

Harry at the Service Station

This is a resource pack, developed by and available from Esso, which has been written for teachers of 5-7 year old children. It is a topic-based resource developed around the idea of a visit to a service station. It contains pages of background information, worksheets and activity ideas with a stated aim being to 'support English, mathematics, science and technology.' The topics addressed within the resource include 'Energy', 'Buildings and Structures', 'On The Move', 'People and the Community', 'Shops and Shopping' and 'Communication'. A particular feature of the material is the cartoon character Harry the Hydrocarbon who features in a number of the activities and worksheets and in the charts.

The resource comprises one 48-page black and white teachers' booklet, one A2 colour wall chart on how service stations have changed over the years and five A3 colour charts with titles such as 'How does a car wash work?' and 'Why do customers go to service station shops?' all contained in a cardboard folder. The pack also contains a copy of the ASE 'Be Safe' booklet, and various leaflets produced by Esso Public Affairs Department which provide background and historical information about service stations in general and Esso in particular.

It is a pity that a resource, first published in 1996, actually refers to Technology throughout rather than Design and Technology and that National Curriculum references relate to five attainment targets! The material contains the ubiquitous topic web indicating a large number of things which could be done in all subject areas, but there is no indication of how well they relate to individual subject orders, particularly at Key Stage 1 which is the target market for this material.

The booklet contains a wealth of ideas, but does not provide a coherent framework for any of the activities. In attempting to cover such a wide range of ideas, it fails to provide sufficient guidance to the teacher who requires extensive support in an unfamiliar area of the curriculum. It also fails to provide sufficient pupil material for the experienced teacher who wants to make use of some well-produced pupil materials.

For example, the teacher guidance for the Model Vehicle activity talks briefly about differentiation and progression (start with static wheels, then onto moving wheels and finally add electric headlights), then preparation (set one group the task of drawing vehicles while they are at the site and suggest that the others draw a car or van when they are at home), and finally some resources (egg box lids, burger boxes etc). Nowhere is there a discussion of the designing and making skills that this activity will develop. At the bottom of the page there is a pupil activity sheet which consists of a drawing of a possible model together with a list of activities such as 'Draw a picture of a car or lorry' 'Design and make a model of the car or lorry' 'How many wheels has it got?' etc.

Overall, there is a great deal of useful information included, but there is nothing that can be easily used without a considerable amount of work in structuring it into your own teaching programme. Much of the material, in particular but not exclusively, that is produced by Esso Public Affairs is inappropriate for Key Stage 1 use. Whilst the posters and wall charts are well produced it is difficult to see how they would be effectively used in the classroom, particularly the one entitled 'How does a car wash work?'

The resource contains some interesting activities, but there is insufficient reference to the National Curriculum and IDEAs, FPTs and DMAs in those sections that refer to what we call Design and Technology, to make it easily accessible to the busy primary school teacher. It also fails to explain what teaching and learning will take place as a result of engaging in some of these activities. However, as a free resource, it is well worth acquiring for your school as a source of ideas, and it would probably be useful to let your Key Stage 2 colleagues have a glance through it as well.

Reviewed by Richard Ager, Deputy Director, School of Maths, Science and Technology, UCE

Harry at the Service Station

Esso Information Service: Free
Orders: 0181 759 0939

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

Reviewed by Alan Cross, Lecturer in Primary Education, University of Manchester

Motoring Through History: Cross-curricular material for Key Stage 2

Just prior to the introduction of the National Curriculum I visited a primary school which delivered its science and design and technology through history. Teachers and children studied the topic of flight as a historical journey including technical, scientific and even sociological developments.

This pack gives the Key Stage 2 teacher ideas which naturally bring together the science, design and technology and history. While the history of the development of the car and the car industry forms an essential feature of the background provided by the book, it does not feature greatly in the practical activities which focus on science and technology. However considerable historical background is given so that teachers would be able to make more of the historical aspects. Good illustrations of early cars and associated technology contribute to this. A short introduction importantly refers to the sponsorship of leading car manufacturers and the involvement of a number of museums. Further brief general guidance is given about the place of this work in the curriculum and approaches to planning and teaching. This advice is sound and is in line with current practice in primary schools.

Primary teachers and the writers of this pack know how interested children are in transport. The book is well presented and organised into five sections, each of which is related to the car: car parts; car production; on the move; people and the environment; communication. Important areas of science and design and technology are dealt with in the sections, with a sensitive balance between the two. These include, in science: energy, forces, friction, pneumatics, hydraulics, materials, electricity and magnetism; and in design and technology: designing and making skills, materials, components, control, structures, products and applications, quality, safety and technical vocabulary. Some interesting background to the development of cars and the car industry is given prior to the five sections mentioned above. Each section provides an introduction, often with historical references. Activities for Key Stage 2

children follow as well as pages of brief but well written scientific and technical background information. The activities are in the main introduced by a series of appropriate questions. These are well-organised with useful teacher guidance and appropriate open-ended activities to develop science and design and technology. Some advice on the potential time required for these activities would have been useful. The illustrations alongside the activities are disappointing as they are small and provide insufficient detail. The greatest omission is a lack of clear advice to teachers about achieving elements of science attainment target one (experimental and investigative science). Admittedly, the nature of the activities implies that they will involve practical work but as we have learnt in the recent years of the National Curriculum this does not guarantee that science skills are being taught or that purposeful investigations are taking place. Teachers find science investigation challenging and so advice here would be helpful. A grid which includes science one gives guidance on aspects of the National Curriculum which might be covered in all three subjects.

Given the environmental impact of the car and the effect it is likely to have on the environment of children in our primary schools, I felt that the environment could have featured more. The single page devoted to this is one of the least inspiring in the book. Unfortunately, it reinforces the view that the way to reduce the environmental impact of the car is to manufacture car parts from materials which can be recycled rather than to reconsider the way we all use cars. Is this a lightweight look at a heavyweight issue? Perhaps it is too much to expect more of an industry sponsored pack.

This resource represents good value for money. It is worth having in school, particularly where aspects of transport are included in your curriculum plan, and where the you see the sense of linking curriculum subjects through motivating contexts. Teachers will see references to a leading car manufacturer for what they are. One aspect of this pack is that it looks to the future, which must be important for children to achieve a historical perspective. Science

and design and technology themselves are nothing without their history. Children from 7 to 11 years will respond well to these activities and associated teaching if they are implemented carefully.

Motoring Through History: Cross-curricular material for Key Stage 2

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

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Reviewed by Dr Anne Riggs, Head of Science and Technology Dept, University College of St Martin, Lancaster

Source to Sale: a technology education resource

Kerala is a state close to the tip of India which, as the teacher's guide in the resource pack *Source to Sale* suggests, 'provides some interesting issues, uses and applications of technology'. The uses and applications of the technologies are outlined in the teacher's guide and in three different worksheets for Key Stage 2/3 pupils.

One worksheet looks at *Fishing and Boating Technologies* in Kerala and asks pupils to make comparisons with the fishing industry in the UK. Different designs and materials for boat construction are explored and evaluated in the light of how and where the boat is to be used. Different ways of catching fish are also described: the technology which involves passive fishing gear is contrasted with active gears which are typical of trawl fishing in the West. In the worksheet entitled *Kerala's Food Production* pupils are introduced to a variety of indigenous food crops and different means

of processing and cooking food. Again pupils are asked to make comparisons with the UK.

Kerala means 'the land of coconuts' so it is not surprising that the third worksheet describes the many uses of the coconut palm and its fruits. It is evident that the coconut is a very versatile commodity mainly because of the use of different processes to utilise its components. If you have ever wondered about the difference between coconut water, oil and milk, all is explained.

The teacher's guide has suggestions for activities – focused practical and design and make tasks related to the three topics. It also includes two brief stories of fishermen and their families, one living in the UK and one in Kerala. This is a very useful way of placing technology in context, of making comparisons and raising issues.

As mentioned above, the Kerala context is intended to provide unfamiliar uses and applications of technologies and raise interesting issues. The resource provides information about unfamiliar uses and applications of technologies but issues, particularly in the worksheets, are not very evident. I assume one issue is the use of mechanised and intensive fishing and depleted fish stocks, but I could find nothing I could call an issue in the *Food Production* or *the Coconut*. This is regrettable. The authors acknowledge the need to place designing and making in particular contexts which give rise to particular issues, needs and value judgements, but any requirement to do this is not explicit and ideas which might have led to fruitful discussion and analysis are only briefly mentioned. An illustration of this is the information that although Kerala is a 'poor state in a poor country' its people have a better quality of life than anywhere else in India and better than most other low-income countries and indeed, one which is close to the quality of life in the Western World. This has been achieved, we are told, in a very un-Western way and based on very different value systems. It would have been valuable if these value systems and their influence on the technologies which are developed had been explored. Similarly one has to ask: What are the differences between quality of life and standard of living and how are these related to technology?

A technology education resource



Source to Sale

INTERMEDIATE TECHNOLOGY

Presumably from the teacher's notes we should think that the high increase in the literacy rate and effective family planning campaigns are the reasons for quality of life in Kerala. Again opportunities are missed to discuss relevant issues especially given that the pack aims to encourage cross-curricular work. Questions arise when reading the notes, such as: Why is literacy linked with quality of life? Why is the literacy rate for males higher than for females? Why is contraception (biological technologies) acceptable in Kerala?

The teacher's guide is a useful resource which could stimulate interesting work in design and technology, Science (making soap) Geography and Religious Education. It is suggested that the resource be used for Key Stage 2 and Key Stage 3 pupils. Much of the information and ideas presented are fine for Key Stage 2/3 but some are more appropriate for older pupils. I was unsure about the reason for the worksheets and the poster included in the pack. I looked through the pack a number of times to see whether the sheets were photocopiable without finding an answer. The poster raises questions which could be discussed across the curriculum and across age ranges but the link with Kerala is tenuous. Only one question mentions Kerala and if pupils look to the worksheets for answers they will be disappointed. The stated aims for the pack are to provide 'related and appropriate tasks set in purposeful contexts', enable pupils to 'learn from and about other people, draw parallels between cultures and encourage cross-curricular work' and these are achieved. The teacher's guide is a useful resource for any primary or secondary school, although at £12 it is rather expensive. The cost may be seem more realistic, however, if the pack is used across the curriculum.

Source to Sale

Intermediate Technology: £12.00

Orders: 01788 560631

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

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

Into Technology

I have for some time felt that the range and quality of resources made available to teachers of design and technology has never been better. This set of books targeted at Key Stage 2 adds further weight to that view. This review looks at two student books and the teacher's resource to support them.

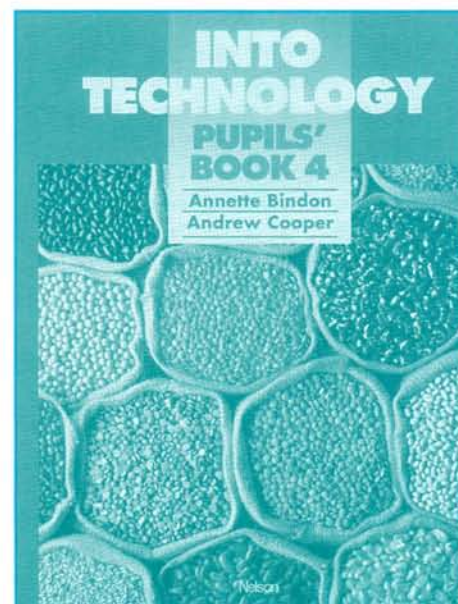
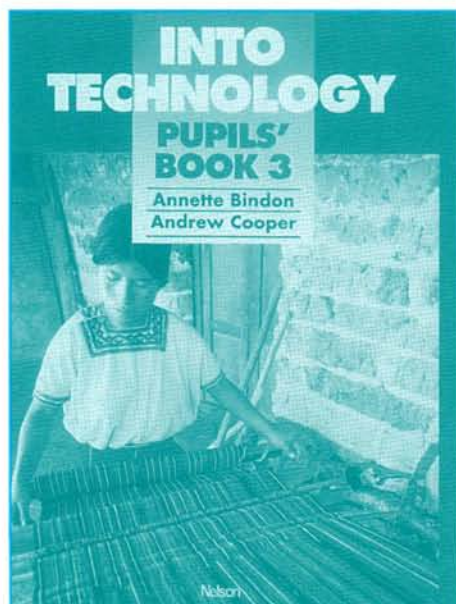
The Teacher's Resource for the new books 3 and 4 in the Into Technology series begins with a short but strong introduction providing a rationale for the subject and a clear and concise explanation of the scheme. The scheme concentrates on the areas of energy and control and materials and structures. It explains the types of activities that the books require and provides a comprehensive and detailed list of supportive resources and contacts. The provision of an audit of the books' contents will provide the busy teacher with a useful menu that should enable the scheme's integration into a broader curriculum plan. The menu cross-references the two books and uses a symbol system to summarise the content and nature of the activity.

Within the Teacher's Resource book the authors have also provided useful guidance on the assessment and recording of children's work. The system is simple and not unnecessarily time consuming and should enable simple administration whilst working with the children. The necessary copy free pro formas are provided.

The activity plans are there to support and provide structure to the activities in the pupils' books. They are simple to follow and contain all the key information on classroom management, content, resources, assessment and making. They also give all important extension activities, referenced and supported through the pupils' books. The children's activities do provide clear progression and would enable a smooth transition to Key Stage 3 activities at secondary school. Indeed I would go so far as to say many Key Stage 3 teachers would be find many of the activities wholly appropriate to their programmes of study and may cause some rethinking on curriculum programmes at that level.

At the back of the Teacher's Resource are photocopiable sheets to support children's learning. They list and illustrate the resources necessary for these focused practical tasks to be completed. Guidance on the use of materials and some suggested applications will also be welcome to child and teacher alike. The artwork is simple and clear, rather cartoon like but it should copy well. A range of structured designing sheets to guide the child are also included as is gridded and isometric sheets. Language use on the children's sheets is appropriate.

The teacher's book concludes with the all important audit of the scheme to the programmes of study. Teachers should find it easy to select and balance their project to provide coverage across the programmes of



study for design and technology and also a range of contexts, all the other National Curriculum subjects and the Environmental Studies Guidelines. Also included are the equivalent materials for the Northern Ireland curriculum. At £22.99 this represents good value.

The children's books are clear in their content and use a range of artwork, both colour and black and white, and use appropriate language. The proposed activities are structured and provide a range of experiences across food and resistant materials. My principal criticism relates to the 'designerliness' of the activities. The audit indicates the books' strengths to be in their design related activities but the scope for the child's design input is in some cases rather limited and in others the making is very prescribed. This may be of benefit in the context of the matching of the cross-

curricular nature of the activities but I would have liked more child led designing and making to be apparent in book 4. I am delighted to see a glossary included in the children's books. The books retail at £5.25 and are reasonably priced for the content and range of activities. Without the teacher's resource book they would be of limited value.

In summary things just got a lot better in the resourcing of Key Stage 2 design and technology. These books offer a broad range of activities from across the subject area and used well will provide a compliment to any design and technology curriculum.

Into Technology Pupils' Book 3

Thomas Nelson: £5.25
ISBN 0 17 423361 2

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

Into Technology Pupils' Book 4

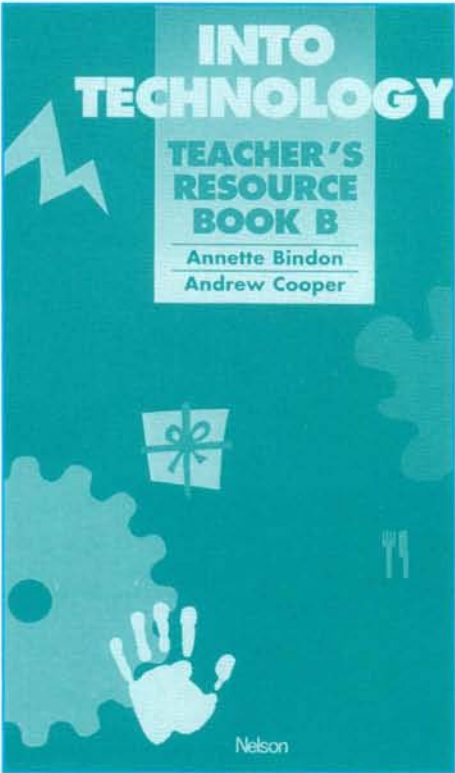
Thomas Nelson: £5.25
ISBN 0 17 423360 4

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

Into Technology Teacher's Resource Book B

Thomas Nelson: £22.99
ISBN 0 17 423364 7
Orders: 01932 262251

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



*Reviewed by Kay
Stables, Goldsmiths
University of London*

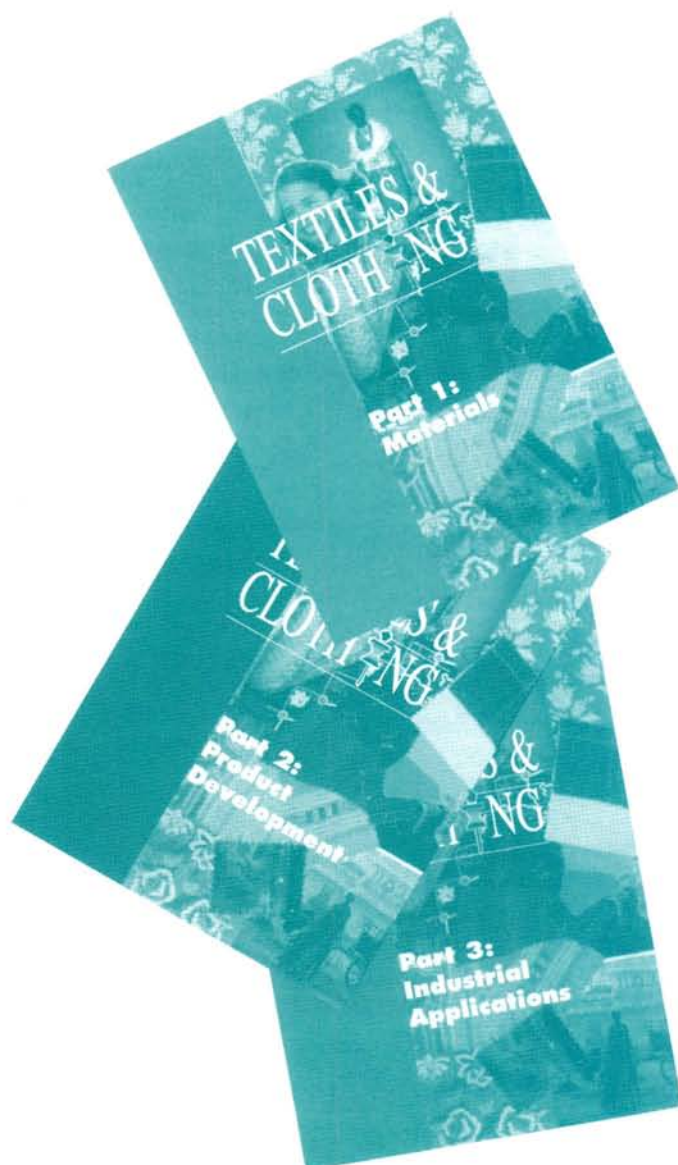
Textiles and Clothing General

This resource is a fairly comprehensive product, aimed at providing a complete range of materials for teaching and learning about textiles and clothing from Key Stage 2 to Key Stage 4. The resource is organised into 3 sections, each provided as a separate entity, packaged through a large ring binder and available to be purchased individually. Progression is developed through the three files, governed both by a logic about learning about this area (starting with materials, moving to product development and finishing with industrial applications) and by the provision of pupil materials aimed in the first section at Key Stage 2, in the second at Key Stage 3 and in the third at Key Stage 4. This approach has certain strengths, such as in the provision of photocopiable pupil material that is age specific but it is also slightly problematic as much of the content is less age specific. For example, much of the content of Part 1: Materials, is equally valid at Key Stages 3, 4 and beyond and while certain of the resources could be used with an older age group, teachers will be left to produce certain pupil materials for themselves, albeit possibly modelled on those provided for younger children.

As a whole, the packs provide a wealth of material. There is guidance for teachers, pupil activities, pupil worksheets, information cards, two videos and a set of posters. The materials have been developed by a large writing team made up of primary and secondary teachers working with industrialists and it is this combination that has produced such a rich array of materials. Looking through it, one finds almost an Aladdin's cave of useful teaching and learning guidance, and were I now in school teaching textiles, I would find many sections immeasurably useful.

The materials have been consciously developed to support National Curriculum design and technology at Key Stages 2, 3 and 4, including addressing the requirement at Key Stage 4 to consider industrial approaches and applications. The guidance also indicates the ways textiles can contribute across the curriculum, especially in primary schools. Having explored and

discussed the materials with students at Goldsmiths training to be design and technology teachers and with teachers working with us in partnership, the reaction of other professionals has been the same – that the resource contains an impressive and useful amount of information and teaching materials. However, because of the vast range provided, and the potential eclectic use by different teachers, the product is crying out for an effective navigation system and this aspect is probably its weakest feature. In these days of modern technology, as we become used to using responsive and speedy systems for finding our way round, for example, the Internet or a CD-ROM, both our expectations and our expertise demand a flexible referencing and indexing system.



The lack of this in the product had me quite frustrated, both in my initial exploration of the resource and in considering ways of using it within my own job of preparing design and technology student teachers to become competent professional practitioners. A number of 'post its' have appeared on the edges of pages, for example from when I finally found the guidance notes on the videos. However, this should not detract from both the wealth and quality of what is provided, the content of which I now turn to.

Each pack provides a general introduction to the whole resource, and a directory of resources and contacts for textiles and clothing. The individual packs then develop their own agenda.

Part 1: Materials

This first pack, targeted at primary schools, includes basic information about textiles materials, including samples of fibres and fabrics, information (including a set of photocards) illustrating the wide range of uses of textiles in modern life, a range of activities spread across the whole curriculum and then more detailed design and technology activities linked to a design and make simulation, aimed at enabling the pupils to apply their new understanding.

Part 2: Product Development

Pack two includes teacher notes and pupil activity guides for a range of topics linked to product development in the textiles and clothing industry. The basic information on fibres and fabrics from pack one is built on to explore the wider application of textiles and to illustrate industrial processes such as dying, printing and finishing. It also deals with fabric and care labelling and clothing manufacture, including the use of modern technologies such as CAD/CAM. The content is supported by an extremely useful video which is broken into short sections on each of the above. For example, it provides a very concise pair of case studies of different approaches to production in industry and an excellent cameo of the development of a garment and fabric concept through the the production of the prototype garment, all enabled through new technologies to be completed in a matter of hours.

Practical activity is developed through a design, make and retail simulation. This is supported by a range of pupil activity sheets, a set of photocards capturing different aspects of the industry and some example design sheets and storyboards, produced in colour on A3 laminated card. The pack finally touches on careers in the industry.

Part 3: Industrial Applications

The final pack is designed specifically to support the particular curriculum demands of Key Stage 4 (and beyond), whether through GCSE, GNVQ, Scottish Standard Grade or GSVQ. The pack has taken the innovative approach of addressing itself not only to teachers, but also to employers, for example by providing an employer's guide to qualifications. Included in the pack are a set of case studies (illustrated by a second video) showing the breadth of the textiles industry, for example by illustrating a company who design and produce air bags, and another who manufacture parachutes, as well as more standard clothing industry illustrations. A whole range of design projects are proposed and supported, and the early work on careers introduced in pack two is developed further, with an excellent guide to work experience – once again aimed at both teachers and employers.

Summary

Finally, at £120 the three files together may seem very expensive and the single file (Part 1) to be bought on its own for a primary school, may seem out of reach for many. However, the amount of valuable teacher's time that can be saved by having this resource to hand would be difficult to quantify in financial terms. Maybe there are ways of primary and secondary partners joining together to buy and share this resource (in itself a great way to foster progressive links between sectors). The industry commitment to this resource is impressive – it was produced by a consortium made up of: The British Apparel and Textile Confederation (BATC); CAPITB Trust; Marks and Spencer plc; the DTI and the DFEE, and published by IBEC Trust - and to a certain extent one must credit that it is born out of a belief in the educational value of working with textiles and clothing both within and beyond the design and

technology curriculum. However, the altruism may end there for it is also in the interests of this industry that pupils develop the knowledge, skills and understanding that will place them in an effective position to play a part in the future development of this important contributor to the UK economy. While the resource has clearly been prepared in a very careful manner, the final thought should be for an educational health warning. Any teacher considering using any part of the resource should ask first and foremost what educational priority is being met, how the development of the whole child is being supported, in what way is the holistic capability of the child being enhanced. Having said this, there is much within to do the job well.

Textiles and Clothing

Writing team coordinated by Janet Jones
IBEC Trust

Part 1: Materials – £30.00

Part 2: Product Development – £50.00

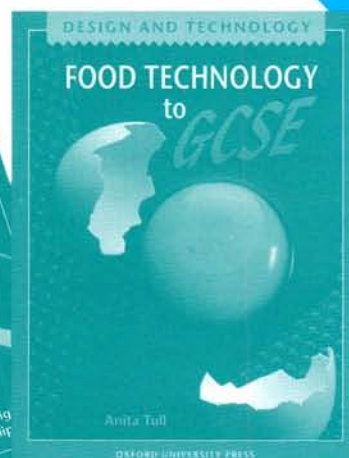
Part 3: Industrial Applications – £40.00

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

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Design & Make it! Food Technology

That 'Design & Make it! Food Technology' has been written by an experienced team of practitioners and examiners is clearly evidenced throughout this book.

The book supports the NEAB GCSE Design and Technology: Food syllabus in particular, but not exclusively. It is being used successfully by teachers following other examination board syllabuses – not surprisingly, since all the GCSE courses are written to exactly the same set of requirements and differ from one another very little. One issue for the syllabus-specific approach might be that it can build a false sense of security, with teachers believing that the book will, in itself, deliver the course. Having said this, the book is a very sound basis from which to teach the course, and most teachers recognise that it would not be wise to rely on one resource in this way. To be fair, the book itself does not pander to this expectation, but it has been marketed as such. Certainly, it will be more valuable as a resource where it is supported by substantial and structured teaching and an extensive range of resources. Used in this way it is an excellent basis for the development of student capability.

A Channel 4 Schools TV programme (not reviewed here) links in with the book and provides a number of opportunities to support the content. Each programme in the series tackles a different material area and is 15 minutes long, so this is perhaps more useful for highlighting snapshots of food design and manufacture, than providing any in-depth treatment.

It is very much a student support book and begins with a useful introductory section about GCSE addressing student expectations and providing a 'How to use this book' section. Students' attention is drawn to 'Key Points' throughout the book which are helpful to revise from when preparing for the examination. Specimen examination questions are included at key points in the book. These present a good range of question types. Teachers should beware of students getting the impression that as long as they can answer the questions in the book, they will be able to tackle the examination also.

The first section in the book is entitled 'Project Guide' and this steers students through a logical approach to project work using the following stages: Choosing and Starting projects; Project investigation; Design specifications; Generating and developing ideas; Planning the making and manufacture; Testing and evaluating; Project presentation. These sections are followed by six units each dealing with different aspects of food technology and a final chapter which considers packaging which is generic to any food project where packaging considerations are a requirement. This section deals very appropriately with the important packaging matters which are relevant within the context of food manufacture and which should not be neglected on any food technology course, without setting an expectation that every food product designed and made must also be packaged by students.

The book is packed full of essential information. Particularly well dealt with are some of the key industrial processes which explain how foods may be combined and

*Reviewed by Ali
Farrell, Independent
Technology
Education Consultant*



treated in particular ways to produce food products with specific qualities. One slight disadvantage is that because such processes are unit specific, and therefore topic specific it would not be easy for students to look up and learn about these processes independently of the examples given. This, then, would be an instance where other resources should come into play.

My major concern with the book's approach would be the emphasis that is placed throughout on designing and making marketable products, as if this were the only context for designing and developing ideas in food technology. Although the introductory chapter advises students that they may not necessarily take all units through to the development of a final product, each unit is presented in a way which focuses consistently on product design and manufacture as if this were inevitable. This tends to encourage students to learn only through designing and making assignments and each assignment then takes on the scale and importance of the final project piece.

I would have preferred to see a broader range of contexts for designing and making across different scales of production, including the industrial and commercial (and certainly for the final coursework piece) but not exclusively. It might have been an idea to have concentrated on presenting focused practical tasks and investigative, disassembly and evaluative activities within each unit so that students were challenged by engaging with the material, with knowledge, skills and understanding promoted in that topic through exploration, then to present suggestions for possible design and make assignments at the end of each unit – with the option to take them up, or not. This approach has the advantage of equipping students for the in-depth piece of product development and manufacture which the final coursework demands, but without taking that as the only approach to developing capability. Some design and make assignments could then be short and snappy, others more extensive.

'Design & Make it! Food Technology' is thoughtfully structured and attractively and

dynamically presented in full colour. The style of presentation is clear and helps the user to absorb manageable nuggets of information and to link related information by means of a good balance of visuals (photos, diagrams, drawings, tables) to text. At £8.99 it is excellent value for money.

Design & Make it! Food Technology

Jill Robinson, Helen Roberts, Elizabeth Barnard, Tristram Shepard
Stanley Thornes: £8.99
ISBN 07487 24729
Orders: 01242 228888

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

Design and Make It! Electronic Products

The "Design and Make It" books – this is apparently the second – are produced in support of the NEAB GCSE syllabus and in conjunction with Channel 4 Schools television. The content of this volume at least is relevant to other boards' syllabi.

The book is attractively presented in colour throughout, with clear diagrams and illustrations. Few of these are superfluous, but the pictures of pupils' heads may unwittingly provide your classes with mild amusement and not just for their politically correct balance, or PCB! Text and graphics are well balanced, showing components clearly and explaining concepts concisely. There is inevitably a great deal of specialist vocabulary and the style of English is directed to the more competent reader. Although soft-backed, the binding is stitched rather than edge-glued, so it should prove durable.

The book is divided usefully into sections identified by coloured markers in the margin. A brief introduction on the use of the book is coupled with a sketchy overview of design and electronics in the "real world". This is followed by a general project guide. I would expect pupils to be familiar with the stages of project planning by the time they come to use this book, but the guide should provide an excellent checklist – and the book would be incomplete without it.

The bulk of the book comprises four specific projects – security devices, timers, alarms and a games-related theme. Each of these takes the pupil from the brief through analysis and research to the evaluation, but concentrates, rightly, on the essential theory. The electronic theory is covered in detail, while associated topics, such as the methods of making suitable casings, receive adequate attention. Throughout each section there are helpful prompt boxes containing suggestions and key points.

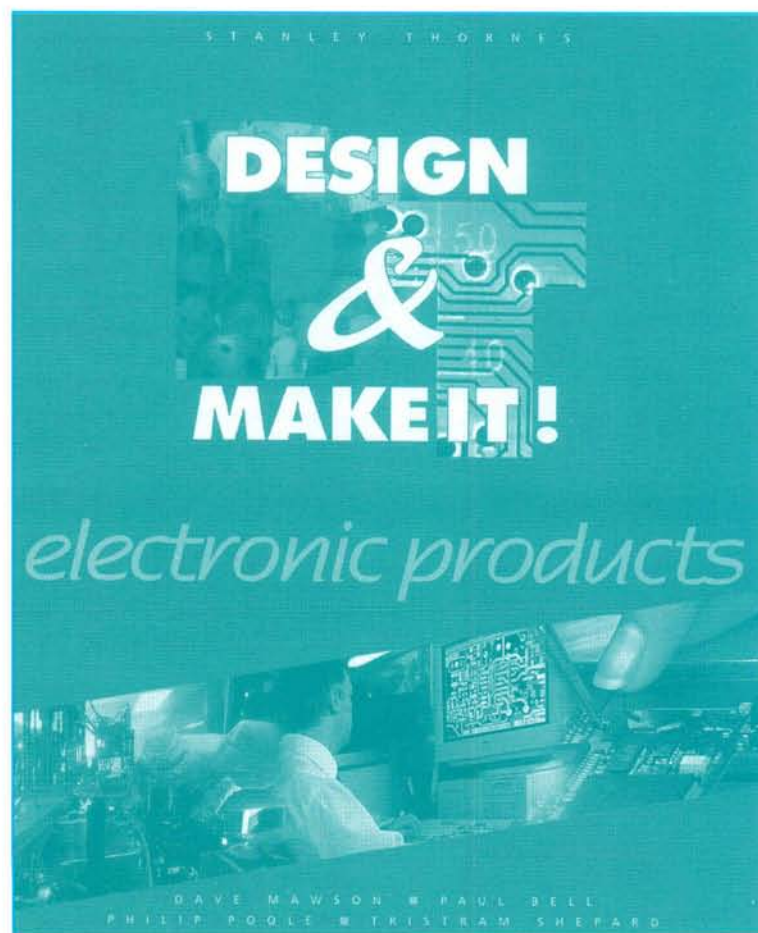
The remainder of the book consists of three sets of examination questions and some further suggestions for projects, namely promotional gifts, jewellery and animal feeders. There is a lot of content here in a book of a mere 144 pages. Less able pupils may find the volume of information

intimidating; certainly the teacher will have to expand upon the often condensed subject matter. To be able to do this, she or he will have to be conversant with the electronics – this is definitely not a book I'd recommend for trying to "keep one page ahead of the class"! To the teacher with the specialist knowledge it will be a valuable resource, especially as it has a sensible combination of factual information and project-related activities.

The projects are sequential; each builds upon the skills developed in previous work. It would be possible to follow the content exactly and this may be an advantage with certain pupils. However, more value would be obtained from the book if it were used as a stimulus and reference work, as the authors themselves make clear in their introduction. Unfortunately it is not photocopiable.

Pupils themselves are likely to enjoy the book. Its style and presentation invite reading and project suggestions are well

*Reviewed by Roman
Gawel, Assistant
teacher, King's
School*



chosen to appeal to both girls and boys. It is arranged in such a way that pupils can find clear directions to guide them through quite intricate work, once their skills and knowledge have been developed. I do feel that improvements could have been made in one area: the "prompts" dealing with various stages in the work. These are scattered throughout the book, occurring at appropriate stages in the projects, and I would welcome a summary checklist to accompany each project.

Would I use it, or recommend it? It would certainly earn its place on the reference shelf in the workshop. Teachers may well find that they could adapt some of the content for use with classes in the lower school, but "Electronic Products" forte would be as a useful class textbook for those departments with an electronics specialism at Key Stage 4.

Design and Make It! Electronic Products

Stanley Thornes: £8.99

Dave Mawson, Paul Bell, Philip Poole,
Tristram Shepard

ISBN: 0 7487 2473 7

Orders: 01242 228 888

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



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Design and Make It! Resistant Materials Technology

I turned first to the two sections on examination questions. These reflect the NEAB syllabus and provide a typical sample of questions that might be found on papers produced by other examining boards, offering a similar GCSE course. They provide useful revision for pupils preparing for the examinations and enable a quick assessment of the book's likely content.

The book is project orientated and provides four major examples:

- 1 Design a distinctive clock for an international chain of hotels
- 2 Design and manufacture a range of jewellery with a wildlife or endangered species theme for a chain of gift shops
- 3 'Once A Tree' chain of shops want to develop their range of traditional toys by a design which will appeal to young children, using sustainable resources in its manufacture
- 4 Design 'flat pack' self-assembly storage items.

The introduction contains important advice to pupils that will well repay the time taken to read it. It is essential that teachers ensure that pupils do this, as it explains the way that the authors intend students to use the book if they wish to derive maximum benefit from it. For example, the 'In Your Project' paragraphs suggest how to apply the content of the page to current work; the 'Key Points' boxes contain paragraphs to revise from when preparing for examinations.

The 'Project Guide' section poses and answers the usual questions raised by pupils and cultivates a holistic outlook on the whole process of project creation and completion. It is well written and thought-provoking. What has been included more than compensates for what might have been omitted. The various stages give realistic examples that pupils can relate to.

Each project is comprehensively treated with the kind of information that a pupil is likely to seek in the natural course of completing the assignment. The authors have anticipated the needs of the students well.

Although the book is project orientated it nonetheless covers the knowledge content of a syllabus in an appealing way.

The book caters for its target audience effectively and will prepare pupils thoroughly for an examination if they absorb the material between the covers. Teachers and students alike should find the book a ready source of worthwhile advice on technique as well as factual content. Teachers should be able to set sections for reading as homework because the prose should pose no problems for the least able and the illustrations, generally, provide clear amplification of the text. In fact, each little

Reviewed by Chris Snell, Head of CDT, Cheltenham Ladies College



coloured drawing is a mini lesson in itself in graphic design.

While flicking through the book I was disconcerted by the amount of space allocated to the jewellery project. On reading the section, however, it proved to be an excellent vehicle for introducing a wide range of technological knowledge, tips and techniques.

One concern that I do have relates to the use of the term '**speed ratio**' (p81) and its formula. The definition of the term '**velocity ratio**' (VR), is accepted universally. Extensions of this definition to '**gear ratio**' (including pulley wheels) are also fairly universally accepted, particularly when applications involving input/output speeds are involved. The velocity ratio for a gear pair is: $\text{Gear Ratio} = (\text{No. of teeth on driveN gear}) / (\text{No. of teeth on driveR gear})$ (VR) (radius, diameter or circumference, instead of teeth, in the case of pulleys)

Adoption of the formula: $\text{Output Speed} = \text{Input Speed} / \text{VR}$ can then be applied without fear of incorrect answers. Departures from rigorous use of these definitions can lead to confusion later in A-level applied mathematics, design and technology, engineering or physics.

At £8.99 it represents value for money and makes a good complement to the excellent Design & Make It! Electronic Products from the same series.

Design and Make It! Resistant Materials Technology

Ted Cosway, Melanie Fasciato, Hilary Felstead, David Macklin
Stanley Thornes: £8.99
ISBN: 0748724702
Orders: 01242 228888

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

Electronic Products: Design Systems Control

How many times does a book arrive just when it is needed? This is one such book. After teaching 'Electronic Products' cold for some time, this book is like a breath of fresh air bringing with it relief and encouragement. It matches the syllabus so well that teachers can rely on the book to guide, and indeed extend them, on this new course. Not that everything is perfect; I am sure a lack of space makes the absence of any comparison between TTL and CMOS understandable. As it is, CMOS is used throughout and the LEDs are driven without series resistors or a word of explanation. A similar concern over space precludes a more detailed index, which is always useful.

However, to make up for the omissions above, which any teacher could fill with ease, the illustrations are excellent, as is the layout of each page. Stanley Thornes have avoided the very cramped appearance of competing books without dumping the detail needed. The attractive layout makes it a pleasure to use and it is obviously based on practical experience in a workshop. The sections dealing with applying, producing and casing the projects will not bring hollow laughs from my workshop colleagues, and even more importantly, pupils can relate easily to the suggestions and follow the methods suggested without a degree in 3D design.

The technical content is spot on for GCSE. New teachers will like the circuit diagrams complete with component values, and older teachers coming up for their next rebore will be able to add the pedantic details they think important. The important thing is that neither style of teaching will prevent the

essential excitement and value of this subject from springing from the pages, and the nitty gritty of the theory is safely contained by its application to real projects.

To sum up, the book is not only good value, but it is the first I have seen that has brought together all the parts of the Electronic Products course. If history is to teach us anything, then the publishers had better start work on car maintenance, child development and technical drawing books, because no successful combination of syllabus, textbooks and teacher competence has been left intact for long. Letuote s hope the Secretary of State makes this one an exception.

Reviewed by Trevor Taylor, Head of Technical Faculty, Wyvern School, Weston-super-Mare

Electronic Products: Design Systems Control

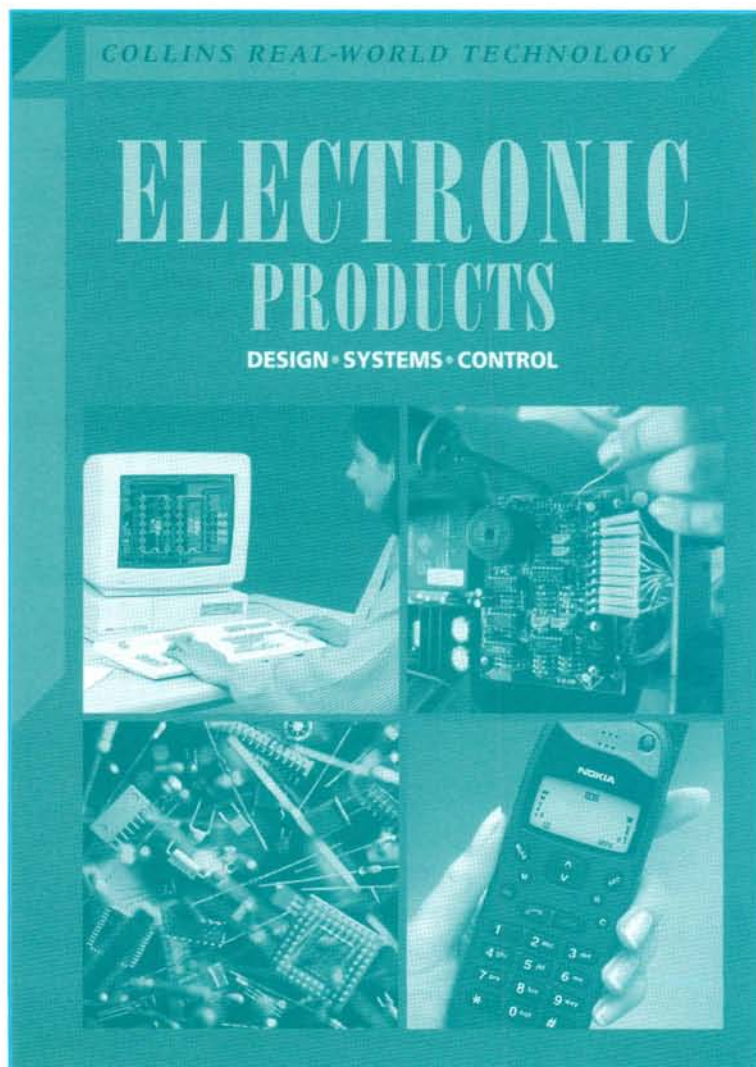
Collins Educational: £10.99

Barry Payne and David Rampley

ISBN: 000300124

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



Reviewed by
Marion Rutland,
Senior Lecturer,
Roehampton Institute
London

GCSE Design and Technology Food Technology

The pupils' book, GCSE Design and Technology Food Technology, was written to support the new GCSE Food Technology examination courses and the content has been divided into sections and units to allow flexibility in the teaching. It is intended that the units enable pupils to develop the level of knowledge and understanding required for the GCSE examination courses and the designing and making skills required for the course. The three sections are:

- *Food Facts*, containing information and knowledge on different types of foods, nutrients, meal planning, food hygiene and preservation, additives, health eating and illnesses and disorders, all familiar areas for food technology specialist teachers.
- *Choosing and Using Food, Tools and Equipment*, looking at the basic processes that pupils need to know about when developing food products. These include measurement and proportions, adapting recipes, cooking methods, mixing, cutting and shaping, using tools safely, equipment and presentation and finishing techniques. Industrial-based case studies are used put the information into context.
- *Product Planning, Preparation and Production*, an important area that deals with the designing and making processes required in food product development. If we accept that food technology is essentially about developing food products, perhaps this aspect should have been dealt with at the beginning of the book and given a central focus. Issues such as sensory analysis, disassembly, packaging, planning work, systems, quality, law and the food industry and risk assessment are included.

Throughout the book there is information on industrial practices in food technology using examples from the food industry. Case studies are used to explain industrial practices in the context of real life examples. For example, the concept of a food related

system is explored and the key issues identified. Each page has a series of activities for the pupils to do to show they understand the concepts covered. The idea is to reinforce the knowledge and encourage the development of ideas and the practice of skills. There is also a dictionary of important terms and every effort has been made to link topic areas through cross referencing. The resource includes a Teacher's Guide in a photocopiable ring binder to provide additional information and guidance for the teacher.

The pupils' book is packed with information, activities and relevant case studies that are invaluable for the food technology teacher and pupils following food technology examinations. Illustrations are clear and colourful. Teachers will be able to dip into the book and find units that they can use with their pupils in their food technology projects. Some of the knowledge may have already been covered in Key Stage 3 as it contains the basis requirements for pupils working on food product development, for example food hygiene and healthy eating, though the depth required for GCSE is included in the book.

This is a useful pupil text book for the food technology teachers. It attempts to include all the relevant food technology areas in an interesting manner. Many of the units can stand on their own as focused tasks and disassemble activities. With careful planning the food technology teacher will be able to use these to develop pupils' knowledge, skills and understanding and integrate the activities into the longer, more open ended designing and making assignments required for the GCSE examinations.

GCSE Design and Technology Food Technology

Celia Barker, Sue Kimmings,
Charmian Phillips
Causeway Press: £8.99
ISBN: 1 873929 62 5
Orders: 01695 576048/577360

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

Assessing Technology: International Trends in Curriculum and Assessment

In the long, drawn out history of school curriculum, technology is still one of the newest subjects and still in its teething problems. The assessment of technology, as this volume eloquently demonstrates, is still almost toothless (the rusting gear wheels on the cover make the point well).

The key problem, as Richard Kimbell points out, is that the assessment of technology requires not just looking at the acquisition of skills and knowledge but at capability in performing a process. Kimbell, a leading figure in this complex task, traces the Herculean efforts that have been made from the early attempts of the Keele project through to the major programme of work for the Assessment of Performance Unit, which he led, right though to the ill-fated attempts to assess design and technology in a National Curriculum. These attempts, developed at a cost of millions of pounds, forced design and technology into a 'straitjacket', alienated teachers, produced unusable results and were quickly abandoned by an uncomprehending government. As the author points out, the catastrophe almost destroyed the subject itself; many of its present problems arise from the distortions and disillusionment generated by the assessment exercise.

Yet Kimbell, as an insider to most of the convolutions of the past 20 years, is able to demonstrate that a viable future for the assessment of the school curriculum is available. He draws upon the major work he led for the APU in which strong and viable strategies were drawn up in a six-year study. A string of publications and Kimbell's tireless efforts brought this information to almost every teacher in the land and to many distant countries. But the formulation of the National Curriculum in design and technology adopted the infamous and rigid TGAT approach to all assessment and Kimbell led APU approaches were seen to be too sophisticated, too expensive and not politically marketable. Kimbell, in one of his most illuminating chapters, 'The Shambles Unravels', maps the U-turns, climb-downs and ultimate abandonment, and also reveals his own frustrations and anger. He follows this with a chapter entitled 'Lessons we

should have learnt'. The most important of these is his insistence that teachers should be allowed to regain the initiative of curriculum development and assessment - lessons that have yet to be learned fully by our new masters.

In the second part of the book Kimbell presents international comparisons from his personal observations in four countries compared with Britain. These are Germany, United States, Taiwan and Australia. Though his chapters sail very close to pure travelogue: 'Erfurt is a very historic city with a university that dates back to 1250' and New York is 'sprawling, international, thrusting', there is real meat here and Kimbell uses his analysis to illustrate British developments in a way that has not been done before. He also shows that previous governments' paranoia about the achievements of other countries is often excessive and frequently ill informed. In all he finds the role of the teacher crucial and indispensable in any real progress and argues consistently for a strong but vastly better informed teacher role in assessment.

This is an important book filled with patient analysis and sensitive findings. Kimbell illustrates his subject from within and shows how teachers too may become insiders rather than occupy the permanent outsider role in assessment in which past and present government policies tend to place them.

Reviewed by John Eggleston

Assessing Technology: International Trends in Curriculum and Assessment

Richard Kimbell

Reviewed by John Eggleston

Open University Press: £16.99

ISBN: 0335197817

Orders: 01280 823388

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

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The **Journal of Design and Technology Education** is the professional journal of the Design and Technology Association. DATA is the recognised professional association which represents all those involved in design and technology education. The journal provides a forum for the exchange of views on design and technology education and welcomes contributions to all sections. Published papers become the copyright of the Design and Technology Association, unless otherwise agreed.

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- Reviews

The research papers published will emphasise the provision of a better understanding of design and technology and the improvement of the quality of design and technology education in schools, colleges and universities. Papers for the research section should usually be between 3,000-5,000 words though in exceptional circumstances papers of a maximum of 8,000 words will be considered. The curriculum development section has a number of sub-sections focusing on particular areas (primary, secondary, initial teacher education, special needs, etc). This section may contain reports of a less formal kind (but still analytical) on aspects of interest to those involved in design and technology. Papers for the curriculum development section should be 1,000-3,000 words long.

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Both the research and curriculum development sections of the journal are refereed and the normal academic criteria will apply. Each submission is read by the section editor and at least two other members of the editorial board, which meets three times a year. Contributors should note that there is likely to be a delay of several weeks between the acknowledgement of receipt of their work and notification of the decision of the editorial board.

Each article must be accompanied by an abstract of 100-150 words, as well as six key words for indexing. The author's name, title, current post and contact details, as well as the section for which the article is intended, should be stated on a separate sheet so that the article is suitable for double-blind reviewing. Please note that the editor-in-chief may, at his discretion, place the article in a different section from that suggested by the author.

Footnotes to the text should be avoided where possible but, if essential, should be placed at the end of the paper. Full references must be supplied for all articles in the following standard forms:

GRONLUND, N. E. and LINN, R. L. (1990). *Measurement and Evaluation in Teaching* (6th edn) New York: Macmillan.

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All contributions should be supplied as word-processed text on disk, in an Apple Mac or IBM-compatible PC format (Microsoft Word), with 2 typescript copies, double spaced, typed on one side of the paper. Pages should be numbered consecutively. Figures, tables and other illustrations should also be supplied on disk. Where typescript copies only can be supplied, tables and figures should be placed on separate sheets and not included within the text. Please include photographs (with captions) where possible. Any illustrations (planning sheets, pupils' work, etc) should be on separate sheets, clearly labelled, and should be as clear as possible to assist reproduction. Typescripts and disks will not normally be returned to contributors unless sufficient postage has been sent.

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