about how you would use it with a class... I certainly had to work very diligently through all the tutorials before I fully understood the educational value of this software. This begs questions about "How do you do that with a whole class?", "How do you stop one pupil from monopolising the software?" and "What do you do with the rest of the class while you are teaching the first student?" I just feel that Anglia Multimedia could have dealt with this by providing some suggested activities for class work and indicating which Programmes of Study and at which key stages the software is intended to address. That apart, this is a splendid piece of software that opens out new approaches for design and technology creativity and I feel a must for forward thinking departments.

Your students' imagination will be the only limitation!

Between tutorials 2 and 3, I was forced to take a break of a few days and by the time I returned to the evaluation, I realised how much I had forgotten between sessions. I would suggest that my approach is not good and that students need to consolidate their experiences by undertaking their own creative work that relates to the tutorials that they have studied.

Just wait until you get into the 4th tutorial! I challenge you not to be excited. One of the exercises provides you with the opportunity to place a laptop onto a desk. When you play the virtual world you have the opportunity of opening the laptop and later changing the screen textures and the contents on the screen.

As I commented earlier, the on-line support from Superscape is fantastic, but in addition to that, the latest VCA objects are regularly available from the Superscape website. This can be found at http://www.superscape.com Check it out! Tutorial 5 teaches the student how to add actions and sounds to their world and, for example, they will be taught how to place a mailbox into their virtual world. When they do this it gives the opportunity to click on the box, open the box, and create an active e-mail function in their world – this can be great fun. I created my box, mailed Superscape and received a reply within half an hour. In this tutorial the students will also be taught how to add external links to take their world to another website and to add attributes such

as, when scrolling over an object a comment appears in Netscape Navigator's status bar (Internet Explorer v.3 does not support this functionality).

What do you get?

• 9 template worlds.

• Facility to fly or walk in real time through fully rendered 3D worlds.

• 100s of virtual clip art images with built in sounds and behaviours.

• 1000s of textures and colours.

• The ability to integrate 3D worlds with HTML pages.

• Send and receive e-mails from your own constructed 3D web page.

• Clear tutorials and on-line help.

• The ability to export created worlds as standard formats VRML 2.0 or SVR.

For those who want more, there is the ability to create highly professional 3D web pages using Do3D. This is done using 3D Webmaster™ which can create interactive 3D websites or add 3D pages to existing 2D sites. This software will allow students to add their own behaviours to objects using SCL – a purpose-built command language with over 600 commands that is easy to learn. It has a shape editor that is a complete geometry modeller that allows the creation of any object the student would desire, plus a sound editor with the ability

REVIEWS

Design and Technology Textiles Foundation Course

Reviewed by Helen Wilson,
Plantsbrook School, Sutton Coldfield

As the title implies, this book has been written to suit the National Curriculum Textiles Technology at Key Stage 3 and aims to provide a solid foundation for subsequent GCSE and GNVQ manufacturing courses at Key Stage 4.

The introduction succinctly outlines the value of textiles within design and technology, showing how skills and knowledge developed through Key Stage 3 could be used as the foundation to further qualifications, leading to a wide range of careers in the textiles industry. This is a valuable starting point for the text as it immediately gives value to the textiles technology work undertaken in school and highlights its relevance to the world of work, in particular raising student awareness to the range of career opportunities other than the obvious fashion designer.

The book is divided into four main sections: designing, investigating textiles, working with textiles and products and design. Each section is attractively set out with concise sections of clearly identifiable text with relevant photographs, charts, diagrams and illustrations. The range and quality of the information is extensive for a book of this size.

The section on designing covers in detail all aspects of the design process from starting points to evaluating ideas. It also includes topics such as fabric properties, including simple experimental work with fabrics, developing ideas for decoration, modelling, planning, making and testing the finished product. Throughout each topic there are frequent references and comparisons made to practices in industry along with examples for recording

students'work with questions and activities related to the information.

Investigating Textiles covers all aspects of textiles from fibres to finished fabric. The information is presented in a lively and colourful format using text photographs, illustrations and graphs. The text is pitched at an appropriate level. However, the chart showing fibre properties appears to contain several errors and is difficult to read, this is unfortunate as the overall presentation is otherwise very pupil-friendly. This section also covers information about a variety of dyeing and printing techniques. Each method is explained through text and clear illustrations with relevant references to commercial processes.

The Working with Textiles section covers a wide range of processes from working with patterns to construction and decoration techniques. Once again this has been well presented with clear diagrams and step-by-step instructions.

The final section Products and Design considers the manufacturing of textile products and a case study of the production of a fashion jacket by Henri Lloyd Ltd.

With the exception of the chart noted earlier, I found this text excellent in its content and presentation. It provides a wealth of valuable information in a stimulating and student friendly format. At £8.99 I consider it to be a valuable resource for textiles technology at Key Stage 3. It could also be used as a supplementary resource for Key Stage 4.
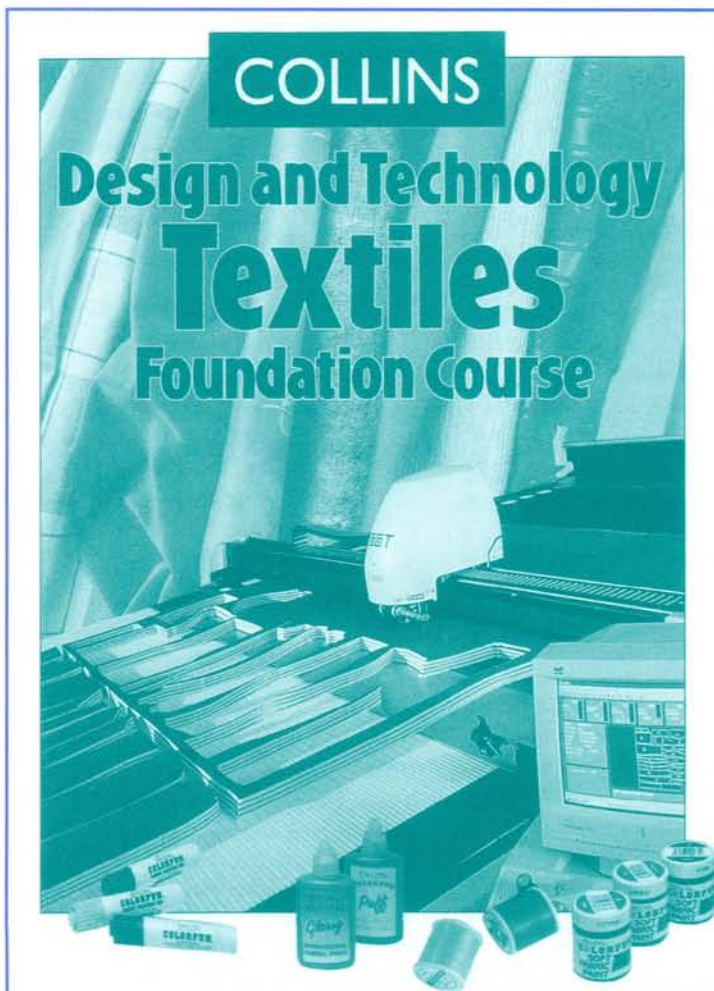
Design and Technology Textiles Foundation Course

Sue Plews, Janet Inglis, Eileen Chapman
Collins Educational: £8.99 (pb)
ISBN: 0 00 329492 7
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

COLLINS
Design and Technology
Textiles
Foundation Course

Focus on Plastics

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

This resource is a four-in-one package comprising:

1. Focus on Plastics – the main resource programme.

2. The User Manual (plastics)

3. Question Editor – in which tutors can edit or rewrite the existing tests.

4. User Manual (editor)

All contained on the CD-ROM. It complements the excellent Focus CD-ROM on Resistant Materials and is also suited to GCSE design and technology.

Main program

The main program deals with eight different plastic manufacturing processes: extrusion, injection moulding, blow moulding, vacuum forming, compression moulding, calendering, strip bending, rotational moulding.

Each process is demonstrated by a very clear sequence of animated stages. Animation can be operated using an 'auto run' button, in which the whole sequence is displayed from start to finish, or, 'manual control' enables separate frames/stages to be arrested and printed. Frame speed can be varied. There is a picture puzzle for each of the eight processes. The scrambled picture is in squares and the puzzle is solved by dragging squares into a new location.

Alongside is a panel of topic information. This can also be printed. Various embedded link topics are shown in blue script and these can be accessed by clicking the mouse. A list of thermoplastics and thermosets, with chemical names, abbreviations and applications, is readily accessed.

Pictures can be enlarged by clicking the picture with the left mouse button. In fact other actions common to most quality CD-ROMs can be carried out on this disk.

Focus on Plastics
Focus Educational Software: £39.95
Orders: 01872 222 391

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

Placing the cursor over the picture and pressing the right button will cause a pop-up menu to appear. Choosing 'copy picture' from this will enable the picture to be copied as a Windows bitmap which can then be pasted into other Windows applications.

The test sections for each topic are straightforward to implement and provide a good revision feature.

Manuals

These are very clearly written, but I found the main programme so easy to use, instinctively, that I barely needed to refer to the user manual.

The Question Editor Manual is very comprehensive and contains essentially the same information that can be found in the program help file, but written in HTML format (the same format used for web pages). This question editing program has been designed to:

- edit the questions and tests that are displayed in the Plastic Forming Techniques program

- produce questions for use in written tests or homework, by the tutor

- for example, a new process or material composition can be added.
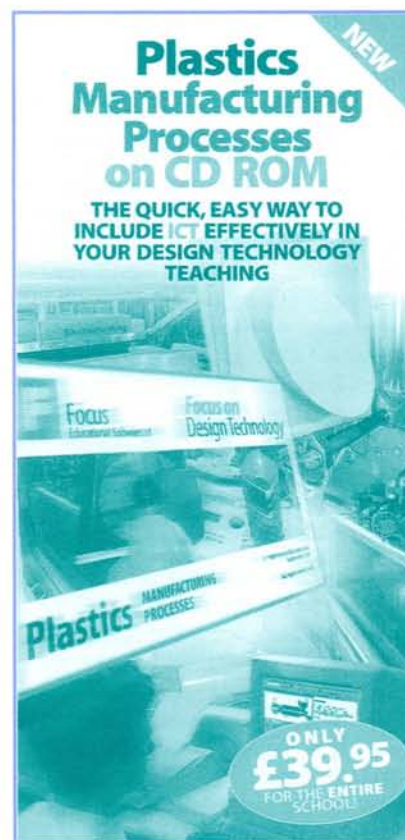
Comment

A review cannot do this resource full justice. A lot of careful and thoughtful work has gone into this CD. The format is clear and uncluttered. Points in the manuals are made clear by the ample use of illustrations and icons identical to those on the screen. Examples of question editing are included, together with information about additional question files, which are installed in the main directory.

The manual also offers friendly advice about printer settings as well as general comment about file handling within the program.

Pupils will find this a very useful Key Stages 3 and 4 resource. Tutors will also find that the animated sequences of actual industrial scenes (as distinct from the simple animated diagrams of the eight basic production processes, quoted earlier) will convey knowledge that could otherwise be obtained only from an industrial visit.

At £39.95 plus p&p (excl. VAT) this is a very good buy.

Plastics Manufacturing Processes on CD ROM

NEW

THE QUICK, EASY WAY TO INCLUDE ICT EFFECTIVELY IN YOUR DESIGN TECHNOLOGY TEACHING

Focus
Focus on Design Technology

Plastics MANUFACTURING PROCESSES

ONLY £39.95 FOR THE ENTIRE SCHOOL!

REVIEWS

Understanding Industrial Practices in Textiles Technology
Reviewed by Jenny Jupe, Reviews Editor

This extremely useful book aims to support GCSE textiles courses and should be useful for GNVQ manufacturing and the new A, AS level courses. The book is a guide to the key textile terms related to industrial designing and manufacturing and will help teachers and students understand what industrial practice is and how they might apply this in their own work. Most usefully the book also explains much about systems and control and how to integrate these aspects into textiles work, using simple industry-related activities.

Understanding Industrial Practices in Textiles Technology is an A–Z guide of industry-standard terms that can be used as a teaching resource, but it is also a very comprehensive reference text. Each entry begins with a clear definition, followed by explanation and examples. The related National Curriculum requirements are explained, followed by focused tasks that provide ideas for implementing specific industrial practices in the classroom. It is worth noting at this point that the book will easily meet the requirements of the curriculum Order for 2000 as much of the content is totally up to date. Within the text there is a range of textiles end product terms, which gives some indication of the enormous spectrum of textiles manufacture. This ranges from fibres, fabrics, and finishing to the production of garments, performance, industrial and technical products. Many of the industrial practices used by the fashion and textiles end of the market are also used in the manufacture of industrial or technical textiles, which are increasingly influenced by colour and manufacture and style trends. The designing and manufacturing topics in the book include trend forecasting, marketing, production systems, quality control, CAD/CAM and the use of Information and Communication Technology (ICT).

This book is photocopiable by the purchasing institution. If it is accepted that this is a reference book with photocopiable facility then the author and publisher may be forgiven for the somewhat plain style of presentation. This is not a criticism, but rather a statement of fact. The alphabetical presentation of the text does make it very easily accessible by some of our less able Key Stage 4 students.

It enables students to break through the barrier of industrial jargon by using it as a basis for updating and developing an understanding of industrial practices.

During the textiles course the explanation of key industrial concepts is essential if students are to incorporate industrial practices in their work. The focused tasks will provide ideas for doing this.

For examination revision the book will be invaluable in helping students gain a good grasp of terminology and theory, both essential for exam success.

The book addresses students directly, to encourage independent learning. The A-Z format is very easy to use and all entries are carefully cross-referenced, with some words written in italics, implying that further information can be found about that topic on another page.

In terms of diversity of content information is included concerning aerospace, architectural and automotive textiles; manufacturing systems, including cellular manufacture; extensive information on CAD/CAM, including concurrent design and manufacture and quality – quality assurance, quality control and quality indicators.

Understanding Industrial Practices in Textiles Technology
L. Cresswell (1998) Zig-Zag, PO Box 24113, London SW18 5WT

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

Understanding Industrial Practices in Textiles Technology is an essential text for all design and technology departments. The extensive coverage of manufacturing terminology makes it just as relevant to resistant materials and systems and control as it is to textiles.

Dyson Education Box

*Reviewed by Jenny Jupe,
Reviews Editor*

The Dyson Education Box is housed in a large trunk that is delivered to your doorstep. The resource can be kept for three weeks before being collected from you, at no cost.

The Dyson Education Box is intended to give "an insight into the design process. Dyson believe that industry should do what it can to make clear to everyone that manufacturing is about making things that people want, which work well and which look good. We want to encourage young people to see design and technology as an exciting subject, full of potential. Dyson hopes to help teachers inspire their students to make a brighter industrial future."

The pack

The main component of the Education Box is the Dyson DC02, which arrives clean and ready to use. Students can assemble, from instructions, the vacuum cleaner and see it in operation, especially if a handy pile of dust/thread/flour is available. There are 10 floor tools, all of which have had the barb removed from the wheel shaft. Students can thus safely assemble and disassemble the floor tool. A cut-away of a cyclone is included to help explain the technology, as well as complimentary copies of Against the Odds (James Dyson's autobiography - see review in Summer 1999 Journal) and Doing a Dyson. Also included are 10 work cards with detailed technological information, suitable for Key Stage 4 and post 16. The language on the cards is sophisticated and only really accessible by the average and more able student. Teacher's notes are predominantly concerned with health and safety issues for using the kit in the classroom.

So the question is "what to do with the Dyson Education Box?" Be prepared to be inventive and resourceful ... the box contains some excellent quality products, but how to use it in the classroom is not obvious.

> **"Dyson hopes to help teachers inspire their students to make a brighter industrial future."**

I can't help thinking that whilst there is excellent potential for the kit as a classroom resource, very little has been done to develop this aspect of the Dyson Education Box. I am left wondering whether this is a fairly crude interpretation of that aspect on National Curriculum design and technology called IDEAS which has largely chosen to ignore the investigative and evaluative aspect. Teachers are busy, resourceful people who would make varied use of the box, but more support is needed. This must include:

- guidance to teachers before despatch about potential use

- more investigative and evaluative activities written for classroom activity.

Dyson Educational Box

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

The latter needs to encourage students to consider the innovative aspects of the Dyson design and how these were achieved in terms of product development. A video would, in this respect, be an excellent supplementary resource.

Dyson Education Box
Dyson Press Office
20 Shawfield Street
London SW3 4BD
Tel: 0171 833 8244
E-mail: press.office@dyson.com

REVIEWS

Edison 3.0
Reviewed by Jean Allman, Garibaldi School

Edison 3.0 is a unique new environment for exploring and analysing electronic circuits. The program is aimed at educational establishments where electronics is taught, and is ideal for teaching at Key Stage 3 and beyond. Lifelike interactive 3-D components are used to build and simulate circuits on a virtual 'breadboard', and Edison simultaneously draws a circuit diagram. It includes a wide range of components, and over 100 experiments and problems to aid self-learning of electronics. Edison 3.0 provides a state of the art analysis results window, called the Control Panel, in addition to its virtual instruments. Circuit analysis can be presented with full control over the axes, line style, colour and fonts. The diagrams can then be printed or cut and pasted into a word processor.

You can select realistic bulbs, batteries, LEDs, transistors, logic gates, flip flops, ICs etc. and text instruments, all easily available on the shelves of your multi-media lab. Drag them onto your 'breadboard' and wire them together using trails of virtual wire using the mouse. Your circuit begins to work immediately, so you can test and trouble shoot with virtual instruments. Components can be dragged and deleted with ease. Overload components go up in smoke and have to be repaired. Resistors are given correct colour codes automatically. Virtual LEDs light up and switch. Virtual speakers produce appropriate sounds. Running through the example circuits following the notes in the manual should soon familiarise new users with the program. The printed manual is backed up with the usual Windows help system. Training days are also available from Quickroute Systems.

This is an excellent resource that makes the transfer of practical work to software easy, and enables developments to be made and transferred back to practical. The software itself is very easy to use and

clearly meets the supplier's stated purpose. Edison includes a wide range of components that are obviously identifiable. The in-built experiments and problems encourage individual learning and problem solving.

The software is excellent due to the combination of realistic components and the ability to build and simulate circuits on the virtual 'breadboard'. Switches can be turned on and off and the interaction of sound and lights provides a realistic simulation for students. Edison is ideal for advanced learners or to reinforce knowledge.

The software is so easy to load and operate the teacher and students do not even have to refer to the accompanying booklet if they do not feel it is necessary. The booklet itself is also very easy to use and understand and is well laid out and clear. This software enables schools to

traverse the problem of scarce resources or equipment by providing testing and trouble shooting facilities and the opportunity to print the results.

This is a good quality resource. The booklet and software are functional, direct and straight to the point. The simulation graphics are very suitable for their purpose and do not leave students waiting for them to download.

The software is good value for money considering its ease of use and its ability to by-pass problems of resources and equipment. It is a good investment for both Key Stage 3 and 4 students.

Edison 3.0
Quickroute Systems Ltd: £tbc
Orders: 0161 476 0202

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

EDISON

Multimedia Lab for Exploring Electricity and Electronics

User's Manual

DesignSoft

REVIEWS