REVIEW SECTION

Plastics and the Environment

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

This is described as an Education Pack and as a Resource Pack on the card folder, although all I received was a CD ROM and a sample of plastic material. I was impressed by the design of the CD-ROM. It is easy to navigate and in clear language with a cartoon figure, who bears a close resemblance to the hunchback of Notre Dame, as the guide. My perennial cry is to find a way of making CD-ROMs different to books, and this one seems to be getting there! The animations are simple and yet enhance the presentation. The instructions for installing the CD-ROM were also very clear and include a virus warning.

The CD-ROM is divided into several sections: a teacher's guide, a presentation titled 'Plastics and the Environment' which is in turn divided into a number of sub-sections and several documents that can be printed out. These include a version of the presentation for display, a front cover for project work, a board game, a design and technology project template, science task record sheets, assessment materials, and record sheets. Unfortunately the latter do not use the 'new' National Curriculum attainment targets and programmes of study for design and technology and science. The plastic samples are for carrying out the science experiments on and there is a contact address where further supplies can be obtained.

For primary school teachers who still have the opportunity to teach via topics where children are encouraged to carry out research, it is a very good resource to have available for children to use on their own. It gives plenty of factual knowledge, but I felt that the level of detail about thermosetting and thermoforming plastics was too great for Key Stage 2. However, it is excellent for Key Stage 3 and perhaps even early in Key Stage 4. I am not

...plastics and the **environment**
Education pack

Covers elements of Key Stage 2
Design and Technology

"This schools Education pack from Fyffes and Symphony Environmental shows, in an exciting and stimulating way, how solutions can be found to everyday environmental issues. It's a valuable resource."

Chris Packham. Broadcaster, Author & Zoologist.

fyffes

Symphony *Environmental Ltd*

Plastics and the Environment
Fyffes: Free
Contact: Fyffes, PO Box 45, Prestwick, Manchester M45 8FY

Appropriate content	///	Generic use	⇐
Pupil/student use	/////	One of a series	
Teacher resource	////	Photocopiable	
Visuals	/////	Pupil/student activities	⇐
Overall style	////	Cross-curricular	⇐
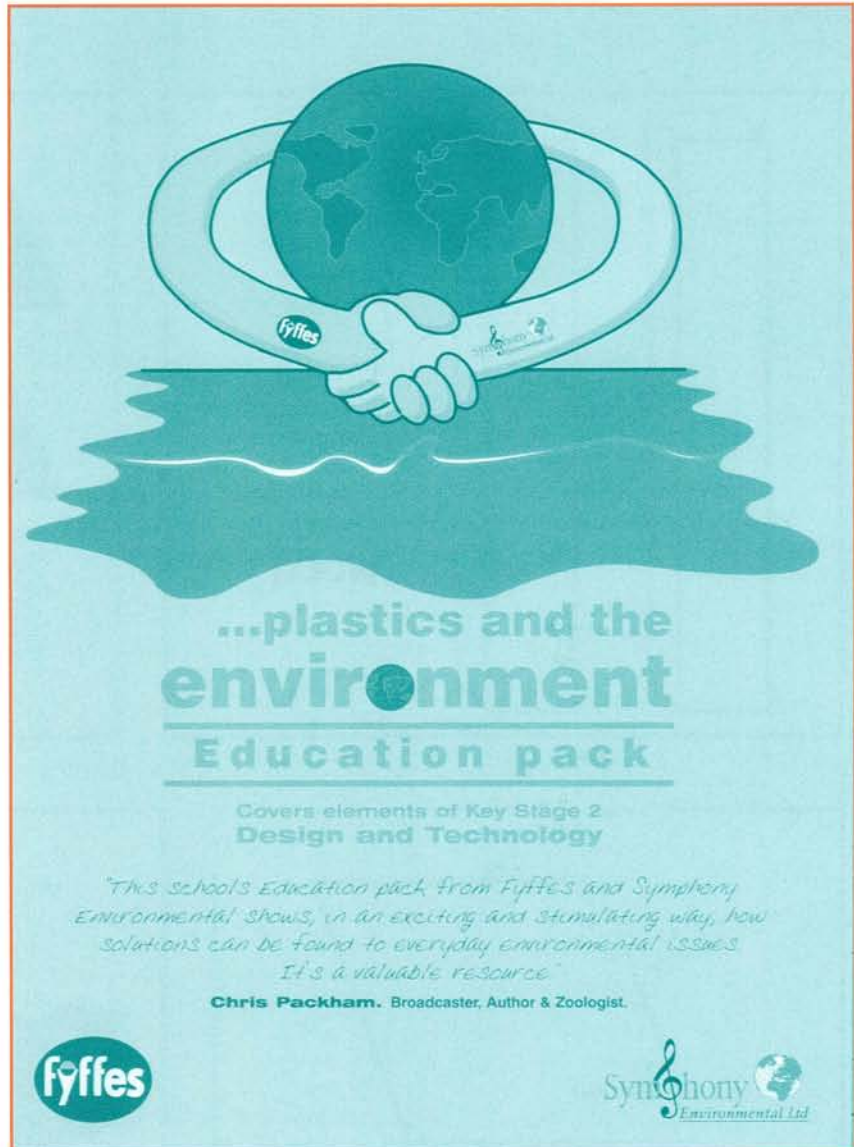
convinced that children using this CD-ROM would be encouraged to 'consider their responsibilities as consumers', as stated in the blurb, but it was a good introduction to the relatively new environmentally friendly plastics and the effects of non-environmentally friendly plastics on the environment.

The printable elements of the CD-ROM are not as useful as they might be, for example a series of strictly defined 'Design Process' based project template sheets left little space for the children to write and draw their responses. The printable front cover, while adding uniformity to children's work, takes away the individuality.

The CD-ROM was produced by Fyffes in collaboration with Symphony Environmental Ltd. The connection here is that Symphony supply Fyffes with their

plastics and these are environmentally friendly, being designed to breakdown after a certain period of time, thus ensuring that Fyffes do not add to the landfill problem. The science experiments are based on this notion and the design and technology tasks on – inevitably – graphic design tasks for banana and plastic bag packaging.

It is a free resource and I think that this is remarkable considering the quality. That said, it does a fine job of promoting Fyffes and Symphony Environmental Ltd, although at no stage would I say that this is intrusive.

Build a Clock

Reviewed by John Durrell, Senior Lecturer in Design and Technology, University of Greenwich

This book appears to be targeted at anyone who wishes to make a clock and it is therefore not school focused design and technology specific. As a consequence, some of the tools used in the book such as the power router and the power jigsaw may not, for safety reasons, be available for children to use in school workshops. However, the authors do give alternative construction techniques.

As the title states, the book is solely about clock making. It appears that the reader will use a ready-made battery powered clock mechanism as the core for the clock, with the design element focusing on the clock case.

The book is A4 in format, and is structured into three main sections, all of which use good quality colour photographs or diagrams. The first section is an introduction in which the two basic types of clock mechanism used in the book (pendulum or non-pendulum) are described, along with the types of hands and various forms of numerals that can be used on the clock face.

The second section looks in detail at a range of themes around which a clock could be designed. These are:

• nature

• textiles

• architecture

• animals

• novelty clocks.

Within each of the themes, the authors show examples of a collection of completed clocks, whose designs were generated from that theme. Each of the themes is accompanied by quite stunning photographs, associated with that theme. The authors then take the reader through

the making of a range of clocks whose designs have been inspired by these themes. The design area of the book is perhaps more limited than the make sections. The format of the presentation is that the reader is shown a number of high quality colour photographs, which depict examples of a theme, e.g. various scenes from nature, such as plants, crashing waves, etc. The reader is then shown photographs of completed clocks that have used nature as their theme. The authors then take the reader through the making of these clocks in a step-by-step fashion. The making element of the clock is dealt with in much more detail than the design aspect. The reader is introduced to a wide range of making skills. These skills appear to cover a broad spectrum of techniques, including ceramics, work with card/paper and papier-mâché. Some of these may be used by both art and design and technology departments who may wish to participate in cross-curricular work.

The final section, like the first, is small in comparison to the second section. Here the authors give a range of *hints and tips* about such issues as safety when using materials, types of materials and the preparation of materials. There is also a photocopiable template for placing numerals onto the clock face.

Bearing in mind that this book's target audience appears to be anyone who is interested in making a clock, the book is very informative for children involved in such projects in design and technology and/or art. Some of the skills suggested would perhaps be more suited to an adult

working in a home workshop. Others could be directly related to work undertaken in school workshops or studios. The level of language used and the book's excellent presentation would be suitable for children across the secondary age phase, and perhaps even upper primary, although the level of equipment used in some of the examples would be more secondary school orientated.

If you are looking towards planning a clock-making project in your teaching programme, then this may be a useful book to order for the school or departmental library. It may spark ideas, and engender the use of a range of making skills and materials that children may not otherwise consider. However, the book is limited in the development of design thinking. Here, the book may act as a focal point with its range of themes, but the authors do not appear to detail how these will be used in conjunction with the design process other than showing photographs of clocks inspired by these themes.

I would suggest that if you want a book that you could direct children to which would act as a spur to clock design, then the themes suggested by this book may be a useful starting point. If you also want to allow children to see some completed clock designs, made from a variety of materials with details on how to use and construct with these materials, then this book would be a useful tool. However, with a price tag of £7.99, a school would probably want to buy library or departmental copies, rather than using the book as a whole class text.

Build a Clock

Toni and Mark Tippett
Hands on Publishing: £7.99 (pb)
ISBN: 1 873101 30 9
Orders: 01732 773399

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

REVIEWS

Food: The Manufacturing Process

Food: The Manufacturing Process
Reviewed by Julia Jones, Food Technology Teacher, Sawtry Community College

Food: The Manufacturing Process is a resource that looks at manufacturing. The idea is that students work through the book and thus understand manufacturing processes without needing any industrial visits.

The book is divided into different sections. These are supposed to be followed, in sequence, teachers' notes are accompanied with a worksheet on each section. The book covers a wide variety of subjects, including consumer needs, recipe development and HACCP. It is an excellent starting point for teachers to use to cover the topics required for industrial practices. However, can any publication match the experiences students gain from any industrial visits that can be arranged?

Teachers are expected to read through the teachers' notes prior to the lesson and be familiar with the requirements of the worksheets prior to the lesson, for the worksheets to have maximum impact.

I like how in the teachers' note it states how differentiation can be achieved with each worksheet and how every topic links together. There are also extension activities available for each section, which are outlined in the teachers' notes.

In the appendix there are also some extra fact sheets available which I find the most useful. They cover consumer research, preparing for production, manufacturing food and post production. These information sheets give concise information to students, which is excellent for Key Stage 4 students as a revision aid. They are easy to understand and suitable for the majority of Key Stage 4 students. There is a page on post-production which covers sensory analysis and includes sensory tests and star profiles. One needs to make sure students do not think that a star profile is the same as a sensory test – a mistake that is easy for students to make both in coursework and in the mock examinations.

This book is a very useful resource for teachers who are not so familiar with the industrial elements of a food technology course. Teachers can choose sections that they are perhaps less confident with, and prepare themselves to make best use of the worksheets for students. I find it particularly useful with some of my Year 9 students who are starting to understand what happens when foods are mass-produced. The book has given me fresh ideas on how to teach topics in a variety of ways, which will keep me from becoming bored and therefore boring to my students.

The language used in the book is simple. It gives students questions they need to ask themselves, and ensures that the opinions of others are considered, rather than them only being concerned with their own opinions and thoughts.

Overall presentation of the book is excellent. It is simple to use, easy to read and understand. A photocopiable book with a well thought out format enables me to recommend it as one of those books you dip in and out of to support schemes of work that are already in place. Although primarily designed for Key Stage 4, I really do find it is useful for the Year 9 students as a foundation for their GCSE course.

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

Nuffield Design and Technology 11-14 Teacher's File and Students' Book

Reviewed by Alison Hardy, Caistor Yarborough School, Caistor

The file is the second edition of the materials produced by the Nuffield project for the Key Stage 3 National Curriculum. The Teacher's File is an amalgamation of the previous Teacher's Handbook, the Resource Tasks File and the Capability Tasks File. These three are now contained in the one file with a new section that contains case studies.

Teacher's file

Teacher's handbook

A brief introduction to the key features of the resources followed by an explanation of each of the components including the web site details. Strategies for the use of the resource tasks, capability tasks and case studies are given with regards to time, classroom layout, introduction to tasks and reviewing progress are given in the second section of the handbook. Advice for planning a Key Stage 3 curriculum including progression, continuity and student self-assessment is covered.

New to the handbook is a quick look at end of key stage assessment. Disappointingly no techniques or approaches are suggested but rather guidance of how to reach that final level for each individual student. Cross-curricular links, ICT and use of the timetable are also investigated.

Resource tasks

These are photocopiable worksheets that can either be used as stand alone lessons or integrated into projects. The file contains 136 tasks with some for generic design and communication skills and others for the separate areas (e.g. textiles, food and resistant materials). There are also tasks for safety and control. Each resource task gives the time needed, the aim ('what you will learn'), resources needed, relevant pages

Nuffield Design and Technology 11-14

Longman Education: £150 (Teacher's File)
ISBN: 0 582 411149 (Student's Book);
0 582 41116 5 (Teacher's File)

Appropriate content	/////	Generic use	←
Pupil/student use	/////	One of a series	
Teacher resource	/////	Photocopiable	←
Visuals	////	Pupil/student activities	←
Overall style	////	Cross-curricular	←
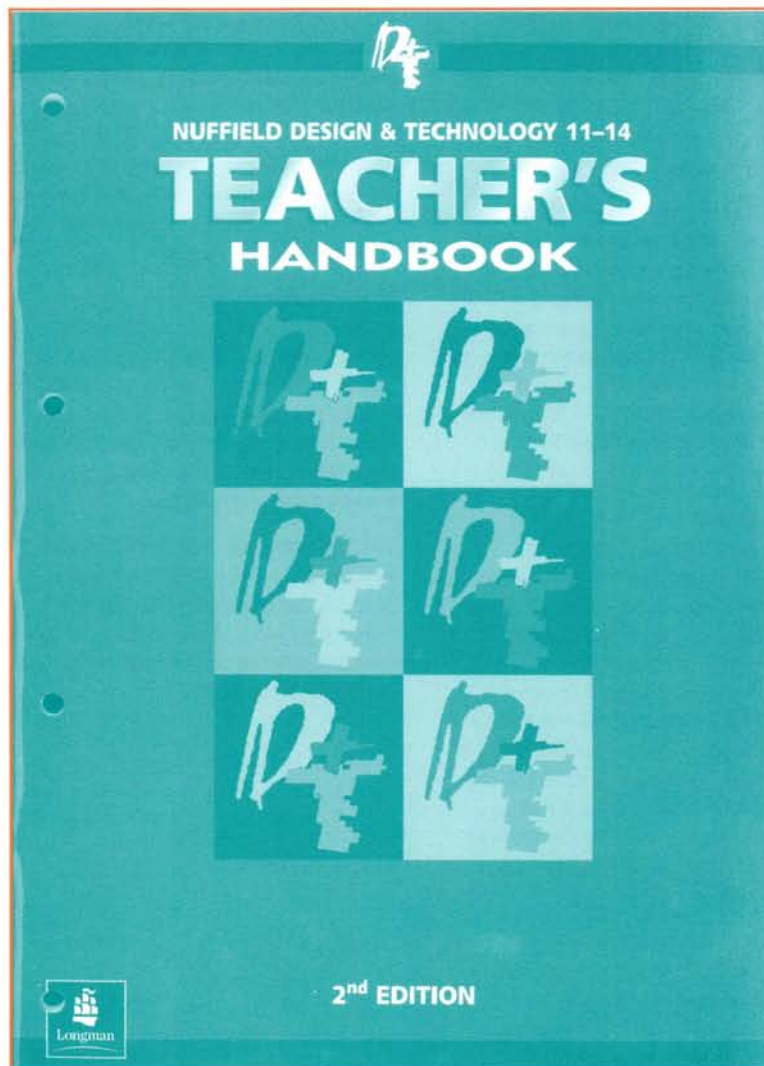
in the student book and what to do. The tasks can be used by students individually or led by the teacher. I have found that some resource tasks can be used without the students' book. The tasks are clearly laid out and are easy to read. Some tasks have homework suggestions. For a few of the tasks more guidance for the teacher would have helped.

Capability tasks

Twenty-six capability tasks are included, each one having four A4 sides with written detail, sketches and photographs as guidance. These tasks give a statement outlining the type of product the students will make in a focus area or material. Some points of learning and values covered are listed. The parts that I found the most useful were the photos of products that students have made with some notes of explanation. They gave me ideas of the range of products that were achievable with this task and were

also springboards of thought. Suggested resource tasks and web sites are also given. A point missing from this edition is that there is no suggested time needed for the whole capability task with an outline for delivery.

Case studies

These go some way to replacing the Nuffield book 'Study Guide' when the first edition was placed. These case studies are photocopiable and make up into A5 booklets. The case studies are true stories about design and technoloy in the real world. They contain 'Pauses for Thought' where students can discuss or make notes about a pertinent point, 'Research' suggestions which may be done as homework and 'Questions' which can be done in discussion or written form. I have found the case studies useful either as starting points for a capability task or as extension activities for some individual students. They may also be used as a reflection

REVIEWS

point at the end of a capability task. There are seven case studies in the file with a further seven available from the web site. The case studies do not all link with a capability task but have a more generic relevance.

At £150 for the Teacher's File I have found it excellent value for money and even if you have the first edition it is worth considering buying this new one. The Nuffield approach has a leaning towards designing and generic skills – an area of general weakness – and this provides a good foundation for planning a comprehensive Key Stage 3 programme.

Students' book

The book starts with two generic chapters about design strategies and communicating design ideas. The first chapter takes students through methods of how to identify needs and likes and then onto how to generate ideas with suggestions for methods of modelling ideas to develop them. I particularly like the last part that suggests different ways of evaluating against a specification technique. Strategies for research is an area that I would have liked to seen covered in more detail.

The second chapter about how to communicate ideas gives very brief methods for presenting and communicating ideas. Although the methods are covered with brevity, there are resource tasks that work alongside these pages. Regularly throughout the book resource tasks are identified at the bottom of the page that link with the topic.

The rest of the book is subject specific, covering:

- designing and making with resistant materials
- designing and making with textiles
- designing and making with food
- being safe in designing and making
- designing and making with mechanisms
- designing and making electric circuits
- designing and making electronic circuits
- computer control
- manufacturing case studies.

Some of the chapters include manufacturing techniques with photographs and drawings. The diagrams are clear and can be used with a wide range of ability of student. Techniques covered are primary ones giving a good resource for students to find information from. If more depth is needed then other resources will be required.

Many chapters have chooser charts. These detail strategies, techniques, components, equipment and so on. They can be used by students independently to select the best approach for their own work. More chooser charts are available from the web site (or will be soon) on materials and processes.

The Nuffield approach to design and technology is quite different to other projects and textbooks and can take some adapting to. It is worth persevering with and does present the subject in a fresh way to students.

Technology in Practice

Reviewed by Chris Snell, Stress and Performance Engineering Analysis Consultant, former Head of Department, Cheltenham Ladies' College

This book provides information found in many textbooks, but continues with a TEP policy of furnishing material extra to the more pedestrian areas provided by other sources. It is aimed at Key Stage 3 and Key Stage 4 pupils undertaking GCSEs in design and technology: resistant materials, systems and control, electronic products and graphic products, as well as GNVQ and vocational courses.

It is divided into four sections:

Section 1: Background information

Each topic (mathematics, maths and formulas, measuring, materials, manufacturing, control, structures, graphics and ergonomics) provides source material often needed for technology. Control, in varying detail, includes sections on:

- designing control systems – control statements; flowcharts; block diagrams; circuit diagrams

- mechanical control – drive systems; levers; cams; crank and slider; screw thread

- electrical control – switches; two-point position control; one-shot control

- electronic control – three-stage control systems (input, process, output); input sensors; process components (bipolar transistor, FET, thyristor); combinatorial systems using more than one input (inputs, process logic gates, buffer [transistor], output); op amps, sequential control systems

- programmable control – bit-by-bit controller; smart card system; the basic stamp computer; The Chip Factory (these topics on
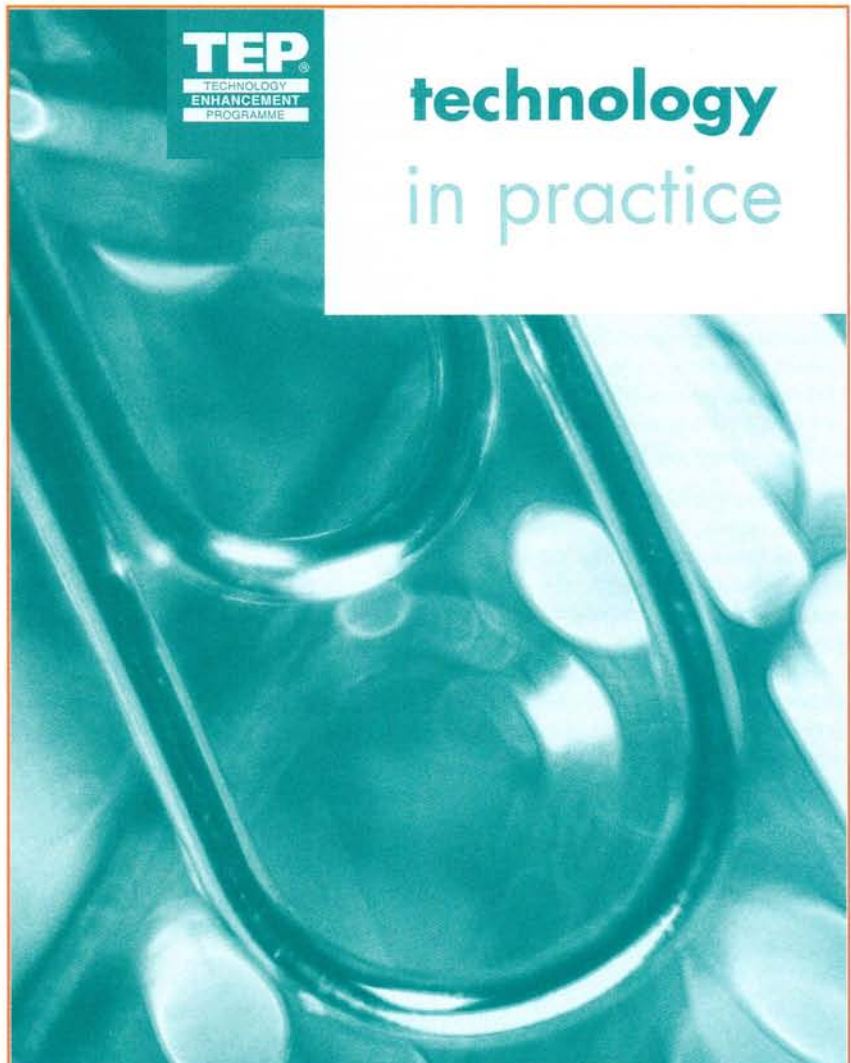
Technology in Practice

John Cave
John Murray Publishers: £10.99
ISBN: 0 7195 7179 0
Orders: 020 7493 4361

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

programmable control provide insight, but do not provide worked examples).

Section 2: Data

An excellent section covering electronic devices, mechanical devices, construction materials, which contains good descriptions and data on common and uncommon components, e.g. Thermochromic film, Shape memory alloy, Air muscles, with examples of design and technology applications.

Section 3: Small miracles of technology

Product analysis – a worthwhile selection of a variety of 19 or 20 everyday items, seen from a fresh and stimulating viewpoint.

Section 4: Projects – inventors' paradise

This section should help to kick-start projects. It covers mechanisms, control, electronics, structures, materials, product design, manufacturing.

This is a book which presents design and technology issues in a structured and systematic way. Topics are dealt with using very clear graphics, especially exploded views – the book itself is an exemplar in graphic design. With provisos, the book should prove a useful source of knowledge, ideas and techniques – particularly at the ideas and prototype design stages of a project.

The text provides a lot of information of the kind found in handbooks. A cursory reading should soon acquaint the reader with an overall feel for the range and character of its content. It enables users to explore choices in the conversion of ideas into functioning hardware.

Some topics contain elements that might confuse, for example, in the maths section the area of a circle sector ratio is expressed in terms of radians.

REVIEWS

The section on structures contains illustrations demonstrating principles of structural behaviour clearly, such as bending and torsion, but some diagrams – relating to loads, fulcrums and reactions – are confusing and misleading. Too many design and technology books fudge the topic of moments, giving it mathematically unsound treatment that leads to misconceptions and confusion at A' Level. Initial comment that 'tension and compression – good forces' and 'bending, torsion and shear – bad forces' (sic) needs to be qualified. Compression, for example, is bad in an Euler strut, bending is good in a fishing rod!

Information on electronic components, in the data section, is so well presented that teachers could refer students, requiring enlightenment, to this section for explanations. In the 'era' of CAD, where good software such as PC Wizard and Crocodile Clips is now common in schools, reference could have been made to the considerable benefits of using such software for PCB design in combination with photo-resist copper board.

Important advice, such as connecting unused inputs on CMOS ICs to either the +V or 0V rail and leaving unused outputs unconnected, might have been added. However, with its user-friendly presentation and wealth of good information this would be one book to hang on to when making future clearouts of old or outdated reference/text books. I would buy it.

The last sentences in the book's Introduction sum up its utility well: 'There is no simple prescription for using *Technology in Practice*. It provides wide-ranging information … to support creative endeavour in an increasingly demanding subject.'

REVIEWS

A Strategy for Differentiation

Reviewed by Mark Hudson, Director of Technology/Deputy Head, Thomas Telford School

This A4 ring bound file is intended for staff training use. It consists of a series of supported activities and handouts to enable a department, or whole staff, to develop a viable and co-ordinated policy and practice on differentiation. It is a cross-curricular book with no specific content for design and technology.

The file takes the trainer through a series of preparation activities and soundly advised strategies for the delivery of an INSET programme. The author clearly understands the audience will also have different learning styles and motivations and takes this into account in his advice and materials.

OHP sheets, but not transparencies, are available and a full set of handouts included to support the trainer. A selection of information, discussions and activities are proposed and sequenced. Key questions are raised and strategies for

developing staff awareness to this issue suggested. Pupils' sheets are also provided as exemplars or for class use.

The materials are well researched and supported by research data and findings. This is presented well and in support of the strategies proposed. A framework for enabling differentiation to develop in teaching emerges. The materials are challenging of practice but not threatening to staff, they do challenge staff to be critical of their own practice and develop a common and co-ordinated approach to meeting the needs of all students.

This book is a valuable asset to any department or school's staff development library. This is a very important issue throughout the curriculum and this book makes significant inroads to enabling us to ask the right questions and seek better solutions. It is a little dry and would rely upon the trainer to inject some zip into its use. At £14.99 this will provide a very reasonable and productive resource for any school seeking to address this issue, see your INSET co-ordinator today!

A Strategy for Differentiation

Geoff Moss
Questions Publishing: £14.99
ISBN: 1 898149 50 X
Orders: 0121 212 0919

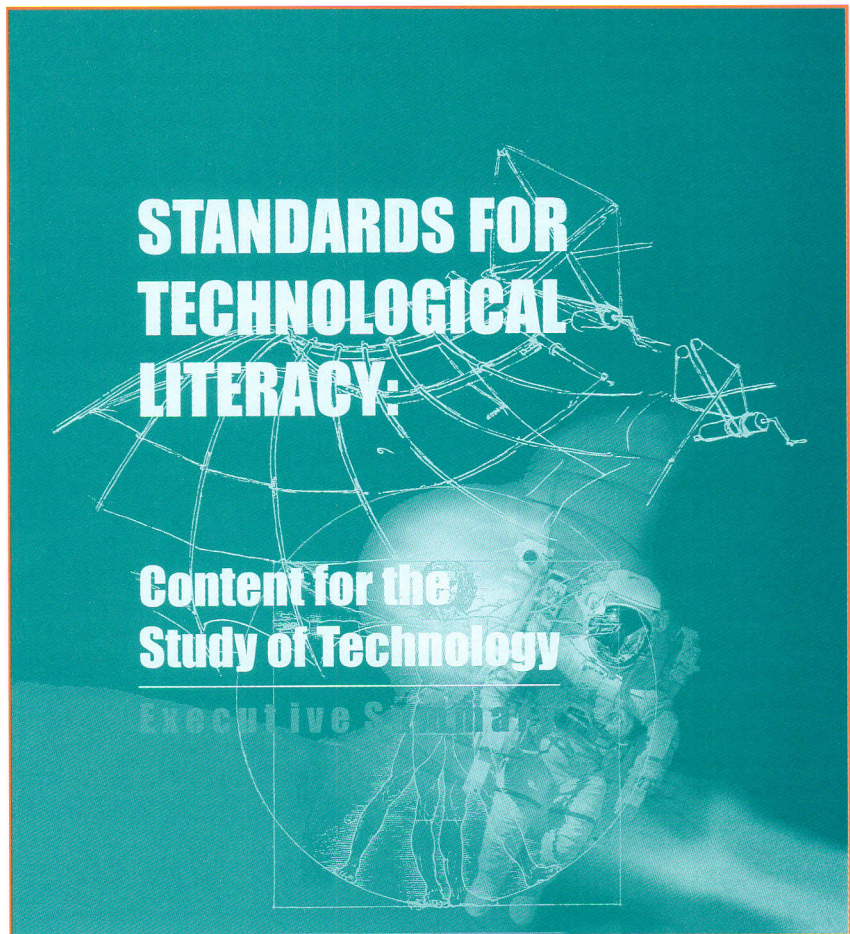| Appropriate content	✓✓✓✓	Generic use	⇐
Pupil/student use	n/a	One of a series	
Teacher resource	✓✓✓✓✓	Photocopiable	⇐
Visuals	n/a	Pupil/student activities	
Overall style	✓✓✓	Cross-curricular	⇐

REVIEWS

Standards for Technological Literacy: Content for the Study of Technology
Reviewed by Eddie Norman, Senior Lecturer, Department of Design and Technology, Loughborough University and Co-Director of IDATER

This 250-page book represents the outcome of a major effort at consensus-building concerning technology education in the US. It has been through six drafts since 1996 and the document has been reviewed by about 1,250 people according to the list in the appendix. Its intention is to act as 'a catalyst for reform, bringing about significant change in the study of technology and resulting in the recognition of technology education as an essential core field of study in schools' (p.vii). I can but admire the scale of the exercise and support the hoped-for outcome.

The US *Technology Content Standards* also have value for technology educators in other countries. Comparative education is a less common area of study than it used to be, yet there is no quicker way of bringing ideas into sharp relief. For example, they begin by making what to my mind is a rather difficult distinction. 'These standards do not attempt to define a curriculum for the study of technology; that is something best left to states and provinces, school districts, and teachers. Instead, as the name implies, the standards describe what the content of technology education should be in grades K–12' (p.vii). For me, the content, alongside the associated teaching, learning and assessment strategies are intertwined in defining a curriculum and are not so easily isolated. One of the tasks I am fortunate enough to have is acting as the Co-Director (with Professor Phil Roberts) of IDATER (International Conference on Design and Technology Educational Research and Curriculum Development). I find myself comparing

Standards for Technological Literacy: Content for the Study of Technology
International Technology Education Association
ISBN: 1 887101 02 0
For further information:
standards@itea-tfaap.org

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

this US position with some of our recent writing:

> There is no doubting that 'good practice' has emerged in schools, but against a backdrop of diversity and, even, confusion over the underpinning rationale. Is 'good practice' in design and technology about equipping young people for the world of work? Is it about developing the ability to manipulate ideas as they are thought to be handled by a designer? Is it about developing the ability to manipulate materials? Is it about experiencing technological problem-solving as addressed by an engineer? Is it about gaining a generic overview of problem-solving processes? Presumably the answer is 'to some extent' all of these, but it is in achieving the appropriate balance between such broad and ambitious objectives that 'good practice' has emerged. (Roberts and Norman, 'Editorial', IDATER2000: 1)

The US *Technology Content Standards* are based around a matrix of 'Benchmark Topics' for four age ranges (Grades K–2, 3–5, 6–8, 9–12) and 20 strands. These strands are divided into five areas: the nature of technology, technology and society, design, abilities for a technological world, and the designed world. Many of the topics mentioned are familiar and read easily: e.g., under 'Technology and Society' one of the strands is 'the effects of technology on the environment', and children in grades K–2 should be taught about the reuse and/or recycling of materials and in grades 9–12 about conservation, reducing resource use, monitoring the environment, aligning natural and technological processes, reducing the negative consequences of technology, and decision-making and trade-offs. Indeed these are matters that could be usefully treated more explicitly in UK practice. But under 'Design' we find that one of the strands is 'Engineering Design' and that in grades K–2 children should be taught about the engineering design process and expressing design ideas to others. The point of mentioning this is that, for me, technology education cannot simply be a reflection of the issues and unresolved concerns of the adult world, but must aspire to have its general educational foundations firmly based on the good

practice that emerges in response to issues in the classroom. I remain to be convinced that the distinctions between engineering design and other (adult and specialist) design areas are a central (or necessary) concern for either kindergarten children or their teachers.

'Designing' is obviously a concept with a range of meanings in the US. Here are some of the passages I highlighted in the 'Design' section. 'Designing in technology differs significantly from designing in art' (p.90). 'Design is the first step in the making of a product or system' (p.91). 'Without a purpose, design is no more than doodling. The design process is a system that converts inputs into outputs, or ideas into completed products and systems' (p.91). 'Over time, the engineering profession has developed well-tested sets of rules and design principles that provide a systematic approach to design' (p.91). 'Design is not a linear, step-by-step process' (p.91). 'The design process consists of a goal or purpose and is bounded by a set of requirements' (p.94). 'All humans have the ability to design and solve problems – it is a fundamental human activity' (p.95). 'The steps of the design process serve as important guideposts to help adept problem-solving students use their intuition and ingenuity to arrive at a variety of solutions' (p.97). After reading this section I remained somewhat unclear about the exact nature of the US view of designing (other than that there exists a plurality of understandings, which may be a proper and accurate reflection of what is the case). I am sometimes equally 'confused' by statements made in the UK: the key, however, is to understand the contexts in which statements are located.

This book represents an enormous effort and I hope it is successful in its objectives of defining the content of technology education and providing 'a road map for individual teachers, schools, school districts and states or provinces that want to develop technological literacy in all students' (p.4). I cannot help but think that there will be more drafts to go as good practice continues to emerge in US classrooms.

DEVELOPING SUBJECT KNOWLEDGE IN DESIGN AND TECHNOLOGY

In October 2001 the Open University introduces a new modular programme for initial teacher training for secondary teaching. Four set books will develop and extend the required subject knowledge for the new National Curriculum in Design and Technology. Although intended for initial students many existing teachers will find these up to the minute texts invaluable updates on the statutory requirements of the subject audits. All include practical and theoretical activities for readers to undertake and questions for them to answer.

DEVELOPING SUBJECT KNOWLEDGE IN ASPECTS OF FOOD TECHNOLOGY: FOOD SCIENCE AND NUTRITION
Gwyneth Owen-Jackson

The contents of this book will include influences on food choice, chemical structure of nutrients; digestion; food and nutrition; diet and health.

June 2001, ISBN 1 85856 245 7, 80 pages, 234mm x 156mm, Price £9.95

DEVELOPING SUBJECT KNOWLEDGE IN ASPECTS OF GENERATING, DEVELOPING AND COMMUNICATING IDEAS
Gwyneth Owen-Jackson

This book has four sections covering: 1. Starting to design 2. Designing 3. Design for manufacture 4. Evaluating designs. These cover: an introduction to design, design briefs, consumer research, product specification and product design, aesthetic and ergonomics, creativity in design, product development and manufacture and issues to do with 'green' design.

March 2001, ISBN 1 85856 244 9, 120 pages, 234mm x 156mm, Price £9.95

DEVELOPING SUBJECT KNOWLEDGE IN ASPECTS OF SYSTEMS AND CONTROL
John Myerson and Gwyneth Owen-Jackson

This book covers aspects of subject knowledge relating to: inputs and outputs in systems; feedback; introduction to circuits; transistors, resistors and capacitors. The main focus is an digital systems, but reference is also made to analogue systems. There is also a focus on electronic and computer-based systems, but reference is also made to pneumatic, hydraulic and mechanical systems.

March 2001, ISBN 1 85856 243 0, 118 pages, 234mm x 156mm, Price £9.95

DEVELOPING SUBJECT KNOWLEDGE IN ASPECTS OF RESISTANT MATERIALS: Structures
John Myerson and Gwyneth Owen-Jackson

This book covers aspects of subject knowledge relating to: structures and materials, shell and frame structures, forces and moments, the effects of loads and stress analysis.

March 2001, ISBN 1 85856 245 7, 72 pages, 234mm x 156mm, Price £9.95

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REVIEWS

Staying on at School, the Hidden Curriculum of Selection
Warwick Papers on Educational Policy No. 9
Reviewed by Melanie Fasciato, Senior Lecturer, The Manchester Metropolitan University

This slender volume of 32 pages is the report of a study funded by the Leverhulme Trust into the reasons why students stay on at school past the minimum leaving age. Teachers and students were interviewed about a number of key areas: the effect of economic arguments on decisions to stay on at school, whether the advice of teachers is reinforcing these, the extent to which low aspiring groups are aspiring higher, how attractive the new 'alternative academic' paths are proving to be across all groups and whether schools are presenting FE as an alternative route.

The research findings are based on a detailed study of a small sample of schools and discussions with senior staff and administrators in secondary schools throughout England. In addition, general issues surrounding staying on at school were explored in conversations with school administrators in the U.S., Australia, South Africa and Latin America.

The report begins by outlining the importance of continuing education. Eggleston comments that as well as being the point of entry to professional training, the prospects for employment, higher earning, professional status and achievement of desired lifestyle are also enhanced through staying on at school. The reverse is true for those who leave at the minimum leaving age. The report is aimed at those who are involved in teaching at whatever level, but will be of greatest significance to teachers at Key Stages 4 and 5 and F.E. lecturers.

Staying on at School, the Hidden Curriculum of Selection
John Eggleston
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The rating grid is not appropriate ti this publication

Appropriate content	Generic use	⇐
Pupil/student use	One of a series	⇐
Teacher resource	Photocopiable	
Visuals	Pupil/student activities	
Overall style	Cross-curricular	⇐
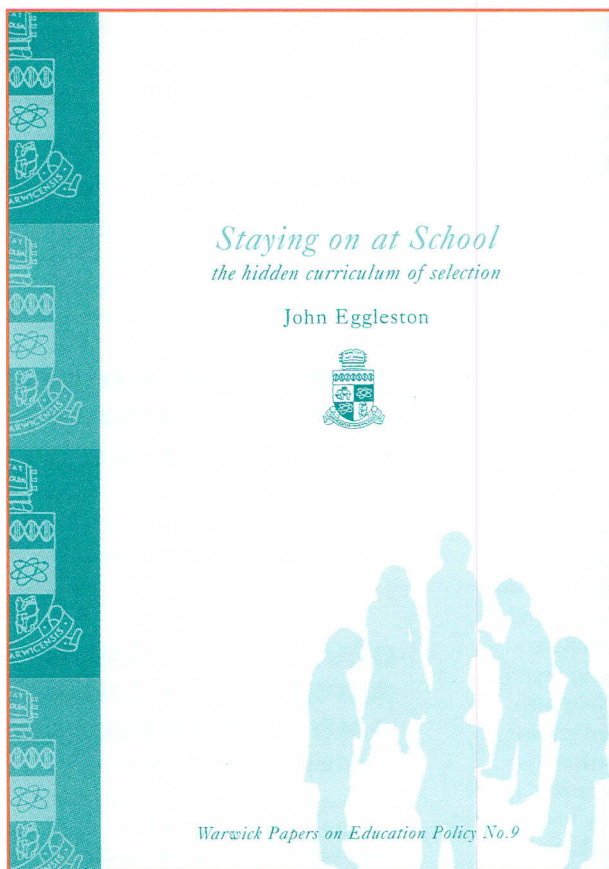
The report considers the two opposing perspectives which have dominated and had a profound effect upon educational provision during the past 50 years. The economist's view is that an educated and skilled labour force will result in greater economic development and an increase in GNP. The social scientist would argue that interventionist strategies are necessary to break the generation to generation transmission of the status quo in terms of class, status and power. Seeking to produce a more economically effective labour force has been and will remain a goal for British governments. There are clear implications here for equality of opportunity across race, class and gender, although the point is made that 'whilst enhanced equality of opportunity is in an unreliable instrument of economic development, economic development is in an equally unreliable means of enhancing social equality'. Eggleston makes the point that there is a paradox in so far as successive governments wish to achieve economic development, but in a largely unchanged social structure. The two are not compatible. Governments wish to manipulate social change and not simply respond to it.

The report indicates that the move to extended education is growing in the major focus of the study, western society. This is supported and encouraged by all governments for reasons of social justice and economic development. Indeed, in many western countries students are supported financially. However, in poor, mainly agrarian societies, the need for the student's financial contribution to the family makes staying on unthinkable.

Recommendations for future practice include: making information about both school and FE alternatives available to students, listening to students' appraisal of staying on, the need for teachers to reconceptualise high status knowledge, not dismissing ambitions that initially appear to be unrealistic, be attuned to career information from a wide range of sources, including the media, not underplaying the satisfaction of study for its own sake, teaching students how to make good use of the money they have to avoid financial hardship. The final point that Eggleston makes is that young people are often idealistic and idealism is not incompatible with well paid, high status careers. Teaching is perhaps an exception.

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