



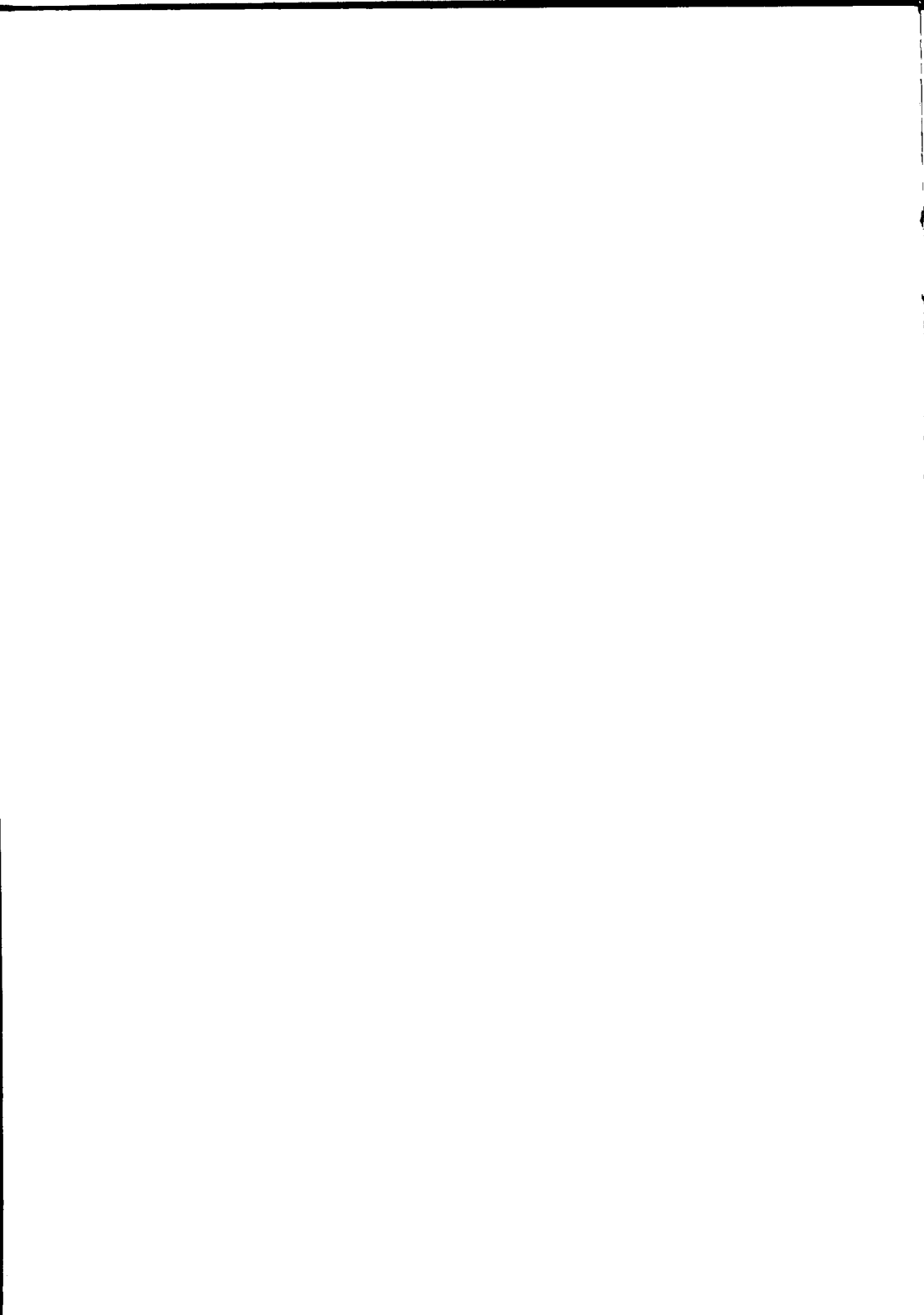
*rchimedes*

# SOFTWARE APPLICATIONS CATALOGUE

BRITISH  
BROADCASTING  
CORPORATION



Acorn   
The choice of experience.



# *Archimedes*

## SOFTWARE APPLICATIONS CATALOGUE

Archimedes 300 Series - the latest generation of British Broadcasting Corporation Microcomputers

Archimedes 400 Series - the new range of Acorn Computers

FOURTH EDITION JANUARY 1988

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*Note that British Broadcasting Corporation has been abbreviated to BBC in this publication.*

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# New Products for the Archimedes System

## Art and Design

*Supplier:*        *Advanced Memory Systems Ltd*  
*Product:*        *Finesse Paint*  
*Available:*      *Spring 1988*

Finesse Paint is an art program and is the first in a range of software products for Archimedes which will develop into an integrated system including 3D CAD, Business Graphics, Maths Graphics and others. The program is based around a unique tablet-graphic environment and enables a real-time window system to be used. Output from Finesse Paint can be printed dot-for-dot on dot matrix or laser printers.

*Supplier:*        *Clares Micro Supplies*  
*Product:*        *Artisan*  
*Available:*      *Now*

ARTISAN, from the authors of ARTROOM, is the ultimate in graphics packages. We can't describe all the features here but some major functions are:

- \* Full screen
- \* WIMP environment
- \* Fast scrolling zoom (x2, x4 and x8)
- \* Magic brush
- \* Colour mix
- \* Variable pen shapes and sizes
- \* Fill on fill and erase fill
- \* User defined pen
- \* User definable palette
- \* ECF designer
- \* Image distortion
- \* Reduce and enlarge - with pixel accuracy
- \* Triangles, circles, rectangles, parallelograms, ellipses, arcs, sectors
- \* Free form rubber band option

Plus all the usual features and some very unusual ones too.

*Supplier:*        *Watford Electronics*  
*Product:*       *Art Package*  
*Available:*      *TBA*

Full feature art package with the ability to interface with digitisers, scanners etc.

*Supplier:*        *Computer Concepts*  
*Product:*       *Drawing Package*  
*Available:*      *TBA*

An object-orientated drawing package, similar to MacDraw in many respects, but far more flexible and faster.

Features include:

- \* Works entirely within the WIMP environment
- \* Wide variety of pre-defined object shapes available, e.g. rectangles, rectangles with rounded corners, circles, ellipses, arcs, wide lines and polygons
- \* Shapes can be filled or unfilled, with or without borders
- \* Any number of objects can be grouped and treated as a single object
- \* Any object can be moved, re-sized, rotated, have fill pattern/colour changed, etc
- \* Multiple drawings in memory, these can be saved individually or as one file
- \* Each drawing may be constructed from any number of separate 'layers' - each layer can be individually coloured etc.
- \* Any drawing can be scaled within the display window, and all operations may be performed on that scaled view
- \* Drawings can be used within the Computer Concepts word processor
- \* An optional language compiler will be available to drive the drawing package. This will allow complex drawings to be created, then used as if created manually within the drawing package. For example this will allow creation of statistical graphs from supplied data, but then these drawings can be 'modified' by the normal means. Additional programs will also be available from third parties to drive the drawing package in other ways.

## Data Management

All Minerva products listed below are fully compatible, in both directions, with System Delta files for previous BBC microcomputers.

(\*) Products marked thus are all System Delta applications requiring System DeltaPlus or SuperDelta to run.

*Supplier:* Minerva Systems  
*Product:* DeltaBase  
*Available:* Now

An extremely powerful yet simple-to-use general Database. Full menu operation with pull down Help Panels to explain each option. Over 8000 records, 255 fields and 16 subsets. Record length up to 8000 characters. Makes use of 40, 80 and 132 column modes. Extensive searching and mathematics facilities. Instant search facility. Sort by multiple criteria using any expressions. Restructuring records is easy and a Card Copier alleviates the need to re-enter data. Imports data from Viewstore, Betabase, Datagem, Interbase, Mini-Office, etc.

*Supplier:* Minerva Systems  
*Product:* System DeltaPlus  
*Available:* Now

The most powerful and extensive Relational Database Management System available. Up to 2 billion records, 16 million fields and 24 million subsets. An infinite number of files may be open at any one time. Powerful WIMP database allows search selection from within windows. Multiple user-definable print formats. Unrivalled comprehensive maths, searches and sort. Mailing label facility with up to 4 across a sheet. Generates reports quickly using simple commands. Card copier to transfer sets of individual data between files. Ability to design your own tailored system. Fully documented Programmer's Reference Guide available at extra £29.95 for those wishing to write their own programs using the System Delta commands. You can even import DBase files.

*Supplier:* Minerva Systems  
*Product:* SuperDelta  
*Available:* Mid-1988

The ultimate Data Management System where even the internal workings are definable. Includes several utilities such as advanced data handling, random length records and soundex searching. Various types of sort available to suit individual requirements. DBase files can be imported. Extensive reporting facilities. Comprehensive documentation includes full details of all commands.



*Supplier:* Minerva Systems  
*Product:* GammaPlot  
*Available:* Early 1988

Extensive general graphics program allowing anyone to produce stunning graphics and charts. Multiple charts on screen at any time including pie, scatter, line, hist etc. On-Screen editor for text presentation. Data entry via the keyboard or any Delta, Gamma or Sigma file.

*Supplier:* Minerva Systems  
*Product:* System GammaPlus  
*Available:* Mid-1988

The only Graphics Management System available. Multiple charts on the screen at any time. Pie, line, histogram, scatter, bubble, %bar, cheese, area charts, cumulative/overlays, function plotting, etc. Allows definable scaling and screen formats. Screen editor enhances presentation. Statistical analysis included. Three-dimensional charting. Macros for greater flexibility in presentation. Ability to design your own tailored system. Fully documented Programmer's Reference Guide available at extra £29.95 for those wishing to write their own programs using the System Gamma Commands.

*Supplier:* Minerva Systems  
*Product:* SigmaSheet  
*Available:* Early 1988

A fast and powerful spreadsheet, SigmaSheet is simple to operate. It gives full maths facilities, has definable column widths, colours etc, imports files from a variety of packages including System Delta, ViewSheet and Intersheet and exports data to the System Gamma range.

*Supplier:* Minerva Systems  
*Product:* System Sigma  
*Available:* Mid-1988

Likely to be the first Spreadsheet Management System containing the facility to design your own tailored system. Has a sheet size of 2000 by 8000 cells and as many sheets in memory as you like. System Sigma will import Lotus files.

*Supplier: Minerva Systems*  
*Product: Reporter*  
*Available: Now*

User definable reports including sub-totals, sub-sub-totals with titles. Definable column formats with facilities for averages and totals. Output entire file or only those matching a specified criterion. For use with DeltaBase and System DeltaPlus.

*Supplier: Minerva Systems*  
*Product: Order Processing/Invoicing (\*)*  
*Available: Now*

Definable invoice layout. Allows varied discount structure on one invoice, eg. £,% or structure. Processes and stores mail order AND credit customer details (with facility to archive information for future mailshots!). Links with Stock Management and Sales Ledger.

*Supplier: Minerva Systems*  
*Product: Sales Ledger (\*)*  
*Available: Now*

Integrates fully with invoicing module for automatic update, or invoices may be entered manually. Reports include Daybook, Analysis, Aged Debtor, monthly control report, etc. Statements may be produced for various criteria such as only those over 90 days with a balance greater than £1000. Credit Controller facility for letters to overdue customers. Integrates with the Nominal Ledger.

*Supplier: Minerva Systems*  
*Product: Stock Management (\*)*  
*Available: Now*

Not only records stock movements, but also assists with the management of stock. Produces useful reports which suggest safety levels, re-order quantities etc. Prints purchase orders. Graphs show the movements of products over a period. Contains the unique facility of a Pareto analysis to indicate which are the most profitable stock items. Links with invoicing module.

*Supplier: Minerva Systems*  
*Product: Purchase Ledger (\*)*  
*Available: Now*

Records details of all purchase transactions. Flexible reporting includes suggested payments, remittance advices, daybook, aged creditors and monthly control reports. Allows manual selection of payments together with computer suggestions. Links with the Nominal Ledger.

*Supplier: Minerva Systems*  
*Product: Nominal Ledger (\*)*  
*Available: Now*

Probably the only system which allows over 8000 user-definable accounts and as many bank accounts as required. Trial Balance, Profit and Loss or Balance Sheet may be produced at any time. Accounts may exceed 12-month trading period for new businesses. Password security may be used if required. Management ratio analysis. Output facility to Spreadsheet. Links with Sales and Purchase ledgers.

*Supplier: Minerva Systems*  
*Product: School Administrator (\*)*  
*Available: Now*

Caters for every size of school in the UK. Pupil records will allow the addition of extra fields. Staff file keeps details relevant to Form 7 statistics. The system produces class lists and analysis by various criteria. Produces reports for examination entries which are upwards compatible for GCSE. Definable pupil records, class lists, full analysis, internal/external exam entries.

*Supplier: Minerva Systems*  
*Product: Timetabling (\*)*  
*Available: Mid-1988*

Determines school timetables allowing for class, teacher and pupil availability.

*Supplier: Minerva Systems*  
*Product: Profiling (\*)*  
*Available: Mid-1988*

To assist schools with the management and storage of pupil profiles with the facility to store vast amounts of data in a textual format.

*Supplier: Minerva Systems*  
*Product: Librarian (\*)*  
*Available: Early 1988*

Designed to assist in the management of a library. Fully definable records for all books together with a fast cross-referencing facility.

*Supplier:* Minerva Systems  
*Product:* Video Rental (\*)  
*Available:* Now

To assist with Video Shop Management. Allows a maximum 8160 videos, and 5000 customers. Instant access to information regarding videos on hire to any particular customer. Extensive reports include overdue videos, fines, video catalogue, etc. Produces receipts if required.

*Supplier:* Minerva Systems  
*Product:* Newsagent (\*)  
*Available:* Mid 1988

Comprehensive management of customer accounts and paper rounds. Orders and receipts of newspapers and periodicals are fully analysed and a report produced to assist future order levels. Helps monitor sales by producing a graph of previous 6 weeks' or 6 months' performance.

*Supplier:* Minerva Systems  
*Product:* Ancestry (\*)  
*Available:* Early 1988

For genealogy in families or pedigree animals. Fully definable records.

*Supplier:* Clares Micro Supplies  
*Product:* Alpha-Base  
*Available:* Early 1988

Alpha-Base is the successor to the hugely successful Beta-Base, the top- selling database for the BBC Model B micro. Beta-Base files can even be transferred to Alpha-Base. Alpha-Base is a powerful, yet easy-to-use, database that is ready to run as soon as you receive it. You do not need any programming skills to use Alpha-Base. But don't be fooled, the ease of use does not mean that you don't have the power. Alpha-Base makes full use of the Archimedes power and it will configure itself to use as much memory as is available. With a four megabyte machine you can have over 50,000 records in a search list.

Alpha-Base incorporates all the suggestions and requests that Clares have received over the last five years. All of the standard Beta-Base facilities are there but in a much improved form. In addition there are many new features that will make your life easier. Some of the features are:

- \* Free format screens
- \* Multiple pages per record
- \* 400 fields and 27600 characters per record
- \* 2.14 billion records per file
- \* Input limits can be set on each field

- \* Multiple display and entry forms
- \* Fast search of specified fields or whole record
- \* Search for minimum and maximum
- \* Plain English entry of search criteria
- \* Super fast sort routine
- \* Five data types including formula and date
- \* Password security optional
- \* Comprehensive print options
- \* Winchester compatible

As well as providing a very powerful database, Clares have also kept it easy to use. Beta-Base was much praised for its ease of use. Alpha-Base continues the theme.

Clares try to give you usable programs. This has resulted in some arbitrary limits on the size of files in Alpha-Base. However, the limits of 400 fields and 27600 characters per record are unlikely to restrict you; they optimise memory allowing additional features in Alpha-Base.

*Supplier:* Watford Electronics  
*Product:* Database  
*Available:* TBA

Very powerful database package. Specification designed to exceed the capability of dBase III Plus, but using the Acorn WIMP for ease of use.

*Supplier:* Abacus Training  
*Product:* Abracadabra (Library)  
*Available:* Early 1988

One of a series of planned Abracadabra products. Abracadabra is a database management system but each record is a procedure which can be entered into the Archimedes Basic 'Library'. The user can choose fields specifying his procedure and create a library module. A range of procedures is supplied with the initial product. Other products in this range will be Abracadabra (Music), and Abracadabra (Drawings). Takes the hard work out of writing BASIC programs.

*Supplier:* Abacus Training  
*Product:* Abracadabra (Statistics)  
*Available:* Early 1988

Requires Abracadabra (Library) to be installed. One of a series of Abracadabra products. A range of statistical functions (i.e. FN types) which can be installed with the Archimedes LIBRARY command. The user can select from many data entry methods using the Abracadabra (Library) database management system. The FNs take the hard work out of writing BASIC programs. Has more flexibility than a spreadsheet.

*Supplier:* Abacus Training  
*Product:* Election 87  
*Available:* Now

A database containing the results of the June 1987 General Election. The results can be displayed or can be analysed statistically in ways defined by the user. Earlier election results can be entered by the user to create his own database. If demand exists earlier election databases will be supplied by Abacus Training.

## **Business/Accounting**

*Supplier:* Meadow Computers  
*Product:* Micro-Trader  
*Available:* Now

Fully integrated professional accounts program consisting of sales purchase and nominal ledgers. Prints invoices and statements. Includes facilities for audit trail, trial balance, profit and loss account and balance sheet. Keeps the up-to-date information required as the basis for management decisions. Designed by a businessman to meet the needs of the businessman.

*Supplier:* Meadow Computers  
*Product:* Micro-Stock  
*Available:* Now

Stock Control program that can be run stand-alone or integrated with Micro-Trader accounts. Stores prices, descriptions and quantities held, on up to 4000 stock items, each accessed by a user-defined stock code. Prints invoices and credit notes, and provides detailed reports on stock holdings and valuations.

*Supplier:* Meadow Computers  
*Product:* Micro-Mailer  
*Available:* Early 1988

Mail-Merge program allows access to 'Micro-Trader' ledgers to print label runs and circular letters. Includes a user-defined data-base for storing additional names and addresses. Frequently used lists of names can be stored on disc for future use. Letters can be created on all-popular word processors.

*Supplier: Meadow Computers*  
*Product: Micro-Aid Extended Payroll*  
*Available: Early 1988*

Micro-Aid Extended Payroll is fully integrated with 'Micro-Trader' accounts. All tax and NI codes (except MOD personnel) are covered for up to 400 employees. Prints payslips from the payroll run, and weekly/monthly summaries. Cash and cheque payments and tax/NI amounts are updated directly on to 'Micro-Trader' ledgers.

## Games

*Supplier: Acornsoft/Superior*  
*Product: Zarch*  
*Stock code: SKG13*  
*Available: Now*

Zarch is a fully extended version of the exciting game included on the Welcome disc. It includes a sophisticated radar detection mapping system for pinpointing the enemy spaceships (before they pinpoint you). Your mission is to protect and defend your territory against all intruders and prevent any intruder from capturing vital supplies.

*Supplier: Minerva Systems*  
*Product: Minotaur*  
*Available: Now*

A full feature 3-dimensional animated maze type game. Unbelievable graphics never before possible until the advent of RISC graphics processing. Use brains or force to kill the Minotaur.

*Supplier: Argonaut*  
*Product: Space Adventure Game*  
*Available: Early 1988*

A game with 3D solid graphics. Very fast, smooth action. More action on planet Novenia.

## Utilities

*Supplier:* Acornsoft  
*Product :* *Software Developer's Toolbox*  
*Stock code :* SKL58  
*Available :* Mid-1988

The Software Developer's Toolbox is a collection of essential utilities such as Diff (allows text and binary file compare), Linker (enhanced Linker program for C, Pascal and Fortran), Symbolic Debugger (source code debugger for C, Pascal and Fortran), plus useful reference documentation related to the operating system and Calling standards etc.

*Supplier:* Acornsoft  
*Product :* TWIN  
*Stock code :* SKL44  
*Available :* Early 1988 (*Pre-release version SKP44 available now*)

TWIN is an extremely fast program editor specifically designed for use on Archimedes. Its ease of use with ARM Assembler and high-level languages such as Ansi-C, Iso-Pascal and Fortran 77 have combined to make TWIN an essential possession when programming on Archimedes.

 *Supplier:* Clares Micro Supplies  
*Product:* Archimedes Toolkit Module  
*Available:* Now

ATM is the toolkit available for this powerful new micro. Many of the features that made RAMROD a top seller have been incorporated into ATM and a whole host of new features have been added including:

- \* 10 Memory and disc editors
- \* 8 Memory and disc searches (inc wildcards)
- \* 4 Disc dump formats
- \* A scrolling disassembler
- \* A one line assembler (accessed from the disassembler)
- \* Memory shift, swap and compare functions
- \* Catall and Exall for discs
- \* Winchester compatible

If you want to explore your Archimedes then order the Archimedes Toolkit Module today. It has enabled Clares to disassemble modules, to discover many undocumented SWI calls and has been an invaluable aid in debugging software. You can even search for mnemonics.



**Supplier:** Tubelink  
**Product:** Print-Aid  
**Available:** Early 1988

Printing couldn't be made simpler, thanks to the Print-Aid module. Features include versatile printer buffer, printer configuration system, instant screen dumping at the press of a single key and comprehensive printer dumping functions - completely user definable in terms of size, intensity, and printing position, etc. Drivers are provided for all popular printers.

**Supplier:** Tubelink  
**Product:** BASIC programmers Toolkit Module  
**Available:** Early 1988

All the utilities the BASIC V programmer could ever wish for to make programming as effortless as possible, with many time-saving functions and utilities for aiding program development.

## Word Processing and Document Preparation

**Supplier:** BBC Soft  
**Product:** ArcWord  
**Available:** Early 1988

A powerful, but easy-to-use, 32-bit word processor which allows the user to create any document from a memo to an entire book, complete with graphics, fonts, highlighting, etc. Fully Uniform(#) compatible.

**Supplier:** Computer Concepts  
**Product:** Word Processor  
**Available:** TBA

A full feature word processing system including many facilities available in popular Desk Top Publishing packages. The overall page layout may be controlled by definition of 'master pages' and/or modified individually.

Some of the features include:

- \* Operates entirely within the WIMP environment
- \* Fully formatted document on screen
- \* Scaled view of full page visible whilst editing
- \* Uses all Acorn-supplied fonts, font sizes and styles

- \* User-defined styles, e.g. Times 14 bold, underlined, etc., can be defined as one style then applied at any point in the document. If a definition changes, all occurrences change to match
- \* Multiple documents in their own windows visible simultaneously
- \* Multiple windows can be opened into the same document
- \* All cursor movements can be controlled from mouse or keyboard
- \* Graphics can be placed and positioned anywhere within the document, even enclosed by text
- \* Headers, Footers and footnotes are supported, all of which can be multiple line, multiple column, include graphics, and may use any combination of fonts, sizes and styles
- \* Automated generation of contents page and indices
- \* In-built spelling checker (a greatly enhanced version of Spell-Master) containing approx. 60 000 words, Intelligent 'guess' facilities, 'browse through' dictionary, add/delete words to/from user dictionary
- \* Optional thesaurus
- \* Supplied in ROM for instant access

#NB UniForm is the BBC Standard File Format, a new format that allows different programs to read each other's files. UniForm was developed by the BBC and Acorn Computers Limited.

*Supplier: Clares Micro Supplies*  
*Product: Graphic Writer*  
*Available: Now*

Graphic Writer is a sophisticated WIMP based word processor with the ability to include graphics as well as to use various font combinations. If you don't want to include graphics then Graphic Writer can be used as a stand-alone word processor. Because Graphic Writer is document-based you do not have to create page-layouts for every page. You prepare your whole document in one go. Just type it, add the graphics and print it - simple. The graphics can be created with the built-in graphics editor.

The graphics editor can be used on its own to create scalable graphics that can be used either in Graphic Writer or in their own right. The graphics are drawn in a window and, when completed, the window can be scaled and re-scaled to whatever size you require without loss of definition.

Graphic Writer is designed as a first level DTP product and it uses the normal printer fonts to print both text and graphics in one pass. Clares will, of course, be producing a full-feature DTP at a later date. Here are just some of the features in Image Writer.

- \* Super smooth scrolling
- \* Fast search and replace
- \* Justify left, right, full, centre
- \* Case swap
- \* Mouse-compatible

- \* Mixed text and graphics
- \* Normal, bold, italic and underlined text or combinations of all four
- \* Sub and superscript
- \* Multiple rulers with left and right margin control
- \* Block operations - delete, undelete, copy and move
- \* Delete and restore whole document

Image Writer is a must for all those who want to illustrate their documents and at such a low price you can't afford to be without it.

*Supplier:* Ian Copestake Software  
*Product:* Architype  
*Available:* Early 1988

Multi-lingual text handling and typesetting.

Architype for the Archimedes takes WYSIWYG word processing a stage further. One of Wordpower's strong points is its ability to display and print text in a wide range of linguistic and scientific character sets. This new edition of Architype for the Archimedes provides an even closer link between screen display and printout, and offers the ideal environment for translation work or the preparation of scientific papers as well as normal word processing.

*Supplier:* Watford Electronics  
*Product:* Grammar/Syntax Checker  
*Available:* TBA

Will check any grammar, check any document looking for the type of error not found by a normal spellchecker, e.g. there instead of their.

## Planning and Decision Aids

*Supplier:* Acornsoft  
*Product:* Logistix  
*Stock code:* SKB20  
*Available:* Now

Logistix is the popular PC package for busy people who need fast answers to 'what if' questions.

Logistix incorporates : \* Spreadsheet with a range of mathematical, logical, statistical and financial functions. \* Database with sort, insert and delete for fields and records \* Timesheet facility using information stored in the database. \* Graphics, including bar charts, line and area graphs, Gantt charts, scatter graphs, spread graphs and pie charts.

## Communications

*Supplier:* Beebug Ltd  
*Product:* The Beebug MODEM  
*Available:* Early 1988

A Hayes compatible MODEM module designed especially for the Archimedes computer. It provides V21 and V23 band rates as standard and optional V22 and V22 bis rates with tone dial. The full Hayes 'AT' command set is implemented together with a battery-backed telephone number as S register store. Other features include:

- \* Line monitoring through computer system
- \* V25 Auto-Answer facility
- \* Selectable bell tones

*Supplier:* Beebug Ltd  
*Product:* Command  
*Available:* Early 1988

The latest in communication software running under the Acorn WIMP environment featuring a comprehensive range of terminals, including : Viewdata, VT52, VT 100, Tektronix 4010, Teletype etc. The package supports a range of modems and includes the facility to create customised modem-drivers. A very wide range of file transfer protocols is available, including: XMODEM, YMODEM, Kermit (full specification), CET. Other features include a disc manager, telephone directory, host mode and toolkit (text editor, file conversion, etc.). A self-contained communications language may be used to control all the above features.

*Supplier:* Acornsoft  
*Product:* Termulator  
*Stock code :* SKC23  
*Available :* Early 1988

Termulator is a DEC VT220 emulator for Archimedes, which allows you to run your Archimedes as if it were a VT220 terminal and still have the full power of Archimedes at your disposal, when your terminal session is completed.

*Supplier:* Acornsoft  
*Product :* Acom  
*Stock code :* SKC10  
*Available :* Mid 1988

Acom is a full Prestel emulator for the Archimedes, which allows you to connect to any of the recognised Viewdata services such as Micronet and Telecom Gold. It includes full editor facilities and is implemented to the emerging CEPT standard for Europe.

*Supplier:* Acornsoft  
*Product :* Acom Host  
*Stock code :* SKC21  
*Available :* Mid 1988

Acom Host is a full Viewdata host system for the Archimedes. It is implemented to the emerging CEPT standard and includes private mailbox, keyword search, up to five bulletin boards and an 'answering page' facility for applications such as teleshopping.

*Supplier:* Acornsoft  
*Product :* Kermit  
*Stock code :* SKC06  
*Available :* Now

Kermit is a protocol for transferring files from Archimedes to other microcomputers, mini computers and mainframes over asynchronous terminal connections. Therefore, provided that Kermit is also installed on the target computer (for file transfer), importing and exporting of files can be carried out to and from your Archimedes computer.

*Supplier:* BBC Soft  
*Product:* ArcComm  
*Available:* Mid 1988

A comprehensive terminal package that will access VT5 scrolling systems, as well as PRESTEL, TELETEL, and CEPT 3 VIEWDATA SYSTEMS. You can set up your own list of databases with all the necessary settings and telephone numbers. ArcComm uses the standard BBC MODEM drivers. Fully UniForm(#) compatible.

# NB UniForm is the BBC Standard File Format, a new format that allows different programs to read each other's files. UniForm was developed by the BBC and Acorn Computers Limited.

*Supplier: Watford Electronics*  
*Product: 1200-1200 MODEM*  
*Available: TBA*

*Low cost, high performance MODEM. Auto dial, auto answer, auto baud sensing, Hayes compatible with 1200 baud full duplex communication. Full software supplied. A plug in upgrade for 2400 baud full duplex will also be available. Full software using Acorn WIMP interface supplied.*

*Supplier: Magenta Research Ltd*  
*Product: U-Connect*  
*Available: Early 1988*

A comprehensive communications package designed especially for Archimedes.

- \*Supports Teletype VT100 and Videotex screen emulations.
- \*File transfer with XMODEM, YMODEM and Kermit.
- \*Indexed dialling directory.
- \*Programmed connection configurations.
- \*all WIMP based.
- \*Mouse interaction.

## CAD

*Supplier: Channel Micro Products Ltd.*  
*Product: Printed Circuit Board CAD*  
*Available: Early/Mid-1988*

This system enables the user to design printed circuit boards on Archimedes and print the artworks on to standard computer paper. Printed circuit boards may then be fabricated directly from photo-reductions of these artworks. Features:

- \* Fully compatible with the Micronova and Channel Microsystems PCB Systems.
- \* Fully menu-driven with colour coded menus. Easy-to-use.
- \* Standard Red-Blue artwork protocols. Both sides of a double-sided board visible simultaneously on screen.
- \* Ability to draw most pad sizes and dual-in-line and single-in-line configurations, or erase them, with a single keystroke.
- \* Automatic bussing of similar dual-in-lines.
- \* Gridlock and Local Zero cursor facilities in Drafting Program.
- \* Powerful on-screen editor. The contents of a screen box of variable size and position may be deleted, moved, changed to the other side of the board, locked to the cursor and moved around the screen, reflected, or rotated. In addition, the contents of the screen box may be saved to a named file.

- \* Maximum board size greater than 2ft x 2ft.
- \* Print out at 1:1 for reference purposes, and 2:1 and 4:1 for direct photo-reduction.
- \* All artworks may be mirror imaged. Solder resist masks produced automatically for each side if required
- \* All printed artworks automatically scaled and labelled. Automatic time and date stamping .
- \* Plotter Drivers for most plotters available.

*Supplier:*        *Techsoft*  
*Product:*        *Techsoft Designer*  
*Available:*       *Spring 1988*

A powerful Computer Aided Design (CAD) package suitable for schools, colleges and small businesses. The ease-of-use of the system, particularly in dealing with 'difficult geometry' and editing, deleting, etc., is one of its strongest features. The BBC/Master version has already been well received.

## Music

*Supplier:*        *Electromusic Research Ltd*  
*Product:*        *MIDI Interface Unit*  
*Available:*       *Now*

Compatible with EMR software, comprising MIDI In, Outx2 and Sync input, connecting to 2MHz bus and User port to Archimedes and MIDI-equipped instruments. This is the current EMR Interface for B,B+, Master and Compact which is usable on the Archimedes I/O Podule.

*Supplier:*        *Electromusic Research Ltd*  
*Product:*        *EMR MIDITRACK Music System*  
*Available:*       *Modules TBA*

A state-of-the-art multitrack digital recording system packed with innovative features offering full control of music with any number of MIDI instruments up to studio standard. Modular design allows gradual expansion of system to contain sufficient control for individual set-ups. Developed as a result of EMR's proven experience over 4 years on BBC micros and released as MIDITRACK modules for normal (real and steptime), intelligent and educational recording, microtonal composition, comprehensive music editing, notation, artmusic graphics, interactive learning, plus 'music development pack' allowing user to extend his own MIDITRACK modules. Programs link with both MIDI and internal Archimedes sound system.

*Supplier:* Electromusic Research Ltd  
*Product:* EMR MIDIBANK Voice Editor  
*Available:* TBA

Comprehensive voice editing package for various MIDI instruments allowing exchange of system exclusive data between micro and instrument for single or bulk loading/saving of sounds/parameters, plus editing and creation of individual voices. Compatible with MIDITRACK Music System.

*Supplier:* Electromusic Research Ltd  
*Product:* EMR MIDISAMPLER 1  
*Available:* TBA

First of a series of sampling instruments utilising Archimedes software with various EMR hardware podules combining to offer facilities up to studio standard. MIDISAMPLER 1 is a low-cost high-quality 16-bit mono sampler (8.5 secs per 256K) with features including start/end edit, forward/reverse/triggered playback, full loop editing, sample display and redraw. Compatible with MIDITRACK Music System.

*Supplier:* Electromusic Research Ltd  
*Product:* EMR SCOREWRITER  
*Available:* TBA

A stand-alone advanced music scoring program for high-quality notation on various printer types. Full score printout plus individual parts (fully polyphonic) and piano transcriptions (merged parts) as well as comprehensive editing facilities and various music input options. Music sound source for scorewriting can be internal Archimedes in addition to MIDI instruments. Compatible with MIDITRACK Music System.

## Languages

*Supplier:* Smalltalk Express  
*Product:* Little Smalltalk  
*Available:* Now

The 'Little Smalltalk' package consists of a book 'A Little Smalltalk' by Timothy Budd and the software. Based on Smalltalk-80, this implementation embodies most of the features of the object-orientated paradigm and includes all the software from which the software has been compiled.



Smalltalk-80, which runs on such workstations as Tektronix, Sun and Apollo has been the basis of the creation of many complex computer applications. The world of Smalltalk comprises objects, all of which are encapsulations of code and data. Each object has the facility to inherit messages from other objects within its class hierarchy and is one of the contributing factors helping to keep the lowest level of detail away from the designer, allowing more time to be spent on the problem rather than on the tools available.

*Supplier:*        *Acornsoft*  
*Product:*       *Ansi C*  
*Stock code:*    *SKL28*  
*Available:*     *Now*

The Acornsoft C compiler for Archimedes is a full implementation of the draft ANSI standard language definition. It includes the C compiler, the ANSI library, the Linker and an additional library, ArthurLib. The Arthur library deals with the general input/output features of Arthur (the Archimedes Operating System) including graphics, sound and keyboard. It also provides functions specifically concerned with the Arthur WIMP (Windows, Icons, Menus and Pointer) system.

Note: Ansi C requires an Archimedes 310 as a minimum configuration.

*Supplier:*        *Acornsoft*  
*Product:*       *ISO-Pascal*  
*Stock code:*    *SKL38*  
*Available:*     *Now*

The Acornsoft ISO-Pascal compiler conforms to BS 6192 :1982, level 1. This standard is functionally equivalent to ISO 7185. This implementation of ISO-Pascal, running under the Arthur operating system includes optional extensions which considerably extend the scope of Pascal in key areas. In particular, modules are introduced to permit the development of large applications in a structured and partitioned manner, and in-line assembly language allows the ultimate escape when no other solution is possible.

All interaction with the operating system is performed by means of external procedure calls. Therefore the code of the compiler and any programs it compiles will not contain any specific code which is dependent on the Arthur operating system. Instead, Archimedes specific instructions are generated if included explicitly as in-line assembly-language statements. The ISO-Pascal package includes the compiler, the linker and the User guide.

Note: ISO-Pascal requires an Archimedes 310 as a minimum configuration.

*Supplier:*        *Acornsoft*  
*Product:*       *Fortran 77*  
*Stock code:*    *SKL48*  
*Available:*      *Now*

The Acornsoft FORTRAN 77 compiler has been fully validated in accordance with the American National Standard Programming Language FORTRAN X3.9 - 1978 (ANS FORTRAN).

The FORTRAN 77 compiler is made up of two parts : a front end which checks that the source code conforms to the standard, and a code generator which creates the equivalent machine code program. This is in Acorn Object Format (AOF) and is linked into an executable form using the linker program (included in the package).

Acornsoft FORTRAN 77 offers several enhancements to the standard. These include use of hexadecimal constants whenever an ordinary constant is used, conversion of all lower case letters (except FORMATS and character constants) to upper case, LOOP extensions, Random Number Generator, Include statement facility, Type names extensions, use of the COMPLEX\*16 value and BIT Manipulation functions.

Note: FORTRAN 77 requires an Archimedes 310 as a minimum configuration.

*Supplier:*        *Acornsoft*  
*Product :*        *Prolog X*  
*Stock code :*    *SKL68*  
*Available :*      *Now*

Prolog is a simple but powerful programming language originally developed at the University of Marseilles as a practical tool for programming in logic. Prolog is especially suitable for high-level symbolic programming tasks and has been supplied in many areas of Artificial Intelligence research.

The interactive Archimedes Prolog X system consists of an incremental Prolog compiler, a run-time system and a wide range of built-in (system-defined) procedures. The system is closely compatible with DEC system-10 Prolog.

*Supplier:*        *Acornsoft*  
*Product :*        *Lisp*  
*Stock code :*    *SKL14*  
*Available :*      *Now*

Lisp was originally developed to provide support for an on-going research project in computer algebra. It is intended for running experimental programs, and so makes a policy of checking for exceptional cases and provides clear and concise diagnostics.

The Archimedes (Cambridge) Lisp system is, to a large extent, compatible with a proposed LISP standard put forward by Professor A.C. Hearn and others of the University of Utah and the Rand Corporation. Lisp includes an editor, implementation features such as PRESERVE and LOAD-ON-CALL FACILITY, I/O routines, Evaluating functions and debugging functions.

Note: Prolog and Lisp both require a minimum configuration of an Archimedes 310.

## Expansion Cards

*Supplier:* Millipede Electronics Graphics  
*Product:* Prisma-3  
*Available:* Mid 1988

Prisma-3 is a high performance computer graphics interface designed for professional applications in Research, Graphic Design, Video and Television. A resolution of 1536 by 574 pixels is supported with a range of almost 17 million colours. Image capture from live video and broadcast genlock are standard. A very high level of software support is provided with emulation of the Arthur Operating System graphics functions, with many additions to cover facilities such as real-time animation.

*Supplier:* RESOURCE  
*Product:* Oscar  
*Available:* Mid 1988

This is a complete package of software and a specially designed podule which turns the computer into a sophisticated storage oscilloscope. The computer can measure analogue signals with the sampling rate of at least 50 KHz. It can compare traces, present them in a variety of graphical forms and store them for future use. An essential instrument for the science laboratory.

*Supplier:* Tubelink  
*Product:* Archimedes SPEECH Module  
*Available:* TBA

Speech synthesis on the Archimedes. Complete sentences can be spoken instantaneously through simple-to-use commands which can be called from within user programs to make instructions for fellow users as simple and as clear as possible. Due to the excellent sound interface in Archimedes, speech quality through Tubelink's SPEECH Module is of the highest quality.

*Supplier: Intelligent Interfaces Ltd*  
*Product: IEEE488 Interface Expansion Card*  
*Available: Now*

An Archimedes computer system fitted with an IEEE488 Interface Expansion card can communicate with up to 14 test and measurement instruments eg DVMs (digital voltmeters), plotters, digital oscilloscopes, spectrum analysers, function generators, counters, logic analysers, programmable power supplies etc.

Areas of application in test and measurement include industrial and academic research and development laboratories, ATE (automatic test equipment) systems, control systems, production test systems, data exchange with Hewlett Packard computers, connecting peripherals e.g. plotters and printers.

The combination of Acorn 32-bit RISC Technology and Intelligent Interfaces hardware and software design, results in an extremely fast data transfer rate (around 250 Kbytes).

The computer can be configured as the system controller or as a simple talker/listener. As the system controller, the computer can send REN (remote enable) and IFC (interface clear) and operates as the controller in charge. It can then address itself, and other devices, to talk and listen and to input and output data. All addressed commands e.g. GTL (Go To Local) and all universal commands e.g. LLO (Local Lockout) can be sent. The computer can conduct both serial and parallel polls and pass control to another device.

As a talker/listener the computer can, when addressed by the controller in charge, input and output data. It can specify the serial poll STB (status byte) and RQS (request service) from the controller in charge by sending SRQ (service request). The computer can take part in a serial poll and be remotely configured to take part in a parallel poll. It can become controller in charge if control is passed to it by the current controller in charge.

Software in ROM on the Expansion Card extends the operating system to enable IEEE488 interface operation and presents a simple low level software interface for assembler programmers. For those programming in BASIC an ultra high level software interface is provided by a library of BBC BASIC Procedures and Functions supplied on disc. Libraries of procedures for FORTRAN 77, ISO Pascal and C are available separately.

*Supplier: Unilab Ltd*  
*Product: Weather Satellite Receiver and Display System*  
*Available: Mid 1988*

Enables you to receive signals from the NOAA weather satellite and use the computer as a very sophisticated display terminal.

Uses user port so requires backplane and I/O Podule to be fitted.

- \* Pictures 256 x 640 pixels.
- \* 64 tones on grey scale.
- \* Can dump pictures to printer or screen.

*Supplier:*        *Watford Electronics*  
*Product:*       *Real Time Digitiser*  
*Available:*      *Now*

Real time high resolution digitiser with full software support allowing manipulation of images.

## Networking

*Supplier:*        *XOB*  
*Product:*       *Directory Manager*  
*Available:*      *Now*

When re-arranging and tidying the contents of directories, it is inconvenient constantly to have to change between the various system utilities needed for this process. Typically these might include \*ACCESS, \*RENAME, \*DELETE, \*INFO, \*CAT and \*DUMP. At any time, a mistake can result in the loss of valuable data.

These problems are compounded with the complex structures possible on hard-disc systems and with Econet servers. Directory Manager makes the management of directories a joy. The entire directory contents are visible on screen. Files may be accessed, renamed, deleted and 'undeleted' with single key commands. The file parameters (as shown by \*INFO) are in view as each file is considered.

It is possible to change and re-change your decisions as to the fate of a given file, working backwards and forwards through the directory. Only when the user is satisfied that all the changes are correct need they be implemented.

*Supplier:*        *XOB*  
*Product:*       *PassMan*  
*Available:*      *Now*

The password management system allows the system user to keep track of all users registered on the file-server (Acorn Level II, III and Filestore Econet systems only).

On Level II systems the following details may be displayed:

- \* All users or only system users, with or without passwords.

- \* Boot option for each user.
- \* Users in original or alphabetical order.
- \* Data to be printed to screen, printer or file.
- \* Filed data may be used to facilitate changing user parameters using the software supplied or that written by the user.

On Level III and Filestore systems all the above are possible, as is free space allocation of the user. Groups of users may be searched for.

The major advantage of the package is that the status of the entire user population may be viewed at a glance. It is possible to check regularly for users who have illegal options, or who may have illegal system status. Software is included to illustrate a range of applications for the data gathered (e.g. setting up options for entire groups of users).

*Supplier:* S J Research  
*Product:* MDFS  
*Available:* Now

Econet File Servers. A Modular system allowing expansion up to 140Mb of Hard Disc with tape backup, 4 floppy discs and 2 (spooled) printers.

## Engineering Applications

*Supplier:* Wyre CNC Systems Ltd  
*Product:* 'G-CODER'  
*Available:* Now

'G-CODER' is an 'off-line' CNC Part Programming package with comprehensive editing capability. Part programs are stored on disc and a DNC link is provided for direct down loading of CNC programs to the machine tool, eliminating the need for paper tape or cassettes. 'G-CODER' is available for many industrial CNC controls and paper tape punches including Fanuc, Anilam, Bosch and Heidenhain, or can be tailored to the user's individual requirements.

*Supplier:* Wyre CNC Systems Ltd  
*Product:* Profiler  
*Available:* Now

'Profiler' is designed to aid production engineers in writing CNC part programs, by eliminating the need to calculate tool paths for complex shapes.

The system uses simple geometry commands and interactive graphics for Computer Aided Part Programming (CAP), of CNC milling machines and lathes with Fanuc, Anilam, Bosch and Heidenhain industrial CNC controllers.

Also included are full edit facilities and a DNC communications package for down loading programs to the CNC controller of paper tape punch.

'Profiler' is also suitable for students on CAE courses in Further and Higher Education.

## Statistics

*Supplier:*        *Serious Statistical Software*  
*Product:*        *FIRST Advance Statistics*  
*Available:*       *Now*

'FIRST' offers professional and academic level facilities plus standard features. it is designed to encourage and facilitate data critique, not merely analysis. 'FIRST' is fast, robust, accurate and interactive.

Features include:

- \*Comprehensive univariate statistics
- \*Unrivalled regression facilities
- \*Advanced regression diagnostics
- \*Robust regression
- \*Non-linear regression
- \*Time Series techniques
- \*Versatile two and three-way ANOVA
- \*Nonparametric methods
- \*Linear calibration
- \*Advanced 'outlier' detection

# Education

## Business Studies and Information Technology

*Supplier:*            **RESOURCE**  
*Product:*          **Modula**  
*Available:*        **Mid-1988**

Archimedes is a powerful computer with a window environment. If you want to create your own file handling programs and business case studies without doing your own programming, then Modula is the package for you. It consists of a series of software modules which can be fitted together to create your own custom-built program. Just to show it works Modula includes three case studies - pay-roll, stock control and order processing.

*Supplier:*            **Scetlander**  
*Product:*          **Airline Reservation Package**  
*Age Range:*        **14-16**  
*Available:*        **Now**

One of the main uses of computers is to store and access important information which may be changing from minute to minute. Teaching about real-time systems can be very dry without a practical demonstration and it can be difficult to explain the range of programs and facilities which is required to sustain a rapidly changing bank of data. Airline Reservation Package overcomes these problems and presents the topic in an interesting context and in a practical manner. The package includes both teacher and pupil notes.

*Supplier:*            **Scetlander**  
*Product:*          **Stock Control Simulation**  
*Age Range:*        **14-16**  
*Available:*        **Now**

Commerce and industry are routinely using computers to control stock. This fully developed simulation gives pupils the opportunity to run a company for up to 120 computer days. The program has three objectives:

- \* To emphasise the importance of the computer in helping industry to set proper re-order levels, to choose reliable suppliers and to link the whole stock control process to production;
- \* To illustrate a simple stock control situation with associated graphs, tables and charts;
- \* To highlight the difference between manual and computer controlled reordering of stock. Both teacher and pupil notes are provided.



## Mathematics

*Supplier:* Scetlander  
*Product:* Bearings Suite A  
*Age Range:* 4-8  
*Available:* Now

A suite of three programs designed to give children confidence in, and to consolidate their understanding of, left and right orientation. The suite progresses to simple route planning; working out a destination following a given route using the commands left or right.

*Supplier:* Scetlander  
*Product:* Bearings Suite B  
*Age Range:* 7-12  
*Available:* Now

A suite of three programs designed to consolidate and extend the pupil's knowledge of the four compass points. Each program has several levels of difficulty.

*Supplier:* Scetlander  
*Product:* Bearings Suite C  
*Age Range:* 7-12  
*Available:* Now

A suite of three programs which further develops the pupil's knowledge of the eight compass points, familiarises him with common Ordnance Survey map symbols and reinforces his understanding of the relationship between bearings and compass directions.

*Supplier:* RESOURCE  
*Product:* Droom  
*Available:* Now

Using the full graphics of Archimedes, Derek Allen has created this superb adventure game. Droom is based around a story in which the Princess Arminda has been kidnapped by the wicked dragon Droom and Prince Henry, her true love, has been turned into a frog. The children's task is to rescue Arminda and in the course of their adventure the children will encounter fairies, trolls, a witch and a wizard. Although the program is set in the context of a story, progression through it depends upon the solution of a series of mathematical problems and puzzles. Extensive guidance for the use of the program is provided together with many back-up materials.

Supplier: RESOURCE  
Product: Dust  
Available: Mid 1988

This adventure is the sequel to Droom (see preceding entry) and follows the same principles of logical and mathematical problem-solving. It is intended to be of use not only in primary, but also in secondary schools, where it has already had a good reception as a motivating tool for reluctant learners. This outstanding package will provide considerable theme-based work relating to many curriculum areas.

## Reading

*Supplier:* H.S.Software  
*Product:* Bumper Pack 1  
*Age range:* 5 - 11  
*Available:* Now

A compilation of eight colourful and exciting reading games for 5-11 year olds, converted from H.S.Software's best selling Read-Right-Away series for 8-bit BBC micros that have all featured in the Acorn User Educational.

## Environmental Studies

*Supplier:* Scetlander  
*Product:* Car Hire  
*Age Range:* 8-12  
*Available:* Now

In this simulation of a small car-hire firm, the pupil is required to receive and make bookings according to each customer's need. Bookings are communicated by telephone calls built into the program. The main skills involve reading for information and decision-making. An overlay is supplied for the function keys which feature in the electronic 'booking form'. The pupil can 'run' the firm for up to four weeks with statements being printed out at the end of each week. Statements can also be saved so that the pupil can resume at another time. A teacher's section allows control of the booking and costs the pupil has to manage.

*Supplier:*            *Scetlander*  
*Product:*           *Catch*  
*Age Range:*        *10-12*  
*Available:*          *Now*

Peterhead fishing port is the scene of this involving project where pupil groups adopt the roles of crew members aboard a seine-netter. Decision making is developed as is a knowledge of the fishing industry. Pupils are supplied with background information and a log book. They also have use of a 'radio' to 'hear' weather forecasts and fish prices. Graphics show weather, soundings of the ocean, size of catch and duration of trip. Pupils must interpret the on-screen sounder to catch fish. Decisions made by the 'crew' are reflected in the operating profits or losses shown on the 'End of Trip Statement Sheet'. A teacher's section provides control of the weather which children face. Random factors are also included. Crew decisions affect the end of trip 'Balance Sheet' which provides an analysis of the costs incurred by the voyage and of the income provided by fish sales. This can lead to discussion on the real-life problems facing small businesses.

*Supplier:*            *Scetlander*  
*Product:*           *Holiday*  
*Age Range:*        *10-12*  
*Available:*          *Now*

Holiday is a simulation of a travel agent-type booking system. It provides great scope for a variety of different types of work. A schematic with suggestions is included in the package which also features a specially produced holiday brochure. The program has three parts: Hotel Information related to the brochure and a Booking Service which can be used in either Customer or Agent mode. The completed holiday booking can be costed and printed out. An extensive teacher's section can update prices, save bookings and switch off the information service.

## **General Science**

*Supplier:*            *Longman*  
*Product:*           *Floating and Sinking*  
*Age range:*        *11 - 16*  
*Available:*          *Early 1988*

Aims to help by extending the experimental work that students do in elementary hydrostatics. The program produces simple animations representing the behaviour of hollow and solid objects of various materials and sizes when they are placed in a range of liquids.

*Supplier: Longman*  
*Product: The Blast Furnace*  
*Age range: 11 - 16*  
*Available: Early 1988*

A simulation of the operation of a blast furnace. Students are able to investigate the effect of temperature and blast rate.

*Supplier: Longman*  
*Product: Bridge Building*  
*Age range: 11 - 16*  
*Available: Early 1988*

A program designed to help children appreciate the factors affecting the design of bridges. It is possible to consider beam, Warren, and arch bridges.

*Supplier: Longman*  
*Product: Circuits*  
*Age range: 11 - 14*  
*Available: Early 1988*

This program allows students to correct faults in simple electrical circuits similar to those they would construct using a Worcester Circuit Board. It is anticipated that the program will extend the conventional practical work that students do.

*Supplier: Longman*  
*Product: Heating a Wire*  
*Age range: 11 - 16*  
*Available: Early 1988*

This program allows students to investigate the variation of temperature with current in the element of an electric fire or a light bulb.

*Supplier: Longman*  
*Product: Domestic Heating*  
*Age range: 14 - 19*  
*Available: Early 1988*

The amount of energy needed to keep a home warm depends on many factors - including type of house, construction, size, number of storeys, temperature, location, exposure, altitude, ventilation, etc. This program allows the student to use pre-set values that apply to his or her home, and then to

explore the effects of various changes. In this way students are encouraged to find out about their homes, the effects on heating bills and how to go about reducing energy costs.

*Supplier:* Longman  
*Product:* Domestic Electrical Fault Tracing  
*Age range:* 11 - 14  
*Available:* Early 1988

This program gives students the opportunity to develop problem-solving skills to identify why a television does not work when it is plugged in.

*Supplier:* Longman  
*Product:* Mine Manager  
*Age range:* 11 - 14  
*Available:* Early 1988

Simulates monitoring and decision making in a coal mine. Students are put in charge of a mine and are required to observe methane levels, air flow and other relevant data; detect unusual changes and make adjustments if faults develop.

## Biology

*Supplier:* Longman  
*Product:* CIC Animal Physiology Pack  
*Age range:* 14 - 19  
*Available:* Early 1988

A suite of four programs as follows:

Blood Sugar - A model to demonstrate the relationships between the various factors affecting the level of glucose in the blood of a human to illustrate the principles of homeostasis.

Countercurrent Systems - Simple models of a heat exchanger and a countercurrent multiplier.

Diet Analysis - A breakdown of the calorie, protein, fat, carbohydrate, vitamin and mineral content in meals selected by the student.

Human Energy Expenditure - Calculates the energy required for different activities and the energy obtained from different foods and considers the energy used and gained over certain periods of time.

*Supplier:* Longman  
*Product:* CIC Biochemistry and Plant Physiology Pack  
*Age range:* 16 - 19  
*Available:* Early 1988

Flowering in Soya Bean - Provides a study of the factors affecting flower initiation and the control of flowering by endogenous rhythms by allowing students to plan and carry out series of experiments under controlled conditions.

Limiting Factors in Photosynthesis - Demonstrates how the rate of photosynthesis may be limited by one or more factors and allows students to plan and carry out investigations, using a wider range of parameters, controlled with a greater precision, than is otherwise possible in a school laboratory.

*Supplier:* Longman  
*Product:* CIC Heredity Pack  
*Age range:* 14 - 19  
*Available:* Early 1988

Inheritance - Breeding investigations in *Drosophila melanogaster*, mice, humans and tomato plants for an introduction to the study of genetics.

Multifactorial Inheritance - A model to investigate continuous variation in a hypothetical organism. Models the effect of up to ten genes, each with two alleles, on the size of the organism. Statistics for Biologists - A collection of simple utility programs to aid the handling of biological data. Calculates mean, standard deviation,  $t$  and correlation coefficient  $r$ . Also carries out the chi-squared test.

*Supplier:* Longman  
*Product:* CIC Ecology Pack  
*Age range:* 14 - 19  
*Available:* Early 1988

Biomass - Assists in the understanding of the production of biomass by a secondary producer and demonstrates how man can affect the yield and maximise the return for a given resource. The program models a freshwater reservoir which can be stocked with trout from fry to adults and allows students to 'observe' the population over many years with or without interference by man.

Pond Ecology - Gives students a greater understanding of the delicate balance which exists in an ecosystem by modelling the effects of fishing and pollution on numbers of phytoplankton, herbivores and fish in a freshwater community.

**Predator-Prey Relationships** - Gives students an understanding of the nature of an ecosystem by studying one of its principal features - the interactions between predators and their prey.

**Statistics for Biologists** - A collection of simple utility programs to aid the handling of biological data. Calculates mean, standard deviation,  $t$  and correlation coefficient  $r$ . Also carries out the chi-squared test.

*Supplier:* Longman  
*Product:* Human Reproductive Cycle  
*Age range:* 11 - 16  
*Available:* Early 1988

A model of the female reproductive cycle, showing the relationships between the time of the month, the state of the ovaries and the thickness of the uterus lining.

*Supplier:* Longman  
*Product:* Water Treatment  
*Age range:* 11 - 14  
*Available:* Early 1988

A simulation concerned with monitoring and maintaining the domestic water supply to a town. It is possible to vary the water flow rate and the amount of flocculant, lime or chlorine added to the water. This program monitors the pH, the clarity and the purity of water.

## Physics

*Supplier:* Longman  
*Product:* CIC Middle Secondary Physics Pack  
*Age range:* 13 - 19  
*Available:* Early 1988

**Gravitational Fields** - An investigation of simple gravitational motion and the idea of escape velocity.

**Momentum** - Gives students an insight into the concepts of momentum and momentum conservation with the help of an animated simulation of a before- and-after study of a collision between two objects. Elastic and inelastic collision can be investigated.

**Planetary Motion** - An analysis of real and generated orbit data leading to laws of planetary motion. Suitable for students aged 14 and over who are learning about direct proportionality. The unit covers simple Newtonian gravitation applied to orbit theory for more advanced students.

*Supplier:* Longman  
*Product:* CIC A-Level Electricity Pack  
*Age range:* 16 - 19  
*Available:* Early 1988

Capacitor Discharge - Laboratory experiments and a computation of simple capacitor circuits.  
Electrical Impedance - Charts the frequency response of circuits containing resistors, capacitors and inductors which can be defined by the user.

*Supplier:* Longman  
*Product:* CIC A-Level General Physics Pack  
*Age range:* 14 - 19  
*Available:* Early 1988

Acoustics - Designed originally for technology courses, this program has proved of considerable interest to physics teachers. The program calculates reverberation time of a room for different sound frequencies. The design of the room and materials used in its construction can be varied.

Mass Spectrometer - A simulation of a mass spectrometer allowing eventual identification of ions in an 'unknown sample'. Other investigations from a range of supplied samples may be tried. Further samples can be added to the simulation.

Photoelectric Effect - A basic introduction to the photoelectric effect and Einstein's photoelectric equation using a computer model and a simulation of Millikan's apparatus.

*Supplier:* Longman  
*Product:* Cube Painter  
*Age range:* 11 - 14  
*Available:* Early 1988

The students can 'paint' cylinders, cubes and spheres of different volumes and compare surface area/volume ratios by considering the amount of paint used.

*Supplier:* Longman  
*Product:* Eye  
*Age range:* 13 - 16  
*Available:* Early 1988

Two programs - EYE 1 and EYE 2 - which demonstrate how the eye works. The programs show the path of light from a point on an object to the retina. The user can alter the distance of the object from the eye, the size of the iris (EYE 1 only), the focal length of the lens, the condition of the eye, the effect of spectacles (EYE 2 only).



The program calculates whether the image is in focus for any chosen set of conditions. The path of light from a point on the object is plotted using high resolution graphics. Colour or black and white displays can be selected. The programs are suitable for all abilities of pupils from the age of thirteen upwards. Several experiments can be done before the programs are used. Pupils should be familiar with the biological structure of the eye, the term 'in focus', concave and convex lenses.

## Chemistry

*Supplier:* Longman  
*Product:* CIC Physical Chemistry Pack  
*Age range:* 13 - 19  
*Available:* Early 1988

**Rates of Reaction** - The effect of reaction conditions, including particle size of catalyst, on the rate of decomposition of hydrogen peroxide.

**Gas Laws** - Helps understanding of these difficult concepts by providing graphical displays demonstrating the relationship between volume, temperature, pressure and mass of an ideal gas.

**Homogeneous Equilibrium** - An investigation of acid-alcohol equilibrium and some gas phase equilibria leading to an equilibrium law in terms of concentration.

*Supplier:* Longman  
*Product:* CIC Industrial Chemistry Pack  
*Age range:* 13 - 18  
*Available:* Early 1988

**The Manufacture of Sulphuric Acid** - An investigation into aspects of a chemical industrial process. The conflicting demands of best equilibrium yield, high daily production and profitable manufacture.

**Siting an Aluminium Plant** - Enables students to consider some of the factors which must be considered when planning the siting and production targets of an aluminium smelting plant. Although primarily designed for the chemistry classroom, this program also has uses on general studies and economics courses.

*Supplier:* Longman  
*Product:* Balancing Equations  
*Age range:* 14 - 16  
*Available:* Early 1988

A revision and practice exercise where students have the opportunity to supply correct formulae for compounds in a chemical equation and to balance the equation. It is possible to balance equations for which correct formulae have already been supplied.

*Supplier:* Longman  
*Product:* Organic Analysis  
*Age range:* 16 - 19  
*Available:* Early 1988

Organic Analysis - Gives students the opportunity to practise deductive analysis and revise their knowledge of some of the properties of organic compounds.

*Supplier:* Longman  
*Product:* A-Level Chemistry Software  
*Available:* Early 1988

Two packs developed by M J Clugston and the Tonbridge Computer Group. Each program illustrates one key aspect of the subject, the majority fully using high resolution graphics.

It is suited to both teacher demonstration and individual student revision.

- \* Using these programs the key concepts of each topic are quickly covered.
- \* Clear straightforward instructions for use are set out in an accompanying booklet
- \* All programs are interactive

Pack 1 - Acid Dissociation; Boyle's Law; Maxwell-Boltzmann distribution; Mole calculations; Molecular structures and names; pH curves; Pressure simulation; Radioactive decay.

Pack 2 - Born-Haber cycle; Curves using the Van der Waals equation; Haber and contact processes; Orders of reaction; Three-dimensional graphs; Trends in the periodic table.

*Supplier:* Longman  
*Product:* A-Level Chemistry Software Pack 3  
*Available:* Early 1988

This pack follows on from Packs 1 and 2 and includes programs on: Orbitals; Chemical Periodical Trends; Shapes of molecules; Qualitative analysis; Classification and Raoult's Law. As with the earlier packs in the series this offers excellent value for money.

*Supplier:* Longman  
*Product:* Chemdata  
*Age range:* 16+  
*Available:* Early 1988

Chemdata is a package consisting of a data plotting program and a database editor. The plotting program enables the user to display chemical data stored in the databases in a number of different ways: numerically or graphically, on the screen or on the printer. Graphs can be 'overlayed', one on top of the other making it particularly useful for investigating periodicity.

The database editor is an extremely easy-to-use management system enabling the user to add data, update information and to create new files of data. Chemdata comes with a number of data files including melting point, relative atomic mass, molar heat capacity, atomic mass, boiling point, enthalpy of fusion, enthalpy of vaporisation, ionisation energy. All the data is taken from the new Revised Nuffield Book of Data.

## Economics

*Supplier:* Longman  
*Product:* CIC Macroeconomics Pack  
*Age range:* 16 - 18  
*Available:* Early 1988

Circular Flow of Income - An 'electronic blackboard' exercise to introduce stage by stage the circular flow of income. Can be used by students or by the teacher for demonstration. Growth under fixed Exchange Rates - A game to facilitate understanding of the implications of fixed exchange rates for domestic economic policy.

*Supplier:* Longman  
*Product:* CIC MicroEconomics Pack 1  
*Age range:* 16 - 19  
*Available:* Early 1988

Measuring Price Elasticity - A role play simulation to help students master the difficult concept of price elasticity and calculate elasticity coefficients.

Wage Theory - The marginal revenue productivity theory of wages applied to different labour markets.

*Supplier:* Longman  
*Product:* CIC MicroEconomics Pack 2  
*Age range:* 16 - 19  
*Available:* Early 1988

Price Discrimination - A simulation of the marketing of a new car to illustrate the theory of price discrimination.

Equi-Marginal Utility - A game that relates the topic of marginal utility to the way people usually behave when arranging their spending.

*Supplier:* Longman  
*Product:* Understanding Economics Pack 1  
*Age range:* 14 - 16  
*Available:* Early 1988

This pack contains Workers and Machines, Estate Agent, Iron and Steel Location, Balance of Payments and Break-Even.

*Supplier:* Longman  
*Product:* Teddytronic - The story of a firm  
*Age range:* 14 - 16  
*Available:* Early 1988

A business simulation in which groups of students run a soft toy firm. Orders depend upon the time of year, and decisions are based on production, sales, cost, cash flow data, and random events which arise from time to time.

*Supplier: Longman*  
*Product: Cost Benefit Analysis*  
*Age range: 16 - 18*  
*Available: Early 1988*

A case study of cost benefit analysis for economics and business studies students using the simulation of the management of a railway line.

*Supplier: Longman*  
*Product: Household Budgeting*  
*Age range: 14 - 16*  
*Available: Early 1988*

Students manage the budgets of three different households. Expenditure and savings are planned within the limits of the resources available. The program reinforces principles of money management and gives an appreciation of saving/consumption and work/leisure choices. The program has a team structure, and includes a review facility.

*Supplier: Longman*  
*Product: Stock Market - An Economics Game*  
*Age range: 14 - 16*  
*Available: Early 1988*

Students play the roles of economic analysts with the task of assessing how changes in the economy will affect the share values of companies. The program has a team structure, transfers results to a printer, and enables a game to be reviewed later.

*Supplier: Longman*  
*Product: Sucker - A Business Game*  
*Age range: 14 - 16*  
*Available: Early 1988*

A team game in which students simulate the running of a company producing vacuum cleaners. The model has been kept deliberately simple so that students can identify the cost and revenue relationships. The only decisions are on price and output.

*Supplier:* Longman  
*Product:* Agricultural Commodity Price Stabilisation  
*Available:* Early 1988

This unit contains a simulation in two parts which students may use to compare and contrast two types of price support and stabilisation schemes for primary commodities. The first part is about the EEC Common Agricultural Policy; the second part concerns the former UK system of guaranteed prices and deficiency payments.

## Geography

*Supplier:* Cunning Running Software  
*Product:* The Forest  
*Available:* Early 1988

An enhanced version of the real-time orienteering simulation with extensive mapping facilities to aid map and contour appreciation. Can be used both as a game and as an educational package.

*Supplier:* Longman  
*Product:* Indian Farmer  
*Age range:* 13 - 16  
*Available:* Early 1988

Students follow the lives of an imaginary farmer and his family in this role-playing exercise.

Decisions are made on planting rice and millet but students' attention is focused upon the personal and social aspects of family life in a changing near-subsistence economy. This game is based on conditions in the Middle Indo-Gangetic Plain during recent decades and complements games such as Rice Farming which is set in South Bihar.

*Supplier:* Longman  
*Product:* Drainage Basin Morphometry  
*Age range:* 15 - 18  
*Available:* Early 1988

This is a simple demonstration and utility program which supports work on drainage basin analysis using Strahler's method of stream ordering.

The program contains data for five small drainage basins and a map which shows a drainage basin with its watershed and stream numbers. The program calculates the main statistics for drainage basin analysis and displays

the results in tables and scatter graphs. Results are shown for single basins or comparisons can be made between two or three basins at once. Teachers and pupils may also type in data for other basins and use the program to calculate statistics and to make comparisons as an aid to enquiry-based learning.

*Supplier:* Longman  
*Product:* Sailing Ships Game  
*Age range:* 11 - 16  
*Available:* Early 1988

This program contains a model of the world's atmospheric circulation system, and students use the unit to reinforce and apply their knowledge of the major wind belts by navigating a ship to take best advantage of them.

At a simple level it can be used to practise compass directions, latitude and longitude and the Beaufort wind scale; at a higher level, to revise knowledge of surface wind zones.

*Supplier:* Longman  
*Product:* South Eastern Railway Game  
*Age range:* 14 - 18  
*Available:* Early 1988

This sophisticated simulation is a competitive one in which two companies try to make profits for shareholders whilst building and operating rival railway networks. The simulation is set in the south east of England during the mid-nineteenth century and is supported by detailed background information in the students' leaflets and Teachers' Guide. Students are divided into two groups and select the railway lines to be built by their respective companies. The companies build main lines from London to Channel Ports and may also set up ferry terminals and branch lines to increase their profits. The simulation may be played at a superficial level by younger pupils but it can be more fully explored by older students of Geography, History or Economics who are interested in the social and economic history of the nineteenth century.

*Supplier:* Longman  
*Product:* CIC Farming Pack  
*Age range:* 8 - 16  
*Available:* Early 1988

**Farm Game** - This is a simple decision-making game for younger pupils who choose the crops to be planted on the imaginary 'Maypole Farm'. Pupils aim to make profits but discover that farming is a high-risk business as the weather changes from year to year.

By taking account of the weather patterns, and past profits, pupils reselect the crops to achieve better profits over periods of four years or more.

To illustrate regional variations in weather patterns, Maypole Farm may be located in three different regions of Britain. This allows pupils to discover that good crop combinations in one region may not be suitable elsewhere and thus learn one factor behind contrasts in British agriculture.

**Farm Resources Game** - This program represents a new generation of farm games. It helps a wide age range of secondary school pupils to explore a number of variables involved in successfully adapting farming to the environment.

The model farm can be located anywhere in Great Britain. Pupils try to match their cropping pattern, not only to the climate, but also to balance their use of labour round the year, to make the best use of expensive machines, and to meet modern rotational requirements. More advanced students can introduce a dairy herd with its requirements for grazing and fodder crops to influence land use.

**Rice Farming** - Students play the part of rice farmers in India, and are faced with decisions about how to manage their farms while coping with environmental disturbances such as drought and pest attack. Students must consider the problems of purchasing, crop yield and marketing and should gain an understanding of the complexities of decision making for Third World farmers.

<i>Supplier:</i>	<i>Longman</i>
<i>Product:</i>	<i>CIC Population Pack</i>
<i>Age range:</i>	<i>14 - 18</i>
<i>Available:</i>	<i>Early 1988</i>

**Human Population Growth** - These two demonstration and utility programs contain recent demographic data and illustrate population growth by means of line graphs and population pyramids. They may also aid enquiry-based learning by calculating statistics for pupils' data typed in at the keyboard.

**Malthus** - This program enables students to study objectively the problems of population growth, using a Malthusian computer model of the world population, and food and energy supplies.

Students can explore the quantitative effects of altering the birth and death rates, the percentage of land used for cultivation, the discovery of new oil reserves and a change in people's diets. Once they have set their chosen variables, a graph plots predictions at five-year intervals for up to 300 years if required.



*Supplier: Longman*  
*Product: Farm Resources Game*  
*Age range: 11 - 16*  
*Available: Early 1988*

This program is described under CIC Farming Pack.

*Supplier: Longman*  
*Product: Farm Game*  
*Age range: 8 - 13*  
*Available: Early 1988*

This program is described under CIC Farming Pack.

*Supplier: Longman*  
*Product: Rice Farming*  
*Age range: 11 - 16*  
*Available: Early 1988*

This program is described under CIC Farming Pack.

*Supplier: Longman*  
*Product: Landscapes*  
*Age range: 11 - 16*  
*Available: Early 1988*

Students can explore contour maps, cross sections and 3-D views with this large unit. A variety of imaginary examples are stored on disc and may be retrieved by students. A contour map is displayed and students can choose 3-D views from different bearings and vertical angles to develop an understanding of the landform. To aid this learning, students may also obtain cross sections along selected eastings and northings.

*Supplier: Longman*  
*Product: World Population Model*  
*Age range: 15 - 18*  
*Available: Early 1988*

This program is described under CIC Population Pack entitled Malthus.

*Supplier:* Longman  
*Product:* Human Population Growth  
*Age range:* 14 - 18  
*Available:* Early 1988

This program is described under CIC Population Pack .

*Supplier:* Longman  
*Product:* Choosing Sites  
*Age range:* 11 - 16  
*Available:* Early 1988

This program is an aid for students making locational decisions and choosing between competing sites.

Each program contains four ready-made exercises on siting a hypermarket, a hospital, the third London airport and a large car assembly plant. The program is text-based and the associated program INSITE can be used to enter, edit and store up to four further exercises on the disc.

Maps and detailed information about the locational factors and the competing sites are supplied on Students' leaflets. These can be used to stimulate role playing and the exploration of values and attitudes as students rank factors in order of importance. Students then make their choice of sites which are analysed on the computer to obtain intersite comparisons and site profiles. In addition, the effects of external events can be simulated to study their impact on site suitability.

*Supplier:* Longman  
*Product:* Climates  
*Age range:* 14 - 18  
*Available:* Early 1988

This program uses a world map to locate the major climate regions. A library of rainfall and temperature data is held for 80 stations and can be listed, displayed on a climograph or located on the world map. A test routine uses the library data and the three display techniques, supplying clues in response to wrong answers. An interactive section enables users to type in their own statistics which the computer will analyse and identify. The same three display options are offered for the user's own statistics. There is also a reference system which provides short notes on all the climate regions.

*Supplier:* Aztec Software  
*Product:* Towns of Great Britain  
*Available:* Now

High resolution map of Britain shows position of Town. Anagram is also available. Scoring system, and ability to add more information. Uses many of the Archimedes facilities including proportional spacing, advanced colour fill etc.

## History

*Supplier:* Longman  
*Product:* Analysis of Data from Burial Registers  
*Age range:* 13 - 16  
*Available:* Early 1988

This is a program for analysing information in a burial register. It can be used to introduce pupils to the methods of handling evidence in a statistical form. It demonstrates the meaning of 'average' and the importance of distribution tables. There is a facility for entering your own data. The program could be used in the context of the 'What is History?' and 'History Around Us' units in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Shallow Hill  
*Age range:* 13 - 16  
*Available:* Early 1988

Using this fictitious simulation of the excavation of an Iron Age site students learn how evidence may come in a variety of forms. During their 'dig' students will learn how the present landscape covers layers of past landscapes.

The computer records and stores the pupils' interpretations of their finds which can be compared with the full explanation of the site. This program is suitable for use with the 'What is History?' unit of the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* American West  
*Age range:* 13 - 16  
*Available:* Early 1988

This is a game about town settlements in the Great Plains between 1860 and 1900. Students have to construct a model of town growth, and then explore a case study of Oklahoma comparing it to their own model. Designed to show the complexity of cause and effect, it supports the Enquiry in Depth on the American West in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Palestine 1947  
*Age range:* 13 - 16  
*Available:* Early 1988

This counter-factual game is designed to help students understand why the 1947 UN plan for the partition of Palestine failed. The aim of the game is to alter the policies of the USA, USSR, the Arabs, the Jews and the UN in order to make the plan work. It allows students to see what happens if they take a decision not taken in the past and to understand the complexity of cause and effect in history. It provides support material for the Modern World Study on the Arab-Israeli Conflict in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Elizabethan Court  
*Age range:* 13 - 16  
*Available:* Early 1988

This adventure game gives pupils the opportunity to explore a royal palace during the reign of Elizabeth I. The aim of the game is to gain a seat on the privy council. En route through the palace, pupils will discover how the conventions and power structure of the sixteenth century can effect their progress. It is particularly relevant to the Enquiry in Depth on Elizabethan England, in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Cabinet  
*Age range:* 13 - 16  
*Available:* Early 1988

This program simulates the decision making of a Cabinet of the Liberal government 1906-1914. It is designed to encourage an empathetic understanding of the Liberals and their policy towards the Suffragettes. It could be used as a comparison resource for the section on the Suffragettes in the 'What is History?' unit of the Schools' History 13-16 Project. The game illustrates some of the complexities of political decision making.

*Supplier:* Longman  
*Product:* Godfrey  
*Age range:* 13 - 16  
*Available:* Early 1988

This program is about the mystery of the death of Sir Edmund Godfrey in 1678 at the time of the Titus Oates' Plot. It is designed to teach pupils about the problems of handling evidence. It can be used to introduce pupils to ambiguities in sources and to the uncertainty of historical explanations of the past. It is particularly relevant to the 'What is History?' unit in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Murder  
*Age range:* 13 - 16  
*Available:* Early 1988

This is a fictitious murder case designed to help pupils investigate and to explore questions of reliability, motivation and incompleteness in evidence. This program is particularly relevant to the 'What is History?' unit in the Schools' History 13-16 Project.

*Supplier:* Longman  
*Product:* Census Analysis  
*Age range:* 9+  
*Available:* Early 1988

A large unit providing an absorbing introduction to the problems of dealing with historical evidence. It uses the returns of the 1851 Census to give a fascinating insight into the lives of a whole community. Teachers and students can encode their own data, creating new files based on census returns from their local area, so encouraging historical research at a primary and local level. The following discs are included:

- \* CENSUS is a program which carries out a search on a data file, identifying different types of people and providing an output of information in a list or table and either on the screen or on a printer.

- \* QBANK is an encoded file of data based on Quarry Bank, an industrial area in the West Midlands

- \* INPUT allows new files to be created.

Also included in the pack are:

- \* Teacher's guide and students' leaflets

\* Encoding Book

\* Alphabetical list of occupations

Note : All require twin disc drives and use high resolution graphics. Census Analysis will not run on a network.

*Supplier:*                *RESOURCE*  
*Product:*              *Castle Pack*  
*Available:*            *Now*

This is a pack of resource material for the teacher. The contents of the pack, suitable for children who have a reading age of 9+, are such that there is sufficient material for an average class of 30 pupils to be occupied on the project for at least half a term.

The accompanying datafile program shows that there were 67 people in the castle on the date in question. The pupils' work-sheets provide activities relating to this datafile program and if they complete all the enquiries suggested they will build up a great deal of knowledge about the castle and its inhabitants and life in these times.

*Supplier:*                *RESOURCE*  
*Product:*              *Cateby Manor*  
*Available:*            *Now*

This pack follows on from and complements the successful CASTLE pack. It is a resource pack aimed at allowing primary children to explore a Norman Manor in the year 1086.

The pack consists of three programs: Cateby Manor: A database of the manor's population (including a sophisticated graphs pack). Cateby Map: A screen map which allows children to search Cateby for additional information in text and/or pictures and also to search the village by input of their own keywords. Cateby Words: A supplementary vocabulary program.

## Modern Languages

*Supplier:*                *Coventry Polytechnic (Computer assisted Language Learning Consultancy)*  
*Product:*                *UNIFILL*  
*Available:*              *Now*

UNIFILL is a text reconstruction exercise. The text is displayed with all the words blanked out, to be replaced one at a time in any order. The student can recall the original text or ask for the first letter of any word. The test can be used for guided translation or transcription.

*Supplier:* Coventry Polytechnic (Computer assisted Language Learning Consultancy)  
*Product:* UNIGAP  
*Available:* Now

In UNIGAP, which is a gap-filling exercise, the text is displayed with pre-selected words or parts of words blanked out. The student replaces each one in turn.

*Supplier:* Coventry Polytechnic (Computer assisted Language Learning Consultancy)  
*Product:* UNISUB  
*Available:* Now

UNISUB is a substitution exercise. The text is displayed with pre-selected words or parts of words highlighted in turn. The student substitutes other words or parts of words for the highlighted sections.

*Supplier:* Coventry Polytechnic (Computer assisted Language Learning Consultancy)  
*Product:* UNILEX  
*Available:* Now

UNILEX provides an opportunity for lexical analysis. The text is sorted into an alphabetically ordered word list and the frequency of occurrence of each word is given. The resulting list can be saved to disc or printed out with the standard printer drivers.

NB UNIFILL, UNIGAP, UNISUB, and UNILEX are student testing exercises for text created using UNITEXT. UNITEXT is currently available for use with the 6502 Emulator but will be available later in native mode. See page 57 for description.

## Logo Products

*Supplier:* Logotron Ltd  
*Product:* Archimedes Logo  
*Available:* Early 1988

Logo has become the foremost computer language for introducing concepts of programming and problem solving in computer education. With applications ranging from Turtle Graphics to Control, Logo has found a significant place in both the Primary and Secondary curriculum.

Archimedes Logo has been developed jointly by Logotron and Acorn, and is fully compatible with the best-selling Logotron Logo. Archimedes Logo takes advantage of Archimedes' advanced RISC technology - which means incredible speed; it also includes excellent editing functions and Logotron's unique INSTALL primitive, which allows Logo to be extended with specialised applications modules. The first of these include Control and Music, with further extensions to follow.

*Supplier:* Logotron Ltd  
*Product:* Control Logo  
*Available:* Early 1988

Control Logo is the ideal language for exploring computer control applications. Now revised with extra primitives for 'natural language' programming and increased speed, Control Logo lets you talk to all the ports using Logo commands, and will work with most interfaces and controllers. A powerful new primitive, COUNTER, automatically registers input changes (feedback), and enables true control applications with fast, efficient Logo procedures.

*Supplier:* Logotron Ltd  
*Product:* Music Logo  
*Available:* Early 1988

Music Logo lets you do musical things from within Logo, using familiar musical terms and notation - such as Crotchet, Minim, F#, Bb, Organ and Strings - to compose and play your own computer-generated music in a Logo microworld. Over 50 Music Logo primitives provide for setting pitch and duration, chords, tempos, instruments, channels and voices, and the software takes full advantage of Archimedes' powerful sound potential.

## Music

*Supplier:* Electromusic Research Ltd  
*Product:* Special Education Music  
*Available:* TBA

A program of development for the handicapped person to encourage the creative use of computer-aided music in education.



## General

*Supplier:*           *Scetlander*  
*Product:*           *Mazemaster*  
*Available:*         *Now*

Mazemaster is an adventure game author specially designed for educational use. A comprehensive editor allows the teacher to develop his/her own scenario related to classwork. The program provides flexible cut-off points which integrate the game element with off-computer assignments. Judicious use of keys etc., allows scope for the design of remediation and extension units. The game map and assignment codes can be printed. Up to eight groups can take part. An exemplar suite for English, 'The Bogolbanian Spy', is included.

## Books

*Supplier:* Acorn (from Acorn dealers)  
*Product:* *Programmers' Reference Manual*  
*Available:* Now

The Programmer's Reference Manual gives the experienced programmer detailed information on the many facilities provided by the Arthur operating system and contains most of the information he or she will need when writing complex programs on the Archimedes. The manual begins with a discussion of fundamental operating system concepts and goes on to explain character input/output, the command line interpreter, the different filing systems, memory management and the program environment.

The manual also covers the various modules: the Window manager, the Font manager as well as sound, the debugger, the floating point emulator, Econet and the Podule system manager.

Included are introductions to the instruction set of the ARM processor, the Linker, and the ARM procedure call standard.

*Supplier:* Computer Concepts  
*Product:* *ARM Assembly Language Programming*  
*Available:* Now

This book, by Peter Cockerell, describes in detail aspects of programming the new Acorn RISC chip. It explains why the chip is so fast and how to take full advantage of its power. The book is up-to-date, covering the 2 micron ARM, with appendices on the floating point and co-processor instructions and with numerous example programs. It covers the use of the ARM assembly language from within BBC BASIC V. This is a truly comprehensive reference manual for anyone who intends to program in ARM assembly language or for those who want to find out why the Acorn RISC chip is so special.

# Products requiring the 6502 Emulator

## Education

*Supplier:*            **RESOURCE**  
*Product:*          **DIY Base**  
*Age range:*        **7+**  
*Available:*        **Early 1988**

DIY Base is a database creator. It is designed for creating stand-alone, dedicated databases. For example, the user may decide to create a database to perform a study of breeds of dog. DIY Base can be used to create a database shell specifically for this. Once that structure has been created any number of files may be developed using that program shell.

DIY Base is a versatile software tool for use with children from age seven and upwards. Its facilities include the ability to create graphs and charts as well as to perform simple mathematical operations and calculations.

*Supplier:*            **RESOURCE**  
*Product:*          **Domesday Database**  
*Available:*        **Early 1988**

This database has been designed to allow schools to use local Domesday data collected as part of the BBC Domesday Project.

The program presents the data as pie charts, bar charts or plotted on a map of the area covered.

The package comes complete with data about South Yorkshire but arrangements can be negotiated for the preparation of other areas' information.

*Supplier:*            **RESOURCE**  
*Product:*          **Forge**  
*Available:*        **Early 1988**

The Industrial Revolution and the growth of the iron and steel industry are the subjects for this theme pack. They are developed through extensive materials including five discs of programs, workcards, photographs, maps and charts and teacher's notes. The programs provide exercises in siting a forge and a furnace, financial management, charging a blast furnace and examining data relating to the village affected by the changes in lifestyle brought about by the onset of the Industrial Revolution. The pack provides sufficient material for a full class project extending up to a term in length.

*Supplier:*            *RESOURCE*  
*Product:*          *Library Catalogue*  
*Available:*        *Early 1988*

A dedicated information retrieval program designed specifically for use within school and departmental libraries. One option allows use of the Dewey Classification, the other, colour-coded systems. More than 900 books can be handled.

*Supplier:*            *RESOURCE*  
*Product:*          *Sorts*  
*Available:*        *Early 1988*

The program shows graphically how a computer undertakes various sort routines. This helps pupils to understand which types of sort are best for which processes in order to minimise execution time. Bubble, quick, radix insertion, selection, and merge sorts are demonstrated.

*Supplier:*            *RESOURCE*  
*Product:*          *SEAfax*  
*Available:*        *Early 1988*

This easy-to-use CEEFAX simulation program has been developed by Sheffield Education Authority (hence SEAfax), and is now being used as a standard means for transferring information around the South Yorkshire and Humberside region. The program will hold up to 100 pages of information which can be created by pupils or teachers.

*Supplier:*            *RESOURCE*  
*Product:*          *NEA Case Study*  
*Available:*        *Early 1988*

This pack consists of a disc, teacher's booklet and student materials simulating the 'North East Area Cleaning Consultants'. The software covers all of the points for the Northern Examining Association 1988 case study including personnel files, payroll slips, training, holidays, etc. The student material gives some simple tasks so that these areas can be explored in an interesting and motivating way.

*Supplier:*            *RESOURCE*  
*Product:*          *SEG Case Study*  
*Available:*        *Early 1988*

This is a software simulation of the Southern Examining Group's GCSE case study for computer studies. The program simulates a supermarket till management system. It makes an ideal resource for teaching about: points of sale terminals, file management and the social effects of computers - as well as being custom-built for the SEG GCSE case study for 1988.

*Supplier:*            *RESOURCE*  
*Product:*          *Leisure Unlimited*  
*Available:*        *Mid 1988*

Leisure Unlimited is a simulation based on a small order company supplying leisure goods. It is designed to familiarise course members with a business data processing system and to illustrate that hard-to-understand parts of a computing syllabus can be taught effectively through practical work. Leisure Unlimited will also prove a useful resource in Information Technology and Business Studies courses. It aims to show the computer as a business tool and as part of an integrated system, to promote problem-solving activities and to encourage a systems approach to the teaching of computing.

*Supplier:*            *Scetlander*  
*Product:*          *COMAL DEMONS*  
*Available:*        *Now*

DEMONS are procedures (or functions) which will carry out, for the pupil, the major operations which will allow him to code a program to solve a problem. New COMAL statements are gradually added to the pupil's vocabulary as and when they are needed. The pupil will soon be in a position to write his own versions of the DEMONS or to write his own procedures which, if desired, can be added to the supplied DEMONS.

*Supplier:*            *Coventry Polytechnic (Computer-assisted Language Learning Consultancy)*  
*Product:*          *UNITEXT*  
*Available:*        *Now*

This simple, multi-lingual authoring package and word processor allows the teacher to create text files in English, French, Italian, German or Spanish using the full range of accents and special characters. Text can be easily entered, formatted, printed and printed out. The text can be used with one of the student testing programs: UNIFILL, UNIGAP, UNISUB or UNILEX. Latin and Cyrillic versions will be available at the end of the year. Disc and Network compatible.

*Supplier:*            *Aztec Software*  
*Product:*          *Die Prinzessin*  
*Available:*        *Now*

Die Prinzessin is an adventure game written entirely in German. It is specially written for school and college age groups with graphics throughout. Find three gold rings within a maze and rescue the princess, but battle with Zwerge, Drachen, Riesen, Ungeheuer etc. along the way.

*Supplier:* Aztec Software  
*Product:* La Princesse  
*Available:* Now

All information and instructions for La Princesse are shown in French. The screen shows a maze with 3-D view inside the maze as an option. Navigate the maze, fight Golums, Nains and even Professeurs de Math to find the treasure, rescue the Princess etc. A new set of circumstances is set up each time the program is run.

*Supplier:* Aztec Software  
*Product:* Basic Mathematics  
*Available:* Now

Basic Mathematics offers five levels of difficulty for addition, subtraction and multiplication. It is suitable for younger children or children with special needs. The questions are set out correctly, one under the other, with correct sequence required for answers i.e. units first. Solutions are given for incorrect answers and there is a scoring system.

*Supplier:* Soft-Teach Educational  
*Product:* General Map Reading  
*Available:* Early 1988

General Map Reading has been designed to be used by 9 - 14 year old students as an enrichment to any established map course concerned with the following fundamentals of map and graphic skills :

- \* symbols
- \* grid references
- \* direction
- \* scale

The main features of the program are :

\* four separate screen pictures are displayed; these closely resemble the O.S. 50,000 Landranger Series of maps and the four displays combine to make one map depicting an imaginary, largely rural, area.

\* 100 questions are held on the disc and are accessed to test specific aspects of map reading, or these aspects can be randomly selected.

\* the questions are answered by manipulating a cursor around the maps on the roads and footpaths using the computer keyboard. Usually, the cursor cannot be guided off the roads and footpaths, although there are some 'hidden pathways' that can sometimes be worked out by simple map interpretation and deduction, or found by luck. These hidden pathways give the students an added interest in the program.

The program is straightforward to use and has a high standard of screen display. It is very relevant to the GCSE curriculum and one that teachers will find useful for reinforcing essential map skills over a wide range of abilities.

The package includes the disc, manual, screen dumps of maps and keys for reproducing, a key pad and a full colour reference map of the entire area covered.

*Supplier:*                *Soft-Teach Educational*  
*Product:*              *Coastal Map Reading*  
*Available:*            *Early 1988*

Coastal Map Reading has the same specifications as General Map Reading but with a much more detailed map depicting a coastal area. With the additional features described below, it is the ideal follow-up to General Map Reading:

- \* 20 extra symbols, many related to coastal areas
- \* many questions require more map interpretation
- \* problems related to spot heights, trig points and hills.

The package includes the disc, manual, screen dumps of maps and keys for reproducing, a key pad and a full colour reference map of the entire area covered.

*Supplier:*                *Soft-Teach Educational*  
*Product:*              *Rays and Waves*  
*Available:*            *Early 1988*

The 12 programs are written for GCSE courses and cover various aspects of wave and ray reflection and refraction, longitudinal sound waves, Doppler shift effect, superposition, diffraction grating and Young's slits and AM and FM modulation. A comprehensive manual is included in the package.

*Supplier:*                *Soft-Teach Educational*  
*Product:*              *Mechanics and Electricity*  
*Available:*            *Early 1988*

The 9 programs cover Newton's Laws of Motion, Vector addition, a practical experiment 'g by free fall', the DC motor, the micrometer screw gauge and Vernier calipers, all written for GCSE courses. The experiment requires extra hardware; a circuit diagram is provided although the hardware can be bought ready assembled (see Hardware). The package includes a comprehensive manual.

*Supplier: Soft-Teach Educational*  
*Product: Physics Disc Three - A Level*  
*Available: Early 1988*

The 10 programs on this disc include superposition of waves, diffraction grating, Young's slits and the Doppler shift effect from the Waves and Rays disc, Newton's Second Law from the Mechanics and Electricity disc plus parallel and series LC circuits, capacitor charge/discharge (a practical experiment requiring extra hardware - a circuit diagram is provided or see Hardware), hydrogen line spectrum and simple harmonic motion. The package includes a manual.

*Supplier: Soft-Teach Educational*  
*Product: CDT Selection*  
*Available: Early 1988*

This selection of the two programs dealing with reading a micrometer screw gauge and Vernier calipers make this disc a useful addition to the CDT department software library. The package includes a manual.

*Supplier: Soft-Teach Educational*  
*Product: Practical Experiments Disc*  
*Available: Early 1988*

The 2 practical experiments, g by free fall and capacitor charge/discharge, can be bought separately - circuit diagrams included. The hardware can be made up at school or bought from Soft-Teach. A comprehensive manual is included in the package.

*Supplier: Soft-Teach Educational*  
*Product: Time Lines*  
*Available: Early 1988*

Time lines is an historical database program that allows the student to:

- \* Scan through thousands of years of prehistory and history
- \* Compare events across the world
- \* Search and read detailed notes from the database
- \* Put in their own events and notes.

Time lines is easy and exciting to use and helps students at the upper end of Junior Schools and at Secondary level with the whole concept of time lines and data bases.



*Supplier:*            *Resource Facilities*  
*Product:*           *Order*  
*Available:*         *Now*

This program contains a comparison of eight sorting algorithms, including Shell-Metzner sort, Help-Metzner sort and Quick-Metzner sort. The program will draw a histogram of the relative speeds of sorting.

*Supplier:*            *Resource Facilities*  
*Product:*           *Regress*  
*Available:*         *Now*

This is a simple form of regressional analysis and will plot up to 52 points.

*Supplier:*            *Resource Facilities*  
*Product:*           *16+ Algebra*  
*Available:*         *Now*

This package is designed as a self-tutorial aid to revision and practice in Algebra and contains both questions and answers.

*Supplier:*            *Resource Facilities*  
*Product:*           *Microba*  
*Available:*         *Now*

Microba is a biological adventure game through the human body. You can be swallowed, inhaled etc.

*Supplier:*            *Resource Facilities*  
*Product:*           *Computer-assisted Tables Bingo*  
*Available:*         *Now*

*Supplier:*            *LOGOsoft*  
*Product:*           *Master LOGO*  
*Available:*         *Now*

Master LOGO for the Acorn Master and BBC Micro is fully compatible with the 6502 emulator on Archimedes, which behaves like a second processor on the BBC Micro.

*Supplier:* ESM  
*Product:* Supastore (Master Compact version)  
*Available:* July 1987

Supastore is an educational database that is easy to use, will hold up to 3500 records with 250 fields a record and is quick to search offering good value for money. It is widely used for administration, class projects and cataloguing.

*Supplier:* Aztec Software  
*Product:* Library Dewey Classification  
*Available:* Now

This database for the school or college library provides for rapid search by topic. The computer reports back the appropriate Dewey number and up to 40 more characters per topic. There are 750 topics built in with room for over a thousand more. The average search time is less than one second.

*Supplier:* Educational Administration Software  
*Product:* Administrator's Friend  
*Available:* Now

Administrator's Friend is an integrated, modular package of administration software for secondary schools. The modules include: options, timetabling, examination entry, examination results and a pupil database. A much enhanced version is being developed to take full advantage of the power and speed of Archimedes.

## Productivity Tools

*Supplier:* Acornsoft  
*Product:* VIEW  
*Stock code:* SKM31  
*Available:* Now

VIEW is an award-winning word processor with advanced facilities designed to help both the professional user and the beginner to create high-quality documents.

*Supplier:* Acornsoft  
*Product:* ViewSheet  
*Stock code:* SKM07  
*Available:* Now

ViewSheet is a flexible electronic spreadsheet that can be used in a multitude of different applications such as cash flow forecasts, sales analysis, resource planning or personal finances.

*Supplier:* Acornsoft  
*Product:* ViewStore  
*Stock code:* SKM27  
*Available:* Now

ViewStore is a powerful general purpose database manager which has uses ranging from mailing lists and stock control to library catalogues and hobby collections.

*Supplier:* Acornsoft  
*Product:* ViewSpell  
*Stock code:* SKM28  
*Available:* Now

ViewSpell is an automatic spelling checker which enables the production of error-free documents.

*Supplier:* Acornsoft  
*Product:* ViewIndex  
*Stock code:* SKM17  
*Available:* Now

ViewIndex is an indexing utility for creating an alphabetically ordered index and for noting each page or section number where the reference occurs.

## Art and Design

*Supplier:* Aztec Software  
*Product:* Perspective  
*Available:* Now

Perspective is an easy-to-use program for drawing and sketching on screen. There is a facility for all perspective lines to be calculated and drawn automatically and for shapes to be viewed from any position. It features the ability to move the original shape to any position with automatic redrawing of new perspective.

## Games

*Supplier:* BBC - Soft  
*Product:* Black Queen  
*Available:* Now

Black Queen is the new Contract Bridge game, available for all BBC micros. The standard (Master Compact) version runs on Archimedes. In addition Black Queen Plus, an enhanced version especially for Archimedes, will be available later.

## Languages

*Supplier:* Acornsoft  
*Product:* Comal  
*Stock code:* SKM19  
*Available:* Now

COMAL is a general purpose language which has been chosen as the educational standard in many European countries. It includes a number of features which encourage well-structured programming and facilitate debugging and maintenance of software.

## Utilities

*Supplier:* BBC - Soft  
*Product:* Monitor  
*Available:* Now

The popular Machine Code Monitor/Memory Investigator for BBC 8-bit micros. Now available on 3.5 disc for the 6502 emulator of Archimedes. Includes ADFS disc editor.

# Transfer Utilities

*Supplier:* Watford Electronics  
*Product:* BBC - Archimedes serial transfer kit  
*Available:* TBA

This simple data link allows any data to be transferred from the BBC Model B, B Plus or Master computer to an Archimedes at up to 19200 baud. The kit is supplied with two discs, one 5.25" for the BBC, the other 3.5" format for the Archimedes, containing the transfer software and the necessary cable to connect the two computers.

*Supplier:* Watford Electronics  
*Product:* 5.25" disc drive lead  
*Available:* Now

Allows the connection of a 5.25" disc drive as the second drive.

*Supplier:* Brainsoft  
*Product:* BBC to Archimedes disc conversion kit  
*Available:* Now

This software allows the user to transfer programs/data word processor files, etc., from the BBC to Archimedes. The BBC is turned into a disc drive, and is controlled as such from Archimedes. Comprehensive instructions are provided which explain transferring programs/text from the BBC into Archimedes, and vice-versa. All interchange between computers is automatic and under the control of the user.

*Supplier:* Tubelink  
*Product:* Advanced BASIC  
*Available:* Now  
*Machine:* B/B+/Master 128

The most powerful version of BASIC ever written for a 6502-based micro. Advanced BASIC is compatible with Archimedes BASIC, and as such, supports the new keywords and is fully file interchangeable allowing programs written on Archimedes to be tested and run on BBC models B, B+ and Master - and of course vice-versa! Graphics string manipulation, HELP system, new error handling, single-trace stepping, new program loop structures, and procedure/function installation libraries - it's all there.

The software requires 6502 or 65C02 or Turbo second/co-processor to be fitted to the machine in use.

*Supplier: Tubelink*  
*Product: ARM Assembler Emulation ROM*  
*Available: Early 1988*  
*Machine: B/B+/Master 128/Master Compact*

A full feature assembler for the BBC micro models B, B+ and Master series, supporting the new ARM Assembler - enabling the assembly of any size of ARM (RISC) Assembler program for direct running and testing on Archimedes or other ARM-based machines.

*Supplier: Cunning Running Software*  
*Product: BBC BASIC to C Conversion Program*  
*Available: Mid 1988*

A BBC BASIC to C conversion program. This will be a series of programs for the Master, Cambridge Workstation and Archimedes ranges.

## Magazines

The following magazines give up-to-the-minute news about Archimedes.

*Supplier: Redwood Publishing*  
*Product: Acorn User magazine*  
*Available: Monthly*

Archimedes is covered in Acorn User magazine. Articles include items such as reviews of software and hardware.

*Supplier: Beebug Ltd*  
*Product: RISC User*  
*Available: Ten issues per annum*

A support group and magazine have been launched specifically for the Archimedes range of computers. Members of the new group benefit from unlimited free technical support, advice, discounts, a BBC/Master to Archimedes trade-in scheme as well as the magazine.

*Supplier: Argus Specialist Press*  
*Product: A & B Computing*  
*Available: Monthly*

Archimedes has its own special section within A & B with colour contents, reports and Red Keys news.

*Supplier: Database Publications*  
*Product: Micro User*  
*Available: Monthly*

In Micro User, Archimedes is covered within the main body of the magazine.

*Supplier: Norwich Computer Services*  
*Product: Archive*  
*Available: Monthly*

The subscription magazine for Archimedes users written by enthusiasts for enthusiasts. The first issue, due out in September, includes:

- \* Wordwise Plus on Archimedes
- \* Basic Concepts I - WIMPs
- \* What's new in BASIC V?
- \* ARM Assembly language
- \* How to upgrade 305 to 310
- \* News from Acorn
- \* Your letters
- \* Readers' Hints and Tips

## Addresses for Ordering Products Listed

**Abacus Training**, 29 Okus Grove, Upper Stratton, Swindon, Wiltshire SN2 6QA, Tel: 0793 723347

**Acornsoft**: Vector Services Ltd, 13 Denington Road, Wellingborough, Northamptonshire, NN8 2RL  
Tel: 0933 228953

**Advanced Memory Systems Ltd**, 166-170 Wilderspool Causeway, Warrington, WA4 6QA,  
Tel: 0925 413501

**Argonaut Software Ltd**, 150 Coles Green Road, London, NW2 7HQ, Tel: 01 208 2509

**Argus Specialist Press: A & B Computing**, Number One Golden Square, London, W1R 3AB  
Tel: 01 437 0626

**Aztec Software**, 25 St Mark Road, Deepcar, Sheffield, S30 5TF, Tel: 0742 862246

**BBC Software**: BBC-Soft, P O Box 234, London, SE1 3TH,  
Tel: 01 576 0548 (Enquiries/Licences) or 01 407 1040 (Access/Visa)

**Beebug Ltd**, Dolphin Place, Holywell Hill, St Albans, Herts AL1 1EX, Tel: 0727 40303

**Brainsoft**, 22 Baker Street, London, W1M 1DF Tel: 01 486 0321

**Channel Micro Products Ltd**, 111 Harptree Drive, Chatham, Kent, ME5 0TF,  
Tel: 0634 570256 or 63228

**Clares Micro Supplies**, 98 Middlewich Road, Rudheath, Northwich, Cheshire CW9 7DA,  
Tel: 0606 48511

**Computer Concepts Ltd**, Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX, Tel: 0442 63933

**Coventry Polytechnic**: Mr T Hooton, CALL Consultancy, Department of Language Studies,  
Coventry Polytechnic, Priory Street, Coventry, CV1 5FB, Tel: 0203 838657

**Cunning Running Software**, 11 Avon Buildings, Flower Lane, Amesbury, Salisbury, Wilts SP4  
7HF, Tel: 0980 22369

**Database Publications**, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY,  
Tel: 061 456 8383

**Educational Administration Software**, Somerville House, 4 Brunswick Road, Manchester,  
M20 9GA, Tel: 061 445 1379

**Electromusic Research**, 14 Mount Close, Wickford, Essex SS11 8HG Tel: 0702 335747



**ESM**, Duke Street, Wisbech, Cambridgeshire, PE13 2AE, Tel: 0945 63441

**H.S.Software**, FREEPOST, Swansea, West Glamorgan, SA2 9ZZ, Tel: 0792 204519

**Ian Copestake Software**, 10 Frost Drive, Wirral, Merseyside, L61 4XL, Tel: 051 648 6287

**Intelligent Interfaces Ltd**, 43b Wood Street, Stratford-upon-Avon, Warwickshire, CV37 6JQ  
Tel: 0789 415875

**LOGOsoft**, 316a Richmond Road, Twickenham, Middlesex, TW1 2PD, Tel: 01 891 0989

**Logotron Ltd**, Dales Brewery, Gwydir Street, Cambridge, CB1 2LJ, Tel: 0223 323656

**Longman**: Queries and further information: Longman Micro Software, Longman House, Burnt Mill, Harlow, Essex CM20 2JE, Tel: 0279 26721 Orders: Geoff Gallagher, Longman Micro Software, 62 Hallfield Road, Layerthorpe, York, YO3 7XQ

**Magenta Research Ltd**, A.M.P. House (5th floor), Dingwall Road, Croydon, CR0 9XA  
Tel: 01 680 2585

**Meadow Computers**, 11 London Street, Whitechurch, Hampshire, RG28 7LH, Tel: 0256 892008

**Millipede Electronics Graphics**, 12 Pryor Close, Milton, Cambridge, CB4 4BU, Tel: 0223 862066 or 860312 Telex: 817936 CAMTEL G Fax: 0223 64317 GROUP III

**Minerva Systems**, 69 Sidwell Street, Exeter, Devon, EX4 6PH, Tel: 0392 37756

**Norwich Computer Services**, 18 Mile End Road, Norwich, Norfolk, NR4 7QY, Tel: 0603 507057

**Redwood Publishing Ltd**, 141-143 Drury Lane, London, WC2B 5TF Tel: 01 836 2441

**RESOURCE**, Exeter Road, Off Coventry Grove, Doncaster DN2 4PY, Tel: 0302 63800 or 63784

**Resource Facilities**, Masters Lane, Halifax, West Yorkshire, HX2 7DX, Tel: 0422 65935

**S J Research Ltd**, 108 Mill Road, Cambridge, CB1 2BD, Tel: 0223 69927

**Scetlander**, 74 Victoria Crescent Road, Glasgow, G12 9JN Tel: 041 357 1659

**Serious Statistical Software**, Lynwood, Benty Heath Lane, Willaston, South Wirral, L64 1SD,  
Tel: 051 327 4268

**Smalltalk Express Ltd**, 4th Floor, Hyde House, The Hyde, Edgware, London, NW9 6LATel: 01 200 0220

**Soft-Teach Educational**, Sturgess Farmhouse, Longbridge Deverill, Warminster, Wiltshire, BA12

**7EA Tel: 0985 40329**

**TechSoft**, Old School Lane, Erryrys, Mold, Clwyd CH7 4DA, Tel: 082 43 318

**Tubelink**, P O Box 641, London, NW9 8TF Tel: 01 205 9393

**Unilab Ltd**, Clarendon Road, Blackburn, Lancashire, BB1 9TA, Tel: 0254 57643

**Watford Electronics**, 250 High St, Watford, Herts, WD1 2AN, Tel: 0923 37774

**Wyre CNC Systems Ltd**, 11 Brambling Rise, Kidderminster, Worcs, DY10 4JQ, Tel: 0562 66209

**XOB**, Balkeerie, Eassie, by Forfar, Angus, DD8 1SR, Tel: 0307 84364





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