

REVIEW SECTION

GCSE Design and Technology – Resistant Materials
GCSE Design and Technology – Resistant Materials Teachers’ Guide

Reviewed by Alison Hardy, Head of design and technology, Caistor Yarborough School, Lincoln

There are two books to this series: a student book and a teachers’ guide.

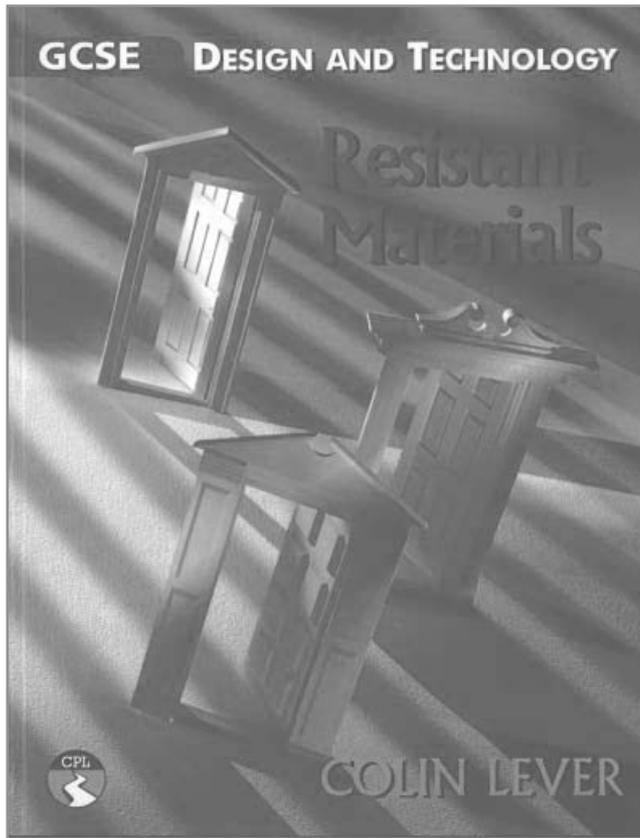
Student Book

The student book is divided into six sections:

- Designing and planning
- Types of resistant materials
- Properties of materials
- Production techniques
- Systems and structures
- Evaluation

Within each section there are units that explain a new topic, e.g. within Section 4 ‘Production Techniques’, Unit 12 covers ‘shaping by forming’. The units have a set format: a description of the topic, some activities and a list of key terms. The key terms section gives a good range of vocabulary and would help when trying to improve students’ use of technical vocabulary. The activities are questions with the students expected to give written answers. The book would have benefited from some practical activities as well as written activities to reinforce the manufacturing techniques covered in the book.

The topics are also supported by case studies that appear regularly throughout; these are informative and apply the knowledge from the units in situations that are real life rather than fabricated for the sake of a textbook. Questions are



also included within the case studies to encourage the reader to delve deeper into the information given in the units.

As a standard approach is used right the way through, the layout of the book is easy to use. The language used within the text is quite high level for Key Stage 4 but is appropriate to that age group.

Teachers’ Guide

At last, a teachers’ guide that gives me the answers to the questions asked in the textbook – it saves me thinking! Seriously, it is helpful to have suggested answers given to the activities in the student book; other teachers’ guides seem to omit this section.

The guide has four sections: the first gives suggested answers to the activities and case studies, in some cases quite detailed. The second section is a series of photocopiable differentiated questions with suggested answers and mark schemes; I have used these with students for resistant materials with some success, the problem is that the style of question is very different to that which you see on actual exam papers. Section 3 is also helpful with reference material to help with the activities from the textbook as well as support coursework; again I have used some of this material with GCSE students as guidance for coursework – I

found the research advice particularly useful. Section 4 is an index of products and businesses referred to in the student book.

I already have both of these books and use them as a reference for myself when teaching, I would not look to purchase a class set as the text book does not suit my teaching of resistant materials; however for a resistant materials teacher who has come from an engineering/CDT background, it may appeal and be a way of incorporating some practical applications into the classroom. It touches fleetingly on developing design skills focussing more on the application of knowledge in practical situations. I would recommend the student book as a reference book for home or the school library.

GCSE Design and Technology – Resistant Materials £10.95
GCSE Design and Technology – Resistant Materials Teachers’ Guide £35.00

Colin Lever
 Causeway Press Limited:
 ISBN: 1 873929 61 7 1 873929 63 3
 Orders: 01695 576048

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

GCSE Design and Technology – Textiles Technology

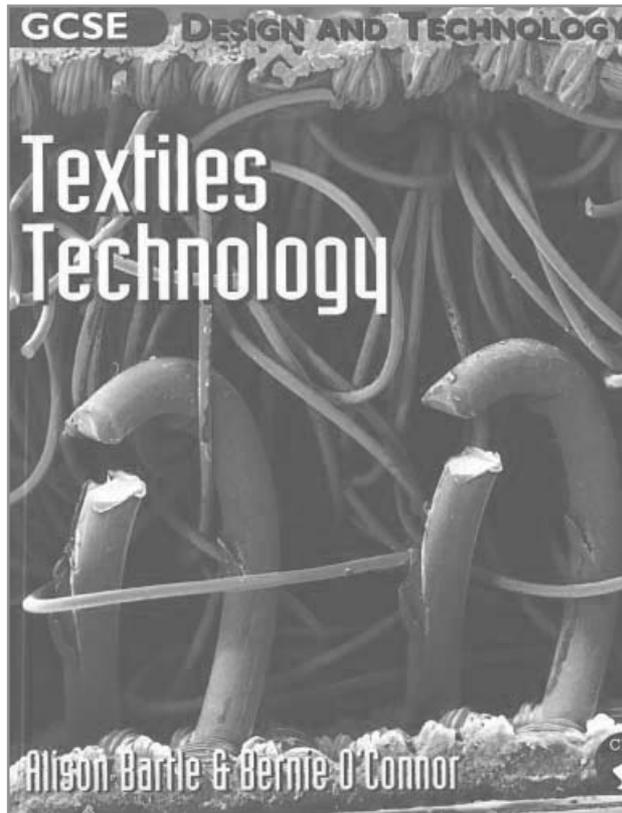
GCSE Design and Technology – Textiles Technology Teachers’ Guide

Reviewed by Julie Boyd, Second in Faculty/Head of Textiles, Lutterworth Grammar School and Community College

This is a student textbook and supporting photocopiable teacher resource. The items can be bought separately or together and the aim is to provide busy teachers with a flexible yet detailed set of resources. The books are aimed at GCSE design and technology textiles students although I have found much of the information and diagrams useful for some A’ Level topics as well.

Both books come in paperback with the teacher’s resource having a spiral bound edge to hold it together. This can be a disadvantage as it means that you do not have the freedom to remove individual sheets from the book as you can with similar resources that are in ring binder format. The teacher’s resource is crammed full of information in order to maximise the use of space, but sections are clearly labelled and cross-referenced so that you can quickly find the section you want. The students’ book is laid out in an attractive and readable format. The pages are colourful with full colour illustrations as well as a large number of good quality photographs. The use of language is appropriate with a good balance of technical language, examples and explanations.

The students’ book is divided into short chapters that have a theme and each chapter is then divided into clear sub headings. The book starts by looking at designing and influences on design and this is very useful for supporting



student’s coursework. It then goes on to look in detail at different fibres, fabrics (including performance fabrics), components and methods of fabric construction. The section on Production Techniques includes decorative and construction techniques along with information on patterns and equipment. The only weakness of the book is that this section has only basic information on decorative and construction techniques and could not be used to instruct students on how to carry these techniques out. The sections on Industrial Practice, ICT and Systems are detailed and easy to follow and have lots of good quality photos which teachers who cannot do industrial visits will find very useful.

The student’s book also includes activities that are interesting and achievable and which support the GCSE syllabus. Each chapter ends with a list of Key Terms to highlight the important points. One of the most useful things about the book is that it has case studies that illustrate industrial practice and these support the key sections of the book and syllabus. The teacher’s resource has all the answers to the case studies and activities in the student’s book along with a large number of differentiated exam type questions (with answers). There is also additional reference material that supports the

activities and case studies along with information on approaching key sections of the coursework (including a number of useful proforma sheets).

I have used both of these books for some time now and have found them to be extremely valuable and easy to use. The work supports all GCSE design and technology textiles courses well and the books are also useful to leave for students to work from during a teacher’s absence as it is an easy book for students to use independently and the activities in the book can be left as cover work. The books are good value for money especially the teacher’s resource, which costs less than many other photocopiable resources. These books are ideal for teachers who have little preparation time or who are less experienced at planning courses. They are also a very useful resource just for dipping into where a course is already more established.

GCSE Design and Technology – Textiles Technology £10.95

GCSE Design and Technology – Textiles Technology Teachers’ Guide £35.00

Alison Bartle and Bernie O’Connor
Causeway Press:
ISBN: 1 873929 65 X 1 873929 66 8
Orders: 01695 576048

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

Issues in Design and Technology Teaching

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

Members of the Design and Technology Team at Manchester Metropolitan University have compiled a book, which consists of a series of papers designed for use primarily by teacher training students, NQTs and anyone with an interest in the developments taking place within the area of design and technology.

This review is of the paperback issue, which is just over A5 in format; it has a price tag of £17.99 and contains nearly 260 pages, including the index, diagrams and pictures. It is clear and logically laid out and is one of a series of books dealing with different National Curriculum subject areas.

It is divided into four main areas:

Section 1: Issues of definition

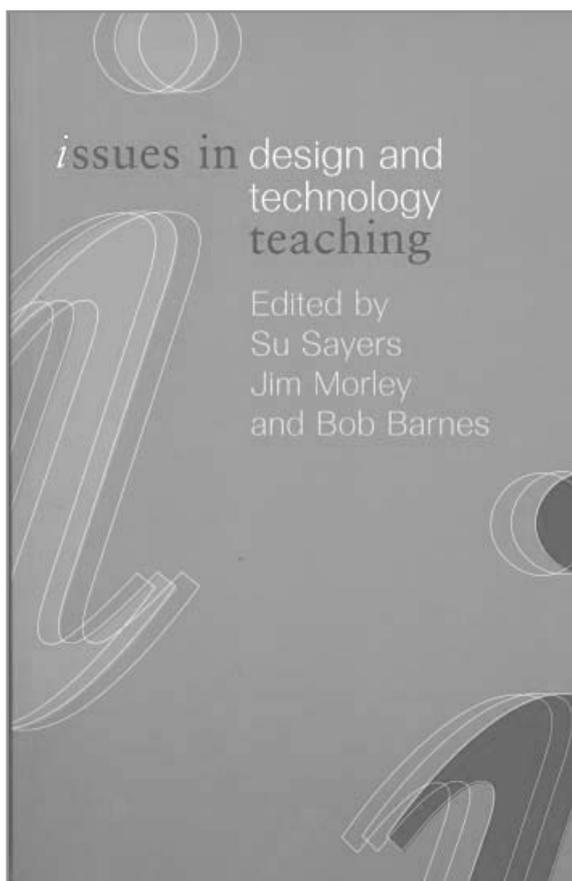
This section analyses the development of design and manufacturing in schools and how this has been transformed into design and technology.

Section 2: Issues in the classroom

This section examines the developments that have taken place in areas such as ICT, electronics, CAD, CAM and how they have typically been planned for and assessed in school. Questions also raised concern what the future may bring in relation to emerging technologies, which are, or could be, school-focused in the future.

Section 3: Issues in the school context

This section examines performance in relation to gender issues and the status of any 'gap' between boys and girls when learning in design and technology.



Section 4: Issues beyond the school

The final section examines a range of issues from the developments in the training of design and technology teachers, through to the links with industry and society's views towards technology.

Each of the sections is subdivided into a number of papers, 14 in all, with the authors ranging in background from primary and secondary teachers, teacher trainers, university education tutors, researchers and artists. Some of these authors add an international perspective, as they have been working in countries where the development of design and technology may have taken a different route from our own.

Each of the papers tends to examine in detail an issue, however in some cases the focus is wider, taking on a broader spectrum of issues in design and technology.

I particularly liked the fact that at the end of each paper, there is a range of questions to be considered by the reader in order to stimulate discussion.

I would agree with the editors that the book is primarily intended for use by

those who are in training to become design and technology teachers; those in their NQT year; as well as those planning for design and technology departmental seminars, where particular issues are to be discussed.

The book has a range of diagrams and clear black and white photographs, which are intended to illustrate points being made in the text.

Overall, the book is not a 'light' read. Some of the papers are thought provoking and may need to be re-read to fully gain a detailed insight into the issues being developed. All are well referenced, with good bibliographies, allowing the reader to engage in further reading on issues of particular interest.

Those wishing to further academic debate within our subject would find this book a good resource, which may be used as a prelude to further departmental discussion. As a teacher educator, I feel I would be able to recommend this book as a resource to help trainees to inform debate when discussing a wide range of subject issues.

Issues in Design and Technology Teaching
 Edited by Su Sayers, Jim Morley and Bob Barnes
 Routledge-Falmer Education: £17.99
 ISBN: 0 415 2686 9
 Orders: www.routledgefalmer.com

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

Agriculture in the Food Supply Chain: an overview

Reviewed by Anne Constable, Head of design and technology/Assistant Principal, The Beauchamp College, Leicester.

This book is the fifth in the series and aims to provide a broad overview of agricultural food production in the context of the modern food supply chain.

It describes what agriculture is and provides examples of raw materials, production and handling, and processing practices. It discusses product quality and the current concerns around environmental and animal welfare issues, as well as product traceability and agricultural legislation and self-regulation.

Historically, agriculture and the food industry have regarded themselves as separate sectors, but, with the introduction of hazard analysis and critical control point (HACCP) in the early 1990s, there has been increasing integration to assure safe food to meet the demands of consumers.

The book follows a standard format with a brief but clear introduction followed by a detailed chapter on the production and handling practices for plant and animal foodstuffs, including social and environmental issues. This is followed by a chapter on food safety hazards, including micro-organisms and chemical and physical hazards. The distinction is made about food quality and the production of specific attributes within the raw materials. The final section explains the systems that are necessary to ensure the quality of the raw materials and the appropriate legislation that is involved.

Definitions about agriculture and food manufacturers and processors are

Agriculture in the Food Supply Chain: an overview

Chris Knight et al

Campden and Chorleywood Food Research Association Group: £15 for schools

ISBN: 0 905942 485

Orders: www.ridgewellpress.co.uk

introduced at an early stage and lay the foundations for later comments. There are useful references to the global agricultural policies and some interesting statistics about food production in 2000.

Farming systems, production, and hygienic practices as well as environmental issues are clearly covered and made visually more accessible by the use of flow diagrams and charts (stages of production of a potato crop and the production and storage cycles of lettuce, strawberries, potatoes and cauliflowers). More interesting is the information on sustainability, integrated farm management and the RSPCA scheme, Freedom Foods, to improve animal welfare from farm to abattoir.

The chapter on food safety issues is an important inclusion and its clarity and logical presentation should help to resolve some of the previous grey areas or lack of understanding. The green (seems appropriate for agriculture) box system is used to feature or tabulate key information. Food quality attributes have become a major part of raw materials specifications and several examples are detailed and clarify understanding. During the last few years there has been greater emphasis on preventive quality assurance systems, including product traceability and HACCP-based systems. Once again, clarification is made by the use of green-boxed information that provides practical examples. The legislation section tends to be brief but lists and describes the various regulations, acts and codes of practice that have influenced the increasingly good practice. There is an extensive detailed glossary and further reading section with suggested websites.

The book is interesting, readable, and certainly helps to expand on areas of confusion. It goes from the basic to the detailed in the appropriate topics, clarifying areas that have traditionally caused confusion and debate. It provides a useful textbook for students or as a look up resource on the current position for existing employees or teachers. Good use is made of technical language and clear examples. The layout helps to make the specific information more accessible and the lack of photos does not seem important, especially when diagrams or blocks of text are interspersed regularly among the text. At £15 for schools this book would provide useful reading for GCSE, AS/A2 food

technology.

Food Chemical Composition: dietary significance in food manufacturing

Reviewed by Anne Constable, Head of design and technology/Assistant Principal, The Beauchamp College, Leicester.

This book is the sixth from the series. It aims to explain the chemical composition of food for people who have a limited knowledge of food chemistry. With Tim Hutton as its author, I assumed that it would be a good read and I was not disappointed.

It has a brief but clear introduction setting the scene on the constituents of food and the issues of processing and nutritional value. It aims and succeeds in demonstrating the chemical similarities between fresh or unprocessed food and processed or formulated foods.

The major content of the book contains individual explanations about the main nutrients (carbohydrates, lipids, proteins, other energy yielding compounds, fibre, minerals, vitamins, other beneficial components) and their chemical nature and role in the body. This is followed by non-nutrient chemicals (flavour and taste compounds, colours, additives, anti-nutrients and toxicants) in foods. There are shorter chapters on special dietary needs and food chemical composition (coeliac disease, lactose intolerance, phenylketonuria, diabetes and allergies) and, finally, food labelling. The glossary is short but there are further explanations included in the main text. Appropriate addresses of organisations and associations have been included and there is a very useful comprehensive reference section that leads the way for students to follow up further research.

The book contains appropriate industrial examples and historical background

information, which demonstrate the wider issues of safety assurance, traceability, product development and labelling. The strong industrial element provides essential information that has been made interesting and easy to understand, and frequently refers back to the reader's previous knowledge. The author has included up-to-date information, which is not always found in other books used for food technology, and has made it accessible and clear. It has given credibility to various issues that are sometimes misrepresented by the more popular media. The book is an enjoyable and informative read. The layout is good with a blue box system used to highlight key aspects of information, molecular diagrams or tables. The lack of photos does not detract from the impact, in fact it enhances the continuity and clarity. Page reference numbers would have been helpful instead of 'see chapter on...', however, this is a small niggle in an excellent, highly-readable book.

I would thoroughly recommend this book. At £15 for schools it represents good value for a standard textbook. Its strength is the enthusiasm and technical knowledge that the author has made explicit by the use of interesting examples and logical presentation. It would be suitable for food technology students, either in industry and education, or as a quick refresher or reference for teachers. It would support AS/A2 food technology extremely well.

Food Chemical Composition: dietary significance in food manufacturing

Tim Hutton

Campden and Chorleywood Food Research Association Group: £15 for schools

ISBN: 0 905942 50 7

Orders: www.ridgewellpress.co.uk

Food The Chemistry of its Components

*Reviewed by Brenda Greatwood,
Bourne Grammar School.*

This book discusses in depth the chemical structure of the main macro and micro-nutrients. The functions of colours, flavours, preservatives and undesirables are also addressed in separate chapters. The chapter on flavours examines not only the effect of sweetness, saltiness, bitterness and sourness on the human senses but also astringency, pungency and meatiness. Within the book the author classifies the undesirables as, endogenous toxins, microbial toxins, toxic residue or toxic condiments. There is one brief section on Nutritional Requirements and Dietary Sources, which explains the 1991 COMA Report and the recommendations of Dietary Reference Values. Each chapter has detailed explanations as well as diagrammatic explanations; these are distributed throughout the book and correspond to the relevant text.

The book is compiled for students studying food science at an undergraduate university level, and for this group of people the depth of information is excellent. However, for students studying food technology to A' Level in schools, without a further science subject, the level of chemistry included in the book would be beyond their understanding. The text is at a level well above that required for the A' Level food technology specification. The A' Level specifications require candidates to understand the chemical structure of protein, lipids and carbohydrates but the major emphasis is on the working characteristics of these nutrients and how these can affect product development.

In a school setting it is possible that both teachers and able students could extend

their understanding of the chemistry of food rather than just the nutritional value. The text could be used when understanding the choice of colours and flavours in a food product or if knowledge of the chemical aspects of food change were required. Issues including the undesirables in food could be discussed, but this is a minimal section of the specification.

It is only the top grade students who may find the book useful to understand aspects of food science in relationship to the product with which they are working.

Teachers may find the book interesting to extend their own personal knowledge of food science or use the book for reference purposes. If the book was to be used in schools, experiments at the end of relevant chapters may have been useful for candidates to attempt to get a more practical understanding of the subject.

The sporadic charts that are distributed throughout the book provide useful information for students in comparing different products, for example the relative sweetness in relationship to the different sugars. More of these would have been useful. At the end of each chapter there is a valuable further reading list, although these books would only be found in a specialist library.

This is a reference book and not intended to purchase as a class set; it is full of chemical explanations related to the structures within food. It is not a book that could be used to teach the functions of proteins, carbohydrates and lipids alongside human nutrition. This is a specialist book.

The price of £16.95 is typical of books in this subject area.

Food The Chemistry of its Components

T.P. Coultate
Royal Society of Chemistry: £16.95
ISBN: 0 85404 6151
Orders: www.tsc.org

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