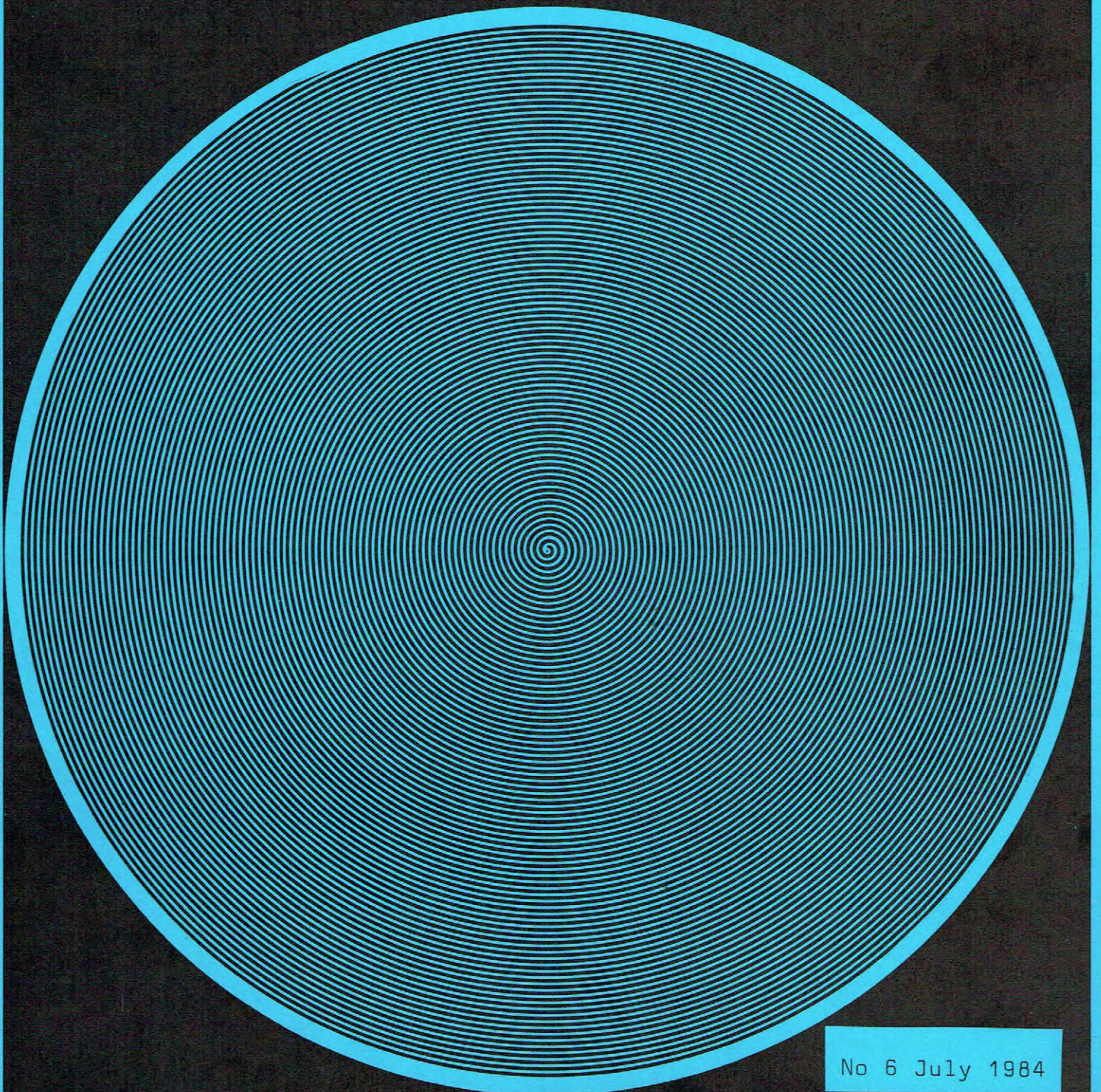Richard Millwood

COMPUTERS IN THE CURRICULUM

NEWSLETTER

No 6 July 1984

COMPUTERS IN THE CURRICULUM - Part 6

Here's the latest (well almost the latest) on what we've all been up to for the past six months. I apologise for the rather dry nature of this edition; this is due to the amount that needed to go in and the non cooperation of our resident cartoon plagiarist. I hope to wooe him back so that the next edition will have the full story <u>and</u> pics.

Please contact me if you have any contributions for the next newsletter or would like further information about the Project.

Angie Donoghue

CENTRAL TEAM

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I N D E X

LETTER FROM MARGARET CDX

Dear Reader,

This Newsletter, reporting on the Project's activities, now appears twice a year. It is distributed to over 400 people who are either working with the Project or associated with it in various ways. As you can imagine, this list grows and grows and we sometimes have to revise our mailing list. If you wish to receive the next edition please complete and return the form on page 28.

In discussing our work with members of different Project groups, it is clear to me that those of us based at Chelsea (the Central Team) do not always pass on as much information about the work being done here and elsewhere in the field of educational computing as might be useful to our regional groups. One of the functions of this Newsletter is to keep you informed of all aspects of the Project's work and to share the benefits of the range of expertise which the Project has. This Newsletter would become very long, however, if we were to include accounts of all our activities in great detail. We are now assessing our current philosophies (in the light of a possible reduction in funding) and new directions beyond the lifetime of the Microelectronics in Education Programme (MEP), and I wish to share with you some of our experiences and our ideas for future work.

We have, over the past two years since I have directed the Project, made an enormous effort to create and complete a range of educational software materials which were planned in collaboration with the MEP. There has been very little time to spare for trying out new ideas in new software languages, or machines. The Project has used its existing expertise to explore new ideas in different areas of the curriculum, but has kept this exploration to the school microcomputers subsidised by the Department of Trade and Industry, Research Machines 380Z/480Z, BBC Model B, and Apple II/IIE (for the export market).

This has not meant that we have not made great progress. For example, there is now an independent evaluation report produced by the Economics Association of our Economics units developed in Staffordshire with the Economics Association and Staffs Education Authority. We are having some of our Science units trialled by one or two of the teacher groups set up by the Association for Science Education, Secondary Science Curriculum Review. Our Foreign Language programs are being developed by teachers in Lancashire and Cumbria who are members of the Foreign Languages Graded Test Movement. Our Devon CDT group has produced a suite of programs to teach orthographics. In all, we now have over 80 published units and many more in various stages of development

One of the aims of the Project has always been to develop CAL materials which will integrate into and enhance the school curriculum. In each of the curriculum areas in which we are working, we are collaborating with reputable associations who are themselves developing new ideas and materials for teaching in schools. More information about specific work is provided in our series of subject leaflets (available from Angie Donoghue).

What about our future? It has not yet been finally decided by the DES/MEP as to our level of funding for 1984-86. There is much Project work already in various stages of completion which we would like to finish, given sufficient resources. As a result of a possible reduction in MEP funding, several members of the Project are now working on other non-MEP Project work; BBC Science programs, Geography and Economics Rewrites etc. We have also lost two people; Diane Moody, who has gone to work as a systems analyst for the GLC, and Mick Dodwell who has moved to Longmans. Diane joined us in 1982 as a TOPS student and has spent two years working first with Science and then History programs. She has contributed a great deal of her originality, enthusiasm and joie de vivre to the Project. Mick joined the Project early in 1982 having previously worked for six months with me at Surrey University.

He has also been involved in different areas of work, starting off by doing many of the Science Rewrites then moving on to new Science and Geography programs. He has been the key person here on screen dumping and we're glad he won't be too far away at Longmans.

It has been an extremely difficult time at Chelsea, trying to be enthusiastic and creative in an atmosphere of uncertainty. I am grateful to everyone for their support and tolerance during this period.

The Project is also saying goodbye to our Canadian English teacher, Mark deWolf, who has created for us a superb pack on the Design of Video Screens, which will be available soon. He has also written many stories for our Story Maker software and Branching Story (English). Another person heavily involved in Story Maker, and our English work has been Andrew Dean who has been with us on secondment from Devon for this year. We have learnt a lot from Andrew who brought his valuable teaching and classroom experience as well as literary skills to the Project. Fortunately Andrew will still be working with us on Story Maker and also, through his research project, exploring the use of microcomputers in the Primary English classroom.

We are now moving away from a period of 'mass production' to pursuing our more challenging aim of pioneering innovative CAL and researching into its possibilities in the classroom. This means more time spent in looking at new hardware and software languages. more time spent evaluating the software in the classroom and more time spent on using our research findings and contacts to push forward Computer Assisted Learning.

We have just acquired an Apple Macintosh to help us in screen design and user interfacing. We have been lent an Atari (by Atari UK Ltd) to help us explore the possibilities of Logo in the classroom. We shall be developing software procedures for science and humanities teaching in Logo. We have also been given a Silicon Disk by RML to enhance our RML memory. All these new hardware capabilities will enable us to develop software for future education in our schools.

From 1986 onwards I hope that the Project will acquire further funds to continue to explore the combined resource of curriculum innovation, educational practice and information technology. The Project is unique in its wealth of expertise necessary for such work and we intend to remain in the lead.

Margaret Cox

HUMANITIES

CURRENT UURK

The main thrust in all the Humanities work at the moment is to complete development of units that are currently underway and modify them in the light of trials feedback. Details of specific programs are given by coordinators further on in this section. Any unit that was not already clearly specified and had been the subject of much group discussion by February this year has been put into abeyance. This has particularly affected the Geography Hazards Group and the Capital English Group, but it gives us a clear 12 months to process existing units to publication. It also gives us time to move in new directions in planning and unit design terms over the same 12 months. This was reflected in the Project's Humanities proposals to the MEP for the 84-86 work. while it is always important to keep moving on in curriculum development terms, it is hard to call a halt to idea development in groups who, now that they see what it is all about, want to carry on. The existing writing groups will all cease to function in the way they currently do by the spring of 1985. I am sure many members will contribute directly to further initiataives in their own locality or on LEA or regional bases.

In the meantime, there is a meeting planned for September to coordinate and plan our Humanities strategy and the formulation of cross-curricula ideas that we have been mulling over for some time. It is encouraging to note that our funders now recognise the work we have been doing in the Social Studies areas, in particular History and Economics and have endorsed my interest in maintaining our CAL work here.

The languages work will continue on a somewhat different basis. In English we will await the trials feedback of STORYMAKER, while the Cumbria group will continue on their second batch of units into 1985. From then there may be a shift of emphasis into EFL (English as a Foreign Language) or FLAW (Foreign Languages at Work). I hope to be able to write further on this next time.

All the subject coordinators are now entering what I consider to be the most difficult phase of CAL development -tying up the loose ends, getting the notes written or (more often writing them themselves). Collating the trials feedback and getting all the trials modifications incorporated in the software is nothing short of a hard slog. The greatest part of the burden falls on the coordinator/editor, and it is more isolated and not nearly as much fun as all the excitement of developing new ideas in the first stages. So this really is a testing time and my thanks to Ian, Steve, Frances, David Peacock, Jan and David Riley for their current and future efforts.

I must also record how much less stressful life is now that Dave Riley has joined the team as my Humanities Manager - I do hope this has been reflected in my attitude. Someone actually reported recently that I had not had an argument (discussion, surely) on the phone with them for at least three months! Can this be right?

Deryn Watson

PUBLICATION

MARCH LAUNCH 1983

Since October the last few humanities Phase 1 units have been moving through the publishing process, including CANAL and the totally rewritten MINE (thanks to the efforts of the two Daves (Creasy and Riley)). Indeed, I am writing this in the same week that the last text, FARMER, has been sent to Longman. This will be an amazing respite for Ian, who has been chivvied by me into writing notes, editing notes, and stopping adding "one little extra refinement" to the software, for very many moons.

I have now learnt to accept that publication is a permanently rolling process; there always seems to be a text, galley, screen dump. paper or finalisation task in hand. The results of the March launch however, are tangible as feedback, and software re-ordering of the published units gives CIC a higher profile in the Humanities area.

NEW MATERIALS

With barely a pause for breath therefore, early May sees the despatch of our first 6 new programs - the 14-16 Economics units from Staffordshire. Steve has been working extremely hard on editing these and polishing them ready for publication. His, Alan's and Gill's efforts should be rewarded by an autumn '84 publication. These units will be the first of a series of batches that will roll through in 1984 and 1985 to Longmans, in History, Geography and Economics. The Geography Rewrites will follow the first Staffs programs, then History 13-16, Geography in Kent, Economics Rewrites, and then the second batch of the 3 main subjects. It is planned for the last of the current units to be in the publications process by the summer of 1985.

We are thinking of batches this time rather than a major launch; it makes more sense in planning terms and is certainly more realistic with respect to deadlines. Other changes in the publishing pattern will emerge. Longman have agreed to break away from the ever increasing rows of identical orange folders we plan for each subject to have a clear identity, and also each individual unit will have artwork relevant to its topic on the cover. At the same time we will try to reflect this artwork on the front page of the program. It is also possible that some units will be marketed together as a pack, where the topic grouping or marketing/pricing policy allows. Each decision will be taken in close cooperation with the group coordinator/editor, myself, and the Longman editors.

LANGUAGES

The first batch of language units (6 Foreign language and 3 English language) come into a separate category. CET have not yet awarded the publishing contract on these; a demonstration session was held at Chelsea which representatives from 17 different publishers attended. A decision will be taken in May. Much work has taken place pulling together the notes and the screen design of the various machine versions. Much thanks is due to Mark Bryson, Ewa, Andy, Jan and Diane. Once we know the publisher we hope that these can be processed speedily and certainly appear on the market in 1984.

The 3 English programs were left with minimal notes in the summer. Andrew and Mark have done an excellent job in the writing of notes and providing of modifications to work these up to a publishable form.

Deryn Watson

ECONOMICS

STAFFORDSHIRE

The main preoccupation in the recent period has been revising the 14-16 programs and notes after trialling. The good news is that the first six units are to be published by Longman in September in time for the start of the dissemination and In-Service programme which is being organised by the Economics Education 14-16 Project in conjunction with a number of LEA's. It is hoped that five units will be available in a single pack: WORKER, ESTATE, LOCATE, EVEN and DEFCIT. The business game, TEDDY TALES, which stores team files on disc, will go out separately. Work continues on the revision of the remaining units, which include: MARKET, SUCKER, FAMILY and the COMPARATIVE STATISTICS data display unit.

Three new units have recently been completed: NATIONAL INCOME/EXPENDITURE, MACRO-ECONOMICS, DATA BASE, and SHOPPING CENTRE (a history of the retail trade) and these are now being trialled.

It has taken the best part of a year after classroom trials to revise fully the programs and notes for publication. As the major teacher group activity which generated the units took place in 1982-83, we are all looking forward to starting again with a clean slate in September.

The last two years have seen significant advances in CAL in Economics. These include:

- the refinement of business and macro-economic games;

- recognition of the value of the computer as a stimulus to discussion and a lead into a wider range of classroom activities, including local studies;

- the development of the computer-based case study;

- the use of the computer to display conventional graphs;

- and the development of easy-to-use data-bases with graph display facilities.

In the new phase of work we shall need to take stock of these and other recent developments in thinking on economics education.

Steve Hurd

HISTORY

LEEDS

The renewed enthusiasm of last summer has been sustained during the last 9 months in a series of creative day workshops. The group expanded its membership last autumn and has been much encouraged by the relative success of the recent trials of three programs in schools across the country. By the end of January 1984, 11 programs had been specified and were in various stages of development. Son of Village and Suffragettes Revisited are being prepared, while briefer revisions of Palestine, American West and Murder will shortly be underway. It is hoped that 3 new units will be published through Longman soon.

Palestine, American West and Murder were successfully demonstrated at the Historical Association conference on Computers and History at Westfield College in February, and attracted a great deal of enthusiastic interest.

Shallow Hill is currently being tested in schools and it is hoped to send out Burial Register shortly. Elizabeth Court may be developed on the adventure generator; development of Godfrey, Population and Medicine await the availability of programmers. The group is most grateful for all the support and encouragement it has had from David Riley, Diane Moody, Andy Walters and John Chatterton.

Frances Blow

HISTORY

KENT

A small group of history teachers has been steadily designing programs for almost 2 years. ready for the day when the Project could allocate them programmer resources. The following proposals are now being considered under a joint funded bid to Southern Region MEP.

MEDICINE - Stages in development of medical knowledge and techniques.

OPERATION SEALION - An academic strategic simulation of German tactics preparatory to invastion of England centring on the Battle of Britain.

IRON AGE - Siting an Iron Age settlement using a time budget.

BLENHEIM - Marlborough's strategy in the 18th century wars with the French.

STRIKE - Simulation on 1920's miners unions to bring out key concepts of trade union organisation and tactics.

WORKING CLASS BUDGETS - A data-based simulation giving students the opportunity to make key job/marriage/budget decisions in a working class slum environment at the turn of the century.

Ian Killbery

GEOGRAPHY

KENT (Geography 11 - 16)

Development work in Kent has benefitted considerably from the productive 8 month secondment of Jim Wynn from Geoffrey Chaucer School, Canterbury. Based at the Educational TV Centre in Dover, Jim's main task was to produce a set of 6 units for Geography 11-16, with programming help from Alan Hills (who remains at Dover) and a group of geography teachers coordinated by Ian Killbery. The 'star attraction' is proving to be the 3D view and contour map program, CONTOUR, which now has utilities for teachers to input their own map data. The other units, which are either out on trial or advancing towards that stage are:-

MOTORWAY - Planning motorway links between any set of towns to find the most efficient network - using gravity model.

DAM - Conflict of interest in a pumped water storage reservoir scheme (based on Broad Oak Reservoir near Canterbury).

SEAWALL - Perception of flood risk in short and long term reaction of an East Coast town to potential North Sea surge situations.

CARPLANT - Location of the new Datsun factory in Great Britain (at last we know the right answer!).

INDIAN FARMER - a subsistence farm game based on Indian peasants that emphasises the effect of family size as well as weather and chance in survival

All will be displayed at the Kent Software Fair '84 to be held in the main hall of Mid Kent College Chatham on 1st July (11am-7pm) and 2nd July (10am-4pm). This event will be a major showcase for the Project's Economics and Geography work. It is anticipated that the geography units will be delivered to the publishers by the end of 1984. The work was part funded by Southern Region MEP.

Angus Willson (Deal Secondary School) a leading author in the Kent Geography Group, has also been working on the rewrite of the Phase 1 unit South Eastern Railway Game. Kent Educational Television Centre has produced a short 8 minute video of Angus teaching a 4th year class using the unit HILLS, together with another video of Richard Ashlin (Maplesden Noakes School) teaching with the Population Pyramids unit, DEMOG4. Copies of these videos are available on VHS or U-Matic on application to KETV, Tel. Dover 202827. They aim to raise issues concerning the practical use of CAL in the classroom.

Angus Willson has also devised a Landscape Evaluation unit which provides a focus for an interesting experiment in micro-controlled video (grant aided by Southern Region MEP). The project aims to produce a simple and cheap link together with software to enable teachers to explore some of the potential of interactive video-disc using the existing technology already in schools. A pilot verion controlling a Ferguson Videostar VHS recorder through its remote control socket by a BBC micro is already in operation and Jim Wynn hopes that the whole unit, with Angus' trial software, will be ready for demonstrations in a few weeks.

Ian Killbery

GEOGRAPHY

ENVIRONMENT GROUP

This group has always been hazard prone and has taken a severe cut back in the latest round of financial cuts. Originally there were some ten ideas for programs but these have been cut back to four, with work being done on three of them. Modified versions of Hurricane and Flood are now with the authors and we hope that detailed specifications of text and the models will lead to trials programs with notes. A specification for the soil fertility program is being developed but work on the pollution unit is suspended until we have funding and programmer resources. As to future funds I suggest that uncertainty is the only sure bet.

David Riley

GEOGRAPHY & ECONOMICS REWRITES

If you placed some money on the completion dates as prompted by Margaret, Deryn and Andrew Ransom in the last newsletter, you will be keen to know about progress. The authors met at Chelsea on October 5th last year and since then we have had occasional meetings with programmers and authors working on particular units. The results are now coming through and we were able to demonstrate 6 of the 7 Geography programs at the Geography Association annual conference before Easter. This is largely due to the efforts of the authors and Plaxy Arthur, Mary Emmanuel, David Riddle and Ewa O'Donoghue, who have spent considerable time and energy on these units. The Economics units are being programmed by Alan Hills and Jim Wynn in Kent, Alan Greenwood and Gill Waterworth in Staffordshire and John Chatterton in Sheffield. There has been substantial progress with 6 of the 10 Economics programs although we are sorry to have recently lost the support of John Chatterton and Jim Wynn. we wish them well in their new posts and are grateful for their work and assistance with various CIC programs.

The future prospects are reasonably good as Dave Creasy will start work on the last of the Geography programs in May, and authors are currently preparing to rewrite the notes for all the units. The Economics programming is being redistributed and a meeting on April 30th should help communications between programmers, authors and the central team.

It seems inevitable that the Geography texts will be ready for Longmans before the Economics and completion of the latter will depend upon competing demands for programmers' time. So we like to think that the first units could be published by the end of this year and the others would come out in the first half of 1985.

So Margaret's bet seems better than Andrew Ransom's!

David Riley

PUBLICITY

There are now some CIC publicity pamphlets on Geography, History, Economics, Languages and Hum;anities in general, to add to the Longmans general catalogues which are available from Angie.

ENGLISH

Owing to the budgetary cuts, I have reluctantly had to cancel the Capital English Working Group that had begun so promisingly last autumn. This is most disappointing but unavoidable.

In the autumn we were delighted to be joined by Andrew Dean on a year's secondment from Devon (where he is the warden of a teacher's centre) and Mark de Wolf, on a year's secondment from Halifax, Canada. They were joined for a term by James Watson and have formed the basis of the English team at Chelsea. Their first task was to tackle the modifications and notes for the 3 programs - CBLUFF, CROSWORD and BSTORY. what has exercised them for more of the time however, has been STORYMAKER.

Our adventure generator program has undergone a major shift in development since September, which is reflected in its new title. Much agonising has gone on over the design to make it most appropriate as a multi-functional tool, and also on the coding to make its speed acceptable. We now have a prototype which was displayed at NATE, and which is being sent to trial in May. The trial version runs on the BBC Model B with disc. STORYMAKER is now a long way from being an adventure generator designed principally for fantasy-style stories. I am now awaiting the trials responses with interest. Andrew, Mark and Jan will all get a welcome respite after Easter, fdrom this mamouth unit which has dominated their work for so many months.

Deryn Watson

FOREIGN LANGUAGES

Since the autumn, the working group based in Cumbria and Lancashire has turned its attention to higher-level work which is still rooted in a communicative approach, to encourage a variety of language skills.

In February there was a very productive meeting at Charley to develop ideas and specifications for this new work. The first evening and most of the following day were spent thrashing out ideas and the remainder was spent writing up what had been thrashed. Margaret came along to meet the group and talk about Project work in general, and this was much appreciated.

Four new units are currently in various stages of development:

BULLION - A 'stop the thief' game involving various regions of France.

ECHANGE - Pen-friend selection and letter writing.

IDENTITY - Hatching and composing descriptions, bulletins etc.

TOURING - Decisions on a touring holiday in Germany.

Another unit, TOWNPLAN, which allows exploration of a German town, has been got ready for trials, thanks to the work put in by Mark Bryson in Lancaster.

I hope to have news of trials in the next newsletter, by which time the original 6 language units should also have been published. Thanks are due to Andy, Ewa and Mark Bryson for their efforts in-modifying these units for publication.

Jan Bright

SCIENCE

After only a very brief lull in publication work we are now back in top gear fulfilling not just one but two publishing deadlines. Rushing about with the manuscripts and final (or is it?) versions of the programs is no different for BBC Publications than it is for Longmans, except we have even less time and somehow software is never absolutely finished - 'wouldn't it be nice to do just this or that?'.

Even though we are working in many different areas in science we have common themes throughout. Most of the material is aimed at pupils up to 16 years and many of the programs are specifically designed for pupils much younger. The ideas are far less traditional and academic in approach than Phase 2 material; the screen designs are more exciting and the user interaction is much more acceptable for younger and for less able pupils. The range of ideas can be seen in the various reports.

A new direction is that BBC Publications, in their wisdom, have decided to sell the BBC Science Topics software to the home market as well as schools (for which the material is designed!). We will then be seeing our programs on sale for the first time on Smiths bookstalls and other retail outlets.

The MEP extension into March 1986 with the changed level of funding provided us with a good opportunity to stop and assess where we go next with our Secondary Science software developed through Cleveland, Leeds and Kent. we had to decide how much could be completed and published in the next two years at the same time allowing us room for new and different work. Some hard decisions were necessary and we have done a fairly brutal pruning operation, reducing the number of programs under development by one third.

Twenty titles in this series are now on line for publication in the next 18 months and a few are waiting at the sidelines, just in case! Most of the final stages of modifications will be going on in Cleveland.

our work must move forwards and we felt it was the right time to venture into some new areas to take advantage of our links within the CSHE and with the SSCR and to capitalise on individual interests and expertise. From September, in conjunction with some working groups of the Review, we will be beginning to consider some specific areas and their implications for science education: microelectronics and its application, information technology and modelling using Logo.

Sophie McCormick

KENT

SECONDARY SCIENCE CURRICULUM REVIEW

The group in Kent is currently working on two programs:

SURFACES - This is a program concerned with the ratio of surface area to volume. Novel use is made of graphics to enable cubes to be moved around the screen to form composite shapes. These shapes can then be painted. The amount of paint used to cover a shape is represented by the level of paint in a paint pot shown on the screen. Two paint pots with different colour paints are available so the amount of paint required to paint different shapes can be compared.

BIOLAND - This program is an adventure game concerned with the same topic as Surfaces. A 'make believe' animal can travel to different lands with different environments. The aim of the game is to help the animal survive by adjusting its physical characteristics.

Two other porgrams which originated from the group are at various stages of development:

SOIL - now under final preparation for publication.

BACTERIA - A trials version is almost complete.

David Squires

CLEVELAND

Work for the Project has continued in Cleveland with Geoff McIsaac programming/developing and myself coordinating/developing, each on an 80% time basis. Development work has covered both the MEP 11-16 Science for All and the BBC TV Schools Science Topics work of the Computers in the Curriculum Project.

Following the evening meetings and very successful weekend workshop at Crathorne Hall, which was attended by members of the central team, two Cleveland Advisers (Mr J Slade -Science, and Mr H Curtis - Computer Education) and the Science Teachers working Groups; several programs are now at various stages of development for the MEP.

The trials of the Electrical Fault Finding Program (DEFT) were successfully completed in Leeds and Cleveland in March. Science teachers in Cleveland were also involved with the schools trials of Floating and Sinking. The program and notes for the Simulation of the Water Treatment works (WATER) are almost ready for trials in June. The Investigation into the Environmental Factors Affecting Industrial Location (SITEX) is now completed and with the publisher. Specifications are complete (or almost) for other programs, eg The Insect Game, Heating Things, Sewage Treatment, and it is unfortunate that the reduction in MEP funding is bringing to a close the production of the Secondary Science Software. However, many science teachers have gained expertise in the development and use of CAL materials during their work with the Project.

Liaison has continued with Joseph Hornsby and the Secondary Science Curriculum Review (North East Region). As more working groups are set up and their areas of interest identified, it is hoped that members of the Review will be involved in school trials and group evaluation of some of the Project's programs. In January I accompanied the Cleveland working Group to the North East Region Conveners' Conference at York and was able to meet members of local working Groups outside Cleveland. Areas of common interest are emerging.

The end of February saw the handing over of the final version of Relationships (Controlling Malaria in an African Village) to the central team for finalising before publication by BBC Publications. This program is to accompany the BBC TV Schools Science Topics programme with the same name. It was programmed by Geoff McIsaac with Anita Pride (Leeds) and myself as co-authors. The next Biology program, Ecology, is now in the pipeline; its development is being coordinated by myself and programmed by Geoff.

Alison Rose

LEEDS

Since September 1983 Patrick Kirk and Melvyn Cook have each been spending half of their time seconded to the Project, and development of CAL Science units has consequently been much faster. Patrick has been actively designing and programming the unit on Floating and Sinking and the more novel unit on Designing a Bridge, which will form a link between science and CDT. Melvyn has developed ingenius machine code routines to cope with the graphics display for the program on Acceleration and Velocity and has similarly been working on another design program. namely, that of the project of building a working Hot Air Balloon. Rapid progress has also been made on the units concerned with Heating a Wire and Electrical Circuits and this has involved close liaison with the central programming team. This added resource has also allowed rapid organisation of school trials, both of the programs written in Leeds and in other regions. Teachers in Leeds have already given useful feedback on the Newtonian Games and at the time of writing, groups are also trying out the Cleveland unit on Fault Finding in Domestic Electrical Appliance. Balancing Equations, The Female Reproductive Cycle and Floating and Sinking are now with the publishers.

Changes in the OVARY will be displayed
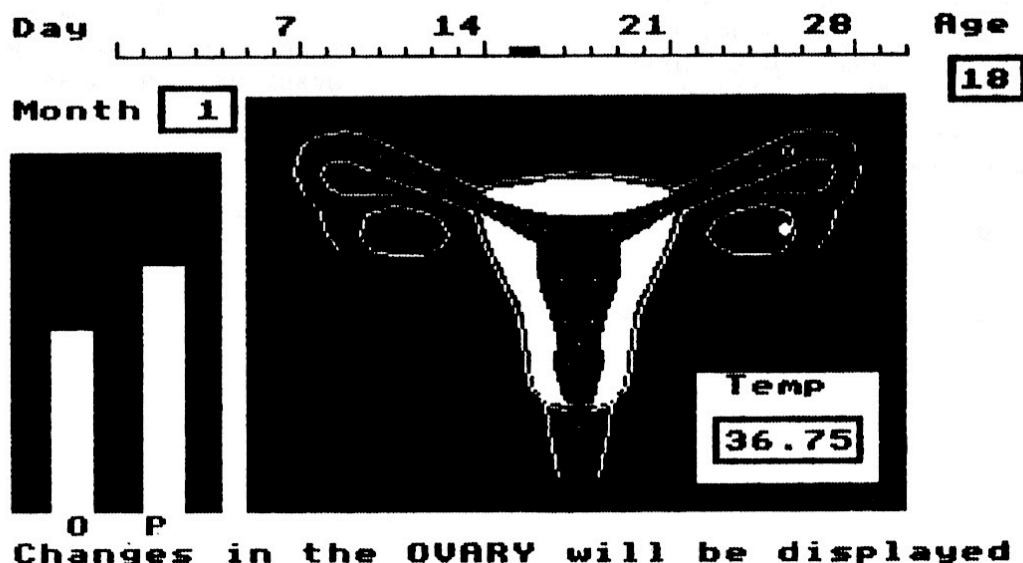
There has been a heavy involvement from Leeds in the development of the software to accompany the BBC Schools TV programmes 'Science Topics'. The work involved in developing CAL units on Malaria Control, Waves, Electronics and the Electro-Magnetic Spectrum Adventure Game has been a facinating new development for all concerned. It has been extremely stimulating to work in conjunction with another, very exciting, educational medium, namely television, but the need for tight specifications and the early deadlines has meant a good deal of additional work from all concerned

It is also pleasing to see the programming that has now been done by Royston on the revamped unit on Domestic Home Heating. We have been fortunate in being able to take up-to -date specialist advice from Phil Booth of the Leeds College of Building and through him the computer model has been both improved and simplified. (See separate note on Home Heating.)

Discussions are now in progress concerning the way that teachers within the Leeds Authority can be most closely involved with the next phase of the Computers in the Curriculum Science development. The region has been the base of another MEP funded development. the design and construction of the VELA. This is a microprocessor based measuring instrument for science teaching which is now receiving government subsidy for introduction into secondary schools. This unit, in common with other similar devices, interfaces easily to the computer and it is likely that in due course it will allow, through the use of well designed software, a new dimension for practical science teaching. We hope that some work in the field of software allied to instrumentation can be one of the things we are involved with.

R Douglas Masterton

NUFFIELD A LEVEL PHYSICS

The Project is producing software to accompany the revision of the Nuffield Physics A Level. This work is being undertaken in conjun;ction with the Nuffield Curriculum Trust.

The following programs will be available:

EFIELD - An investigation of the variation of the intensity of an electric field with distance from a circular plate or between two circular plates.

SHUFLE - An animation representing the movement of quanta in a solid.

SCHRDD - Calculation of the variation of wave function values with distance from the nucleus for the hydrogen atom. Curves representing the variations are displayed on the screen.

SHH - Demonstration of the fundamental properties of simple harmonic motion.

GFIELD - Investigation of the behaviour of the gravitational field as the distance from the earth changes.

Dynamic Modelling System - A major piece of general purpose software which enables models to be created and edited. The results of running these models can then be shown in graphical and tabular form.

David Squires

BBC/CIC PROJECT

We are working with BBC Schools Television in the development of ten CAL packages to accompany their 'Science Topics' series. Although the TV broadcasts and CAL packages could 'stand alone', they are designed so that they can be used together to maximise their educational value. The broadcasts are visually exciting and provide a general introduction to several related aspects of a topic; the CAL, on the other hand, provides an opportunity to actively explore one or more of these aspects in much greater depth.

The authors of the CAL packages are groups of science teachers who have been associated with the Project's work over a number of years and with whom we have already shared two very successful workshop weekends. The first was in Brighton and the second was in Sheffield; the next one will be in July at Woolley Hall in Leeds.

As a result of tremendously hard work, both at these weekends and since them, the packages have reached the following stages in only 9 months:

WAVES - to BBC Publications, with notes, for their final evaluation.

RELATIONSHIPS - to BBC Publications, with notes, for their final evaluation.

BONDING - undergoing post trials revision.

ELECTRONICS IN ACTION - programmed and awaiting trials.

ELECTROMAGNETIC SPECTRUM - programming underway.

ECOLOGY - specification nearly complete and some preliminary coding.

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POLYMERS              )
PERIODIC TABLE        ) specification
NEWTON & THE SHUTTLE  ) well
FOOD & POPULATION     ) underway
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The first two packages will be available from BBC Publications in September to accompany the next broadcast of the series.

A video has been produced by the Open University BBC Group which includes the use of the programs Waves and Relationships.

Marianne Atherton

THE REACTOR SIMULATION PROGRAM

The Project is currently involved in producing a reactor simulation program for the United Kingdom Atomic Energy Authority (UHAEA). which is designed to teach the principles of reactor operation to physics students from CSE level upwards. The work is being coordinated by David Squires, with Royston and myself doing the programming. Liaison with the UKAEA is handled by Heather Chollerton. who works at the Authority's London HQ. Notes for the unit are to be written by a small group of teachers based in Birmingham. Maurice Tebbut of the Deptartment of Curriculum Studies at Birmingham University is also involved.

The model used by the program is based on the characteristics of an Advanced Gas-cooled Reactor (AGR) although many of the features of the model apply to all types of reactor. The program will allow the user to investigate the operation of the reactor core, boilers, and turbines, as individual units, as well as running the system as a whole. It is expected that the unit will be trialled in September and October and should be completed in November.

Alan Edis

HOME HEATING

This unit, funded by the Department of Energy, Longmans and Chelsea College is moving apace. The program is now in REVISION stage and the draft notes are complete.

A frightening number of development versions have been sent to important personages, including John Coll and Sir Keith Joseph. A copy has gone to China and one wonders what the Chinese will make of "foam filled cavity walls".

To re-cap, the program allows the user to simulate the:

TYPE
CONSTRUCTION
LOCATION
SIZE
NO OF FLOORS
TEMPERATURES
WINDON AREA
VENTILATION

of up to three homes. It will then calculate the energy losses and fuel bills for the homes.

At the moment the program runs on the RML and BBC. The BBC version requires a disk as it is in three parts which CHAIN each other and communicate through data files. In fact, the program is now far too complex for me to work on, so I'll be slipping it in somebody else's In Tray for "finalisation" any day now.

Work is now underway on the second program, Energy Efficiency.

Royston Sellman
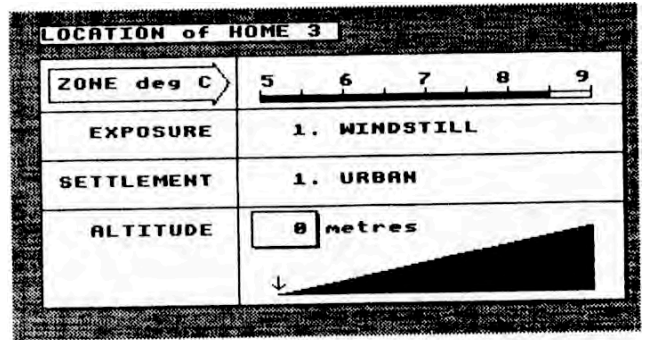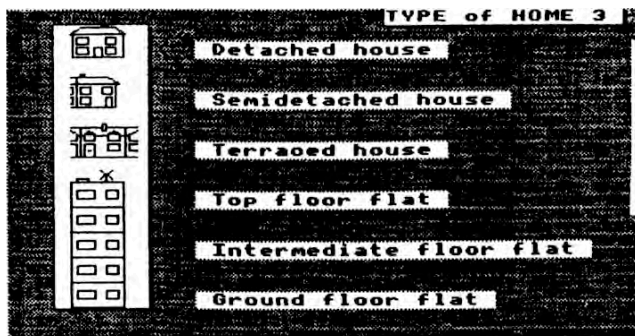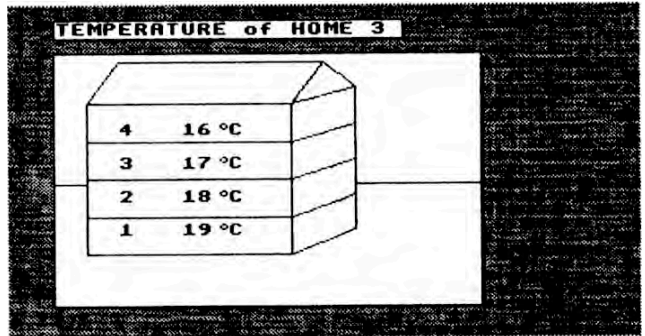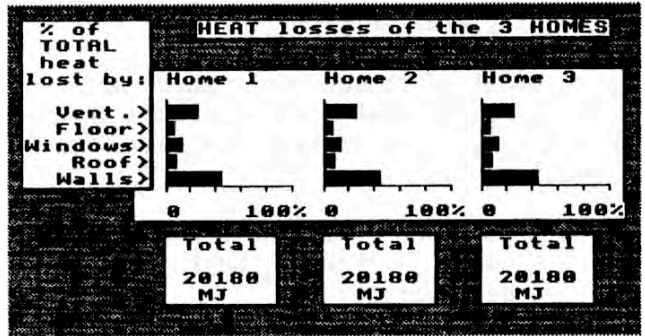
Selection of screen designs
from HOME HEATING.

CRAFT, DESIGN & TECHNOLOGY

As a result of very limited resources for CDT work some of the ideas have not developed as we had hoped. I have been told by the MEP that CDT work is being done in several regions and that the Project should build on its expertise in other areas, finishing off outstanding CDT material. We do not have the resources to design and develop the management package planned by our CDT panel. Our Devon group had already produced a draft design for this package. and the Southern MEP/Kent/ILEA group have been working on the data storage. I hope that this package will be developed elsewhere as it would provide a valuable resource for CDT students and teachers.

In spite of severe constraints on our CDT work the Project has achieved considerable success in developing a range of materials now going out on trial. These are listed below. we have had to discontinue the GEARS program owing to lack of programming resources. I am grateful to our Birmingham coordinator, Doug Brown, who has put a great deal of effort into his work of the last one and a half years with very little support from the Central Team. We would not have the units ready for trials without the considerable contribution in both designing and programming them made by our CDT teachers.

KENT

Sketch

A program which allows the student to sketch graphical drawings on the screen and print them out.

Author: Peter Banbury
Programmer: Peter Banbury
Central Team: Colin Smith

Now going to trials

Anthropomorphic Person

A program providing the opportunity to manipulate and measure a model person to aid in designing furniture.

Author: Jim Wynn
Programmer: Jim Wynn

Now going to trials.

DEVON

Coordinator: Steve Beck

Suite of 5 units on Orthographic Projections.

This suite consists of 5 units designed to familiarise the user with the concepts of 3D orthographics, showing plan, front and end views.

Author: Elliott Penton

Programmer: Derrick Ellis

Now going to trials.

Ciruit Design

A complex unit enabling students to create and test electrical circuits.

Authors: Steve Beck
                  Eric Eden
Programmer: Alan Edis
Pprogramming Adviser: David Creasy

To be trialled in the autumn.

A full report of CAL in CDT is being prepared by myself and Steve Beck. The Project is supported in this work by both Kent and Devon education authorities who have seconded teachers to work with us and provided schools for trials.

BIRMINGHAM

The Birmingham group, supported by Birmingham Educational Computing Centre, has now been taken over by BECC, following the cut in Computers in the Curriculum CDT resources.

Margaret Cox

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SOFTWARE SUPPORT

Once again, for information, I am including a full, up~to-date, list of the programs (67) and program versions (411!) that should be available from 1st June 1984 from our publishers, Edward Arnold and Longman. All the titles listed YES have been supplied, those listed No are not yet finalised, those with --- will not be available in the listed format, while those with R or V prefixes already have revised versions, so if you find a bug and the version number doesn't match that listed here, we may have the answer! Some programs on the 380Z require 56K memory and these are marked 56K in the RML Disk column. In addition, those listed IMM are finalised and we are currently either batch copying or awaiting orders from Longman. All programs marked YES except two non-Library units (FORMUL and SYNTH) are now available on disk for the BBC machine, and all these bar two (GRAVTY and CENSUS/INPUT) are on cassette.

The situation with regard to BBC Networks and our BBC versions is still a little confused, owing to our lack of access to a BBC network of either Level I or Level II variety (which are not compatible with each other!). Please contact me if you would like a copy of a paper I have written on this problem. Also, although not specifically mentioned on the list, the LINK 480Z is supported as a stand-alone cassette machine by the 380Z cassette versions, and as a stand-alone disk system by the 380Z disk versions (albeit supplied on single density disks, and without the ability to use Easistart on the system). All program files are in ASCII format. Although we do not currently produce 8″ disk versions, there is no reason why any disk-based 380Z program should not run successfully on a Network file server without modification (except CENSUS), since the ASCII format programs can be loaded under any version of BASIC 5.0. The only other known exception to this statement is FORMUL (requiring BASICSG2). FORMUL Version V2 now runs on Network systems.All programs should also work on the Electron unless the 8K RAM required by the power-up MODE 6 prevents them from loading (Teletext MODE 7 is not supported).

Publishing contracts have been signed, or are being set up, to supply CSSP and CIC titles to the U.S.A. and Australia, and CSSP titles to Canada, Norway, Holland, Germany, Denmark, Spain, Italy and Finland on a range of machines

David Riddle

PATCH

As most of the readers of this newsletter will know, PATCH is the Project software information sheet. Its purpose is to act as a medium for the exchange of programming techniques and information, and generally to keep programming staff working outside the central team informed of software developments at Chelsea.

Since the last newsletter the "programming techniques" section has become more prominent and hopefully this will continue to be the case.

At the time of writing, a total of 19 programmers outside the central team receive PATCH. The total number of copies of each issue, including those distributed within the central team and to interested persons outside the Project, plus some copies kept as spares, stands at 60.

In conclusion, I would like to thank those people who have expressed an interest in PATCH, in particular those who have suggested topics for inclusion. I look forward to receiving more ideas for future issues.

Alan Edis

SOFTWARE NEWS

The formal, public release of the
Subroutine Library has now occured. It
is available at a cost of £25 + VAT for
the manual and the software for either
the RML 380Z, APPLE II (or IIE), or BBC
machine (PET + Supersoft will not be
supported either by the Library or by
future CIC releases). A special price
of £40 + VAT has been fixed for all
three software versions. Additional
copies of the manual will cost £10
VAT and individual software versions
will be £15 + VAT. We have already
supplied about 180 copies to existing
users, new buyers and to some LEA's.
Kent Education Authority for example,
now have a licence to provide the
Library to their teachers for software
development purposes.As far as new
implementations of the Library are
concerned, we are currently talking to
Memotech about an implementation on
their 500 series disk-based machine.
They are undertaking the work largely
on their own behalf since there is no
guarantee that Longmans will be
interested in supporting a machine
which currently has no significant
user-base in education in this country.

In addition, we have made noises to
Sinclair (about the QL, not the
Spectrum!) and IBM, but all of these
moves have met with little in the way
of definite response since the initial
approach.

David Riddle

SUBROUTINE LIBRARY

As I write this, it seems a long time
ago that the Subroutine Library Manual
was finally printed and distributed
(November 1983), but to newsletter
readers not directly involved with the
Project this is news. There were two
disastrous errors which were quickly
corrected curriculum was spelt
curriculm on the front cover and the
grid sheet inside had the wrong number
of squares! Sticky labels for the
front cover and errata sheets for the
grids were quickly produced.

There are a few developments concerning
the Library to report. Two bugs have
been reported since the November '83
version: the file handling section,
FLIB, in the BBC Library did not
initialise Y$ and the cursor
positioning section, CLIB, was not
functioning correctly in the BBC and
RML Library. Both these errors are
reported fully in Patch with their
cures. If you would like your disk to
be updated send it to Chelsea and we
will correct it.

LONGMAN PROGRAM STATUS

PROGRAM	RML Disk	Tape	APPLE Disk	BBC Disk	Tape	PET Disk	Tape
POND	R2	R2		R2	R2		
PREY	R2	R2		R2	R2		
TRANS	R2	R2		R2	R2		
ENERGY	56K	56K		56K	56K		
HEREDS	R2	R2		R2	R2		
COUNT1	R2	R2		R2	R2		
COUNT2	YES	YES		YES	YES		
CONTC	YES	YES	YES	YES	YES		
DECOMP	R2	R2	R2	R2	R2		
ELEMNT	R2	R2	R2	R2	R2		
EQUIL	R2	R2	R2	R2	R2		
GASCR	56K	56K		56K	56K		
CAPDIS	56K	56K		56K	56K		
PROTO	YES	YES	YES	YES	YES		
ESCAPE	YES	YES	YES	YES	YES		
RADACT	YES	YES	YES	YES	YES		
ORBIT1	YES	YES	YES	YES	YES		
ORBIT2	YES	YES	YES	YES	YES		
MASPEC	YES	YES	YES	YES	YES		
GASDIF	YES	YES	YES	YES	YES		
BSTATS	56K	56K	YES	YES	YES		
MARCE							
LAUNCH							
SUGAR	V2	V2	V2	V2	V2	V2	V2
PSYNTH	V2	V2	V2	V2	V2	V2	V2
METAB	V2	V2	V2	V2	V2	V2	V2
FISH	V2	V2		YES	YES		
FLOWER	V2	V2	YES	YES	YES		
DIET	56K	56K		V2	V2		
POPUL	56K	56K*	YES	YES	YES		
SYNTH	56K	56K		YES	YES		
GASLAW	56K	56K		V2	V3	V2	V2
DALCO	56K	56K		V2	V3	V2	V2
ORGANA	V2	V2		V2	V3	V2	V2
CHEND	56K						
IMPEDE	V2	V2	V2	V2	V2	V2	V2
IMPACT	V2	V2	V2	V2	V2	V2	V2
BOUNCE	V2	V3	V3	V3	V3		
REVERB	V3	V3		YES	YES		
FRAUN	YES	YES		YES	YES		
ALPHA	YES	YES		YES	YES		
DECAY	YES	YES	YES	YES	YES		
RANGE	YES	YES	YES	YES	YES		

PROGRAM	RML Disk	Tape	APPLE Disk	BBC Disk	Tape	PET Disk	Tape
CENSUS	56K			V2	V3		V3
CAMPN	56K	V2	V2	V2	V3		
CHOICE	56K	V2	V2	V3	V3		
CANAL	56K		YES	YES	YES		
RICE	56K		YES	YES	YES	V2	V2
MALTH	56K		YES	YES	YES	YES	YES
HILLS	56K		YES	YES	YES	YES	YES
WELF	56K		YES	YES	YES	YES	YES
PUDDLE	56K	IMM	IMM	IMM	IMM	IMM	IMM
GROWTH	56K	YES	YES	YES	YES	YES	YES
MINE	56K	NO			YES	NO	
FARMER	56K	V2	V2	V2	V2		
GRAVTY	V3	V3	V3	V3	V3	V3	V3
WINDS	YES	YES	YES	YES	YES	YES	YES
ROUTE	YES	YES	YES	YES	YES		
UTILITY	YES	YES	YES	YES	YES		
FIXEK	YES			V2			
WAGES	56K						
MERGER	YES	YES	YES	YES	YES		
COSBEN	56K	IMM	IMM	IMM	IMM	IMM	IMM
CIRFLO	56K						
ELASCO	V3	V3	YES	V2	V2	???	V2
DISCRM	YES	YES	YES	YES	YES	YES	YES
JUNE 14th 1984							
PIE	YES	YES	YES	YES	YES		
TRANS	NO	NO	NO	NO	NO		
QUAD	NO	NO	NO	NO	NO		
SAMPLE	NO	NO	NO	NO	NO		
PROGS							
CSSP							
CMPETE	YES	YES	YES	YES	YES	YES	YES
COXIST	YES	YES	YES	YES	YES	YES	YES
ENZKIN	YES	YES	YES	YES	YES	YES	YES
LANOVR	YES	YES	YES	YES	YES	YES	YES
EVOLUT	YES	YES	YES	YES	YES	YES	YES
HABER2	56K	R3	R3	R3	R3	R3	R3
HABER1	56K	R3	R3	R3	R3	R3	R3
RKINET	R2	R2	R2	R2	R2	R2	R2
INTERP	YES	YES	YES	YES	YES	YES	YES
NEWTON	R3	R3	R3	R3	R3	R3	R3
SCATT1	YES	YES	YES	YES	YES	YES	YES
SCATT2	YES	YES	YES	YES	YES	YES	YES
SCATT3	YES	YES	YES	YES	YES	YES	YES

Several permutations of the BBC Library have been produced to overcome memory problems. Firstly, a version which has no graphics (except plot text) has been produced for text based programs using MODE 7. This has been used for the adventure generator program. Secondly, a version has been produced which configures its own screen mode by reducing the number of lines displayed in MODE 4 from 323 to 24. This has the effect of freeing 2.5k of memory but the screen aspect ratio is reduced vertically which makes displays looked cramped, as on the Apple. Thirdly, a version has been produced for MODE 1 use but there are severe memory limitations in this case. All of these versions are available from Chelsea but are experimental in nature and are being used where all else fails!

For information on acquiring the Subroutine Library see David Riddle's section SOFTWARE NEWS on page

Richard Millwood

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HARDWARE NEWS

The RML network is now running extremely well, with eight CHAIN 480Zs available on a twin-server system (5" and 8") together with a Winchester master disk store. We are still running with the Winchester Trials software (without the Winchester back-up support package, CLIP) so are hoping for a further performance enhancement with the release software when it finally appears. The only real complaint with the system is the inability to change user numbers and to check for current disk use (RELEASE) from within BASIC, and the painfully slow time taken for a log-off from BASIC with BYE when the system is in heavy use. PIP is also very slow in some circumstances. Aside from that, the ability to have all system utilities including Library files, other languages and all our current release software available for demonstration situations, is a dream come true!

We have also obtained two new 380Z D machines in case some of the 5 year old faithfuls give up completely, as well as stand-alone disk drive for a 480Z. These machines and the Network have revealed between them some rather horrific compatability problems between the increasingly ridiculous number of RML BASIC interpreter versions, as well as the inability of the 480Z disk drive to deal with single density formatted disks containing CP/M 1.4 in drive A consequently no ability to use Longman Easistart disks. There is also no compatability between HRG picture files produced for the 480Z and the 380Z, nor between the code needed to load and save them!

Most of the non-computer hardware acquisitions in the last six months have been designed to allow more adventurous use of the micro in Project units. One of the most useful of these has been the British Micro Grafpad. This has already been put to good use on the Geography re-write of RAIL to provide a more realistic background map. The system software provided with the Grafpad operates in MODE 1, but an un-documented ability exists in the (miraculously) un-protected software to operate in MODE 4. In addition, some modifications were made to inhibit the production of HELP text menus at the top of the page, and to prevent the drawing of a surrounding box. The entire 'page' is stored on disk, and can then be retrieved as a 'picture file' in to ordinary BASIC programs. This technique for direct loading of pictures created by any of the currently available software-based Graphics Packages can be used with Library programs on the understanding that it is fully documented. The main problem encountered with RAIL, was what to do about transferring pictures to other machines when they are generated outside of BASIC code and DATA co-ordinates. This problem has been solved as far as the RML 380Z and 480Z are concerned by a relatively simple technique described in the latest edition of PATCH. It involves the repetitive creation of a user-defined character under BASICSG2, and plotting this on the HRG screen. We hope to be able to stretch the technique to the APPLE as well, but this is somewhat more problematic.

Another tool that we have just started to investigate is the Digithurst Video Digitizer, which interfaces to both the BBC machine and the 380Z. A B/W camera is used to digitize either photographs or 'live' scenes, and it can be used with video tape. Pictures can be generated with the system in 'pseudo' colour on the BBC version, by means of a filtering technique. They can then be 'read' by graphics package software, and manipulated as required.
We have also acquired a BBC Buggy to complement the Turtle (or something) and await its use in a Project package.

David Riddle

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EDUCATIONAL TECHNOLOGY EXHIBITION
Paris – December 1983

In December I was privileged to visit an educational exhibition in Paris with David Squires, to work for two days on a stand that had been set up by Research Machines Ltd. The aim was to demonstrate British educational software as well as hardware, to the French teaching profession. The French were fascinated by the stand and were constantly drawn by the British Turtle which RML had cleverly arranged to have with them. (The French version of the Turtle is most bizarre, programmed with slot-in plastic templates, it rather looks like an armoured car.) French schools are obviously under pressure to buy French made equipment but it is clear that their own products and software is far behind current British practice. During slack periods I was able to inspect some of the French educational software designed to accompany the computers going into French schools. I felt that they are probably about five years behind in their design of software and there is a clear market for British publishers who take the trouble to translate our software on to their machines insofar as this might be possible. In terms of hardware it will not be easy for RML to break into the French market, but I wish them every success in their efforts.

R Douglas Masterton

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INTERACTIVE VIDEO CONFERENCE
12th April 1984 – York University

This was a one day conference held as part of the Educational Television Association's Annual Conference "Education in the Video Age".

Various sessions provided demonstrations of interactive video disc material produced by Thorn EMI, the Open University, the University of London's Audio Visual Centre and the Centre for Educational Development, Dundee College of Technology. Certainly the state of the art has progressed considerably in the last year. However, the type of material varies in style enormously, from what is little more than random access film and still collections, to illustrated CAL, and in a few cases, real attempts to allow the user to interact with the computer controlled visuals. The nature of the material depends on its home of origin, eg the Open University has developed tutorial type material providing, on film, a substitute 'teacher' but allowing the flexibility of following particular pathways depending on the needs of the user. This may be into further film material or traditional CAL. Such material has been designed to be used by OU students on Summer Schools in conjunction with standard CAL.

Other materials shown are being used mainly by undergraduates but some (essentially film material) is now being tested in primary schools by the School of Education and Humanities of the NE London Polytechnic. A report on this will be published in May.

The field is effectively wide open for future development and by the audience, clearly a number of organisations are interested in becoming involved. The Department of Trade and Industry Initiative, within its 'Support for Innovation' scheme, is prepared to help finance a limited number of projects. This may give a boost to new initiatives started. We have a strong interest in this with our BBC work.

Sophie McCormick

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MICROS IN EDUCATION
SSRC (now ESRC) Research Seminar

Last November I represented the Project and Chelsea on a 3 day seminar held in a Birmingham hotel. This was called by the ESRC:

  (i) to discuss the report from Morley Sage and David Smith; and

  (ii) to attempt to plan an action priority list for areas of research in this field.

The participants varied from those engaged in university research. with a large representation from the AI world (Exeter, The OU, Edinburgh and Imperial), to those from development groups or departments of education (CIC, AUCBE, IMA, and UEA). Two other interesting polarisations emerged, in a rather classic way, between those who were interested principally in the curriculum end, and those interested in the machine end, either the human-computer interface (MMI) or the systems themselves. There was also the commercial approach versus the universities and a good sprinkling of educational psychologists.

We had been sent a huge pile of papers and documents to digest before the seminar began. These were essentially position papers, often the "state of the art" in particular areas, eg PROLOG, and proposed how further work should be funded and produced. Copies of these papers are available from my room.

When we were released from listening to the presentation of the papers there was much lively discussion amongst the participants from such disparate interests. It became difficult to weld those interests into a cohesive whole, and at the final session no clear pattern emerged from the 10 small discussion groups to advise the ESRC how to spend their relatively small quantity of funds. I think it will need a strong clear framework which all the component bodies agree with before we can see a clear direction in the research from the ESRC in this field.

Deryn Watson

ASSOCIATION OF SCIENCE EDUCATION
Exeter University - January 1984

Once again Dave Riddle and I did the trucking with the VW loaded to the gunwales. 50 mph crosswinds added a challenge to the journey with the need to guess how far the steering wheel would have to be wrenched as we overtook lorries.

Setting up the stand went smoothly as there were many people to help. This was the first time we had taken the RML Network away with us for a conference and it ran like a dream and simplified demonstrations a lot.

Present from the Project were Margaret, Sophie, Dave Creasy, Diane, Dave Squires, Marianne, Dave Riddle, Alison Rose, Doug Masterton, Patrick Kirk, myself, and Colin for one day. With this many people we all managed to see the presentations we wished without leaving the stand understaffed.

There were also plenty of hands to help with Sophie and David Squires' workshops on CAL and the Curriculum Review, which were well attended.

Peter Bratt of the BBC and Sophie gave a talk on the collaboration between the Computers in the Curriculum Project and the BBC, and they demonstrated some of the material that has been developed for the Science Topics series. This material was also being demonstrated on the BBC stand and both the TV programmes and the software received a great deal of interest (if the numbers of leaflets handed out are anything to go by).

I went to a few lectures, but the one which sticks out in my memory is a talk on Optical Computers. The speaker conveyed an impression of the state of the art on these devices which offer many advantages over semi-conductors, the greatest of which seems to be multistate logic. Dave Creasy and I were left feeling very much as I imagine conference goers felt when Bardeen, Shockley et al were announcing their work with transistors and look how far that has come.

Overall I think that we were all pleased with the presentations and lectures, with the level of interest in our materials and the number of opportunities of getting to a bar. For us ASE 84 was a success.

Royston Sellman

The National Association for the Teaching of English

16th-19th April 1984 - Durham

NATE conferences consist of perhaps 10-12 individual commisions on selected themes. The first computer commission took place last year and had about 30 members. This year there were over 120 taking part and they showed real interest in finding out what is going on in English and other areas. Andrew Dean, Mark de Wolf and myself went along to represent the Project and give a presentation of STORYMAKER.

Many of the sessions consisted of guest speakers with a transatlantic bias. There were perhaps not enough opportunities for teachers to get together and discuss the actual usage of both micros and software in the classroom, and how they could exploit and contribute to software within the context of their own skills etc. Commission members felt they would have benefited from such a framework, with more hands on experience.

A computer exhibition had been arranged for the whole of Wednesday in the main hall. Mark and I made a conscious effort to staff the stand all day so that teachers who had already expressed interest or who wanted to explore some software could do so. Several people used STORYMAKER to create a story and were delighted with the results.

Andrew, Mark and I gave an official presentation of STORYMAKER on Wednesday afternoon. This was enthusiasticaly received and regarded as a powerful utility which English teachers could employ.

Attendance at commission sessions and exhibitions was not as good as expected. This was probably a direct result of the good weather, various organised trips to open air museums and the countryside, and some general disenchantment with "talking heads".

This conference was well worth attending and it is hoped that next year the commission framework will be modified.

Jan Bright

JOINT COUNCIL OF LANGUAGE ASSOCIATION 24TH-26TH March 1984 - Exeter

This was the first time CIC had been represented at a national language association conference, and the first time that JCLA itself had included a series of computer workshops.

As the theme was "Communication, Dream into Reality", great emphasis was placed on interactive skills and group work in communicative language learning and teaching.

Perhaps as a result of this, our language software was particularly well received. Each of the four workshop sessions was attended by large numbers of teachers, and overran its allotted time. Andy, Mark Bryson, David Peacock and myself were kept pretty busy on the stand, and always seemed to be the last people to reach the inevitable queue for tea, coffee, lunch, dinner etc.

One highlight of the conference came in David Peacock's part of the opening session in which he discussed reasons for the different levels of language achievement between mainland Europe and the UK. The crucial factors being societal influence and perceived importance of the language and not innate ability. This not only mad a witty and amusing start to the proceedings, but also displayed David's hitherto unknown talent for bird impersonation which I'm sure will come in useful in later life.

After the success of this year's events, the JCLA intend to hold computer workshops on a much larger scale next year, to which we have been asked to contribute.

Jan Bright

ANGLO/FINNISH COURSE
INFORMATION TECHNOLOGY
ACROSS THE CURRICULUM

February 1984

TECHNICAL RESEARCH CENTRE OF FINLAND

Earlier this year I was invited to act as a tutor on the above course. The course structure was designed to cater for the needs of course members with widely ranging degrees of experience and expertise.

The basic aims of the course were to ensure that each course member:

  i) acquired basic operational competence in using a microcomputer;

 ii) experienced using a representative range of software which included the most important categories of software currently used in schools;

iii) became aware of the essential factors relevant to establishing the use of Information Technology in the curriculum.

In addition, for more experienced course members. the aims were to:

 i) provide a forum for detailed discussion about methods of implementing a national computer education policy in Finland;

ii) introduce some of the more innovative developments in computer education which are currently taking place.

CAL was considered in some detail. In addition to a general lecture on CAL there were several subject specific workshops. The Project's software was used extensively during these sessions. Major lecture and practical sessions were included on "word processing, information handling, and Logo.

A control technology session was included as an optional activity. No formal attention was given to Computer Studies.

Seminar and lecture sessions dealt with software selection, software distribution, software production, teacher training, and information services. As a response to requests from the course hosts, a session on recent MSC initiatives - ITEC's and TVEI - was given.

Funding for the course was provided jointly by the British Council and the Finnish authorities.

David Squires

GEOGRAPHICAL ASSOCIATION ANNUAL CONFERENCE

April 16th-18th 1984

This conference was attended in greater strength than in previous years and the Project stand was put to good use in demonstrating some 20 programs over 2 days. Thanks to Mary, Ewa, David Riddle, Deryn, Angus Willson, David Hassel, Catherine Robinson and Ian Killbery, the stand was staffed for the whole of Tuesday and Wednesday. There was a reasonable level of interest and the sophistication of teachers' comments reveals a growing awareness and appreciation of CAL in Geography.

The conference theme of 'Futures' provided a framework for the lectures and apparently stimulated more interest than previous conferences have managed. As to be expected, the CAL brigade was much to the fore, including presentations by the BBC, Nelsons, Longmans, CIP, Hutchinsons, Solent Software and Michael Jay Publications. The CET managed a presence -albeit subliminal - and we helped advertise Deryn's Reader which was published in time for this conference. Meanwhile, Loughborough University has produced an interim list of some 160 Geography CAL programs which are published or are nearly ready for publication. The GAPE programs were demonstrated on the Hutchinsons stand and the CIC programmers and authors took the opportunity to look at these and other publishers' programs. The quality of Geography CAL programs is undeniably patchy and many teachers realise that inspection sessions are necessary. There seems to be a clear need for support for teachers if publishers are to attain the sales figures they are aiming for.

David Riley

ECONOMICS ASSOCIATION CONFERENCE

Easter 1984

Ian Killbery, Steve Hurd and Ken Randall represented the Project again at this year's venue, Bristol Polytechnic. Steve's demonstration of the Economics 14-16 Project software aroused considerable interest in an audience impressed with the improved graphics and frustrated at the time lag before publication. My demonstration of COSBEN bravely graced the-first-thing-on-Sunday-morning-after-the-Association-Dinner-the-night-before slot. I argued the case for the inclusion of cost-benefit analysis as an important part of citizenship training in Economics syllabuses, and for CAL as the means to fill this gap that standard textbooks have fought shy of covering. Encouragingly favourable reports from Economics teachers of experiences using the Phase 2 units filtered through, with some people out there eagerly awaiting the Phase 1 rewrites!

Ian Killbery

PROJECT PERSONNEL

The list of people involved in working groups around the country has become so large it is no longer feasible to include it in this newsletter. Please contact me if you would like a copy.

Angie Donoghue

SWITZERLAND

The Swiss Group of International Schools invited a representative of the Project to go and speak to them at a day's workshop in Lausanne. I was asked to go, flying out on Friday, speaking on Saturday and flying back on Sunday.

The experience was quite revealing about the state of computer education in these independent schools and showed how much we gain in this country from centrally funded resources. Each school was very dependent on the enthusiasm of one or two individuals, and the workshop I attended was one of the rare opportunities for these teachers to share their experience. They began by discussing the ways they had introduced computer literacy classes, a matter of some interest to me since in the dim and distant past I had helped to set up a MODE 3 Computer Studies CSE. Then I presented a talk on "The Role of Computers in the School Curriculum". Most of what I said was an attempt to describe the strengths and weaknesses of the computer compared with other resources and was illustrated with a look at the Sailing Ships Game and Reverberation Times -both good units for audience participation!

Most schools had Apple equipment and were still buying Apples, although a few were interested in BBC micros. Some schools were well endowed with DEC equipment - generally those with DEC executives amongst the parents.

There was a suggestion that they might ask one of us to present a session at the European Conference of International Schools - perhaps someone else's turn?

Richard Millwood

AVERY HILL WORKSHOP
7th-9th November 1983

The two main objectives of the workshop were to identify principles of good screen design, making recommendations as to how CIC software could be improved in this area and to discuss critically the learning skills promoted by certain Project packages with consideration of their use across the curriculum. It was, however, the Screen Design portion of the workshop which aroused the most interest and which has sparked the most tangible results since the workshop.

The first day began with an introduction by Margaret Cox and presentations by Sophie McCormick and Deryn Watson bringing everyone up to date on the activities and the goals of the Project in both the Sciences and Humanities branches. Those attending then formed groups which looked at selected Science and Humanities programs with an eye to their cross-curricula potential. Reporting back, most groups seemed fairly sure that the programs they had viewed had little such potential, altthough many of the features they had observed could usefully be incorporated in units for other disciplines. Most participants agreed that more "context-free" programs would be worth developing.

The Screen Design Conference on the second day was opened by Margaret Cox and Grant Alderson, the conference organiser. It was attended by the 45 members of the Project and 20 invited guests from other projects. Dr Jeremy Foster from the Psychology Department of Manchester Polytechnic was the first speaker and he began with a thoughtful presentation on increasing the effectiveness of reading text on VDU screens. He stressed the importance of making the visual format reflect the nature of the verbal message, the fact that there seems to be little correlation between the factors which make for effective print reading and those which increase VDU reading effectiveness, and the importance of following up on what little research has been done in this field.

Fred Daly, the Director of the Homerton Curriculum Development Project, then gave an extremely interesting and colourful demonstration of a program called Tessellations. This proved to be an impressive example of attractive screen design combined with functional clarity and was referred to often in the course of the workshop.

The next presentation was given by Peter Bratt, the producer of 'Science Topics' on BBC Schools TV. He made the point very effectively that, when it comes to graphic displays, simplicity is best. He also dealt with several other aspects of visual effectiveness which he felt were as applicable to CAL developers as they were to television producers.

After lunch, participants were given the opportunity to see demonstrations of software poduced by a number of development groups and, from them, identify features of both good and bad design The Advsory Unit for Computer Based Learning in Hatfield (AUCBE). Fiveways Software, Homerton College, the ILEA Computing Centre and Netherhall School made some of their programs available for this session. There was a great deal of interest in the LISA system from Apple which was also on display.

The last speaker of the conference was Dr Steve Scrivener who is Head of Graphics at Leicester Polytechnic's Human-Computer Interface Research Unit. His talk proved to be very stimulating indeed, as he used slides of selected works of art to illustrate his points on the factors which influence how a person perceives objects represented in a two-dimensional picture. It was noted that many programmers already follow those principles of perceptual psychology which he outlined (continuation, illusions of depth, colour use, etc) but they do it instinctively in most cases, and it was generally agreed that having these principles made clear in this way would be extremely useful.

The plenary session which followed featured a panel made up of the speakers, answering questions from the floor. There was a great deal of interesting discussion about such topics as screen animation, age factors in the perception of two-dimensional images, and whether or not programs should include within them an explanation of how they work.

At the end of the day all of the participants seemed to feel that the conference had been both stimulating and useful. At the group workshops and the general discussion which finished up the third day's activities, it was clear that much had been learned on the previous day which was of use in critically appraising the screen design of CIC software. From the group reports and the general discussion came a list of recommendations which have been discussed in follow-up committee meetings and which will form the basis for an exemplar package of screen design guidelines now being assembled for use by developers and programmers. All in all, it was a very productive workshop.

Mark de Wolf

コンピューター教育部　科学・数学教育センター
ロンドン大学チェルシー　カレッジ

Dr. Margaret Cox

In November 1983 I went to Japan to participate in a UK/Japanese science seminar. This seminar was one of a series which has been held between the UK and Japanese science professors over a period of several years, sponsored by the British Council. Two themes were chosen for the seminar: Assessment. and The Microcomputer in Science Education. The British team consisted of 8 delegates invited by Professor Black (Director of the Centre for Science & Maths Education) who contributed papers to the seminar. Eight Japanese delegates also contributed papers on the same themes.

The Japanese approach to using computers in education is very different from the British one. In some ways, it is reminiscent of the way CAL was used in universities in the 1970's. They consider that the only use worth encouraging is on a one to one basis (machine plus student) or, at the most, two or three students. The difference between our two cultures naturally influences the education system. In general, pupils in Japan are not encouraged to participate actively in a classroom lesson. (It was difficult to get participation during the seminar, other than from the speaker and one or two people).

The week long seminar finished with a public session at which Bill Tagg (Chiltern), Roger Hartley (Leeds). Bob Sparkes (Stirling) and I gave an afternoon's presentation of CAL in Britain. This included a hands on session using Apples, RML 480Z and a BBC, with simultaneous translation by a team of interpreters. It was a shining example of teamwork; Bill Tagg showed Quest using a data file on Japan, Roger Hartley showed some of our Physics programs, as well as the Assessment team, and Professor Black, Professor Galton (Leicester) and Dr Leonard (Scottish Examinations Board) demonstrated our Project software on Apples. The session was very successful and was reported in the

national paper "Asahi".

Bill Tagg and I also gave an interview to a Japanese publisher which publishes a magazine called "CAL and the Family". This was followed by a truly traditional meal of Sushi. Bill and I sat on the floor with our Japanese colleagues, eating dish after dish of unrecognisable comestibles with chop sticks. As my feet got more numb, and my curiosity more curtailed by vivid descriptions of the sea animals we were eating, Bill finally put an end to my polite "what is this?" with "Stop, I don't want to know anymore!"

The four of us, Bill, Roger, Bob and I were then invited to Kyoto for four days; Kyoto is about 200 miles south west of Tokyo. One of our more challenging activities was when Bill and I decided to travel on the Kyoto underground, which has no English names only largte route maps. After much bowing, smiling and waving of hands, referring to a wall map and arguing with the guard that we did not wish to travel by bus (we'd done buses) but by train, we discovered, to our confusion, that the 'pink line' was a bus route not an underground route. Full of humility we struggled back up the stairs to join the bus queue.

The trip included many talks, visits, interviews and exchanges of experiences and ideas. One of the outcomes is a new look at what we're doing in the UK. The Project is now a member of SMILE (The Society for Microcomputers in Life and Education), based in Kyoto, and is hoping to collaborate further with colleagues in Kyoto, Tokyo and Tsukuba. One possibility now being considered is to acquire a Japanese school micro and implemnent the Project Library on it! Any volunteers?

Margaret Cox

HELP NEEDED

The Project is trying to publicise its good works as widely as possible. If you are a member of a professional association, have you considered writing an article about us for your journal or for the national press? If you are interested in writing, please do.

We are gathering together feedback on the use of software in the classroom. If you have any data which would help please send it to me. Thanks.

Margaret Cox

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MATHEMATICS

After a long dormant period due to (guess what) lack of funding. the Maths work of the Project is now really taking off. Most of the work is being done by a small Maths Group taken from CSME staff, William Wynne Wilson (Birmingham), Grant Alderson (Roehampton/CIC), Richard Millwood and, until recently, Mick Dodwell. Three of the earlier Maths units have now been renovated, the fourth unit has been designed, written and programmed by Grant Alderson.

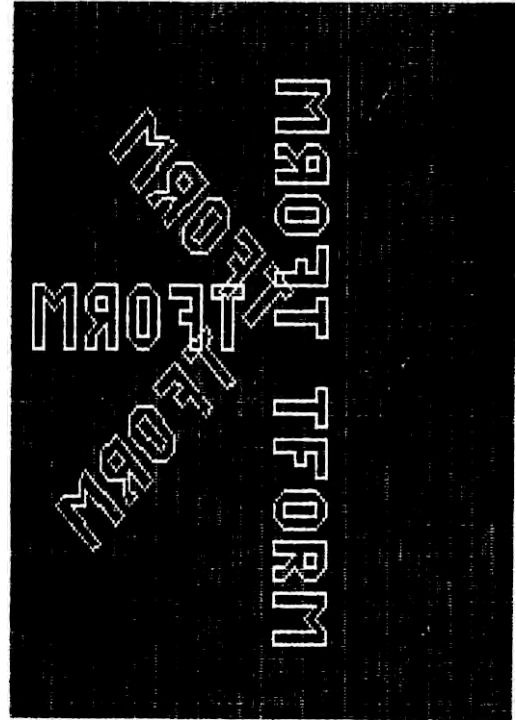Maths Editor: Grant Alderson
Maths Coordinator: Barry Blakeley

Pie Charts

A unit which allows the student to try out Pie Charts using both fractional and angular divisions has now been published.

Quadratic Equations

A useful utility to allow students to choose any quadratic equation and check its roots is now nearing completion.

Sampling Distribution

This unit allows the user to explore statistical distribution by building up samples and is now at the galley stage.

TFORM

A suite of transformation geometry programs designed for a wide range of ages. The first unit is now nearing the trials stage.

These four units come into the group of materials first announced in 1983 and being published by Longmans.

Margaret Cox

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PROJECT PAPERS

Many people write to us for information about CAL in general and the CIC Project in particular. We have produced several Project Papers in the past and some of these are still available. If you would like the list of references to papers written by Project members please let me know. If you have published any papers about the Project I would be very glad to receive a copy which we could add to the current list.

Angie Donoghue

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STEERING COMMITTEE

The Computers in the Curriculum Project is advised by a Steering Committee appointed by the DES. This committee meets about 3 times a year and comprises the following members:

Bob Coates (MEP), Margaret Cox (CIC), William Dobson (Shropshire EA), Derek Esterson (ILEA), Richard Fothergill (ILEA), Gabriel Goldstein (HMI). Alan Greenwell (Schools Curriculum Development Committee), David Johnson (Chelsea College), Philip Lewis (DES) - Chair, Sophie McCormick (CIC). William Maltby, Donovan Tagg (Lancaster University), John Turnbull (NCC); Deryn Watson (CIC), Michael Watts (SSCR), Norman Willis (CET).

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NEWSLETTER MAILING LIST

IF YOU WISH TO CONTINUE RECEIVING COPIES OF THIS NEWSLETTER PLEASE COMPLETE THIS FORM AND RETURN IT TO ME.

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NAME

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