

## The school can

Alcan Aluminium Can  
Recycling: Free  
Orders: 0800  
2620456

*Reviewed by J  
Crockett*

## The school can

A new pack was launched in September aimed at the recovery and recycling of aluminium cans. The set of booklets is free to teachers and can be obtained by phoning Alcan on 0800 2620456.

The idea that cans should be recycled is laudable and necessary, yet judging by litter, the idea is not taken seriously by many children. Any secondary school playground after break is testament to the throw-away attitudes of older pupils, so the impressionable junior school pupils are an ideal target group for these materials.

Pupils of secondary age could benefit from a modified pack to use in, perhaps, environmental studies or social education.

The materials, designed for Key Stages 1 and 2, are presented in a double, A4 card folder, which is aluminium coloured. One pocket contains the explanatory teacher booklet, an A2 poster, copiable award certificates for being a 'Friend of the Environment', and an open invitation to visit recycling centres. The other pocket contains the pupil sheets usually double sided A4 and black and white. Of the five sections, only the curriculum suggestion sheets are single sided with coloured borders. All the worksheets are durable card and, if laminated, would stand use well.

The teachers' booklet gives case studies of schools which have funded pet projects and raised money for themselves in the process; £60 in four weeks to help replace a computer, £300 in 18 months to fund an astronomy class, and £400 for the RNLI amongst others. Some staggering statistics show how one school collected 100,000 cans in two years.

The pocket containing the pupil sheets is in five sections – a topic web; the story of aluminium including properties and uses and the history of the can; curriculum suggestion sheets; children's activity sheets; and some further activities. It is suggested that the areas that could use a cross curriculum approach are science, maths, English, design and technology, geography, IT, history and art.

The curriculum suggestions are wide ranging and include science investigations on electrical conductivity, magnetism and fair tests; maths on data-handling, volume and weight; English on speaking and listening, writing, reading, and drama; design and technology on ten possible tasks; geography on mapping, the weather, and recycling; IT on taping, videos, computing, and the Internet; history on relevant research; and art is extended to design activities.

There are 13 individual activity sheets; all black and white and suitable for copying. Teachers will not have to make out their own sheets for any of the science or maths activities. There is a crossword, a word search, and some extension activities in each area.

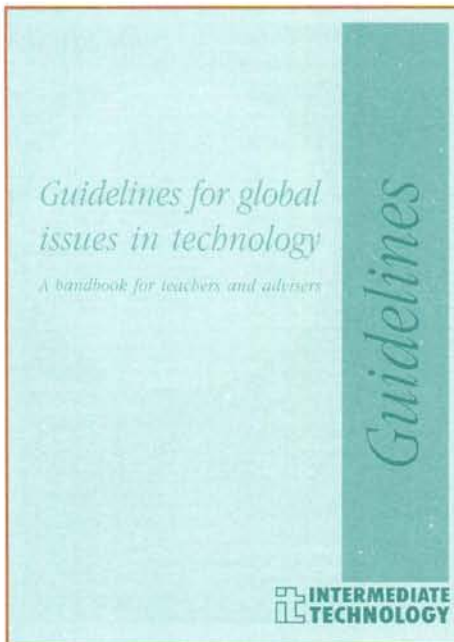
Both the maths and science investigations are straightforward, using simple equipment, and most older pupils will be able to follow the sheets. Some background skills are assumed, for example, chart making, understanding of fair testing, temperature and its measurement, and simple circuitry. As ever, the design and technology design sheet is lacking in space to do design work and some difficult concepts are assumed – 'draw a detailed labelled plan – of a can crusher'. I can't imagine that this design activity will result in making an actual can crusher.

The project may take some days if fully used. I can visualise a good wall display being possible using the poster, the coloured-in certificate of the dragon logo, and some of the colour photographs. A money thermometer or 'canometer' may be a nice supplement.

Overall, this is a commendable attempt to do some good for the environment, and perhaps to help pupils' attitudes to their surroundings.

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

**Guidelines for global issues in technology**



The main aim of this handbook is to highlight opportunities for teachers to incorporate global issues into their work and thus develop their pupils' global awareness. Specifically it aims to challenge common racial and ethnocentric stereotypes.

The handbook is divided into two sections. The first sets a context for the issues considered in the second. Following an introductory chapter, Chapter 2 defines common terms such as development, sustainability and appropriate technology. More importantly, perhaps, it reverses the distinctions implied by First/Third World to opt for the more accurate Majority/Minority World, the former being the areas that contain most of the world's population.

Chapter 3 challenges common assumptions such as "Good development means becoming like 'us'" and "They're not as clever as we are". This is followed by a chapter on positive images which illustrates some of pupils' common misconceptions about the world. The section ends with chapters on values and needs and wants.

The second section of the handbook examines the issues of sustainability and the environment, appropriate technology, technology transfer, indigenous knowledge,

women and technology, prejudice and racism, and debt, aid and trade. Each of these terms is defined and then explained.

The handbook case studies from around the world illustrate points being made. These are backed up by tables, photographs and cartoons which add to the attractiveness of the publication. Teachers will also be particularly interested in the resources (and the key stages for which they are appropriate) listed at the end of each chapter. These are supplemented by a full resource list and a list of useful addresses at the end of the book.

As a member of an ethnic minority I read this book with a great deal of interest and was particularly impressed by the range and variety of case studies. Although at times I was left wanting to know more – and after all to challenge perceptions which have been around for hundreds of years in only 32 pages is a mammoth undertaking – I think the handbook provides a useful starting point for those interested in tackling global and racial/ethnocentric issues.

*Reviewed by the Education and Training Team, Design Council*

The profundity of global issues has long made difficult work for the class teacher. The scale of the picture is so huge that educating pupils in the broad sweep let alone subtleties of global issues has seemed until now a herculean task.

Intermediate Technology has addressed this problem by producing a slim, succinct 'handbook' for the class teacher. It tackles the largest concepts with refreshing ease. Have you really understood how little of the world's surface we occupy? Well, a systematic slicing of your lunch apple will bring home to all pupils just how tiny our zone is.

**Guidelines for global issues in technology A handbook for teachers and advisers**  
Intermediate Technology: £5.20  
Orders: 01788 560631

*Reviewed by Sharon Hurley*



Take an apple:  
this represents the world.  
Cut it into four quarters, vertically.  
Put three aside – they represent the  
earth's surface covered by water. Slice  
the remaining quarter into eight slivers,  
and discard seven – these represent  
mountains, deserts etc. where agriculture  
is not possible. Peel the remaining  
sliver – that peel represents the  
earth's surface on which we  
depend for food, and  
for survival.

The 'handbook' has case studies and  
practical ideas which provide many useful  
and accessible ways into significant and  
difficult topics. It is a signpost to other  
resources in the field which is bound to be  
an invaluable tool for all teachers and  
educationalists looking for ways of adding a  
global dimension to their work.



## Design and Technology in Demand

### Design and Technology can be studied through the following routes:

- BA (Hons) Design and Technology
- BEd (Hons) Primary School Teaching
- BA (Hons) QTS Secondary School Teaching
- BEd (Hons) Secondary School Teaching (for mature students)
- PGCE Primary/Secondary School Teaching
- Continuing Professional Development programmes for practising teachers including MA Design and Technology

Students studying Design and Technology as part of a one or two year secondary ITT programme may be eligible for a bursary from the University of Wolverhampton, as an incentive to train in those areas where the demand for teachers is greatest.

Tel: 01902 323532. Fax: 01902 323540. Email: [in4822@mail.wlv.ac.uk](mailto:in4822@mail.wlv.ac.uk)

Admissions Office, University of Wolverhampton, Gorway Road, Walsall, West Midlands WS1 3BD.

URL: <http://www.wlv.ac.uk/sed/cdate/cdatep01.htm>

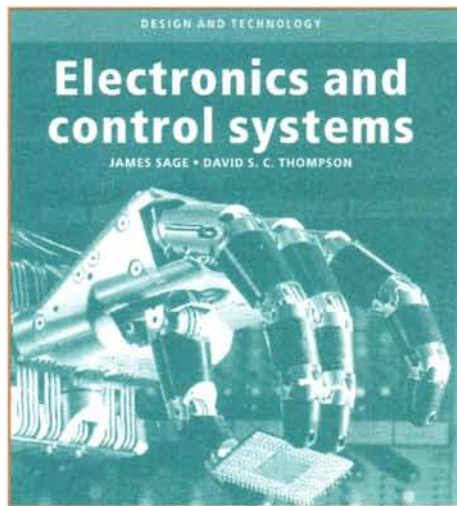
Our web site contains details of Open Days, CDATE News, Staff Profiles, and details of Student Projects in addition to information on our awards.

*The University provides higher education services to all sections of the community and is committed to equality of opportunity.*



INVESTOR IN PEOPLE

## STEP Design and Technology: Electronics and control systems



### Content

I warmed to this book straight away. It ranges over 14 section headings, dealing at the start with a carefully thought out treatment of 'Systems', with appropriate definitions, through to a short glossary and index at the end, in the space of 116 pages.

The book deals with concepts, circuits, contexts, product development, components and basic formulae such as space and mark time for 555 astables and gain equations for op-amps. The chapters/sections dealing with these topics are:

'The Erne Hydroelectric Development', focusing on a detailed look at such issues as energy cost comparisons; counting salmon passing through, to the sequence of operations for gates controlling the access of fish through the various fish-pass tanks.

'Electronic control systems'; 'Computer control systems'; 'Signal conversion' are sections that deal mainly with concepts making use of block diagrams, flow diagrams, computer coding (at an elementary level) and systems kit modelling, e.g. Alpha. Analogue-to-Digital Conversion (ADC) and DAC are encountered in the signal section in simple detail.

'Electronics and healthcare' gives a very comprehensive treatment to patient monitoring. It deals with the circuits and

components required for temperature measurement; pulse rate metering; ultrasonic transmission and reception and analogue digital signal transmission using fibre optics. 'Electronics for people with visual impairment' deals with infrared transmission and reception – a popular project theme with many pupils – and provides examples of three different pairs of circuits and their components. 'Contexts for control' offers a wide range of different areas for pupils to consider and apply themselves to.

'Product development' is a short and crisp section which does not labour the point with the usual flush of design-loop diagrams that seem to saturate sections involved with production, planning and procurement in many design and technology books. This is followed by chapters on:

'Analysing and developing control systems' – a short account dealing with broad headings; 'Making and testing electronic products' – PCB production, soldering, correct power supply selection, fault finding, testing etc.; 'Basic electronics' – Ohm's Law, potential dividers, through to a general treatment of the function of various input and output devices, servo motor drive circuit, 555 motor speed controller; 'Integrated circuits' – 555 monostable and astable set ups, with typical R and C component values; various op-amp configurations: comparator, inverting amplifier, Schmitt trigger, square wave oscillator etc. Logic gate symbols and truth tables are included in this section.

### Effectiveness/catering for target audience

The book should prove to be a worthwhile source of information to pupils following GCSEs of this genre.

### Value to the user

For teachers, the book provides a systematic treatment that they should find complements considerably any syllabus on control. For pupils the material satisfies without saturating the mind with – to them – unnecessary explanations.

## STEP Design and Technology:

## Electronics and control systems

James Sage and  
David S C Thompson  
Cambridge University  
Press: £7.50  
ISBN 0 521 49961 5  
Orders: 01223  
312393

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

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



#### **Capacity to support pupils/teachers**

This is a book one can give a pupil to read as well as consult. The 'Tasks' found at the end of each section are – I would think – interesting to pupils and should prove suitable for the less able, at one end of the ability range, to stimulating the curiosity of those able to achieve starred A performances at the other end of the range.

#### **Strengths and weaknesses**

The book achieves its ends without being burdened with excessive rhetoric. The text allows the reader to follow an explanation without the thread of concentration being broken by theory inappropriately placed. Pupils might be frustrated by a lack of satisfactory explanation concerning the use and function of capacitors in different circuits. Also there is really very little in the way of circuit examples in which extensive use of IC Logic gates is made. However other text books could be consulted for suitable applications; no one book ever treats all topics exhaustively, unless it is much larger and consequently more expensive.

#### **Readability, presentation and cost**

It is 'comfortable' to read; the ideas flow easily. It is refreshing to pick up a Key Stage 4 book which can stimulate interest without resorting to clip-art gimmickry. At £7.50 it compares favourably in price to books treating other topics in technology. It should prove valuable as a set of class text books rather than just a single reference copy on the departmental bookshelf.

### The Meat in Your Sandwich

*The Meat in Your Sandwich* produced by The Meat and Livestock Commission, is a resource pack designed to support food technology specialists, who are now preparing to deliver the Design and Technology: Food Technology syllabuses recently published by the examination boards. In addition, the pack is also targeted for use with GNVQ Manufacturing (intermediate).

The pack comprises

- a 15 minute video
- for GNVQ Manufacturing (intermediate), four-page Teacher Notes and a 20-page Student Assignment Booklet.
- for Key Stages 3 and 4, Teacher Notes and seven student information and activity cards.

The materials are both concise and clearly presented and a sandwich is a product with which all students are familiar. It offers the

opportunity to compare a manufactured product with one that is easily and quickly prepared by students.

For Key Stage 3 and 4 use, the project may be used flexibly to suit your pupils' needs and some degree of differentiation is offered. The pack supports work in the following areas:

- market research
- consumer preferences
- sensory analysis
- healthy eating nutritional requirements
- interaction of ingredients and recipe development
- quality and hygiene controls.

Questionnaires for Key Stages 3 and 4 are provided for use with the video. This pack

### The Meat in Your Sandwich

Meat and Livestock Commission: Free to Schools  
Orders: 01908 677577

*Reviewed by  
Christine Twistleton*





would be ideal to provide pupils with a trial run through the process of designing a food product before they progress to a more complex product. It also offers opportunities for teachers to develop their own choice of development work alongside this project, such as costing and packaging. The pack itself does not focus on these issues.

For GNVQ purposes, course elements addressed are stated and include core skills. The video and materials provide assignment work on:

- working with a design specification
- production plan
- process operations
- quality, safety and the environment
- drawing and graphic design
- materials and their preparation for use
- the world of manufacturing.

The curriculum links and topics covered are clearly identified in the pack for both applications in England and Scotland.

The video clearly demonstrates the whole process from the delivery of the raw ingredients through to the safe distribution and retailing of the sandwiches. It is well produced and provides a relevant overview into the food product manufacturing process.

In my opinion, this pack provides a sound framework for the delivery of various syllabus areas. The student activity ideas are well structured and would be useful to most teachers. There is scope for adaptation to meet particular needs and it would be possible to combine and be selective with the activity ideas. I would be very happy to make use of these materials. Videos concerning food production are a very welcome resource, since factory visits with students are very difficult to obtain.

It should be noted that whilst this pack provides a very useful video, curriculum structure and outline student materials, teachers will need to supplement the content knowledge in order to deliver the appropriate teaching and background information for pupils to use as they work on the tasks. Teachers would need to provide background notes on topics such as quality assurance and control, safety and hygiene issues and manufacturing theory. Therefore, this resource needs to be valued for its activity ideas, clarity of structure and video support, rather than content detail in subject knowledge.

This pack is free to schools and represents a helpful curriculum resource for food technology teaching.

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

### Nuffield Design and Technology 14-16 resources

Following hard on the heels of the Nuffield Key Stage 3 project for Design and Technology come the 14-16 resources. At the time of review the *Product Design*, *Food Technology* and *Textiles* books have been published, with *Graphics* to follow. Over one third of secondary departments in England and Wales have successfully integrated Nuffield materials into the Key Stage 3 programme of learning – they will not be disappointed with the adaptability of the Key Stage 4 materials. The project has continued to place a strong emphasis on values, whilst adopting the more industrial focus demanded by the new GCSE and GNVQ courses.

One major strength of the project is its coherent approach to generic issues and the commonality of style to be found throughout each text. This might be considered to be particularly important by departmental team leaders at a time when there is a danger that Key Stage 4 study in focus areas could be divisive. Building on from the now familiar approach of resource and capability tasks, the materials come in three separate publications – Teacher's Guide, Resource Tasks and Student Book – each capable of being free standing, but more usefully used in conjunction to build the learning programme.

### Teacher's Guides – Product Design, Food Technology and Textiles

The teacher's guide is divided into two sections. The first section provides guidance on how to use the teacher's guide, resource tasks and student book to meet the requirements of the 1995 Statutory Order, together with an explanation of how the learning activities have been framed into resource tasks, case studies and capability tasks. This is followed by several chapters giving details of how to use the publications. Chapter 6 of each guide deals with the thorny issue of assessment in a most helpful manner and one which could provide a focus for departmental discussion and professional development. A summary of the requirements of the different examination boards follows, indicating those syllabuses that are supported by Nuffield materials. One addition, which the project might consider to be a useful appendix in the future, is a more detailed reference to the way in which the materials might support the GNVQ specifications for Manufacturing and Engineering at foundation and intermediate level. At the end of the first section there is a useful table of resource tasks, summarising each activity for quick reference.

Section two of the teacher's guide contains a series of capability tasks. These are initially presented as a summary table at the beginning outlining the line of interest, task title, nature of the project, useful resource

### Nuffield Design and Technology 14-16 resources

Addison Wesley Longman (see below for details)  
Orders: 01279 623928

*Selly Park Technology College is a Nuffield Regional INSET centre which has actively used the project materials to develop the design and technology curriculum. In this review colleagues have put together their views after just six weeks of using the Key Stage 4 materials to support GCSE and GNVQ courses.*





Product Design  
Teacher's Guide

|                     |      |
|---------------------|------|
| Appropriate content | //// |
| Pupil/student use   |      |
| Teacher resource    | //// |
| Visuals             | //// |
| Overall style       | //// |

|                          |   |
|--------------------------|---|
| Generic use              | ⇐ |
| One of a series          | ⇐ |
| Photocopiable            | ⇐ |
| Pupil/student activities | ⇐ |
| Cross-curricular         | ⇐ |

Food Technology  
Teacher's Guide

|                     |      |
|---------------------|------|
| Appropriate content | //// |
| Pupil/student use   |      |
| Teacher resource    | //// |
| Visuals             | //// |
| Overall style       | //// |

|                          |   |
|--------------------------|---|
| Generic use              | ⇐ |
| One of a series          | ⇐ |
| Photocopiable            | ⇐ |
| Pupil/student activities | ⇐ |
| Cross-curricular         | ⇐ |

## Textiles Teacher's Guide

|                     |      |
|---------------------|------|
| Appropriate content | //// |
| Pupil/student use   |      |
| Teacher resource    | //// |
| Visuals             | //// |
| Overall style       | //// |

|                          |   |
|--------------------------|---|
| Generic use              | ⇐ |
| One of a series          | ⇐ |
| Photocopiable            | ⇐ |
| Pupil/student activities | ⇐ |
| Cross-curricular         | ⇐ |

tasks, useful case studies and other useful references for each of the dozen or so capability tasks. Each task then follows the same format, providing guidance as to the aims, values, nature of the product, technical knowledge and understanding needed, specialist tools, equipment and materials needed and relevant cross-curricular links. The tasks are set within a context with a clear design brief and specification. One might argue that the whole is very prescriptive, but for those teachers who have acutely felt the lack of coherence and direction at Key Stage 4, such prescription will no doubt be welcomed. For those who wish to take a more individual or customised approach, the framework could well be taken and used to develop new tasks. Each capability task is a photocopiable master, although a blank master is not included.

Taken as a guide, the advice on planning and assessment contained within each focus area book is both sound and eminently usable, if one takes the time and effort to really get to grips with the material. Those with experience will be all too aware that building a two year GCSE learning programme is no quick and easy task, but the Nuffield teacher's guides have certainly taken the heavy graft out of such work. By the same token, for those with little experience of GCSE planning, the guides provide rigorous and reliable information to help the novice.

## Resource Task Books

The format of each resource task book is the same; each contains valuable photocopiable masters. The learning objectives are listed, references are made to the students book for information to support the activity, timings for each activity are given, as well as a list of materials and equipment required. The resource tasks also identify links with other subjects and state the type of task it is, i.e. recap, extension or new. Accompanying each resource task is an extension or homework activity. Each resource sheet is complete with detailed written instructions, clearly labelled diagrams and stimuli for the activity. The common approach enables students to become familiar and proficient with the resource task material.

Through recapitulation resource tasks, students have the opportunity to reinforce and recap knowledge and understanding gained from earlier activities in Key Stage 3. Extension resource tasks build on previous experiences and stretch students to adopt a more advanced approach. The book also contains many resource tasks that will be new to students, providing an active, informative and varied way of delivering and supporting Key Stage 4 design and technology.

The *Product Design* book has nine sections, seven of which are developments of categories from the Key Stage 3 book. The two new categories, 'Manufacturing' and 'Lines of interest', are both extremely useful, particularly with the change of emphasis in GCSE courses.

Two sections are particularly worthy of note within the *Food Technology* book, namely those relating to designing food products and food chemistry. 'Designing food products' is particularly novel in approach and should help students (and teachers) understand how several features of a food product need to be developed both separately and in relation to each other. The aspects included for design consideration are: nutrition; flavour and aroma; colour; texture; finish; shelf-life; cost. The detailed emphasis on each aspect of design clearly dispels the myth that designing food products is a quick and simple task and should cause all food technology teachers to question being able to develop a new food product in any less time than in other focus area!

The 'Food chemistry' section will be a joy to all those who take pleasure in the study of food as a complex and fascinating material. Whilst simple in approach, the chemistry covered includes food tests, making things set, looking at foams and looking at emulsions. One note of caution, however, is that some of the activities should take place in laboratory conditions and not in a food preparation room!

The *Textiles* resource task book provides a valuable resource at a time when there seems to be quite a shortage of texts to



support this focus area. As with the other focus area books, knowledge and understanding pertinent to the material is dealt with in detail. In the case of the textiles resource book this includes investigating the structure and properties of fabrics, before considering how these might be applied when designing a new product, as well as a keenly focused consideration of how fabric construction influences the use of textiles in product design. The lines of interest dealt with towards the back of the book visit familiar topics in a new way and introduce some new topics in a familiar Nuffield way. They include fashion accessories, bags and carriers, interiors, kites, protection, street style, tents and theatre, themes which are picked up again in the student book.

### Student Books

The student books are complete textbooks to provide support for all aspects of GCSE courses. The books are divided into 12 sections, with the first chapter, entitled 'Doing Nuffield D&T', setting the scene for future work. This introduces students to the Nuffield approach to design and technology through resource tasks, capability tasks and case studies and establishes links with other subjects, encouraging students to bring experiences from other areas into their designing and making. The books contain a brief chapter on examination questions, to familiarise students with typical GCSE examination questions.

The *Product Design Student Book* contains an extensive selection of case studies, some being general and some focused. These are most useful in that they provide an insight to the world of product design, providing background information and stimuli to support design and make activities. Each case study follows a similar format and includes a Pause for Thought box, a Questions box and a Research Activity box that can be set for homework.

The remainder of the book deals with: 'Strategies', 'Communicating your design proposals', 'Design guides', 'Mechanical systems', 'Structural systems', 'Electrical systems', 'Materials information', 'Ways to make your product' and 'Health and safety'. Each section provides interesting, illustrated information for students to gain the

necessary knowledge, understanding and skills to enable them to complete exiting design and make activities and succeed at GCSE. The chooser charts provide a quick reference to complete sections of work, summarising the information in a tabular form. References are made throughout the book to resource tasks, providing focused practical tasks to support the various sections.

The *Food Technology Student Book* is clearly laid out, although on some pages small print on grey paper makes the text difficult to read, especially for less able pupils or those who have visual problems. The case studies, both general and focused, are well illustrated, using both coloured and black and white photographs.

The strategies section is well devised and easily accessible to most pupils. This is a section which pupils will be able to use throughout the course, making use of the chooser charts to guide design thinking. As with the resource book, the student book develops the novel approach to food product design, devoting a considerable section to ways in which all the various aspects need to be developed. Illustrative material included here is excellent and should enable all students to understand the key features of product design.

The only criticism of the illustrations contained within the book is that on page 201, which you will have to buy the book to understand! Section 5, on communicating design proposals, is clear and well illustrated and will be invaluable in helping pupils complete their major GCSE project. All in all this is a book recommended to colleagues teaching food related courses, at either GCSE or GNVQ level.

The *Textiles Student Book* is a complete text book to provide support for all aspects of GCSE courses and some aspects of GNVQ courses. Anyone familiar with the Nuffield project will be aware of the clear links between the material in the Key Stage 3 pupil book and this student book. However, the graphics are far more sophisticated, with greater street credibility which the pupils will definitely enjoy. General case studies link different focus areas coherently, e.g.

#### Product Design Student Book

|                     |       |
|---------------------|-------|
| Appropriate content | ///// |
| Pupil/student use   | ///// |
| Teacher resource    |       |
| Visuals             | ////  |
| Overall style       | ///// |

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|--------------------------|---|
| Generic use              |   |
| One of a series          | ← |
| Photocopiable            |   |
| Pupil/student activities | ← |
| Cross-curricular         | ← |

#### Food Technology Student Book

|                     |       |
|---------------------|-------|
| Appropriate content | ///// |
| Pupil/student use   | ///// |
| Teacher resource    |       |
| Visuals             | ///   |
| Overall style       | ////  |

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#### Textiles Student Book

|                     |       |
|---------------------|-------|
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| Pupil/student use   | ///// |
| Teacher resource    | ///// |
| Visuals             | ////  |
| Overall style       | ///// |

|                          |   |
|--------------------------|---|
| Generic use              |   |
| One of a series          | ← |
| Photocopiable            |   |
| Pupil/student activities | ← |
| Cross-curricular         | ← |



#### Product Design Resource Tasks

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

#### Food Technology Resource Tasks

|                          |      |
|--------------------------|------|
| Appropriate content      | //// |
| Pupil/student use        | //// |
| Teacher resource         | ///  |
| Visuals                  | ///  |
| Overall style            | //// |
| Generic use              | ←    |
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#### Textiles Resource Tasks

|                          |      |
|--------------------------|------|
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| Pupil/student activities | ←    |
| Cross-curricular         | ←    |

manufacturing aircraft, and enable pupils to see working with textiles in a wider context. Focused case studies attempt, quite successfully to combine the creative with the technological, in that they focus on the work of both the designer and the manufacturer. They contain useful prompts for pupils to pause for thought, answer questions and carry out independent research.

The strategies section includes more detail on techniques such as using computers, applying science and specifying the product to cite just a few. One very clear and useful strategy is that of modelling, summarised in a chooser chart enabling pupils to decide which material might best model their prototype ideas. The design guides which follow take the lines of interest introduced in the resource task book and devote several pages to each, providing the pupil with a clear idea of the constraints which will need to be reconciled. This is followed by five 'technological sections' which deal with weighty chunks of the syllabus content such as surface decoration, fibres and yarns, fabrics, textile product design and ways to make your product. Once again the chooser charts are very useful – one in particular listing fabrics in order of performance for different criteria such as weight, drape, strength etc. 'Ways to make your product' is particularly well laid out with clear illustrations of techniques from pattern layout, to range of stitches (with a simple key showing the degree of difficulty) to joining, shaping and fastening. Health and safety is dealt with in what amounts to approximately one page of text and the glossary is 'somewhat limited. However, this is not enough to cause any great concern in a book which is eminently suited to the needs of Key Stage 4 textiles courses.

For those teachers who are looking for coherence at Key Stage 4, in a way which combines a fresh approach to the subject material together with a clear framework for learning, it is certainly well worth bidding to school managers for the necessary capital expenditure to put together sets of the Nuffield 14-16 resources.

#### Textiles

Teacher's Guide: 0582 290 708 – £19.99  
Student Book: 0582 234 670 – £9.99  
Resource Task File: 0582 290 775 – £37.50  
+ VAT

#### Product Design

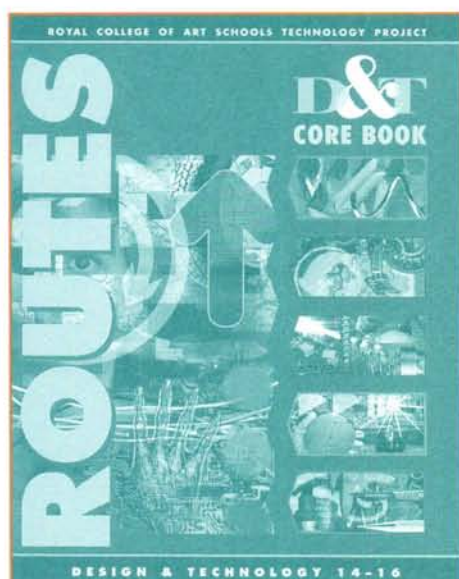
Teacher's Guide: 0582 290 732 – £19.99  
Student Book: 0582 234 697 – £9.99  
Resource Task File: 0582 290 740 – £37.50  
+ VAT

#### Food Technology

Teacher's Guide: 0582 290 716 – £19.99  
Student Book: 0582 234 662 – £9.99  
Resource Task File: 0582 290 759 – £37.50  
+ VAT



## D&amp;T Routes



The D&T Routes series has been written by the Royal College of Art (RCA) team to support students through courses at Key Stage 4, including GCSE and GNVQ. The series builds on the foundations of the RCA's Key Stage 3 *D&T Challenges* series and it is intended that it can be used as it is written or adapted as necessary to suit different schools. The series aims to give a clear structure for teaching and learning, emphasising strategies for increasing the self-reliance of students. The course consists of:

- The *D&T Routes Core Book* directed at students to help them take an increased responsibility for their own learning. The book is divided into sections. The first section, 'Looking after yourself', is a study guide to help students analyse their strengths and weakness and then plan, organise and manage their work as individuals and team members throughout their course. Other sections of the book look at analysing and evaluating products, using activities and a range of relevant case studies from schools and industry, support for the development of more advanced designing and making skills and information on manufacturing processes, including the difference between making individual items and manufacturing in quantity. This book, together with the Teacher's Resource, is intended to

support short courses but it can also be used for a full GCSE.

- The *D&T Routes Teacher's Resource*, directed at teachers and heads of department, is intended to be used as a guide for curriculum planning. It provides advice and support on devising design and technology courses for Key Stage 4, the best route to choose to ensure continuity from Key Stage 3, progression, differentiation and assessment for the curriculum planner.
- The *Focus Area Books* are designed to be used with the Core Book and are aimed at students working towards a full GCSE in specific focus areas. They are materials-based books to extend the core of knowledge and understanding and apply them to the pupil's chosen Focus Area. The focus areas covered are *Food, Graphics Products, Resistant Materials, Textiles and Control Products*. Each Focus Area Book will be supported by a Teacher's Edition.

The *D&T Routes Teacher's Resource for Key Stage 4* and the *D&T Routes Core Book* are available now and the Focus Area. Books will become available during 1997. The Teacher's Resource Book is comprehensive and provides a wide range of advice and support to help design and technology teachers with classroom and curriculum planning. It looks at issues such as managing a design and technology department, teaching and learning issues, assessment and advice for supporting students during the designing, making and manufacturing stages. Though not identified as a target audience, it would be invaluable resource for college design and technology students on initial teacher education courses and design and technology teachers following INSET programmes.

The *D&T Routes Core Book*, aimed at students in schools, is colourful and attractive in its style and presentation. The text is clear and appropriate for pupils at Key Stage 4. Each area has double page spreads which are a combination of text, photographs and diagrams. There is a very useful main areas index page at the

## D&amp;T Routes

Royal College of Art  
Schools Technology  
Project/Hodder and  
Stoughton  
Core Book: ISBN 0  
340 67342 7 – £9.99  
Teacher's Resource  
for KS4: ISBN 0 340  
67341 9 – £25.00  
Orders: 01235 400  
400

*Reviewed by Marion  
Rutland, Roehampton  
Institute London*

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



beginning of the book which enables students to find their way to individual sections of the book. Chapter 5 on manufacturing is particularly useful as it looks at how students can include industrial manufacturing approaches in their design proposals. Though targeted at students following GCSE short courses, the book would provide an ideal resource for students throughout a full GCSE. It could be used to help structure a course by teachers in the early part of the course to develop and extend the students' knowledge, understanding and skills and then used independently by the students in conjunction with the Focus Area Books to support them through their GCSE course work assignments.

*D&T Routes* has been well researched and is a comprehensive design and technology teaching resource for teachers and pupils. I look forward to reading the Focus Area Books when they are published.

### Analysing Design Activity

The intention of the book is well summed up in the sleeve notes: 'Design encompasses some of the highest cognitive abilities of human beings, including creativity, synthesis and problem solving. But until now it has been impossible to compare the work of different researchers using different methods'. The book is the result of papers produced at an international workshop at Delft, The Netherlands in 1994 at which participants were asked to analyse the work of two sets of designers. The participants were given the same materials in the form of video recordings and written and drawn outcomes. The designers observed were a group of three, and a single designer working alone. Both had been given the same engineering design problem, of designing a rack to fix a rucksack to a bicycle. The participants in the workshop analysed the materials in their own ways, the outcomes of their work were presented as papers.

Analysis of design activity is not simple, and the method of observing designers in action, and seeking to find ways of understanding their activities, has superseded initial attempts to find the unique and universal way of working. This process is often referred to as protocol analysis. Protocol analysis, is shown by the contributions in the book, to be on two levels, 'how do they (designers) do that', and, 'why do they (designers) do that?'

Uniquely, what is recorded are 20 different viewpoints and analysis of the *same* activities all attempting to say how and why the designing was taking place. The analytical focuses range from: decision making; the interactions of the group; the comparisons between the group and the individual designer; and comparison of philosophical viewpoints in designing. What has emerged is not only a 'state of the art' view of protocol analysis but also a tool kit from which prospective analysts can select potential techniques in order to move their own work forward.

None of the papers have made any claim to having found *the* definitive method, which I fully support, but that the methodologies used do offer 'a valid way of describing the

design activity'. A range of usable options are presented for the reader to examine or choose from, and apply to their own situations.

The book is therefore a basic text in describing both the viewpoints of this particular design activity, and the methodology used to analyse it. As the sleeve notes say this 'allows valid comparison between different researchers using different methods'. Both researchers and students will find this a valuable resource in their work. Teachers in schools may find it less relevant, not because the book is inaccessible to the school teacher, but that the analysis of individual's designing activity will, I feel, need more unpacking before it is directly applicable to them.

Maybe the authors would question the view of the book as a tool kit, but as a teacher and researcher in this area, this is the potential I feel it offers to me and others in similar situations. The book is an excellent resource but I would like to make two comments on its structure. First, the introduction does not offer a resumé of each chapter, so that to examine any of the approaches used you have to read all of them. Second, for me the most illuminating chapter is chapter 12 (Comparing Paradigms for Describing Design Activity) by Dorst and Dijkhuis. After reading this, the content and focus of the book suddenly fell into place. I would have put this chapter straight after the introduction, as to have done so would have given a faster insight to the fundamental issues in the book.

The presentation of the material is overall very suitable. The style is consistent and the layout clear and easy to read. Diagrams and illustrations are next to the text to which they refer, and the means of referencing is visible without being obtrusive.

The cost of the book, at around £60, means that apart from devotees it will be used as a reference and library copy for most people. The claim that it is a 'substantial contribution to developing understanding of the nature of the design activity' is in my opinion true.

### Analysing Design Activity

Edited by Nigel Cross, Henri Christiaans, Kees Dorst  
John Wiley and Sons:  
£60  
ISBN 0 471 96060 8  
Orders: Customer Service Dept 01243 779777

*Reviewed by Tony Lawler, Design Studies, Goldsmiths University of London*

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