BELL & HYMAN

Multiple Choice Questions on "A" Level Mathematics

R. W. PAYNE and D. B. PENNYCUICK

£1.95

Covers the London G.C.E. A-level syllabus in Mathematics and Further Mathematics and should also be of value to students taking A-levels of other boards, and to teachers of mathematics in sixth-forms and colleges. "This book is more interesting and valuable than its title suggests, since it is not restricted to the simple type of multiple-choice question, in which the correct answer is hidden among 'distractors'."

TIMES EDUCATIONAL SUPPLEMENT

Advanced Level Mechanics

A. J. FRANCIS

£3.95

Covers Mechanics required for Advanced-level Mathematics.

"Mr. Francis is to be complimented on the vigour and consistency with which he has used the vector approach to the various branches of the course. The format of the bookwork is also refreshingly clear and concise, particularly in respect of its diagrams."

THE MATHEMATICAL GAZETTE

An Introduction to BASIC

M. R. EAGLE

£3.75

This book is intended as a first introduction to programming using the BASIC language. It aims to foster an appreciation of the computer by examples chosen to give some idea of the variety of possible uses. Enthusiasm for the power of computers is balanced by an emphasis on the responsibility of the programmer to use them, as a tool, correctly in order to avoid misleading results. Most sixth formers and college students should find the book within their grasp. "I strongly recommend the one by Ruth Eagle. . . . She has used her knowledge about education, computing and mathematics to design and write an introductory textbook for sixth formers and above who have an interest in mathematics.

"Ruth Eagle's book should please readers who appreciate good computer applications of mathematics, expressed in a clear and logical way. In the whole book I find only two small faults."

THE MATHEMATICAL GAZETTE

Constructive Mathematics

M. HAYMAN

£1.35 Teachers' Book £1.80 net

"Outstanding in a lengthy shelf of texts intended for the less academic pupil is Constructive Mathematics. Mrs Hayman is an articulate teacher, of wide experience and the highest quality. Mrs Hayman suggests that the course could occupy one year of non-examination work, but may be equally effective for CSE pupils (it has been the basis of a validated Mode 3 syllabus) or for a common 16-plus examination or CEE programme. Indeed, the work can be strongly recommended for all these purposes. There is no doubt that in such fields it is the year's 'best buy'."

Certificate Mathematics

C. V. DURELL

Four volumes £2.15 each

Still the definitive course of unified mathematics for traditional "O"-level syllabuses.

Bell & Hyman Ltd., Denmark House, 37/39 Queen Elizabeth Street, London SEI

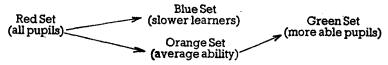
Modular Mathematics



Modular Mathematics Organization

A new common course for 11 to 14 year olds

- * Modular-36 Modules, each developing a basic topic
- * Individualised Learning
- * Mixed Ability-the material is colour coded:



- * Integrated Material—each module comprises WORK-CARDS, WORKSHEETS and APPARATUS
- * Rigorously Evaluated—tested and modified in 27 secondary schools and now used throughout Britain
- * Modular Mathematics Bulletin—written by Modular Maths teachers, offers advice and information

For more information write (using the form below) or telephone: Graham Taylor, Heinemann Educational Books Ltd., 48 Charles Street,

London W1X 8AH (01 493 9103)	
(Name, Address, and telephone number)	Modular Mathematics
	Send me Modular Mathematics Bulletin, a prospectus and free specimen
	material
	Contact me to arrange a visit by your representative
	Supply me with details of forthcoming seminars on the scheme or schools which I can visit to see the scheme
	in action



Heinemann Educational Books

48 Charles Street, London W1X 8AH

Now complete

Oxford Comprehensive Mathematics

A new course for secondary schools

- ★ Covers all modern syllabuses
- * Emphasizes traditional computational skills
- ★ Colourful, spacious design
- ★ Children like it
- ★ Comprehensive teacher's manuals
- ★ Yellow Books 1 and 2 suitable for mixed abilities
- ★ Green Books 3, 4 and 5 for C.S.E.
- ★ Blue Books 3, 4 and 5 for G.C.E.

Those who use it like it

Books 1 and 2, each £1.50 Books 3, 4 and 5 C.S.E. and G.C.E., each £1.75



Books 1, 2, 3 C.S.E. and 3 G.C.E. are available in packs of 15 copies at a saving of around 10 per cent. Book 1 Pack and Book 2 Pack, each £19.95. Book 3 C.S.E. Pack and Book 3 G.C.E. Pack, each £23.75.

Extending Mathematics

Volume 1

T. J. Heard

NEW Volume 2

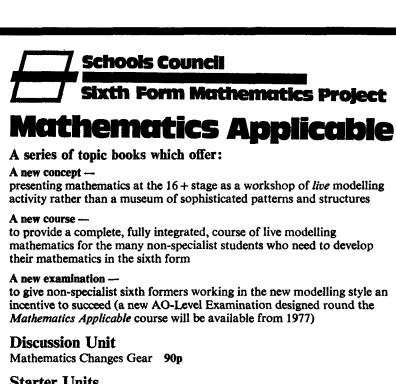
T. J. Heard and D. R. Martin

Extending Mathematics is designed for students working for A and S level examinations in pure mathematics. As well as paying attention to mathematics as a coherent discipline, the authors have included as many useful applications of mathematics as possible.

The sections in the book can be taken in any order. Each section includes questions to reinforce understanding, and is followed by a set of graded exercises. At the end of Book 2 there is an extensive miscellaneous exercise which reviews the whole course.

Book 1 £3.95 Book 2 about £4.50

Please send me inspecti	on copies of	
C.S.E. Book 3	Mathematics Book 1 C.S.E. Book 4 G.C.E. Book 4	Book 2 C.S.E. Book 5 G.C.E. Book 5
Extending Mathematics Name	Book 1 ☐ B	ook 2 🗌
School Address		
	Education Department, Wa	



Starter Units

Understanding Indices £1.80 Introductory Probability £1.10 Polynomial Models (available December 77) about £1.95

Geometry from Coordinates £1.60 Vector Models (available December 77) about £1.95

Continuation Units

Algebra with Applications (available December 77) about £2.90 Calculus Applicable £1.95 Logarithmic/Exponential £1.95

Inspection Copies Please ring the titles you would like to receive on inspection and return this advertisement to the address below with your name and address.
Name
School
Address



Heinemann Educational Books 48 Charles Street, London W1X 8AH

THE MATHEMATICAL ASSOCIATION

The fundamental aim of the Mathematical Association is to promote good methods of mathematical teaching. A member receives each issue of the *Mathematical Gazette* and/or *Mathematics in School* (according to the class of membership chosen), together with any Newsletters and Reports published during the year. Intending members should ask the Executive Secretary for information and application forms.

The address of the Association and of the Honorary Treasurer and Secretaries is

259 London Road, Leicester LE2 3BE. Telephone (0533) 703 877.

Change of address should be notified to the Membership Secretary at the Leicester office. If copies of the Association's periodicals fail to reach a member for lack of such notification, duplicate copies can be supplied only at the published price. If change of address is the result of a change of appointment, the Membership Secretary will be glad to be informed.

Subscriptions should be paid to the Hon. Treasurer.

Correspondence relating to the Teaching Committee should be addressed to Miss A. J. Wells, 18 Farmway Close, Hove, East Sussex BN3 8AE.

The Library is housed in the University Library, Leicester.

Correspondence for the Problem Bureau should be addressed to Mr. R. H. Cobb, 9 The Lees, Malvern, Worcs. WR14 3HT.

THE MATHEMATICAL GAZETTE

Editor:

Mr. D. A. Quadling, 12 Archway Court, Barton Road, Cambridge CB3 9LW.

Assistant Editors:

Dr. J. A. Anderson, Department of Mathematics, The University, Nottingham NG7 2RD.

Mr. J. W. Hersee, 76 Pembroke Road, Bristol BS8 3EG.

Material for publication, and books for review, should be sent to Mr. Quadling. Authors will be notified as soon as possible whether or not their contributions can be accepted; if an *immediate* acknowledgement is required, they should send an addressed, reply-paid postcard with their contribution.

Business and advertising correspondence should be addressed to the Executive Sec-

retary at the Leicester office of the Association.

© 1977 THE MATHEMATICAL ASSOCIATION

CONTENTS

Notation and language in school mathematics. John Hersee (for Teaching Committee)	241
Jack-in-the-box. A. Helfgott and R. B. Potts	247
Repaying a loan by instalments. C. W. Puritz	253
Old curves in a new setting. C. R. Haines	262
Speedway tournaments in the classroom. Frank Budden	266
Groups of linear transformations. R. P. Burn	273
Symmetry and differential equations. J. V. Greenman	279
Obituary: J. L. Lloyd	284
Notes 61.19-25	285
Reviews	299

ISSN 0025-5572

PRINTED IN GREAT BRITAIN
AT THE SPOTTISWOODE BALLANTYNE PRESS
BY WILLIAM CLOWES AND SONS LIMITED
LONDON, COLCHESTER AND BECCLES