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MICRO SCOPE

Newman College with MAPE

Contents

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Editorial

The *Times Educational Supplement* of 21st March contained 'The last MEP page' written by Richard Fothergill. His article reviewed the work of the MEP over the last five years.

Pauline Bleach, a Research Fellow at The Reading and Language Information Centre of the University of Reading School of Education, has surveyed the use of micros for language development in 536 schools. She has just published some of the findings in an Interim Report.

When I read the report I was struck by the difference between the potential, explained by Richard Fothergill, and the practical reality discovered in early 1985 by Pauline Bleach.

Software

'Observing the excitement of children of this (primary) age exploring new worlds opened up by computer programs is a real thrill for the educationist'—R.F.

Pauline Bleach was surveying programs for language development; nevertheless it is interesting to note the skill areas covered (Table 14):

Main Areas Identified	Schools Using
Anagrams	53%
Alphabet Skills	58%
Cloze	31%
Comprehension	35%
Databank and Retrieval	36%
Drill & Practice	36%
Dictionary Skills	45%
Phonics	40%
Punctuation	17%
Reading Development	40%
Reference Skills	17%
Spelling	70%
Story Development	33%
Study Skills	9%
Talk & Discussion	42%
Thinking Skills/Logic	62%
Word Processing	23%
Word/Sentence Completion	41%
Vocabulary Development	46%
Other (e.g. handwriting)	3%

Figure 1: Pauline Bleach: Table 14.

Peripherals

'In some cases we have developed or promoted devices that have opened up unexpected opportunities. Some stand out for me . . . the concept keyboard, which is now essential equipment in the primary and special education fields'—R.F.

Pauline Bleach, Table 6:

Device	% of Schools
Printer	24.6%
Concept Keyboard	8.6%
Light Pen	1.5%
Microwriter/Quinkey	0.4%
Touch Screen	0.2%
Turtle	7.1%
Buggy	0.9%
Speech Synthesiser	0.9%
Other (eg. AMX Mouse)	3.1%
Bigtrak	22.4%

Figure 2: Pauline Bleach: Table 6.

Advice and help

'From the in-service packages that have been produced . . . new opportunities for learning for primary children have been made possible. . . . As in all the work of the programme, we have merely introduced the topic, shown its potential, and left it with a great deal more to be developed and done.'—R.F.

Pauline Bleach, Table 16:

Source of Help	Percentage of Schools
LEA Advisers	46%
Other Schools	44%
Parents	18%
Friends	20%
Teachers' Centres	58%
Courses	60%
Publications	47%
Other (including Colleges, Universities, MEP Centres, etc.)	6%

Figure 3: Pauline Bleach: Table 16.

The future

'If we look at any future scenario of society, its functioning is going to be dominated by electronics. It is essential that children have the ability to cope with, and have a general knowledge of, the technology.'—R.F.

'. . . indications are that, for a variety of reasons, schools in general are only very slowly absorbing computers into their curricula.'—P.B.

'. . . staff were willing to undertake training but a staggering 64 per cent were left in the position of only being able to wire up and run their machines.'—P.B.

The way ahead

'There is still a great deal to be done. For if children are to take advantage of the potential then this technology should be as pervasive in its use inside education as it is in the world outside. If we continue to work together we can make it so.'—R.F.

'What is needed is a massive resource injection to boost in-service training and provide the much needed information about the educational uses of worthwhile software. Non-contact time must be given to primary school teachers to develop this very important area. When this has been achieved, schools will then require the independent finance to purchase, from any source, the software which will suit the dictates of their individual curricula.'—P.B.

Pauline Bleach conducted her survey over a year ago; undoubtedly some of the figures have now changed. The fact that teachers are not receiving enough support is unlikely to have changed. With regard to sources of help MAPE is probably among the 'Publications' category. Even so, three-and-a-half thousand members is a

drop in the ocean of twenty-seven thousand primary schools. We started to discuss what members look for from MAPE at the AGM but dinner intervened. How can MAPE help you?

This year's course/conference is now over. I passed a set of information to a friend. She said, later, 'I couldn't have gone to that conference; I didn't even understand the titles of the sessions. I don't know enough to go.' We are looking at plans for next year. Will you be coming? If so, what would you like to see happening? Let me know. Book the date in your diary and ask your LEA for funding. April 10th, 11th and 12th 1987, at Newman College, Birmingham.

The Interim Report is available from Pauline Bleach, Reading and Language Information Centre, University of Reading School of Education, London Road, Reading RG1 5AQ. Price £0.70 including postage.

Letters

Points on piracy

I have just received my copy of *MICRO-SCOPE 17* and was extremely interested to read Michael Trott's article 'Squeaky Clean' which was concerned with some of the aspects of software piracy. As far as I know I have never met nor spoken to him but I felt that I must write to say how refreshing it was to read an article such as this from someone 'on the inside' who obviously appreciates one of the problems we are facing. The subject of piracy seems only to be discussed in relation to 'High Street' software and to see an educationalist in print about it is extremely rare.

We have been aware that piracy has been going on over the past five or so years and, when necessary, have sent the occasional strongly worded letter to the offending party as and when the need arose. Of course, our problem is catching the culprit although sometimes they do actually catch themselves by sending faulty discs back to us!

As Michael Trott says, the Librarian is becoming branded as a 'wrecker' whereas he should surely be a friend. His warning of corrupted data being passed from one school to another is so true as to be almost frightening. The end result of a piece of pirated/loan software is invariably an irate teacher with a class of very unhappy children and there is very little we can do except wonder quite what damage this is doing to us.

The pages of *MICRO-SCOPE* are often full of articles asking why software costs so much. Piracy is now unfortunately becoming one of the answers (along with demonstration/loan/evaluation/review/sale or return/library and general reference requests) and this is a sorry state to have to admit.

We have recently been made aware of a school in East Anglia that has all 'the best titles' and has never purchased one of them. Unfortunately the name of the school has been withheld from us, and even if we did know it, obtaining evidence would be very difficult indeed. How many more are there like this?

As Michael Trott fears, his article may provoke a flood of protests. All I can say is that if it does, so much the better because from our viewpoint it will be interesting to see not only who writes but also what they say!

Brian Richardson
Cambridgeshire Software House
The Town Hall, St Ives
Huntingdon, Cambs PE17 4AL

Three Minute Warning

Software producers take note. At the last MAPE conference I was informed by a delegate that no program should require more than three minutes for a teacher to be able to 'get to grips' with it. Her reason was that teachers have insufficient time. One wonders how she was able to spend three days in Manchester.

Perhaps, in future, MAPE could be re-organised on a bipartite basis so that hard-pressed teachers could have a special three-hour conference and a three-page issue of *MICRO-SCOPE*.

Mike Matson
4MATION Educational Resources
Linden Lea, Rock Park,
Barnstaple, Devon EX32 9AQ

PS You'll appreciate why this letter is so short.
PPS The lady concerned did mention that she was a LOGO enthusiast. I couldn't help wondering . . .
PPPS Please ignore all this: I think she might have said five minutes.

Viewpoint

Are simulations stimulating?

Keith Whiting

Are simulations stimulating? Are they always relevant? According to my dictionary *to simulate* means *to sham, to feign or to counterfeit.* Are computer simulations doing just that?

Recently, an adviser visiting my classroom commented upon the validity of some rather aesthetic art work based on volcanoes (at least, I thought it was). We had seen a film about Sertsey but the question was asked 'Are they based on first-hand experiences?' My answer had to be in the negative although I did not think that the question was really appropriate. I presume that classroom displays based on major computer simulations would gain similar reproof from the less enlightened.

However, as my thoughts have slowly crystallized (or stagnated) since then I have begun to wonder about the relevance of computer simulations to many classrooms. How many such programs are now gathering dust on shelves because of second thoughts similar to those that I shall try to outline here?

I teach near the geographical centre of England so why should I expect children to base a major topic on diving into mud in the Solent even if my historical period is the Tudors? Few of our children have seen anything larger than a narrow boat. We have paced out the length of the QE2 on the school field in an effort to show how large an ocean liner is but it was still rather a waste of time. Admittedly, children enjoy such programs and they aid logical thinking, language and vocabulary through discussion, etc.

On the other hand I am sure that a good simulation based on Ironbridge, one of my fourth-year industrial revolution topics, could be more enjoyable (for me at least) and certainly cheaper than trudging around Blists Hill on a wet and cold October day. Would such a program be better? Probably not, as the visit gives an idea of the conditions in which our ancestors worked no matter what the weather. Similarly, can children appreciate the heat and discomfort from lack of salt when endlessly digging in the desert in the hope of finding Egyptian relics? Or the slow lingering death of a fox hit by a car? Or the trauma of being chased by a pack of hounds? Certainly they are not first-hand experiences for the children, more like fantasy adventures.

I am dejected at the thought of hundreds of impressive classroom displays of hulks, foxes or pyramids. To many children they will remain 'castles in the air' which is the best reason I can think of for choosing a fantasy-type program in the first place. All the programs referred to are excellent and amongst the best currently available, but only third best. They will be second best when computers can be cheaply interfaced to laser discs so that good animated sequences of the events can be seen and children must make decisions based on what they see evolving before their eyes.

How much more effective to see the relic as it is slowly uncovered or the fox's wild gaze while being pursued by dogs. I am not sure about the fox being killed by a car but we probably have until next century to think about that one.

There can be no substitute for local visits and experiences, especially when supported by appropriate computer-based work. Choose your programs carefully according to the situation of your school and your teaching method but more importantly consider what they are adding to your curriculum. Do not base purchases purely on recommendations. Will they add useful experiences to your children's development? But above all prepare your response to the question 'Is your work based on first-hand experiences?'

Perhaps I have been a little cynical, even provocative, but I still have to find a simulation suitable for me. It is rather like true love – when I find it I shall know that it is the right one. Surprisingly, I have found that one of my more successful mini-projects (end of year), is a cheap adventure based on pirates. It appeals equally to boys and girls, stimulating a great deal of interesting work. What was I saying about first-hand experiences and being so far from the sea . . . ?

Electronic Mail?

André Wagstaff
Deputy Director, MEP National Primary Project

'Electronic mail? Don't talk about electronic mail to me. My school can't even afford postage stamps!'

This was the pithy comment I received when talking to a very experienced primary teacher about the implications of this recent development. At first I felt a little hurt at so tart a dismissal of such a promising new resource; but upon reflection one can understand it. After all, it is the sort of very human reaction we are all capable of when confronted by change. All too often we fail to see that the word 'new' is not synonymous with the word 'change'. New clothes may generally be pleasurable, but a change of job is often accompanied by increased stress. On the whole we avoid stress and cling to the familiar. In spite of this, there have been enormous changes in people's lives during the last eighty years and the pace is quickening. But the world of education moves at a slower pace. People of different generations often share the same memories of school.

My mother and I were both born in this century, and both of us grew up in rural communities – yet how different were the events which surrounded our formative years! Hers was a world where a man heroically flew the English Channel, where a huge liner sank because it could not detect the iceberg in its path, where people listened with awe to a cat's whisker crystal radio, and where children at school laboriously used chalk to form letters on slates. Mine was a world where a man watched the earth rolling beneath his feet as his space capsule orbited the planet, where planes could safely land by night in the thickest fog, where people watched live colour television pictures from the other side of the world, and where my earliest memories of school are of using chalk to form letters on a slate.

The fact that both my mother and I used chalk and slates at school is not proof that education has not changed, but it does hint at the sluggishness which seems inherent within our educational system. Education has an inbuilt tendency to conservatism, to preferring the tried and tested rather than the new. In a world where little changes this is a commendable stance to take, but the plain fact is that we live in a world in which social and technological change are accelerating.

Fortunately, education has begun to show signs of rising to meet the challenge; primary and secondary schools are now very different places from those of my childhood. Teachers and pupils have changed expectations of each other, the curriculum is broadening to embrace developments in the world outside, and teachers are aware as perhaps never before, of the need for relevance in that which they teach.

It is very important that this change occurring within schools does not slavishly ape the world outside, but that it changes for sound educational reasons. One of our duties as teachers must be to prepare children for the world, but another, and perhaps more important duty, is to equip children with the attitudes and skills to help create a better world.

Recent years have seen the introduction of the new technology into our schools. Perhaps the most dramatic instance is the enthusiasm with which microcomputers have been introduced into the classrooms of the majority of our primary schools. At first teachers and children were captivated by the sheer novelty of the new technology. But this initial excitement is now on the wane, to be replaced by the insistent question: how can we make best educational use of this new and powerful resource?

The answer to this question is neither simple nor universal. It is not simple because of the protean nature of computers; they can be called upon to play a wide variety of roles. It is not universal because the interests of our primary schools are so diverse; each school places a different emphasis on different areas of the curriculum. But within this diversity one may discern some common strands. One of these strands is the value which we place on the ability of children to communicate. The act of communication does not simply lead to the exchange of information and ideas:

> Very often . . . the definition of ideas develops in the process of communication.[1]

In recent years children have been using computers as an aid to the conveying of facts and the expression of ideas and feelings. The use of simple word processors such as *Writer*, or of information retrieval programs like *Ourselves*, has done much to help children become better users and communicators of information. But all

this has occurred within the familiar framework of the classroom. Primary schools have remained essentially isolated institutions. One primary school may know little of what is occurring in other primary schools only a few streets away, let alone what is happening in the primary schools in a neighbouring county.

Isolation of this kind is necessary no longer. A primary school in Bristol can communicate as cheaply and quickly with a school in Aberdeen as it can with one in Bath. Children in Tasmania can send a message to children in England and receive a reply within hours rather than weeks. The medium for achieving this is electronic mail.

Electronic mail is a method of sending information down the telephone lines. The information is transmitted and received by computers. The information can be words, or numbers or even pictures. Of course, telephone lines were not designed for computer use, so a special piece of equipment called a modem is needed to deal with the problem.

One of the most successful systems for electronic mail has been Telecom Gold, but this was designed for commercial use and is too expensive for most schools even to contemplate using. During the last two years a special system has been set up for educational users. It is called The Times Network Service (TTNS). It is only available within the educational system. All subscribers are allotted a mailbox and a password. To use the service you also need to have a microcomputer system, a modem and suitable communications software.

At present the network offers a variety of services:

An information database;
Local news;
A mail service;
A mail directory;
A noticeboard facility.

Each of these services is useful on its own; together they offer a truly powerful new means of communication.

The information database is a resource which can be browsed through or searched. Once information has been located it can be taken into the memory of the school's micro, then stored on disc to be used at leisure. The information contained on the database covers a very wide range. Some of it is material which teachers can use as a resource, some is intended for use by children. There is a growing number of databases which you can access in this way; for example *World Reporter* is a database which stores the entire text of several daily papers. It seems likely that the skills of being able to use such databases as a source of reference material will become of increasing importance.

The local news is a database which any LEA manages and controls for its schools; each authority can decide what sort of information it will contain and how best to present it. Schools and individuals are able to contribute information and items of interest to their local area database.

The mail directory is just like a telephone directory. You use it to find out the names and mailbox numbers of all the schools using the system. The mail service is used to send messages to anyone who has a mailbox. Each user has his own mailbox: think of it like those 'pigeon-hole' systems so beloved of the larger sort of school. The TTNS main computer has one of these 'pigeon holes' for every user. If you know somebody else's mailbox number then you can send them a message. That message will be placed in their mail box and will be waiting for them when they next decide to look into it. Nobody can look into any mailbox except their own. Figure 1 (opposite) shows a primary school micro linking up to the main TTNS computer and sending messages to different mailboxes.

It is a mistake to confuse the operation of electronic mail with the use of a telephone, despite the fact that it makes use of the telephone service. It is a service which can offer significant advantages over using more conventional methods of communication.

It is more immediate and certain than letter post. Using electronic mail, your message is delivered to the receiver's mailbox within seconds of your sending it. And you are given confirmation that it has arrived, so there is no longer any chance of mail getting lost in the post.

Electronic mail is potentially more convenient and cheaper than the telephone. When you send your message the receiver does not have to be on the telephone, nor do you have to be using the phone in your school; your message will still be sent and will sit in their mailbox awaiting them. The cost of sending a message anywhere in the British Isles is never more than the cost of a local telephone charge. Effectively the country has been electronically 'shrunk' to a 40 mile radius from where you make the call.

It is considerably more flexible than using either the telephone or letter post. You can keep electronic mail on your own floppy disc, file it away on the system's computer, or print it out on paper. You can use your word processor to write and edit electronic mail either before it has been sent or after it has been received. It is very easy to send copies of a letter to several different mailboxes at once – and all for the same cost as sending the message to one mailbox!

In September 1985, TTNS launched a primary pilot scheme whose aim was to make these kinds of services available to primary schools on an

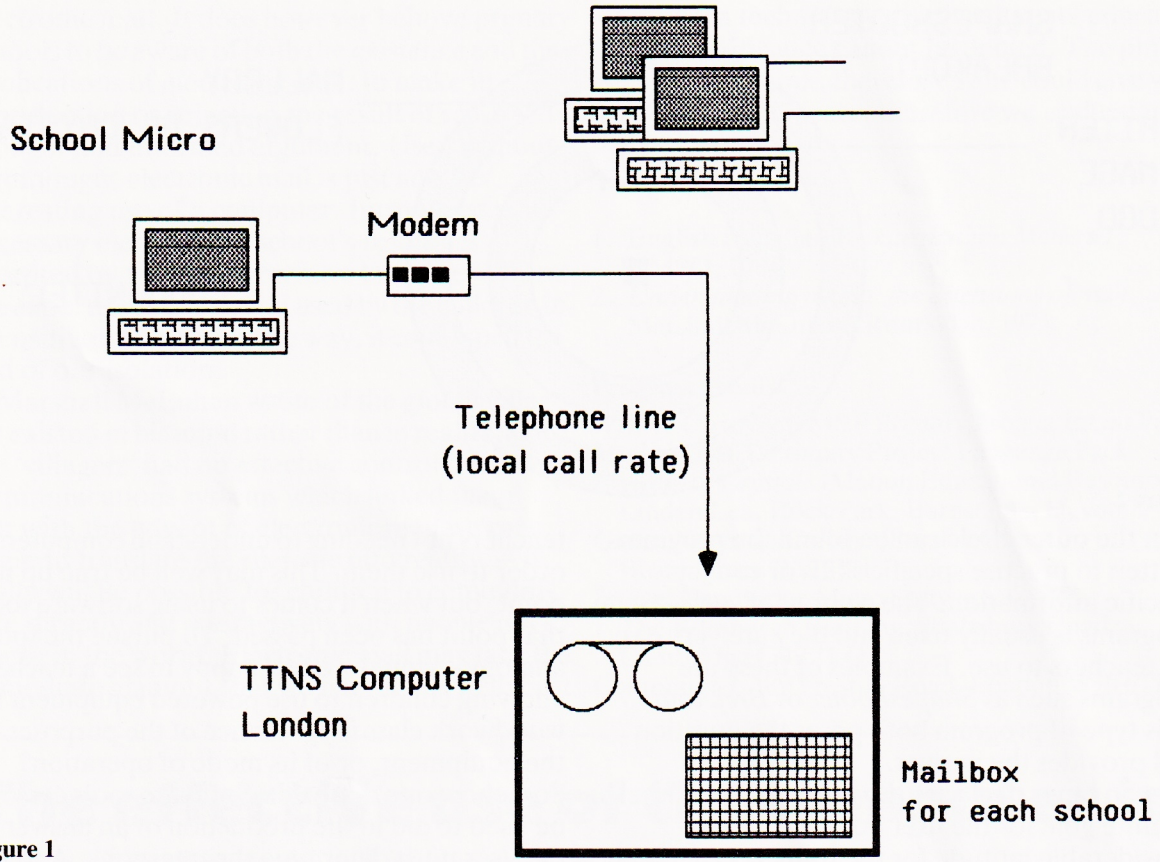


Figure 1

experimental basis. One of the aims of the pilot scheme is to establish the needs of primary schools and find out how the existing services might best be used.

As might be expected, primary schools are using the system in a wide variety of ways.

Some schools already have a tradition of communicating with the outside world. A school in Cleveland is using electronic mail as a natural extension of existing initiatives, and are now in contact with schools in California.

Others are using the system to establish links with other schools in order to set about collaborative project work. Ten schools in Devon are getting together with nine schools in Tasmania. Although this project intends to exchange information using a variety of media: drawings, photographs, audio cassettes and letters, the 'glue' which will hold the whole thing together will be provided by electronic mail.

Some schools are establishing links with other schools as a means of breaking down the formation of religious, racial or cultural stereotypes. Electronic mail offers an immense potential for increasing understanding within our divided world. Once children begin to exchange information and ideas there is a good chance that the rest of the world will cease to be a series of abstractions: opinions will be based on first hand experience of communicating with real people, not the stereotypes so often found in books.

Others are encouraging children to see themselves as providers of information, not simply information users. Because local area databases are under the control of each LEA, they can be tailored to reflect the needs and interests of local schools.

Some are taking electronic mail into the realms of the creative imagination. One school in Derbyshire has used it to stimulate creative thought, discussion and writing by having an adult play the role of Merlin; the children entered into a correspondence which was both a delight and an educational experience.

Yet other primary schools are using electronic mail to help children with special needs. A teacher in Northern Ireland is using the system in a school with a unit for children with only partial hearing. Their handicap will simply be irrelevant when they use electronic mail to communicate with other schools.

As time goes by we can confidently expect electronic mail to be used in an increasingly wide variety of ways.

Two questions remain to be answered. How does the use of electronic mail fit in with good primary practice, and should all primary schools be expected to involve themselves in its use?

The answer to the first question may be found by thinking about the different types of computer software available today. Figure 2 shows one possible way of classifying computer programs.

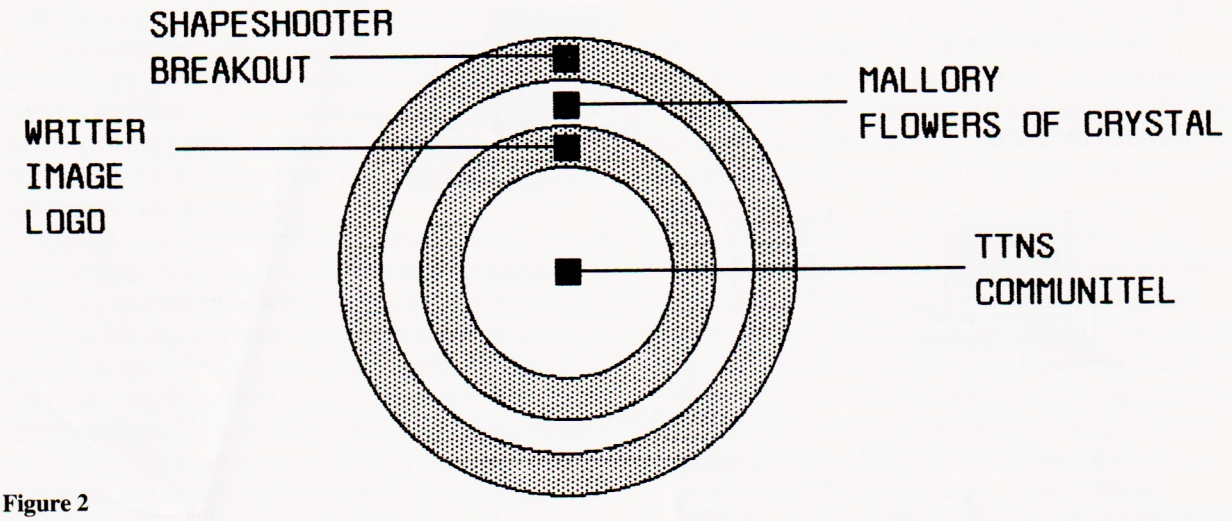


Figure 2

In the outer circle can be found the programs written to practise specific skills or convey specific information. The content of such programs is usually fixed and they are very easy for teachers to use. Examples of these are programs such as *Shapeshooter* or *Breakout*. This type of program both poses the question and provides the answer.

In an inner circle are the programs which set a definite goal for the user but which leave considerable latitude for the route taken to that goal. The content of such programs is often fixed, although some do allow for its variation through the creation of data files. This sort of program is exemplified by adventure programs such as *Mallory* or *Flowers of Crystal*. Teachers need a fair amount of both skill and commitment to use these programs, since much of their educational worth is lost if they are not used as part of some larger theme or topic, or if children are not actively encouraged to build on the experiences these programs provide. This sort of program provides the questions and many ways of finding the answer – sometimes there are many answers.

Within a further inner circle lies software which exists to be used as a tool. Writers of such software know only the broad purposes for which they may be used and are ignorant of the goals which may be pursued by the user. These are information retrieval programs like *Grass*, word processors like *Writer*, graphics programs such as *Image*, and even a computer language like LOGO. The use of these programs places a heavy load on the teacher. Not only do they require a varying expertise in their use – word processors are fairly easy but LOGO is hard – but they provide no 'answer' to work towards. It is up to the teacher to decide where and when they can profitably be used. It is up to the teacher to decide on how children should be taught to use these powerful tools and to what purposes they should be put. There has been much glib talk of teachers not needing to understand computers in order to use them. This may well be true up to a point, but when it comes to using software tools that point has been passed. To pursue the tools analogy – would we feel happy to see a teacher allowing children to use powered equipment in a woodwork class in ignorance of the purposes of the equipment, or of its mode of operation? Somehow one doubts it. Software tools can only be used to aid in the production of an answer – the user must determine the questions. And the posing of appropriate questions is never an easy task.

Finally we come to software which lies in the innermost circle of all. Here is to be found the sort of software which is just a bridge for the extension of a computer's powers. Communications software such as that offered by *Communitel* or TTNS falls into this category. These may be easy to use, indeed they depend upon being easy to use, but they make the heaviest of demands upon teachers. If proper use is to be made of them then it is likely that upon their backs will ride the use of complex pieces of other computer software such as word processors and information retrieval programs. Because they enable schools to communicate with other schools the work done will not just be inter-curricular but *intra*-curricular. Used to their best advantage they can do much to enhance existing good primary practice and more to encourage its spread.

And should all primary schools get involved with electronic mail? Almost certainly not. It is not indispensable. No school which lacks it will feel under-resourced, provided that matters have been thought through. It may be that a school finds that its energies and funds are already committed. It may be that a school is making full use of its scarce computer resources already. It may even be that plans have been made for the future development of computer usage and that there is no room in those plans for

electronic mail. It does however behove primary schools to be aware of both the existence and the implications of electronic mail; to make its introduction or rejection the result of reasoned thought and informed argument. Used without forethought electronic mail is just another interesting use of a computer. Introduced as a necessary element in a school's resources, accepted by teachers who have both the will and the expertise to use it, and used by the children in a sensitive and imaginative way, it could spell the end of our isolation.

Marshall McLuhan wrote of the global village – it existed in his mind rather than in reality, since the 'villagers' had no effective control over the communications systems which linked them[2]. But with the advent of electronic mail we can begin to translate the rhetoric into reality — it really will be possible for children to communicate directly and interactively with people anywhere in the world. Electronic mail may lack the immediate glamour that we have come to expect of modern technology, but its ultimate educational significance cannot be denied. The philosophy of 'I think, therefore I am' could give way to 'We communicate, therefore we understand'.

References

1. English from 5 to 16, *Curriculum Matters 1*, HMSO, 1984.
2. *Understanding media: the extensions of man*, Marshall McLuhan, Routledge, 1975.

Program details:

Writer, Ourselves, MEP Primary Project Infant Pack
Mallory, MEP Primary Project Language Pack
Flowers of Crystal, 4Mation Educational Resources, Linden Lea, Rock Park, Barnstaple, Devon
Grass, Newman College, Bartley Green, Birmingham B32 3NT
Image, Cambridge Micro Software, CUP, The Edinburgh Building, Shaftsbury Road, Cambridge CB2 1LQ
Communitel, 189 Freston Road, London W10 6TH

The effective use of the computer in the infant classroom

A case study

George Ball
Department of Mathematics and Computer Science
Polytechnic of Wales

Paragraph 243 of the Cockroft Report[1] asserts that mathematics teaching at all levels should include opportunities for:

exposition by the teacher;
discussion between teacher and pupils and between pupils themselves;
appropriate practical work;
consolidation and practice of fundamental skills and routines;
problem solving, including the application of mathematics to everyday situations;
investigational work.

In this article I would like to discuss a recent teaching assignment which seems to exhibit most, if not all, of the above characteristics, while dealing only with a very small part of the school curriculum. I should also like to offer some observations regarding the use of the microcomputer in primary education and mention a new research and development project currently being undertaken at the Polytechnic of Wales.

The assignment was carried out as part-assessment for the Mathematical Association's Diploma in Mathematical Education[2] and it required that a microcomputer and suitable software be used to enhance the teaching of a chosen mathematical topic. The reported work, which is representative of many other equally interesting submissions, was carried out by Mrs Margaret Wagner[3] while introducing ideas of directional awareness to a group of six- and seven-year-old infants. A standard cassette-driven BBC Micro was used, and the software package chosen was *Directions 1* which is produced by Nelson[4]. This package is described in the teaching notes provided as consisting of:

> 'three programs on left and right turns, showing that the directions of left and right are dependent upon current position'.

In the first of these programs a racing car moves around a track. As the car reaches a bend the user has to decide whether a left or right turn is to be made (see Figure 1).

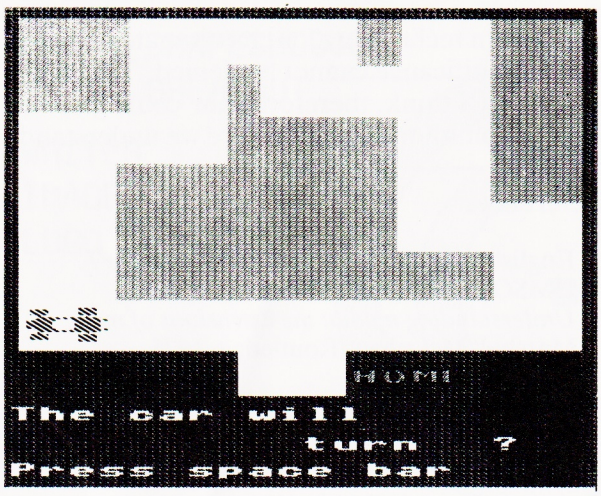


Figure 1: Computer display for *Directions 1*.

To allow children to use a program like this (or any other resource!) without embodying it within a coherent teaching strategy can be very tempting. Classroom pressures are often such that the computer is utilised as a means of keeping the bright child busy, or as a reward for good effort. The computer can be a tremendous motivator and, as such, can be a valuable addition to any classroom. However, careful testing and planning should precede its use. It is within the wider context of an organised and structured approach to teaching that I want to report Mrs Wagner's work.

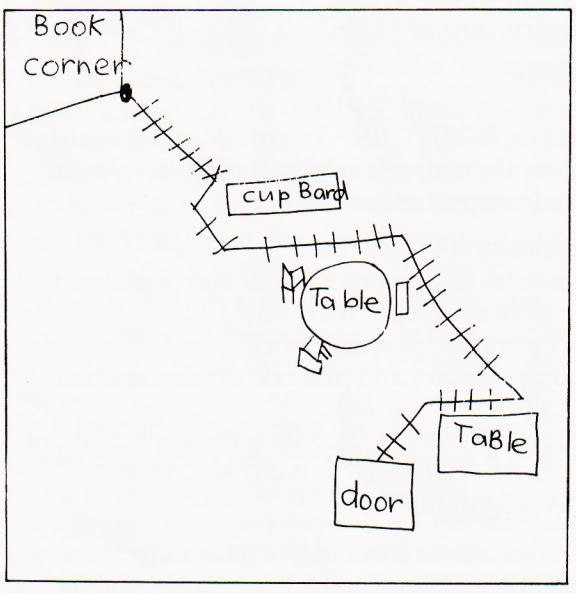
As an introduction to the theme 'Directions' the children were taken into the playground to investigate their surroundings. Each child had constructed a 'compass' (see Figure 2) and while using this device they were encouraged to observe and discuss their environment. On returning to the classroom, various pieces of written and art work were produced (see Figure 3).

Figure 2: A child's 'compass'.

I went into the playground
I looked all around me
I looked inFowards I saw
cars and houses and then
I looked to the LEFT and
I saw the hall and I saw
the arched windows
when I looked right I
saw the dining room.
When I Looked
Behind me I saw
the coridooR and
the cool shed

Figure 3: A typical piece of written work by a six-year-old.

Further practical work followed in which the children paced out routes from a given starting point to a given destination. Again much discussion ensued, many alternatives were considered, and a suitable record of the work was made (see Figure 4). The activity culminated in



I took 32 steps
if I move the Tables
and cHairs out of the way
I take 20 steps

Figure 4: Record of work carried out by a six-year-old.

the writing of simple LOGO-type programs to describe the selected routes (see Figure 5).

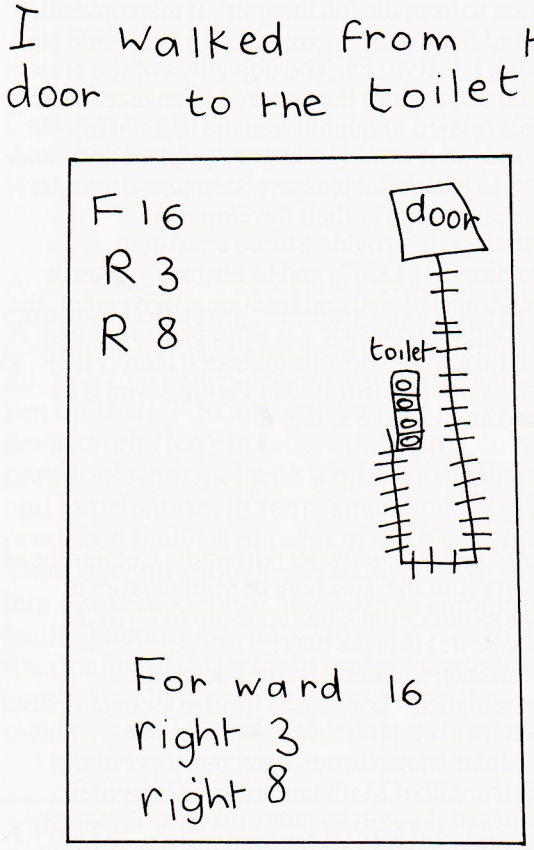


Figure 5: LOGO-type programs written by six-year-olds.

It was at this stage that the program *Follow the road* was introduced. Having completed the practical work described above, it was felt that the children would have the necessary experience to direct the car around the racing track (refer to Figure 1). Initially the class teacher operated the program while soliciting decisions from the children as to whether a left or right turn was required to negotiate a bend. Although the children could identify their left and right hand sides, it soon became obvious that they did not fully appreciate that the direction of left or right depends upon which way the person or object is facing. The children became confused, and the presence of this confusion indicated that more practical experience and discussion was necessary.

A structured set of work cards similar to the one shown in Figure 6 was produced. It was explained that as the car reached an arrow the driver has to make a decision – should he turn right or left. Each child was encouraged to pretend that he was the racing driver and was provided with a toy car to move around the track shown on the work card. The children enjoyed this activity and quickly realised that the task could be made easier if the work card was turned so that the user was always looking along the arrow. This discovery, coupled with the experience of physically moving the car along with their fingers, seemed to help the children to develop an understanding of what was required in the computer simulation.

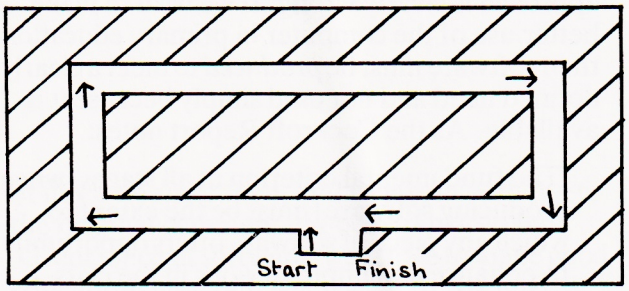


Figure 6: A typical work card.

The children were now introduced to the second of the three programs. This program, *Keep on the path*, is very similar to the first. The figure of a man moving along a path is shown. As he reaches a junction he stops and awaits an instruction to turn left or right. If the instruction entered is incorrect the man crashes into a wall and the game ends, otherwise the man moves on to a new junction. The children were amused by the sound and graphics associated with this program. The animated character moving freely to a new junction after a correct response pleased the children greatly. Apart from a few careless mistakes no difficulties were encountered as the children practised their newly acquired skills with obvious pleasure.

Steer the boat, the third program in the series, simulates rowing a boat into a harbour. Rocks surround the harbour and the user must direct the boat safely through the maze of obstacles. The boat moves forward leaving a wake behind which traces its path. As the boat nears rocks it must be stopped, turned in an appropriate direction ('left' or 'right'), and re-started. The children found this program most enjoyable. It provided them with a problem-solving environment in which routes could be planned and discussed, sequences of decisions considered and modified, alternatives reviewed and compared. The children were eager and vociferous:

> 'You've got to turn right but if you go too far you'll hit the rocks. Go forward a little, turn left then go forward to the top of the screen before turning right into the harbour'

being typical of the advice offered. The use of the computer had apparently sustained the children's enthusiasm. In reality, however, it was an enthusiasm kindled and fanned by sensitive teaching and controlled use of resources.

The assignment which had been set for Mrs Wagner and her colleagues was designed to encourage teachers to explore the possibilities

offered by using computer packages as an integral part of their teaching. The emphasis had been on their *finding* suitable commercially produced programs, and, to some extent, organising their teaching around these. This approach is clearly wrong. If we wish to make better use of the computer in primary education then software must be *produced* to meet a clearly defined need and not used simply because it is available. As the Cockroft Report notes:

> 'The fundamental criterion at all stages [when producing software] must be the extent to which any piece of software offers opportunity to enhance and improve work in the classroom.'

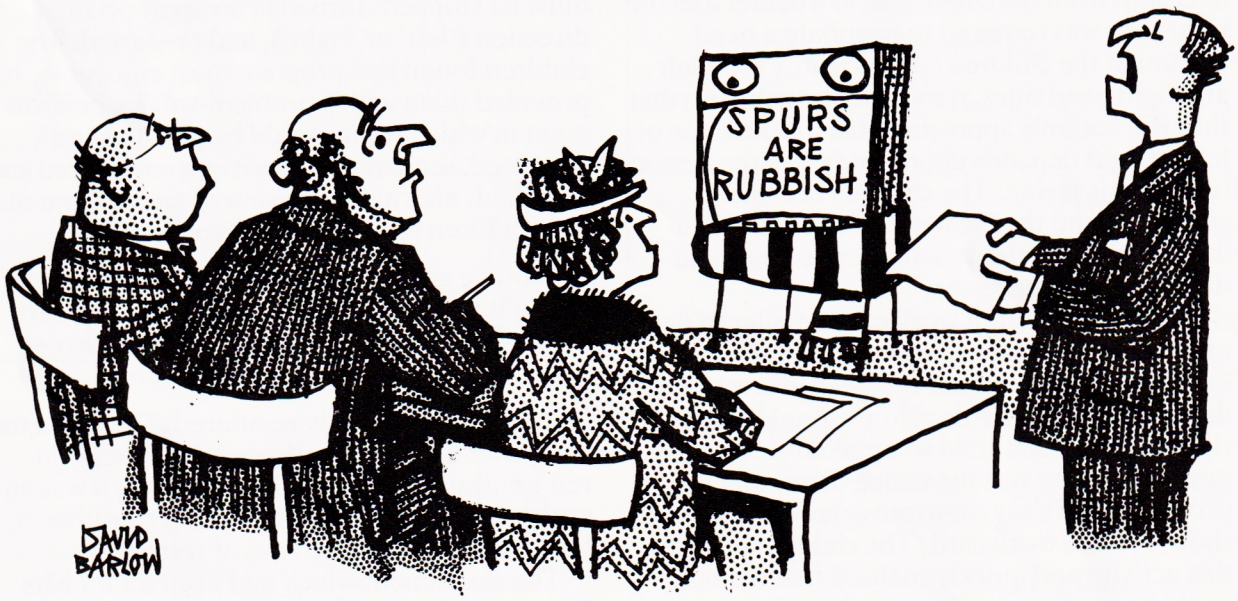
For every good educational package available there are many of poor or dubious quality. Mrs Wagner chose wisely, but even so it was *her* skill and experience as a teacher which made the use of the package worthwhile. It is the same skill and expertise of practising teachers who have undertaken research exercises similar to the one described here, coupled with the extensive computing resources of the Polytechnic of Wales, that are now being combined to produce teaching packages for local schools. As well as promoting mathematical awareness, a primary objective of these packages is to aid language development by providing materials, both computer-based and otherwise, which will stimulate teacher–pupil and pupil–pupil discussion. It is planned that eventually the materials produced will be made generally available in the form of INSET packs, a development which I hope to report upon in due course.

Note

The syntax normally associated with LOGO requires a rotation to be made 'on the spot'. If this convention is adopted the example given in Figure 5 would read F16, R90, F3, R90, F8. The objectives of the present study did not require the children to engage in any activities related to quantifying the amount of turn made. Indeed it would be inappropriate to introduce children to rotational measure in *standard units* at such an early stage in their development. Nevertheless, to provide a more consistent introduction to LOGO, and to distinguish clearly between translational and rotational movement, the syntax used in the article has since been modified. A quarter-turn would now be indicated merely by R, so that the example illustrated in Figure 5 would be recorded as F16, R, F3, R, F8.

References

1. *Mathematics Counts.* Report of the Committee of Inquiry into the Teaching of Mathematics in Schools under the Chairmanship of Dr W.H. Cockcroft. HMSO (1982).
2. Diploma in Mathematical Education – a Mathematical Association Course for experienced teachers of children in the 5–13 age range. This particular course is taught by members of the Department of Mathematics and Computer Science at the Polytechnic of Wales, Treforest.
3. Mrs Wagner is currently head teacher at Porth Infants School, Rhondda, Mid Glamorgan.
4. *Directions 1 Left and Right.* Alan Brighouse/ David Godber/Peter Patilla. Thomas Nelson & Sons Ltd. (1983).



'You are charged with inciting violence at a football match.'

RML Software

Graham Smith
Teacher Co-ordinator
Wolverhampton Computer Education Centre

A couple of years ago, only an eyeblink educationally speaking, but more like eons in computer terms, an oft-heard cry on the introduction of a new piece of software was 'Does it run on RML?' In many cases the answer was a devastating 'No'; in others the words 'In preparation' were met with a mixture of cynicism and anticipation; in some an unequivocal 'Yes' produced feelings of relief or even euphoria. This concentration on the acquisition of software lent a sort of kleptomanic aura to computing, leading almost inevitably to the desire to judge the quality of one's input into educational computing by counting the number of programs owned, or at least available for one's machine.

However, the wheel has turned a further part of its circle since then, and today, in early 1986, the original comment has been replaced by . . . 'Great piece of software; we'd love to make good educational use of it when we have acquired a second (or third, fourth, etc.) machine. The software *is* available, but vast quantities of programs are not the whole answer – rather, they pose the problem of how to acquire the hardware time to use them properly.

In case there are any RML users who are still asking the old 'Is there a 480 version?' chestnut, I set out below a list of some of the packages which I feel are well worth gathering. Be warned however – if you get these you'll not be happy until you've also got enough systems to make full use of them.

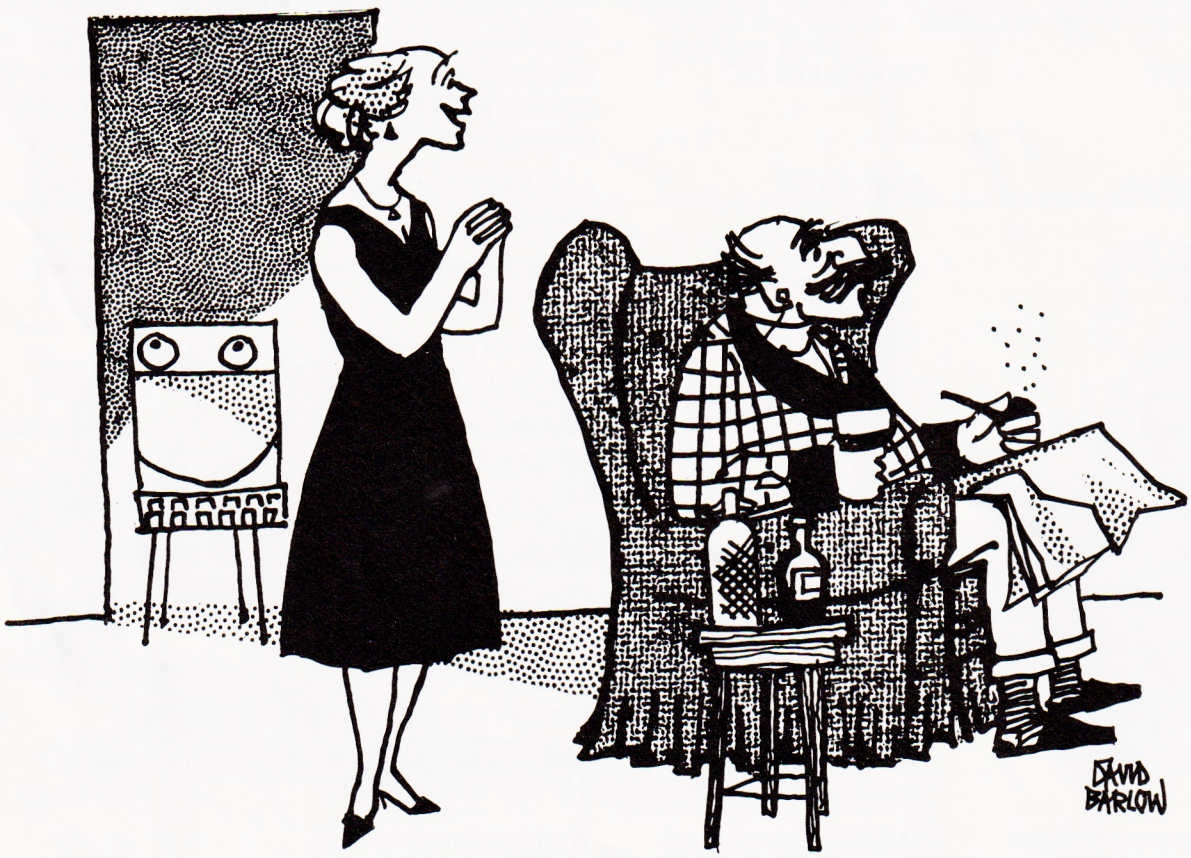
Arrow3	Oxfordshire CC	Enhanced *Arrow* with colour, disc-storage, hi-speed, etc.
Hazard/Rescue	Oxfordshire CC	Adventure generator for primary children. Text and map.
Write2	Oxfordshire CC	Enhanced version of a great word-processor, with optional hi-light of ctrl characters, directory, etc.
Dataview	Suffolk CC	Local Viewdata with colour, carousel, and a good editor.
Mosaic	AUCBE	Powerful pattern designer, with print and disc-save facilities.
Starset	AUCBE	Powerful program used to convert other programs to concept keyboard control.
Editor, Display and *Relate*	AUCBE	Simple creation of, and pictorial representation for *Quest* data files
Bits	MEP/Northants CC	A *Control* program, similar to *Arrow* in use.
Grass	Newman College	Excellent mid-range Information Retrieval program, menu-driven with graphical data display.
Picplot	Staffordshire CC	Very good art program. One of a primary suite.
3Dtached	Wolverhampton CC	Explore a house – 3D effect, no text.
PaintSPA	Software Production Associates	Excellent art program – mouse or keyboard.
Granny's Garden	4Mation Educational Resources	Well known adventure.

Dragon World	4Mation Educational Resources	Starting points in the imaginary world of Dragons.
Flowers of Crystal	4Mation Educational Resources	For older children – conservation and concern in an adventure scenario.
Dinosaurs	Cambridgeshire Software House	Simulates a 'dig' for dinosaur bones, for younger children.
Cars	Cambridgeshire Software House	*Maths in motion* – children set up racing cars to suit varying types of track, etc.
Fletcher's Castle	Fernleaf	Simulates building a Norman castle.
Viking England	Fernleaf	Simulates the early Viking settlement of our land.

Please don't complain if I've missed out your favourite. . . . I know this is only the tip of the iceberg; my own personal iceberg at that. If you feel really strongly that I've missed all the best ones, don't write to me, write to the editor. I'm sure she'll be pleased to publish your lists in the next issue.

Addresses

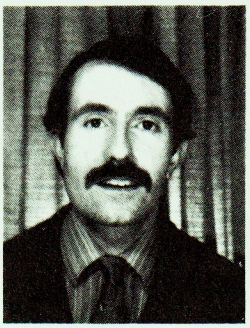
AUCBE, Endymion Road, Hatfield, Herts.
Cambridgeshire Software House, The Town Hall, St Ives, Huntingdon, Cambridgeshire PE17 4AL.
Fernleaf Educational Software, Fernleaf House, 31 Old Road West, Gravesend, Kent DA11 0LH.
4Mation Educational Resources, Linden Lea, Rock Park, Barnstaple, Devon.
MEP Primary Project, St James' Hall, King Alfreds College, Winchester SO22 4NR.
Newman College, Bartley Green, Birmingham B32 3NT.
Northamptonshire Computer Education Centre, Northampton Teachers' Centre, Barry Road, Northampton NN1 5JS.
Oxfordshire County Council, Macclesfield House, Oxford OX1 1NA.
Software Production Associates, PO Box 59, Leamington Spa, Warwicks.
Staffordshire CED, Unity House, Hanley, Stoke-on-Trent.
Suffolk Educational Software, c/o Brian Massey, County Hall, Ipswich, Suffolk.



'I just know you're going to like him Daddy.'

? JUNIOR ?

? MAPE ?



Hi! — I'm Di — **and I'm Charles,**

and THIS is YOUR special pull-out magazine from *MICRO-SCOPE*. Just four sides this time but, if you can help us, it will grow and GROW.

So what is 'Junior MAPE'? It is a mini-magazine with:

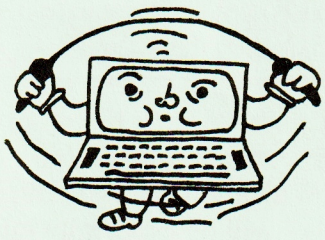
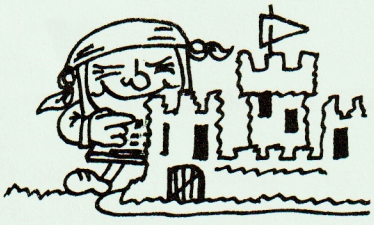
- **COMPETITIONS**
- **JOKES AND CARTOONS**
- **PUZZLES**
- **IDEAS FOR THINGS TO DO WITH YOUR MICRO**
- **INTERVIEWS WITH THE PEOPLE BEHIND THE COMPUTER PROGRAMS**
- **YOUR LETTERS**

In this first pull-out special we have:

- **A BUMPER SET OF COMPETITIONS**
- **ALL YOU EVER WANTED TO KNOW ABOUT THE MAN WHO MADE GRANNY MORE ADVENTUROUS!! — IS HE REALLY A DRAGON?**
- **MAKING MUSIC ON YOUR MICRO**
- **HOW YOUR MICRO SPENDS ITS SUMMER HOLIDAY**

To mark this first issue of your magazine we are running four great competitions – why not have a go at ALL of them?

INTERESTED? THEN TURN OVER AND START READING

MARTY MICRO	MARTY MICRO	MARTY MICRO
		
IN SPORTS	ON HOLIDAY	READS YOUR LETTERS

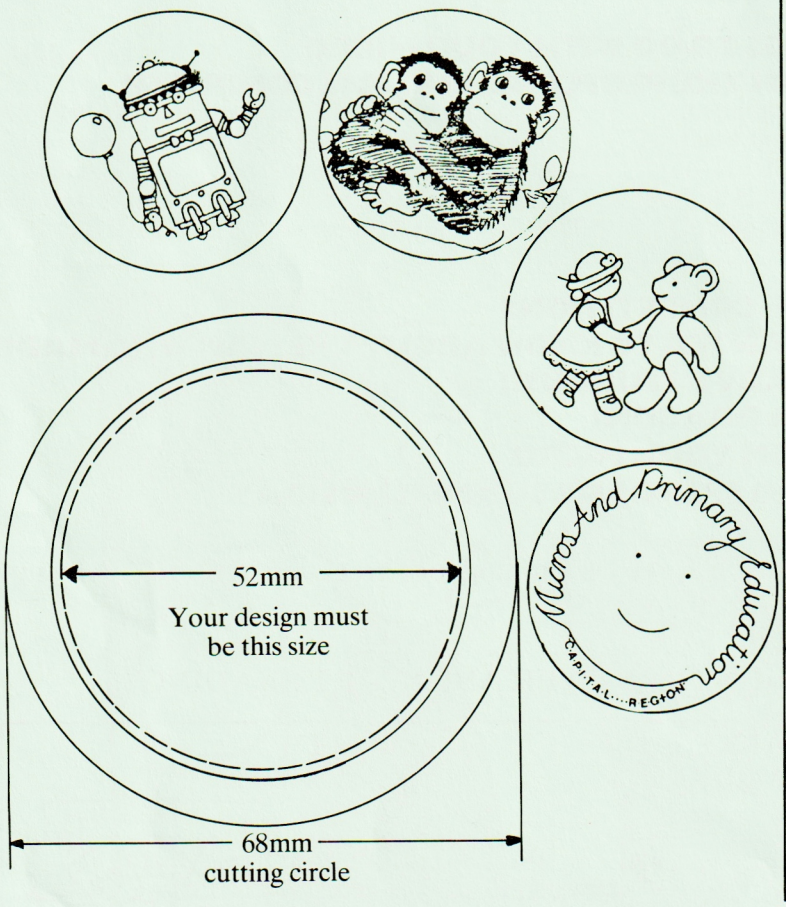
●1● WE NEED A TITLE . . .

Can you think of a better name for the magazine instead of *Junior MAPE*? As you know, the main magazine is called *MICRO-SCOPE*, so perhaps your magazine should be called something similar. The best title we receive will be used as the new name for the next issue and there will be a photo of the prize winners.

●2● WE NEED A BADGE . . .

MAPE is the proud possessor of a badge-making machine. You can see some of the designs we already use printed below. What we need is a design that is ALL OUR OWN. It might be a drawing of a computer, or a cartoon character or an animal . . . use your imagination. The school that supplies the winning design will receive one badge *FREE for EACH PUPIL*. (Everyone else who wants a badge will need to buy one, but don't worry; they won't cost the earth!)

P.S. If your school is in the London area you could even hire our 'badger' to make money at your school fete!



MUSIC BOX
a short program for your Beeb

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 10 SOUND 1,-15,109,5
 20 SOUND 1,-15,109,5
 30 SOUND 1,-15,117,10
 40 SOUND 1,-15,109,10
 55 SOUND 1,-15,129,10
 60 SOUND 1,-15,125,20
 70 SOUND 1,-15,109,5
 80 SOUND 1,-15,109,5
 90 SOUND 1,-15,117,10
100 SOUND 1,-15,109,10
110 SOUND 1,-15,137,10
120 SOUND 1,-15,129,20
130 SOUND 1,-15,109,5
140 SOUND 1,-15,109,5
150 SOUND 1,-15,157,10
160 SOUND 1,-15,145,10
170 SOUND 1,-15,129,10
180 SOUND 1,-15,125,10
190 SOUND 1,-15,117,10
200 SOUND 1,-15,149,5
210 SOUND 1,-15,149,5
220 SOUND 1,-15,145,10
230 SOUND 1,-15,129,10
240 SOUND 1,-15,137,10
250 SOUND 1,-15.129,20
```

●3● WE NEED YOUR LETTERS . . .

Tell us how you are using micros in your school. We'd like to know all about your favourite programs, even ones you may have written yourself. Of course we will be especially interested to see how you are using the programs from the MAPE Tapes. There will be a prize for the best letter or article we receive. Maybe your school could fill up a whole page with news and views, poems and stories, graphics and puzzles your computer has helped you create.

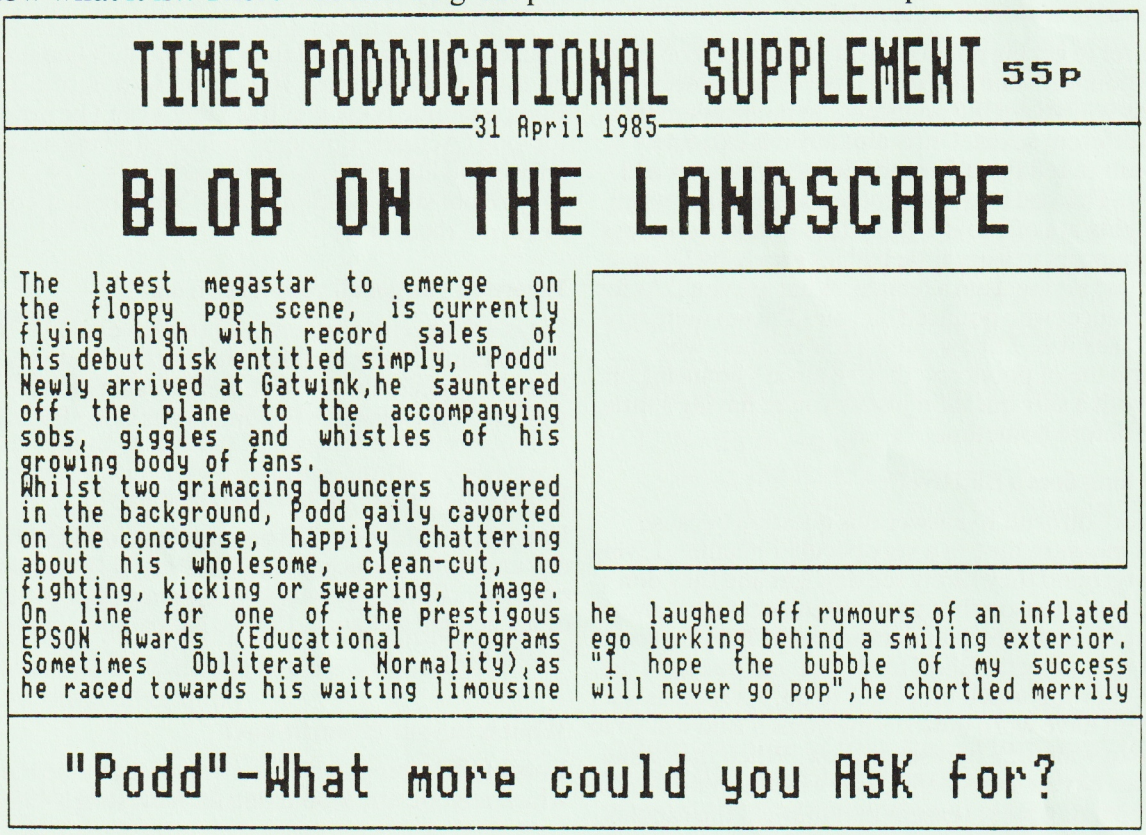
●4● WE NEED YOU TO SEND US A FRONT PAGE . . .

Have you used *Front Page* or *Front Page Extra* yet? If you have you know you can use it to create your own newspaper or magazine. But you could use it for lots of other things as well:

* a page out of history
* an exciting way to review a book or a film
* a sports report
* a daily log of your adventures as you hunt for dragons and buried treasure with your micro . . .

. . . or simply just for fun like the page we've created about PODD antics. Read it carefully – you're 'bound' to 'sniff' out some useful words!!

The most original Front Page you send us (PRINTOUTS ONLY, PLEASE . . . *NOT* DISCS) will receive a special MYSTERY prize – in fact, it's so mysterious even we don't know what it is!! There will also be great prizes for the best runners-up.



TIMES PODDUCATIONAL SUPPLEMENT 55p

31 April 1985

BLOB ON THE LANDSCAPE

The latest megastar to emerge on the floppy pop scene, is currently flying high with record sales of his debut disk entitled simply, "Podd" Newly arrived at Gatwink,he sauntered off the plane to the accompanying sobs, giggles and whistles of his growing body of fans.
Whilst two grimacing bouncers hovered in the background, Podd gaily cavorted on the concourse, happily chattering about his wholesome, clean-cut, no fighting, kicking or swearing, image. On line for one of the prestigous EPSON Awards (Educational Programs Sometimes Obliterate Normality),as he raced towards his waiting limousine he laughed off rumours of an inflated ego lurking behind a smiling exterior. "I hope the bubble of my success will never go pop",he chortled merrily

"Podd"-What more could you ASK for?

INTERESTED? – WELL, DON'T JUST SIT THERE, HAVE A GO!!

Rules

1. *A maximum of six entries per class for each competition you enter.*
2. *Entries for the BADGE and TITLE competitions should be written or drawn on the back of a sealed ENVELOPE or on a POSTCARD.*
3. *All entries must have clearly written on them IN CAPITALS the name of your class, the name of your teacher, the name and address of your school, and the school's MAPE membership number (if known).*
4. *Sorry – NO ENTRIES CAN BE RETURNED.*
5. *Entries for the competitions must arrive no later than 1st December 1986 and should be addressed to:*

   MAPE Competitions, IT Unit, Davidson Centre,
   Davidson Road, Croydon CR0 6DD

UNDER THE MICROSCOPE:
●● MIKE MATSON ●●

You've outwitted the witch, flown with the Blue Raven, collared the dragons and braved the castle . . . now meet the man who landscaped Granny's Garden, hatched Dragon World and opened the Box of Treasures: Mike Matson.

We asked children at Rocks Park School, Uckfield to interview Mike. However, there was one small problem – Mike lives under a toadstool, miles away in Devon and the Blue Raven had the afternoon off. Unable to use a crystal ball to make contact the children at Rocks Park had to call on modern technology.

First, they wordprocessed their questions, then they used their microcomputer to send their questions to him using the school telephone, and Mike sent his answers back in the same way. . . . This system is called 'electronic mail'. If you want to find out more, just go up to your teachers and say these four letters: 'TTNS'. See if they know what these letters mean. If you look carefully in the magazine you'll find the answer!!

What sex is the pouncer? We know a teacher just like IT, and we wonder if we are right.

In order to get big pouncers you have to start off with little pouncers and you can't have little pouncers unless you've got big pouncers. So pouncers come in two different sexes. Unfortunately it is extremely difficult to tell the difference between females and males. This causes a few problems, especially when the lights are off, so it is quite fashionable nowadays for pouncers to wear little badges (made by Di or Charles) saying 'I am a female. What are you?' As for the pouncer who pounced on you – I'm not quite sure which sex it is. I know quite a few teachers who remind me of pouncers: they're always pouncing on you with a silly question just as you're having a little doze before hometime.

How long does a Blid live?

It's very difficult to answer this question because Blids measure time in a very peculiar manner. Living underground they rarely see daylight and they don't experience seasons because the temperature is always about the same deep under the earth. They measure their ages in teeth. Blids' teeth wear out due to all the rock-chewing which they have to do. As soon as a set of teeth have worn down to the gums a Blid will go to sleep to wait for a new set to grow. When they wake up they have a 'new-teeth' party which is quite similar to a birthday party (except that they eat the candles and set light to the cake). A few Blids have managed to live to the ripe old age of 167 teeth, and that really is old!

Have you ever met a Dragon? You seem to know them so well.

Yes, but it's a secret.

Do you do all the programming yourself?

Yes, it helps to keep me awake until bed-time.

Have you ever written a story-book?

I've not written a full-length story if that's what you mean, but I have written quite a lot of short stories. If you promise not to tell anyone I'll let you into a secret: what I'd really like to be doing more than anything else is writing books for children. Maybe one of these days I'll be able to do it.

Why is *Telebook* so different from all your other software?

Because every now and then I decide that I ought to be a bit more serious. But if you look at the Tele-Book example book you'll see that I can't be serious for long (Actually I'm doing quite well giving sensible answers to all these silly questions aren't I? No, they're not silly questions really. Well, perhaps one or two of them are.)

Where do you get all your ideas from?

Ideas are never a problem. All you have to do is try not to think of any and then they just pop into your head unexpectedly as you're walking along the beach, waiting at the dentist's or eating your Coco Pops.

When did you give up teaching? and why?

I gave up teaching in 1983 because I couldn't teach all day and then produce things like *Dragon World* in the evenings. Teaching is terribly tiring and after 14 years of it I needed a change. (So did the children in my school!)

What is in your favourite box?

Lots of little things which are important to me but which anyone else would find uninteresting.

Are you going to do any more programs?

Yes, until I lose interest or people stop buying them.

What is your favourite program a) of yours b) other peoples'?

My favourite one is always the one on which I'm working. As soon as I've finished it I try to forget all about it. I suppose the most popular one has been *Granny's Garden* but then it has been available for quite a while now.

(A personal one) Will you visit us again – most of us missed you!!

Just as soon as I get an invitation and can find the time to make the journey.

Robotix challenges

Patrick Drewett

Several primary schools in Wales have been working on an MEP (Wales) curriculum development project investigating the control technology implications of a new kit called *Robotix* which is manufactured by Milton Bradley.

Robotix is a children's construction set, containing inter-connecting parts such as girders, wheels, walker-legs, a gripper mechanism, and motors. The octagonally-shaped plastic parts fit together easily, enabling a variety of working models to be built. The motors are particularly interesting as they can be positioned almost anywhere on the model. A battery box supplies the power, and the motors are controlled, in the first instance, from the rocker switches of a hand-controller.

Assembly

The pieces are large enough for children aged six and over to manipulate without difficulty. The plug end of one piece is pushed into the socket end of another piece, and the model begins to take shape. The 8-sided design allows the pieces to be connected to one another securely, at a variety of angles, without the use of tools. *Robotix* assembles rapidly, and, with relatively little time being spent on construction, more time is made available in class for scientific and technological enquiry.

Robotix and control technology

In computer control, a program controls the switching of motors or of lights or of a whole system of events. For example, *Robotix* motors or electric train sets or model washing machines can be switched on and off by a LOGO procedure. The value of control technology lies in the fact that it allows a sequence of switching arrangements to be set up more readily than does manual control.

Control technology is an increasingly important area of study in the curriculum because it provides an environment for learning which encourages the processes of logical thinking and problem-solving in 'real-time' situations. It develops the spatial awareness of pupils, through the use of 3D structures and multi-axis movement, simulating the world of industry, where robots control many manufacturing processes. The control technology environment also fosters a study of important scientific and mathematical concepts in a practical and problem-solving context.

Two factors make *Robotix* an ideal medium through which a study of control technology may take place – its motors and its flexibility of construction. *Robotix* supports investigations into the ways that movement may be created and controlled, and into the relationship between structure and movement. Control technology is at the heart of this relationship.

In my own school, the *Robotix* kit was used by a class of children aged ten and eleven, and was accommodated into the existing science curriculum with ease. The class had already been experimenting with simple electrical circuits, and *Robotix*, with its switches and electric motors, was a natural extension to this.

The work can be viewed in four main sections:

1. familiarization;
2. using the hand controller;
3. computer control using the computer's function keys;
4. computer control using LOGO.

1. *Familiarization*

Initially, the children were challenged to make a model which could move. The class was split into groups of three or four and, in turn, each group began. The method of working involved group planning and agreement of a strategy, the drawing of the proposed model, an allocation of construction work, the construction, the trials of the model, and the written work associated with this testing. Some of the groups incorporated motors in their designs, others did not. The important thing was that the pupils were experiencing *Robotix* for the first time and learning about its method of construction.

2. *Control using the hand controller*

During the second stage, children built models and controlled them with the hand controller. Challenges were set which led to scientific investigations of friction, time, speed, turning, load-bearing capacity, lifting power. For

example, the children were asked 'How much can a *Robotix* model pick up?' In the course of trying to solve this problem, they thought of other problems which they wanted to try to solve. 'Does the length of the arm affect the weight it can lift?' or 'Does a counterweight help?' During these investigations, the children were learning about the interdependence between the structures they built and the positioning of the motors on these structures, and they were learning about the controlling of movement.

3. *Control via the function keys*

A logical extension to this came when the hand controller switches were replaced by a computer. A 'Control It' interface, manufactured by Deltronics Ltd, was connected to the BBC, and the *Robotix* cables were connected to this interface. This interface supplies sufficient power to run the four motors of the *Robotix* kit and so the battery box and hand controller were dispensed with.

Using a BASIC program called *Robomem*, the function keys were used to control models. Now, a motor could be turned on simply by pressing a function key. Not only that, but the computer could remember a sequence of key presses, and this sequence could be repeated. Model movements were thus programmed via the function keys. *Captain*, another BASIC program, is a prelude to full LOGO programming and allows single key entry of commands to build up a sequence of movements on a model.

4. *Control LOGO*

The next stage required the children to program the computer in LOGO. A Logotron LOGO chip was fitted, and, using a Control Primitives disc, written by Julian Pixton of the Walsall LOGO Project, the children were able to write procedures for controlling their models. At first, pupils familiarized themselves with LOGO in immediate mode. Then they used procedural mode, and eventually built up some quite complicated nested procedures.

LOGO programming—immediate mode

In immediate mode the computer carries out each command immediately. Initially, only three LOGO commands are needed: TURNON, TURNOFF and WAIT.

TURNON [1] will switch on motor 1 clockwise. TURNON [1 2] will reverse motor 1 to rotate anti-clockwise. Motor 2 is switched on with the command TURNON [3] and reversed with TURNON [3 4] and so on.

It is wise to allow children some experimentation in immediate mode so that they can better understand the principles involved. Once the children have mastered the idea of programming in immediate mode, the further concept of procedures can be introduced.

LOGO programming—procedural mode

Writing procedures, which are several commands embedded in one name, is a more difficult task since it requires the children to think in more abstract terms. They can no longer see their models move as they type in a procedure. Only when they call that procedure, by entering its name, will they see the effect of their commands. Often, procedures will be written away from the computer, and entered at a later time. Procedural programming requires and develops abstract thinking, systematic structuring of commands, and demands much forethought.

Finally there was opportunity for the use of sensors to provide feedback information for the computer to act upon. For example, one group of children positioned a microswitch on the front of their model which closed when an obstacle was encountered. This information was fed back into the computer via the input sockets on the interface, and procedures which the children had written then commanded the model to take avoiding action. The following procedure may serve to demonstrate this:

Procedure	*Comment*
TO GOFORWARD TURNON [1 3]	Model moves forward
WAIT 600 X END	
TO X TURNOFF [1 2 3 4 5 6 7 8]	Model stops
END	
TO TURNLEFT TURNON [1 2 3]	Model turns left
WAIT 180 X END	
TO REVERSE TURNON [1 2 3 4]	Model reverses
WAIT 300 X END	
TO AVOID IF SENSE? [GO FORWARD][REVERSE TURNLEFT GOFORWARD]	Model reverses and turns if switch closed
AVOID END	

Throughout, the emphasis was on the solving of challenges which had been set either by myself or

by the children themselves. A wealth of technological, scientific and mathematical learning took place, and, even though the children had a great deal of writing to do involving these experiments, they put as much effort into the written as into the practical aspects of their work.

This has been a brief glimpse of the Sensors and Control for Pupils aged 9–11 Robotix Project, a much fuller account of which has been written and is shortly to be published by MEP (Wales), entitled *Robotix Challenges*. This describes in detail, for teachers who have had no previous experience of this kind, the ways which *Robotix* can enhance the curriculum, bringing a study of structures and the control of movement within the compass of most primary schools. Aims and objectives, skills and concepts are also drawn into focus, and the experiences of all the schools involved are related. Further details of the Robotix Project or equipment mentioned in this text may be obtained from:

MEP (Wales),
WJEC,
245 Western Avenue,
Cardiff.
Tel. (0222) 651231

Paul Watkins.

Problem
How will the length of the arm on my model make a difference to the amount that it picks up.

What we are going to do
Start off so the arm has only one section then pick up a weight then built the arm a section at a time, each time pick up the weight. I think that the longer the arm the more weight it will pick up and also it will spread the weight along the arm and it will not be so heavy at the claw end.

Fig. 1

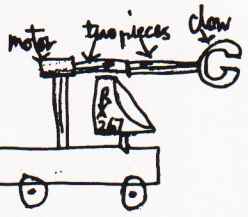


Fig 2

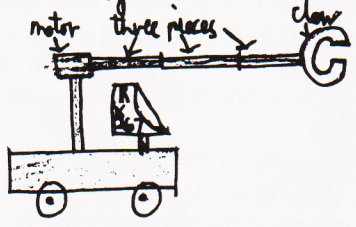


Fig 3

What we saw
With one big piece and one small piece = 250g
With two big pieces and one small piece = 100g
With three big pieces and one small piece = 60g

What this means
My experiment proved the exact opposite of what I thought, so the longer the arm, the less weight it will pick up.

Cars – maths in motion

C.F. Windsor
Deputy Head, Whaddon Primary School, Cheltenham

The suggestion that we should be doing some work around the topic of motor racing was in the first instance treated by some of the girls with suspicion, one of teacher's little jokes. But as a new week started and it became apparent that this was no hoax, I was pleased to see that both boys and girls were ready to take it on with equal enthusiasm.

Cars—maths in motion is a simulation program for middle juniors upwards, in which small groups or teams prepare a racing car in practice sessions before putting all to the test on race day. As the title suggests, the practical use of maths forms a vital part of the work of the program, but we also used the opportunity in class to branch out into other areas of study. The class itself comprises 32 top juniors spending only their first term together, having followed two separate routes up through the school as pupil numbers dictated class placements. I was interested to see how well they would settle into a co-operative, team approach.

The junior classes had, at the start of term, switched from a one-day-in-six rota of computer use to a new system of week-long blocks, thus offering us the chance of a concentrated spell with the program. So as not to hang everything on the computer, work started away from the keyboard some little while before our week was due to come round.

To absorb something of the atmosphere of a big motor race, the whole class watched a half-hour video recording of highlights of the recent Grand Prix of Europe at Brands Hatch. Names of teams, drivers and sponsors were gleaned, team colours, the grid and pit procedures were noted, and flag marshals were seen in action. Some minor bumps and an engine or two on fire reminded us that danger was not far away. And throughout I was pleased to have my initial worries quelled as the girls followed the action as closely as any of the boys. Nigel Mansell winning for Britain probably helped the children identify with the race still more closely.

An early visit this term from the county library van had given us a good stock of books on motoring and motor racing, and research skills were given good practice as children looked into the differing facets of the sport. From priorities at road junctions to attempts on the World Land Speed Record, reports came in from all sides, and displays were enlivened by some clear and careful pictorial work.

The need for sponsorship of Formula One teams in the face of astronomical budgets was investigated. Each child wrote a letter to a notional sponsor seeking support for a coming season's Grand Prix racing. It fell to the Headmaster to say which letters, if any, would have persuaded him to part with his cash!

When our week on the computer began, some preparation was required. The children were divided into race teams, eight with three members and two with four. The teacher has to select one race track from several on offer, and to maintain the British interest I chose Silverstone and opted for a longish race of eighty laps. The computer generates a variety of race day weather reports and I chose one where the race would start in driving rain and end on a hot, dry track. This would have clear implications for the planning of pit stops and the choice of tyre type.

Each race team needs to be given a plan of the circuit and two worksheets upon which different car settings can be noted. The children then enter their driver's name, in each case preferring to use one of their own names rather than that of an actual driver. They then enter the temperament of the driver, and this can range from 'sedate' right through to 'maniac'. Every team without exception steered a middle course, hoping to run quickly without the risk of accidents. With these details noted down on the worksheets the teams settled down to the practice sessions.

'Workshop Adjustments' allowed the children to alter, on a scale from 0 to 10, the car's engine tuning, aerodynamic downforce, suspension tuning and gear box ratios. The choice of high or low settings would favour certain types of circuit and the teams were told which applied in each case so as to make reasoned choices.

Before they could set the cars up to run well at Silverstone they had to study the circuit diagram to discover the nature of the track. Each section of track fell into one of three categories of bend or three categories of straight. With the use of protractors and straight-line measurements against a scale, Silverstone was found to be a fast circuit with medium and long straights and only

one tight bend. So armed with this information the teams entered their four adjustments into the computer. This was done in each case by altering the position of a coloured bar on a straight-line graph. The computer responded by indicating what percentage of the maximum speed indicated on the circuit diagram for each bend and straight would actually be attainable on those settings. Once these performance percentages had been noted down, the teams tried making small adjustments in an effort to improve them. Everyone ignored a poor rating on tight bends as only one of these featured on the circuit; 98% or 99% performance on the long straights and long bends offered more hope of a fast lap time. Each team entered six different sets of adjustments, noting down performance percentages before leaving the keyboard.

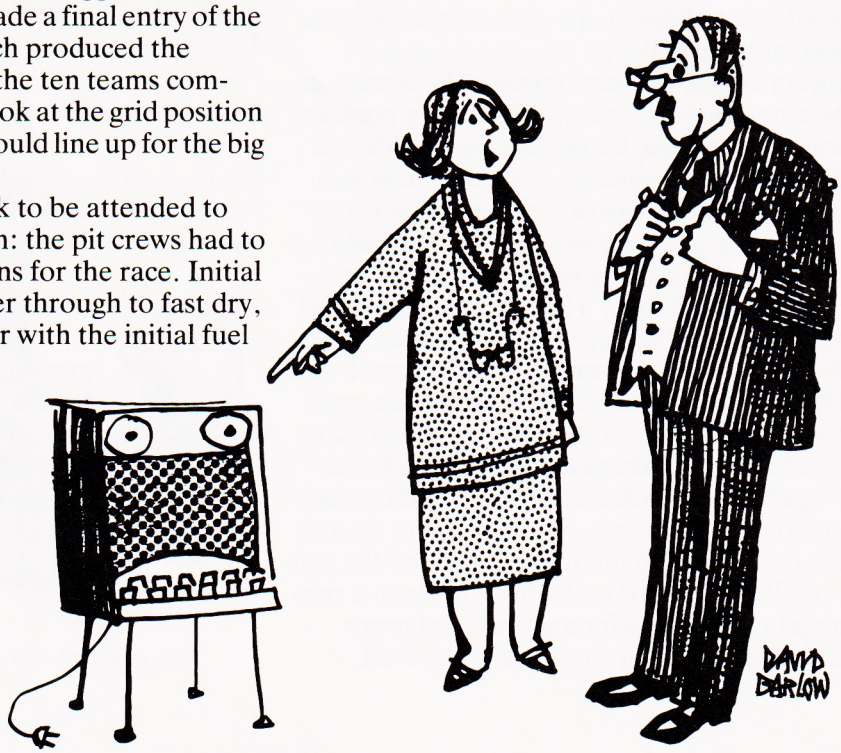
Back at the tables these percentages of maximum speeds were turned into the actual safe speeds for each type of bend or straight that the chosen car adjustments would allow. The teams used calculators to handle the computation.

The next task for the teams was to enter a race plan for each of their six car settings. The children entered the actual speed they wished to take each bend and straight around the circuit; in most cases the figures equated with the safe speeds worked out on the calculators, but some more daring souls added a few extra km/h, undaunted by the computer's message that a (small) risk of a crash ensued. This race plan produced a lap time for each of the six car settings and with all the details logged on the worksheets the children made a final entry of the settings and race plan which produced the quickest lap time. And as the ten teams completed this task in turn, a look at the grid position screen showed how they would line up for the big race.

There was one more task to be attended to before the race could begin: the pit crews had to be briefed on the team plans for the race. Initial tyre type, from wet weather through to fast dry, had to be entered, together with the initial fuel load. The maximum fuel load for each car is 220 litres and fuel consumption is a standard 2 km per litre. Some teams opted to run safely on a full tank whilst others looked for more speed on a light fuel load, topping up part-way through the race at a pit stop. With more than half an eye on the race day weather forecast, all teams opted for pit stops to change tyre types, entering the lap to do so according to the forecast's predicted timetable for the change of weather.

We were able to add an interesting feature to the pit stops. A standard pit stop lasts twenty seconds, but it is possible to alter this for each team by using the Teacher's Page. We cleared some floor space in the classroom and using a slightly unlikely array of equipment simulated a pit stop for each team. Each team was timed on jacking the 'car' up, changing all four 'wheels' and clearing the jack out of the way. Then according to the results of this, the fastest team was given a pit stop time of 12 seconds on the computer, working down in two-second increments to a pit stop time of 30 seconds for the tenth and slowest team. It is also possible to award teams experience points in response to past race results, but as this was our first attempt at the program this feature was not used.

In the course of all the practice sessions each team had made several visits to the computer, and more than four days had gone by before everyone had a final grid position. (Another week, and perhaps a different circuit, and I am sure that the familiarity gained with the program



'Doctor says he can't be in school till the spots have gone!'

would lead to far quicker progress towards race day.) This meant that Friday afternoon saw the big race and with a reshuffle of furniture we sat the teams in their grid order facing the monitor. A ten-second countdown, the red and green starting lights, and the race was on.

What ensues is very different from an arcade-type computer game. Instead of little cars hurtling round a scrolling trace, the screen displays the circuit diagram at the top with any incidents occurring reported in brief phrases below. A lap counter keeps you in touch with race progress. I found myself in the role of commentator reading out (often in rapid succession) details of which driver had overtaken which, who had an overheated engine, and who had spun at which corner. (One team was to pay the penalty for an over-bold race plan, persistently spinning on the tight bend and finally crashing out of the race on about lap 30.)

The teacher can choose at what intervals to pause for an update of race positions, and I chose to do this every four laps. The screen then displays the lap number, the teams in current race order, their average speed, their lag time behind the car in front and the total time taken by each team so far. All these details were noted on the worksheets (ultimately a total of 20 times in 80 laps), allowing the teams a check on their comparative performance as the race unfolded. Fortunately the children at the back of our 'grid' were just able to read their details, so speeding up this phase of the program, but a large demonstration monitor would have been just the job! Once all is noted down, the race continues in the same manner as before.

I found my job of 'commentator' kept me busy all the time, but it certainly produced a positive response from those teams moving up through the field. An early pit stop from one team to change tyres showed how it dropped back a couple of places but within eight laps was moving up quickly on a more suitable tyre type. An 80-lap race is definitely a large undertaking and in fact we took a break at 40 laps to recharge batteries for the home run. Between laps 50 and 60 every team made a pit stop and so race positions were in a state of flux, keeping everyone on their toes. With perhaps a dozen laps left the placings had sorted themselves out and the race ran its course to the end. At lap 80, more than an hour's concentrated involvement left all the children feeling they had really been through a race, with elation for the winning team and more muted tones from further back in the field.

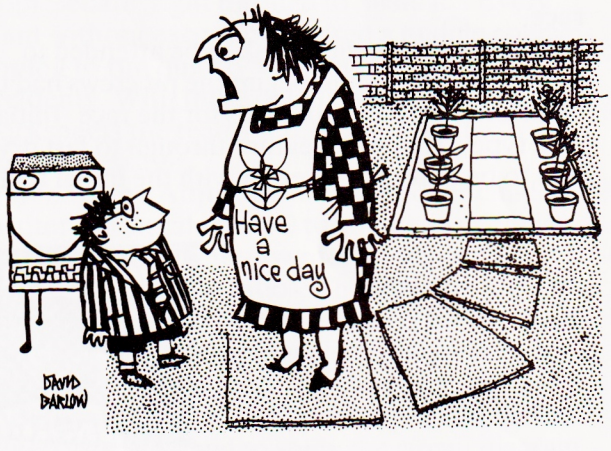
This particular race echoed in some ways what you might expect to see in real life. There was plenty of incident near the start, a rather quiet middle period, a flurry of activity with the pit stops and a little bit of a procession at the end. We were fortunate that the lead changed twice in the last 30 laps, so keeping interest up for the backmarkers. For anyone not wanting such a major event for the race, a shorter overall distance with a larger interval between the race reports would probably suit them better.

So after a hard week at the keyboard, the computer was ours no longer. In the meantime, however, the children have written 'newspaper' race reports, and have researched the flags and geography of Grand Prix nations. One wall of the classroom is bedecked with a large field of racing cars in grid formation, with advertising hoardings, national and marshalling flags as a backdrop. Experiments with gears and streamlining are in the pipeline, and buggy-building will form a related topic of its own. The topic also offers a variety of geographical studies which could be pursued.

Cars—maths in motion proved an enjoyable program to use – at times rather demanding but with good documentation to see through its complexities. For us it has formed an important part of ongoing wider work.

Reference

Cars—maths in motion is published by Cambridgeshire Software House, The Town Hall, St Ives, Huntingdon, Cambridgeshire PE17 4AL.



'You swapped your Dad's what *for a computer?'*

380Z–480Z–Nimbus?

Barrie Edwards
Curriculum Development Unit, Kettering

Why not 580Z, I wonder? Having spent the past four months getting to grips with its operating system, MS-DOS, it is easy to see why. It would be an insult to a fast, beautiful and powerful machine. No longer have we a computer so designed that it looks more at home in a display of farm machinery than a computer room. Gone is the disc drive that resembles a scaled-down version of a double-decker bus garage. Nimbus is light, easily transportable and pleasing to look at. The 16-bit Nimbus comes as three separate components: the computer unit, the keyboard and the monitor. For a basic price of around £1000, you can purchase a PC1 with 576K capacity as standard and a built-in single 3.5'' disc drive along with a 14'' colour monitor of standard resolution. More expensive systems are available to suit your requirements.

My first introduction to the Nimbus was last July when all we had to hand was a pre-release version of BASIC. There were the inevitable faults in the language and not all the features were available, but one could see the potential. The latest version is based on RM Extended BASIC which has been enhanced to take 16-bit technology into account. The most obvious improvement to the layman is the speed of its graphics, but it is now a far more structured language including the facility to name procedures. Furthermore, Research Machines have indicated that a series of 'utility translation packages to assist in the rapid conversion of programs written in 8-bit RML and BBC versions of BASIC' will soon be available. One waits with interest!

RM LOGO has been released in its full version although an extension pack to drive floor turtles will soon be on the market. Unfortunately, I have found little time to investigate this language but by all accounts it seems to have been received favourably by the educational press. Both RM BASIC and RM LOGO are supplied free of charge when purchasing most Nimbus systems.

Those fortunate enough to be able to purchase a Network are given a whole range of good quality software which normally would have to be purchased over the counter.

Word is a powerful word processor that is equally at home in an electronic office as in a classroom – giving you, at your fingertips, all that would be expected from a professional package. It is the only word processor I have used that displays the document on the screen formatted in the style to be printed on the paper: a true WYSIWYG (What You See Is What You Get) program. Furthermore, refining text with, for example, bold type-face, or underlining is simplicity itself since there is no need to memorize any formatting symbols or codes.

Compatible with *Word* is *Multiplan*, an easy-to-use spreadsheet. Not only can the spreadsheet be used for the school's capitation or, on a smaller scale, to balance the 'tuck shop' budget, but some imaginative teachers are finding it useful in a variety of subject areas, especially mathematics and science. One application for *Multiplan* could be as a 'function box' where a particular mathematical series can be displayed for investigation by the children.

Two databases are included in the package. *Superfile* is an extremely powerful program, if somewhat unfriendly. I was also disappointed with *Quest 16*, AUCBE's version of the widely-used database for 8-bit computers, although it is faster and includes the use of colour. Newman College's Nimbus version of *Grass* shows far more promise . . . but perhaps I'm looking from a biased viewpoint.

At present there is a severely limited list of software suitable for use in primary schools. But then didn't they say that once about the 480Z and look at the wealth of new, quality software that has recently been published. Time will tell. Watch this space . . . Cumulus.

Video review

Title: **Turning Point**
Publisher: Videotext Educational Publications, Eagle Star House, New North Road, Exeter, EX4 4HF
Price: £16.95 + VAT + p & p
Length: 36 minutes
Format: VHS

Turning Point was produced in the Spring of 1985 to accompany the MEP Primary Project INSET pack 'Posing and Solving Problems with LOGO'. (It is one in a series of INSET-related videos, all produced by Tim Taylor.) The film shows children working with LOGO in four different primary schools. The schools are involved either in the Walsall, or the Chiltern, LOGO projects. Each school has used LOGO for more than a year.

Turning Point is divided into two main sections. The first section gives a general introduction to LOGO and the second section looks at the role of the teacher, the kinds of learning LOGO can promote and the attitudes of both the children and the teachers.

This video is not an introduction to LOGO. It provides an overview of all sorts of possibilities – music LOGO, control LOGO, Tilly the Turtle – but the watcher needs to have had some experience with LOGO in order to understand what is happening when the children are programming.

Beverly Anderson introduces the video and focusses attention on several important aspects of LOGO and associated management. The characteristics of LOGO are identified and demonstrated. The flexibility of LOGO is revealed in the variety of activities that the children are exploring. LOGO can be adapted to suit the requirements of both the teacher and the children. The teachers interviewed express the kind of misgivings that are familiar to all, 'How can I manage to fit LOGO into my classroom?', 'Will the 3Rs be neglected if I start LOGO activities?'. These teachers have integrated LOGO into their classrooms and accept the learning opportunities thus provided.

The question of support for the teacher is not discussed in any depth. A point that watching teachers are bound to notice is the fact that there is always more than one micro in each of the classrooms shown. How many micros does a school need if the teachers are going to pursue LOGO in an organised way? The video doesn't always give enough information about what is happening. In the first part two children, one apparently very bright, are shown investigating a simple procedure which embodies some extremely complex concepts. I would have liked to know how they got that procedure.

Children are shown using BigTrak, the floor turtle, and the screen turtle. Linda Spear puts forward the idea that working with one leads to working with another. This progression is one that many teachers would identify. The video doesn't deal with any real progression within LOGO – it is relatively easy to identify which commands to teach first but many teachers would like to hear about the experience of others in introducing variables, procedure building, and simple list processing.

The second part of the video focuses on what the children gain from working with LOGO. The suggestion is that they become more confident, they work co-operatively together and they develop problem-solving strategies. Evidence to support these suggestions is shown.

The video raises many questions. As it was produced to accompany an in-service pack that fact may well be deliberate. The children appear to be working in real classrooms; there are other children present. The teachers are all female, though they span the ages. In 36 minutes the video can present only an overview and this it does. As a focus for discussion and as a look at possibilities, this well-produced video can serve a very useful purpose.

Roger Keeling
Senga Whiteman
Newman College

Book reviews

Title: **A First Computer Dictionary**
Author: Brian Samways and Tony Byrne-Jones
Publisher: Macmillan
Price: £3.50 (88pp)

If you are still looking for a clear, straightforward dictionary on computers and computing, this is one of the best. With over 500 entries and 120 diagrams it is aimed at 'beginners of all ages', and particularly those in the 'home computer' market. From half-adders to multiplexors, BASIC to Silicon Valley, it covers a wide range of 'computing jargon', with simple and clear explanations which make it very valuable to juniors, novices and even computer buffs. The use of bold type to indicate a cross-reference is also a well thought-out and useful touch:

eg **Microcomputer**
A computer that has a **microprocessor** as its 'brain' or **central processing unit**. The first one was produced in the USA in 1975. (p 50)

However, this book offers more than just a dictionary. Not only are technical terms explained but famous people, places and machines also get a mention so you can quickly check up on Charles Babbage or the early UNIVAC 1. Some might query the omission of items on, say, Papert, or a Z80 processor (or why it's 'disks' rather than 'discs') but the line has to be drawn somewhere and the two authors have erred on the right side. Every school, and any home with a micro for that matter, would be well advised to consider this book very carefully in terms of both content and cost.

Of course, bearing in mind the way language develops, particularly in a fast-moving area such as computing, the danger of any dictionary is that it can quickly become out-of-date. We are just hoping that the two authors might already be engaged on *A Second Computer Dictionary* of the same high standard.

Lynne Christie
Barry Wake
BECC
Birmingham

Titles: **Computers in Action: Supermarket Computer & Travel Agent's Computer**
Authors: Pamela Fiddy and Dick Fox-Davies
Publisher: A & C Black
Price: £3.95 each (26pp hardback)

Both these books begin by posing the same questions – what sort of help can a computer really offer? They then set out to answer these questions simply and clearly, by showing computers in action in familiar, everyday situations. They explain some of the basic concepts and jargon of how computers themselves work and what makes them so useful in certain applications such as in supermarkets and travel agents. The content is generally accurate and precise, and the reader can easily see what a barcode is used for or how computer messages can travel down telephone wires, for instance. There are, however, a few omissions in that, for example, you are not told how you can 'read' a barcode exactly, or about questioning the validity of the information that appears on the screen. However, the text itself is clear, concise and kept to a minimum whereas on the other hand the illustrations and photographs are, for a change, very plentiful, bright and colourful.

Both books end with a summary (and a short, useful index) together with some more questions that should encourage further investigation by the readers. We found them very interesting and useful reference material with older juniors and they go a long way in increasing the children's awareness of the place of computers in today's society. If you have any library funds left, both books are well worth finding space for on the Computer or Information Technology shelves.

Lynne Christie
Barry Wake
BECC
Birmingham

Software review

Title: **Flightpath**
Publisher: Storm Software, Newbury Court, Gillingham, Dorset SP8 4QX.
Machine: BBC B (disc only) and Commodore 64
Price: £17.65 + VAT.
Reviewed on: BBC B

Flightpath is a simulation program suitable for ten to fifteen year-olds which gives the user the opportunity to plan a flight across Europe. Like the BBC's 'Introducing Geography' program *Flight*, it involves making accurate calculations and logical decisions to produce a successful flight. But unlike *Flight*, considerable emphasis is put on the economics of running an airline. In role, as captain, your aim is to plan carefully and decide wisely in order to minimise costs and, if possible, make a profit for the airline. You may choose your departure and destination airports or have them set by the computer itself. You then have to choose the most suitable aircraft for the number of passengers wishing to travel, and the number of stop-overs you are going to make (to fill any empty space in the plane) before measuring the range and bearing of each leg of the journey. This can be done using the computer or an atlas. If you choose the atlas option you have to be accurate to within 50 km in calculating the distance. You can also work out the bearings on your own but you must use the computer to check on your own calculations. There is an option to have wind factor in your flight, so you may also need to take weather conditions over Europe into consideration, and this may well involve course and speed corrections. All these initial options, including sound, are set very simply at the start of the program.

Once all this has been completed the moment of truth arrives as the aircraft makes the planned flight. If the calculations are correct, the aircraft will land on target, but if not, the aircraft will crash and require costly recovery, and fines for late arrival may well be incurred.

The documentation claims that children will be able to acquire new ideas and skill through the use of the program. *Flightpath* does provide an application for the concepts of range, scale, course and speed corrections, wind angle, profit and loss. Careful checking of the pre-knowledge required is necessary, but the authors seem to have been well aware that some of the ideas and calculations involved in the adjustment for wind are quite complex, and should have been introduced before the main part of the program was embarked upon.

They have provided both bearing and speed adjustment tutorials (help pages). These are very clear and comprehensible, and are ideal for use by the teacher with a larger group in the pre-preparatory stage. Once understood, these tutorials can be by-passed in the main program. Children using *Flightpath*, even without the wind option, still get practice in the skills of measuring distance, estimating and measuring angles, calculating the time of the flight and the potential angles.

At the end of the journey, the captain sees how accurate the calculations were, and how good a decision-maker he/she is. A balance sheet is also presented. This provides a closer analysis of the various costs involved, and reveals whether the airline is 'in the red'. This includes the revenue from each passenger, fuel costs, the standard landing charge, together with rescue charges and fines for late arrival if applicable. Addition and subtraction calculations must be made with whole numbers of up to five digits, often involving 'carrying' and decomposition. Multiplication of hundreds, tens and units is required to get the revenue obtained from the passengers, and pounds and pence are multiplied by up to four digits to obtain fuel costs.

Finally the 'Captain's Notes' summarise the program by comparing the entered values with the 'correct' ones and giving advice on decisions made. This program certainly cannot be faulted on the grounds of lack of feedback or remediation.

The whole thing has been well thought out. The disc, together with a very well-presented booklet (which includes a topic web, photographs and a booklist, as well as information on just about every aspect of the program) is accompanied by summary sheets for both the flightpath and the finances, and tables for the calculation of speed and course correction. It is a very comprehensive little package. The map has the usual limitations of a disc-based two-colour map – a slowish build-up and nothing to distinguish land from sea. Presumably the oval has been used to match the projection of the map but its axes are used like radii in the calculationof distance which could be confusing if you have been doing a lot of work on circles. I am also told, on good authority, that planes flying from London to Birmingham, for example, would actually use beacons, getting their bearings by radio rather than calculating them in the fashion suggested by the program, but this is a minor point that could well be pointed out to the

children. Planes do not normally crash at the rate they will probably do with this program either! The passengers would be likely to be more than irate as well. There was only one other minor graphical phenomenon to be noted. This was on the flight from Stockholm to Lisbon: part of the plane wrapped round and appeared in Yugoslavia!

Overall however, *Flightpath* is an extremely useful program, either as the basis for, or as one aspect of, a topic. It is robust and generally clear, although one or two messages are a bit squashed down at the bottom of the screen. It is also very flexible in its provision of options and even allows the user the opportunity to type in the names of airports not catered for by the 'reasonable' flightpaths of the program – by allowing you to ignore the error message presented. It is suitable for a wide range of abilities and is undoubtedly a motivating vehicle for some lively work away from the keyboard.

Sarah Wells
Manor CP School
Uckfield, Sussex

LOGO Course

The fourth annual British LOGO User Group course and conference is to be held at Birmingham University, Edgbaston, from Friday 29–Sunday 31 August 1986.

The theme of the conference is 'LOGO and Computers in Education', and our aim is to take a much broader look at how LOGO, and related areas, can best be applied to the whole curriculum.

There will be keynote addresses, workshops, seminars and plenary sessions, as well as exhibitions of hardware and the latest educational software.

Further details and an application form can be obtained by writing to:

B.L.U.G. '86,
P.O. Box 79,
Walsall.
WS5 3RW.

Items received for review

Software

Police—Language in Evidence (BBC)
Cambridgeshire Software House Ltd, The Town Hall, St Ives, Huntingdon, Cambs PE17 4AL.

Viking England (RML 480Z)
Norman England (BBC)
The Sea (BBC)
Fernleaf Educational Software, Fernleaf House, 31 Old Road West, Gravesend, Kent DA11 0LH.

Desfax 7 (BBC)
Design 7 (BBC)
M/B Software, 4 Arden Close, Hadrian Park, Wallsend, Tyne & Wear NE28 9YB.

Books

Hands On: Hands Off
Christopher Schenk, £7.95, A & C Black, 35 Bedford Row, London WC1R 4JH.

MEP Readers 8: Exploring Mathematics with Microcomputers
Edited by Nigen Bufton, £10.00, ISBN 0 86184 162 X, CET, 3 Devonshire Street, London W1N 2BA.

Programming in Micro-PROLOG Made Simple
P.H. Hepburn, £8.50, ISBN 0 431 99013 1, Heinemann Educational Books, 22 Bedford Square, London WC1B 3HH.

The Complete Disc Manual for the BBC Microcomputer
R.I.M. Sadek, £7.95, ISBN 0333 409302

Geometric and Artistic Graphics
J.-P. Delahaye, £9.95, ISBN 0333 41799 2
MacMillan Education Ltd, Houndmills, Basingstoke, Hampshire RG21 2XS.

Educational Games for the BBC Micro
I. Soutar, £6.95, ISBN 0744 70016 7, MicroPress, Castle House, 27 London Road, Tunbridge Wells, Kent.

Official Report of the Annual Course/Conference

Manchester Polytechnic, Easter 1986

Well it's all over for another year, and everyone who attended will no doubt agree that it was one of the best. All went well, thanks to the Executive Conference Co-ordinating Committee (ECCC). Lots of time and effort were expended beforehand in order to ensure that all aspects of the three days ran like a well-oiled machine. Perhaps one of the masterstrokes was the idea of making sure that delegates from all over the British Isles were able to meet and interact socially in order to break down regional barriers. This was discussed at length by the ECCC and the problem was solved by the brilliant expedient of arranging a succession of queues. Consequently delegates were able to chat in convivial surroundings as they queued for registration, for breakfast, for lunch – and discussions continued well into the evening as they waited their turn at the bar.

The workshop sessions were well received and Wednesday afternoon saw the 'fringe'. A new departure this year saw a non-computer fringe – a guided tour around the highspots of Manchester by a talkative native, arriving back in good time to miss the AGM. The Exhibition Hall at Central Station; the site of Liverpool Road Station, now a steam engine museum; the Midland Hotel, the site of one delegate's baptism of conjugal bliss (not what he said but that's what he meant); the Coronation Street set; the site of the Roman camp – all this proved an interesting foil to the high-tech of the rest of the conference. It was a pity that several delegates not known for their cultural diversity dropped out along the way to look at the shops. Obviously the Manchester weather came in from some adverse comment; most of this mickey-taking came from people from such sylvan paradises as Wolverhampton or Dudley. At least this outside activity had kind weather.

The blot on the conference was the spate of car thefts and break-ins. Delegates were advised not to park in the city centre, but many had to bring cars to carry equipment. The group from MEP's National Primary Project however spent the three days in smug satisfaction knowing that their vehicles were safe, thanks to foresight and cunning. Most vehicles were protected by tilt switches, reed switches, proximity switches and pressure pads, all connected to a computer equipped with *Logotron* LOGO. The alarm consisted of lights and buzzers and the whole thing was powered by a massive nodding donkey made from dowell, wood, beercans, rubber bands and cheapo motors. A variation on this was a Welsh alarm which set in motion a huge *Robotix* thing which lumbered up to the thief and squeezed him in a certain place which made one doubt that it would be effective against females.

Two other slight niggles. There seems to be a propensity for some delegates at these conferences to stay up late, making a noise. I have to say that this is unfortunate and disturbs the majority of the delegates. I myself went to bed after the dance in order to read my copy of *The Curriculum: 5 to 16*, so that I could polish my classroom skills to a level the government deserves, but I couldn't concentrate for a rowdy discussion from a group on the sixth floor of our tower. Why people should want to discuss graffiti I do not know. I quite appreciate that experts would dismiss this as 'bob art' and not 'pop art', but there's a time and a place for everything.

The other niggle, also personal, was the disappointment I felt about one workshop I subscribed to. I'd been led to believe that the control element would consist of aiming at a target dangling on a hook from the ceiling. This was going to be arranged by members of MAPE's Capital Region Group. I don't know what went wrong, but I spent the session designing traffic lights.

Finally, the item of clothing found under the Mancunian Way on Wednesday remains unclaimed. It may be collected from David Whitehead, the Chief Executive of the Conference Co-ordinating Committee (address at the back of this issue), and it will be dispatched by return in a plain brown envelope.

Stephen Booth
Deputy Assistant Vice Liaison Officer
Executive Conference Co-ordinating Committee 1986

MAPE 1986 Impressions

I was delivered to the door by a cigar-chewing Mancunian taxi driver. Sue Partridge directed me towards the luxurious sounding Loxford Residential Tower. Great, I thought, sounds palatial (I was suffering from five hours of British Rail), that's just what I need. Follow the signs! Out the back entrance, turn right, stop. There was a monstrous great fly-over!

Do you remember seeing *West Side Story* – the bit where the Sharks and the Jets have the gang fight in the cage? There was a cage just like that beneath the fly-over!

The impression this gave was backed up when we found difficulties in phoning home as most of the phones were not working, and next morning we found that three colleagues' cars had been vandalised.

The lectures and workshops were up to their usual high standards. The workshop that fascinated me was the Times Network for Schools and Communicating with Australia by André Wagstaff and Mike Matson. Communicating with Australia was fun, but the system enables you to contact schools all over this country, to contact all types of databases (or set up your own), and religion, colour or nationality cannot prejudice the message received. Another favourite was Anthony Adams' lecture on Teaching Humanities in the Microelectronic Age. He provoked a lot of thought and his lecture was superbly delivered. But I kept on coming back to the conference 'message', emphasised by Anita Straker in the very first lecture and by succeeding speakers. It was that the 'gee whizzery' of the computer should now be over. We should be working on where and how the computer can be of most use in our schools – a tool used across the curriculum.

Finally I would like to say a big 'thank you' to all the organisers and especially Dave Whitehead and Mike Partridge – I think they did get some sleep, but I heard that the dance didn't finish until 3.00 a.m. We were all kept in order by Roger Keeling, who never, never got worried(?).

Now I come to think about it, the worst memory I have is of being conned into writing this by our regional representative! It's all yours, Reg.

David Moore
MAPE South West

MUSE Summer Conference

28th–30th July, Nottingham University

The three plenary speakers at this year's Conference are Doug Brown, Brian Samways and Professor Ted Wragg.

The Session speakers are:

Richard Green: Acorn Econet the practical realities
Roy Thornton: Comal – the philosophy
Stanley Goodchild: Communications with the Times Network
Bob Harrison: Computer Art and Design
Brian Nixon: Computer Software support from ITV companies
Keith Hemsley & Chris Robson: Control in the Primary School
John Coll: The C Programming Language
Mick Nadal: Data Handling in the Primary School
Ian Malcolm: Demons – an approach to programming with Comal
John Perfect: Programming with Turtle Graphics and LOGO
Mike Matson: Make the 'Off' Switch Bigger
Colin Wells: High Quality Music from Computers
Robin Newman: Hints and Tips
Ian Irving: Inform+
Jacquetta Megarry: Open Access to IT Literacy
Ian Birnbaum: IT Education in Secondary Core Curriculum
Bob Sparkes: LOGO in Science and Technology
Charles Sweeten: Mathematics
Phil Moore: The New Literacy
Pat Hamblin: NIMBUS Networks for Beginners
Stephen Partridge: Problem Solving Control Technology
Jon Nichol: PROLOG
Julian Coleman: Radio and the Micro – Complementary Resources
Malcolm Neave: RML Chain Network
Jane Whitwell: Starting IT Courses
Andy Terry: Telesoftware and Prestel Education
Jacquetta Megarry: Word Processing Plus
Eric Deeson

For further details, write to:

MUSE,
P.O. Box 43,
Houghton on the Hill,
Leicester LE7 9GX.

MAPE members may book at the discounted rate if they quote their membership number.

MAPE news

South

As from 1.1.86 MAPE South has had a new regional representative. I am Dave Kitching from the Isle of Wight.

Thanks to my predecessor David Marshall of East Sussex, for all his efforts on behalf of MAPE nationally and locally in the south.

To be the representative of such a large area is an almost impossible job, and this is a request for your help and suggestions. Across the seven counties of the region, Isle of Wight to Kent to Berkshire, are some 550 MAPE members, and if you would like to help MAPE in the south, or in your area, please contact me. It would be helpful to have a regional committee with representatives from each area. If you are willing, please let me know. If there are positive replies to this request, I will try to organise a meeting in the summer, somewhere central to the region.

At the present time, I am negotiating with an educational institution in Portsmouth, and I hope to put on an event under the MAPE banner in the near future. If you live in the Portsmouth area and could help, please get in touch. Perhaps we could consider a second event in West Sussex before the end of the year – perhaps a regional newsletter before Christmas – it all depends on you. MAPE South will only function with your help.

So if you have time, or experience, or expertise, or questions, or answers, or interest, or ideas, or suggestions, or good examples of primary com-
puting, or bad examples, or an article for a newsletter, or hints and tips, or . . . and you live in the south – then please contact me:

Dave Kitching
MAPE South Representative

Home: 82 Silver Trees, Shanklin,
Isle of Wight PO37 7ND.
tel. 0983-866162

School: Deputy Headteacher,
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West Midlands

Advance notice:

a) One day course, 11 October 1986, Newman College;
b) Christmas workshop, Saturday morning, 15 November 1986, Newman College.

Spring Term:

Beginners' workshop;
Problem-solving workshop.

Details will be sent to members in due course.

Senga Whiteman

Software at discount prices for MAPE members

Reg Eyre

The following software publishers are prepared to allow a 10% discount off the published price of their software for MAPE members. By publishing such a list, MAPE is in no way endorsing these products, and members are still advised to preview software before purchasing, at LEA centres, through reviews, etc.

Cambridgeshire Software House Ltd
The Town Hall
St. Ives
Huntingdon
Cambs PE17 4AL

Fernleaf Educational Software
Fernleaf House
31 Old Road West
Gravesend
Kent DA11 0LF

Hilditch Software
4 Church Road
Felixstowe
Suffolk IP11 9NF

LTS Ltd
Haydon House
Alcester Road
Studley
Warks B80 7AP

Collins/Hill MacGibbon
8 Grafton Street
London W1X 3LA

To obtain your discount for any software, please send the address label from the packing of your *MICRO-SCOPE* as proof of membership. This will be returned to you with your purchase.

In accord with our policy of not carrying advertisements, the discounts offered are general, and should you require detailed information about programs available, we suggest you either write to the publishers for brochures, or see advertisements in the commercial educational computing magazines.

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