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MICRO SCOPE

Newman College with MAPE

Contents

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MICRO-SCOPE 15

Editorial

I have returned recently from four interesting days at CAL '85. This Conference attracted about 500 delegates, including a large contingent from overseas, to discuss the latest developments in computer assisted learning. It is generally recognised that the UK is one of the world leaders in this area, especially at the primary level where many other countries have yet to make a start. I was particularly interested in talking to a group of educationalists from India. I couldn't help wondering why, with their many problems, they were considering putting micros into their schools. The man I was talking to had, only a few months earlier, survived the tragedy of Bhopal and was talking about schools without electricity and with water drawn from a well by a bullock. Yet their dilemma is one of all developing countries. If they do nothing about incorporating micros into their educational system the rift between their country and the high technology western nations grows even greater. Their current interest is in pilot studies that will point the way to future developments which in turn will benefit, not this generation, but the Indian nation of the future. I wondered to what extent we are advising and to what extent we are exploiting visitors from overseas (and I'm not certain who is responsible), particularly when I learnt, in the case of the Indians, that they have arranged a licence to build the Acorn/BBC micro in India. Are we telling people from overseas how well we are doing in the UK, or are we telling them the lessons that should be learnt from our mistakes? I hope that it is the latter. We are here to help and advise, and we should now be pointing out the vast limitations that 8 bit micros present to the development of decent educational software. Today is the age of the 16 bit micro; the range of IBM PCs, the Apple Macintosh, the Apricot and the RM Nimbus. The latter can be built for virtually the same price as the 480Z. We should be advising colleagues from abroad to look in this direction. This is the next logical step forward, particularly in the case of countries like India where a large machine memory is required to enable software modifications to compensate for their non-Roman alphabet. To what extent are we selfishly trying to sell dated 8 bit micros abroad in order that our experience, expertise and software remain marketable export commodities? The time for the Acorn/BBC micro and the 480Z has passed, although they will still serve many valid educational purposes. We are now in the era of the 16 bit micro. If we belive that education should use to its advantage the latest technology, we must also recognize that we can't sit back and be content with what has already been achieved. And let's be honest with educational colleagues from abroad and not try to foist our dated hardware on them. Any country at the planning stage of incorporating micros in its education system should start with 16 bit hardware; the options available in terms of languages and software will be extensive.

Roger Keeling

Letters

MICROSCOPE 14

I am writing with reference to the article 'Evidence from M.A.P.E.' in the above issue and in particular to item 'J' of the summary. As the article is signed 'MAPE Executive' I have assumed that the Executive feels the comments fairly reflect the views of the members.

We have just returned from Conference thinking more than ever that we, as a software house involved entirely in the educational field, are producing the type of software teachers are looking for, for use in their classrooms. Certainly as far as we were concerned not one delegate to the Conference (nor for that matter one visitor on the Saturday) complained that the software we produce is '*inappropriate*'.

I am not, of course, trying to say that every teacher who has ever used our software has enjoyed our programs, as that would be foolish. However, I do feel that programs such as *Mary Rose, Expedition to Saqqara, Adventure Island,* etc. available through Ginn, and *Archaeology, Dinosaurs, Cars-Maths in Motion* etc. available from ourselves, can hardly be described as '*not appropriate*' to the educational system.

We receive many letters from our users and invitations to see work in schools using our software and it is evident that the type of package we produce is very well received. The M.E.P. Primary Project must also have felt that *Mary Rose* wasn't too bad to have produced their Advisers pack!

For the MAPE Executive to say '*an educational software market, based on the educational system, is the only viable way . . . The commercial software market is not appropriate*' is, I feel, unrealistic and most certainly misleading. What you are effectively saying to your members and to the Committee on Achievement is 'don't buy commercial software'. Surely what MAPE should be saying is 'Take more care in what you buy' and giving its members more help in arriving at any decisions they may have to make in this field. I take great exception to the statement that the '*commercial software market is largely unresponsive to and/or uninformed of schools' needs*'. In our experience the vast majority of teachers are only too pleased to be able to buy commercial software on the basis that much of what is produced by their LEA centre is unusable within the environment of a classroom.

I certainly do not want to start a 'who produces the best software' debate but as a member of MAPE for over 3 years I have always felt 'part of the show'. When I read this article I now wonder whether you would prefer firms such as ourselves to be 'part of the audience' (for yesterday's performance). It would be interesting to hear what some other 'rank and file' members have to say on this subject.

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In *MICRO-SCOPE 14* you printed a copy of a letter attributed to the MAPE executive and addressed to the Committee on Achievement in Primary Schools. It was stated that the letter '*represents the views of MAPE*'. I would be very interested to know how these *views* were formulated. Are they the opinions of the majority of MAPE members or are they no more than the thoughts of certain members of the MAPE executive?

I was particularly concerned about the paragraph which seemed to say that while most commercial software is over-priced and unsuited to schools' requirements, that produced by educational establishments is both better and cheaper. Is there any evidence to support this? My immediate reaction upon reading, '*The commercial software market is not appropriate*' was to utter, 'What arrogance! What on earth makes them think that good educational software can be produced only by groups of educationalists employed within the system? Is software so very different from other commercially-produced resources which schools buy quite happily?'

Certainly there are some software packages which do seem to be expensive but I would maintain that, in general, schools are being asked to pay realistic prices (and if they cannot afford them then perhaps the campaign should be directed towards providing the schools with more funds). I am not aware of anyone making a fortune out of educational software and I doubt whether anyone ever will when the market is so small. The very fact that the market

is so restricted means that software houses must produce the goods which the consumer requires. Gone are the days when schools would purchase any programs which they could lay their hands on and the software producers are well aware of that fact.

In the natural world the birth of a new environment may provide opportunities for a vast range of life forms to flourish. As the population increases, however, natural selection occurs and only the best equipped species and individuals survive. The introduction of micros into schools provided a new environment in which all types of software producers were able to find a niche but, as competition has increased, a number of 'educational' software companies have disappeared and it is highly likely that many more will do so. I maintain that the survivors will be those which are offering the type of packages which schools require. Furthermore I am quite certain that they will be able to produce the goods at a price which could never be matched by the educational world itself.

In theory, the people who are involved in education may be able to produce better quality materials but I question whether (a) they possess the necessary experience or incentive to be cost effective and (b) they can bypass the inefficient operations of established bureaucratic systems. '*Substantial national funding*' may well lead to the development of some worthwhile packages but, I am quite sure, a significant proportion of that funding would be wasted. We can all think of examples of organisations which have received substantial grants but which have produced very little in the way of useful materials. Does the MAPE executive really believe that an '*educational software market*' can produce '*quality material at minimum cost*'? If a group of nationally-funded educationalists produce nothing worthwhile after six months work they are still going to receive their salaries. If a software company wastes six months it will go to the wall. Survival is a powerful motivator and is likely to yield far higher returns in the commercial world than in the educational world. The development of materials by commercial bodies does not involve the educational establishment in any financial risks and there is no reason whatsoever why the materials produced should be inappropriate to the needs of schools. I am sure that the majority of successful commercial packages have been produced exclusively by, or with the assistance of, individuals with educational experience. Perhaps MAPE would like to find out from its members which commercial packages have been found to be educationally valid and then determine how many of those packages have been produced with the co-operation of people with experience in education.

Since I have been in the business of writing software I have felt (and I don't think it's just my paranoia) that many people equate commercial software development with personal gain: 'They're only in it for the money' is not often said but frequently implied. Software development by educational bodies is, somehow, regarded as being more respectable. As far as I am concerned one of the major differences between the commercial author and the 'establishment' author is the fact that only the latter can be fairly certain how much money will be in the bank next month. I spent fifteen years as a cog in the educational system and I know full well that I can play a much more useful role in education as an ex-cog. I am now in a position where I can visit schools whenever I like, ask teachers what they want, ignore the verbal outpourings of educational theorists (and 'superiors') and actually spend all my time doing what has to be done. From my base outside the system I think I have a far clearer view of what education is all about than some individuals who have spent so long locked away inside that they no longer have any inkling of the nature of the real world in which children are going to find themselves. As a commercial software author I put far more effort and longer hours into my work than if I was working for a local authority – not to increase my personal wealth but because I feel that I am making a far more useful contribution than I did, or ever could, when I was a part of an establishment. If I make a mistake I cannot hide in the cellars of County Hall or the inner sanctum of some seat of learning. If I produce something which is not of educational value I would not expect schools to buy it. The other major difference between the commercial and the establishment author is the one which I value most, that of artistic freedom. I freely admit that some commercial authors may well have less freedom than others but I am quite sure that as employees of 'the system' their balls would have shorter chains.

I am not saying that there is no place for nationally-funded software development. On the contrary I believe that there are several areas in which financial assistance is imperative. Perhaps the most important need is for research into software and hardware to assist the handicapped child. There are thousands of children who are totally incapable of communicating with anyone. Micro technology can offer these kids the opportunity to 'speak' for the first time in their lives.

If a case is to be made for more money to be made available because schools cannot afford

to purchase software I suggest that the argument should be for more money to be placed at the disposal of schools rather than larger funds for software development because, in the long run, software produced by 'educational' sources is likely to be far more costly to the tax and rate payer than is commercial software. And if MAPE wishes to put forward a case for funding for software *development* perhaps a better idea than criticism of the commercial market would be an exploration of those specific areas where software houses cannot be of assistance.

I note that near the beginning of the Executive's letter one of MAPE's intended achievements is:

> *liaising with commercial organisations, with a view to making them aware of the educational needs of primary schools and to receiving from them information about development relevant to primary schools.*

Now if the '*commercial software market* (is) *largely unresponsive to, and/or uninformed of, schools' needs*', as is stated later, MAPE is obviously not doing a particularly effective job. In fact, as a partner in a commercial organisation I don't recollect having been liaised with lately (unless it happened when I was having a drink with Senga in the bar at the MAPE conference).

As a final thought I wonder what Roald Dahl would say if someone told him that his work would be of a better quality if it was produced by the National Institute for the Use of Novels as an Aid to Reading.

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Viewpoint

Whither micros in education — some thoughts

Pauline Seymour
Parent/Civil Servant

1. We're starting from the wrong point. It's not 'I have a micro – what do I do with it?' but 'I have a problem – could a micro help?' The answer to this latter question may be 'yes' *or 'no'*. Any teacher who hasn't got a problem (are there any?) ought to consider what problems they would have if they were asked to improve their standards.

2. Software does not have to be complicated to be useful. There is a place for professionally written complex software which provides easy-to-use bug-free tools for children (and adults), e.g Word processing, database systems, LOGO, statistical and data display packages. This is very much the province of professional software houses. There is also a need for combined software/printed material packages where the software is frequently, although not always, pretty basic. This is the job of the educational publishers. The last requirement is for simple stand-alone software to serve a myriad of special purposes. This is the province of the amateur – the mum/dad who can liaise directly with the classroom teacher to satisfy individual requirements.

3. We need software libraries for home use. Norman Thomas stated four questions to be asked:[1]

a. Does the child need to know it?
b. Does the child know it already?
c. Is a micro the best way to teach it?
d. Is it the best use of limited computing facilities?

It is often the case that, where the answer for (c.) is 'yes', the answer for (d.) is 'no' for the school but 'yes' for the home, because computing facilities, if they exist in the home, are shared by far fewer people. However, there is a problem. Much of the basic educational software, i.e. the drill and practice stuff (and, yes, children do have to learn facts and practise skills), should only be run once or twice with each child, i.e. the answer to (b.) rapidly becomes 'yes' or, if it doesn't, the software is no good anyway. Very few parents are willing to spend large sums on software only to effectively throw it away after a week or two. What is needed is educational software libraries and, if the education system has any sense, software libraries run *by schools*. These could include both free and commercial software. (Yes, I know it only helps a subset of pupils, but that's a separate issue).

4. Why don't schools use other people's facilities? Few schools possess a printer for word processing but I bet that most schools have at least one parent who does. Personally, I would be quite happy to print 100 pages a week at cost, probably free if there are only a few – but nobody has asked!

5. Much more use of software tools (see the first part of para 2). Also much, much wider dissemination of ideas for their use.

Reference

1. Norman Thomas, 'Microcomputing in Primary Schools', *MICRO-SCOPE* Special Edition, 'Primary Education, The Contribution of the Micro.'

Computer adventure games in the primary classroom

Margaret Murphy
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In primary classrooms today many teachers use a wide variety of resources to help stimulate children's creative thinking in an attempt to encourage them to think and write in a more imaginative manner. Some of these resources include visual aids, posters, poems, stories, music, actual experiences – walking through leaves in autumn or going to the park on a frosty day – and these have been used successfully by teachers for many years. A recent addition to these resources in most primary schools is the microcomputer and I believe that, with appropriate software, the micro can prove to be another extremely valuable resource which the teacher can use to motivate children, stimulate their curiosity and extend their experiences. It is important to remember that the computer should not be seen as a substitute for all other classroom resources, some of which I have already mentioned. If it is used alongside these resources, however, the computer has the power to enrich and enhance much of the primary curriculum.

Appropriate Software

A computer adventure game simulates a situation of the imagination and presents teachers with the opportunity to provide children with situations and experiences which otherwise would be impossible to reproduce. For example, a teacher may show the class a poster or a picture of an imaginary planet, or play suitable music and use words like 'imagine' and 'pretend', but by using the computer the teacher can actually present the situation to the children on the screen, and by keying in certain instructions and responses the children can explore the planet and feel that they are experiencing the outcome and results of their own decisions.

By creating a rich learning environment for the children, a computer adventure game stimulates children's curiosity and imagination and shows great potential for promoting many cross-curricular activities away from the keyboard. Some teachers use the computer to occupy more able children, perhaps those who have completed their work before the others in the class, and this temptation should be resisted. An adventure game should not be used as an isolated activity but may be used to provide the basis for a project lasting for at least a term. Within most adventure games the children will be given tasks to carry out, and it is important that they are encouraged to approach these in an ordered and systematic manner. Therefore it is advisable for the teacher to become familiar with the adventure before using it with the children and, in doing so, should consider the following points when planning the structure of the project.

1. *Classroom organisation*:
   How often your class has access to the computer.
   Whether particular activities involve group work.
   How long each group will be allowed to work at the keyboard.
   How often you feel it desirable to come together for a class discussion or debate.
   How you intend to monitor their progress.

2. *Activities*:
   Activities associated with the project both at and away from the keyboard which will include the use of databases and word processing.

3. *Supplementary Materials*:
   Reference books, novels, poems, music, videos, radio broadcasts etc.

Curriculum Areas

Computer adventure games, when used in a meaningful way, have great potential as a source for generating activities away from the keyboard in areas of language development, mathematics, music, drama, art, craft, science, history, religious education, environmental sciences etc. Their

most obvious contribution is in the development of communication skills such as talking, listening, reading and writing. These programs demand a high degree of logical thinking, indeed some demand a good deal of planning when working out strategies. While the children make decisions as to which course of action they wish to take, they are interacting with the computer, and as they assess and examine the consequences of their decisions a great amount of conversation is generated.

On one particular occasion, while using a computer adventure game with a group of infants, I observed a typical example of how one tiny incident can trigger off a series of related activities and discussions. The children were introduced to a friendly spider and when one six year old child saw the spider it reminded her of an incident which had occurred the previous week. She proceeded to tell the group about how she had found a spider in her bedroom and had gone to fetch her dad who caught it and put it out of the window. This led on to a discussion about whether or not we should kill spiders and insects. Later in the week, as a result of this discussion, another child arrived at school with the story *Charlotte's Webb*, and I read this story to them during the remainder of the term. From this there developed a tremendous amount of activities including:

creative writing – the children imagined they were Charlotte living on the farm;
diary work – keeping a diary of life on the farm as one of Charlotte's animal friends;
art work – making a frieze using a variety of fabrics;
mathematics – using turtle graphics to draw web patterns;
music – animal songs, listening to music;
environmental sciences – mini beasts i.e. spiders – food, habitat observation.

Before starting the project with the class it is important to 'set the scene' for the adventure. For example, if the setting is on a planet it is a good idea to talk about the planet, the story involved, the characters they will meet, the various tasks they have to perform and the roles they have to play. Some adventure games now provide the story in either booklet form or on audio cassette tape, with sound effects, and these can be used in a variety of ways. The teacher can read a section of the story each day leading up to the commencement of the project or the audio tape can be played to the class and interrupted at appropriate places when the children are asked to anticipate what happens next.

If the children are working in groups they may want to give their group a fictitious name, or even invent imaginary names or titles for individuals within each group. Some pupils working on a computer adventure game in which they took on the role of space scientists gave themselves names like Captain Zep and Spacewalk Sam. If log books are being used to record activities or missions it is a good idea, at this introductory stage, to provide the children with suitable notebooks in which to keep a record of their missions. Each child should write an introduction which establishes their role in the adventure at the beginning of their log.

The following extract is from the logbook of a ten year old:

> My name is Captain Zep and I am captain on this mission to a strange planet. On our ship we have spent a few years exploring the Ursula System and sending back information to Earth. This is my sixth mission into space so I am quite an expert, even if I say so myself! I originally come from Transilvania, although now I consider space as my home, for I have spent so long here. When I was born my parents had hoped for a boy to carry on Dracula's influence but no such luck, so now I am stuck as the female explorer (my looks got me into the business!) Soon we will return to Earth with equipment which has been stolen from us.

Language Development

Recording daily events is a valuable activity usually associated with young children and as they grow older they should be given the opportunity to write about events which happen outside their immediate environment. Computer adventure games provide the opportunity for such activities, because after the children have completed a session at the computer they then proceed to record it in their log books while they are motivated and experiences are fresh in their minds.

The following extract from a child's log book illustrates how 'real' the adventure game becomes to them.

MISSION 1

Equipment:
1. Periscope
2. Gun
3. Spade
4. Torch
5. Rope

We blasted off from base to 0808 and discovered a Kleptoe holding the air pressure gauge. We did not ask her for it and she walked away and picked berries. We retrieved the item. Soon afterwards we travelled to 0313 where it was desolate except for twelve stones. I decided to look under the tenth and found the manipulator arm. We zoomed off to 0107 and discovered the speed brake control. Just as the captain picked it up a large creature came and we tripped it up with our rope. On our way to 0405 we noticed a strange shadow looming in front of

us. Captain said not to worry but he was wrong. It was a range of mountains and we hit it straight on. This was the end of mission 1.

Items retrieved:
Air pressure gauge
Manipulator arm
Speed brake control

A computer adventure game has the power to arouse children's interest and enthusiasm and as their involvement deepens and their motivation increases, the quality of their imaginative writing becomes richer. It is desirable to establish a definite link between ideas for creative writing and the characters involved in the adventure game. Below are some examples of ideas to stimulate such activities in the development of language.

1. Imagine you are an alien sent on a mission to earth to investigate the possibility of your species invading it and living there. Write about your adventure including your impressions of the land, people etc.
2. You are a newspaper reporter returning from the planet on which your computer adventure takes place. Write an article which will keep the public interested.

Word Processing

The opportunity to write for a different audience, other than the teacher, is another extremely valuable activity in the language curriculum that can be developed along with the adventure game through the production of a class magazine using a word processor.

By producing a class magazine the children will:

1. Extend and develop communication skills.
2. Develop an awareness of drafting and editing.
3. Receive opportunities for recording ideas and opinions.
4. Acquire skills in word processing.
5. Gain more control over their processes of writing.

This idea of using the word processor for the production of a magazine is an excellent example of showing how the computer can be shared among a whole class, because while one little group is producing drafts at the computer keyboard for their contribution to the finished product, the other groups are planning, designing, interviewing and producing illustrations *away* from the keyboard. Creating a magazine also gives opportunities to use the word processor alongside other resources integrating it into other areas of the primary curriculum.

These include:

(a) Mathematics – designing the cover using turtle graphics . . . .
(b) Art – illustrating the various stories . . . .
(c) Imaginative writing – poems, stories . . . .
(d) Recording information – talking to and interviewing . . . .
(e) Drama – plays and debates . . . .
(f) Music – composing songs.

Drama

There are many opportunities for activities in drama and debate, for example, the children can pretend that they are a well known presenter of a television chat show and that they have to interview certain characters from within the adventure game. A group of children can take on the role of the guests on the show while the remainder of the class become the television studio audience. This can be dramatised and perhaps recorded on cassette.

If the children have not had much previous experience in interviewing they can acquire some proficiency and begin by interviewing each other about topics of interest such as favourite games, television programmes, hobbies, toys etc.

Art and Craft

Adventure games seem to be a source of many exciting ideas for activities in painting, model making, collage work, murals. Designing posters which advertise certain aspects of the program is particularly interesting as this activity encourages the children to look around their town and observe advertisements on buildings, buses and windows. They can also make notes about certain television advertisements and comment on the target audiences, the language used and the graphics involved. Another interesting slant is to construct and design advertisements, and this can become a very humorous and stimulating experience.

Music

As well as teaching songs related to the adventure game the children should be encouraged to compose simple music to accompany the program. Another activity which will help develop sound discrimination is to use an extract from their log book and dramatise it, adding appropriate sound effects using a variety of untuned percussion instruments:

Swanee whistle – space craft taking off;
Guiro – squeaking doors;
Kazoo – strange creatures;
Cymbals – crashing into mountains;
Claves – knocking sounds.

They could also use their recorders to compose little jingles and slogans to advertise the particular adventure games.

Environmental Sciences

Certain computer adventure games, which are currently being used in primary schools, lend themselves to the development of a theme on conservation. The children can consider the effects on plant life, animal life and the weather when forests are cleared for the development of factories and housing estates.

WATER POLLUTION *effects* PLANTS
effects OXYGEN *effects* FISH

This can be illustrated by using science experments to show that plants give out oxygen and if desired can lead on to fish and how they breathe using gills.

Mathematics

The amount of mathematics involved will vary depending on the choice of adventure game because, while some only demand simple co-ordinate work, others demand skills in using a compass or managing large numbers. A valuable activity which can be developed as a result of using an adventure game is the creation of a database on a topic evolving from the adventure. As well as developing skills in information handling this activity gives children the opportunity to carry out a variety of problem-solving activities. For example, by creating a database on eating habits the children are involved in weighing people, measuring them, working out averages etc. and this can help develop and promote mathematical skills and concepts in:

proportion
measurement
weighing
graph work
forming strategies
approximation
patterns
record keeping

I have attempted to illustrate how a computer adventure game can be used in a creative and imaginative way which changes your classroom into an even richer learning environment and, in doing so, has the power to inspire activities across the primary curriculum. Finally, the successful use of any software package requires one additional element.

I'll leave you to discover what that is!

Reference

The space exploration program referred to is *Spacex* from 4Mation Educational Resources, Linden Lea, Rock Park, Barnstaple, Devon EX32 9AQ. BBC disc £10.40, cassette £8.65, Spectrum cassette £8.65, includes p&p but add VAT.

Magic adventure

Carol Lancaster
Greatworth Primary School, Nr Banbury

'Did you find the tickets to the castle?'
'How many baby rabbits did you see?'
'I don't think the talking tree is horrid?'
'I know the magic word – sh! it's a secret'.
'I fell down the hole and Richard left me there! Did you get to the castle?'

These are just a few examples of the language stimulated in a classroom by the computer program *Magic Adventure*.[1] It is a very simple adventure program, ideal for young children (infant age), which just uses the function keys (BBC version) or number keys (480Z). There is only one page of instructions on the screen. The places to visit are printed on a strip of paper placed by the appropriate keys.

Two children explore the various scenes on their adventure. They may visit the talking tree, the tree with a sign, mummy rabbit, the cage etc. In the course of their travels they hope to find two tickets to the castle and the magic glasses; various clues are given on the way and questions asked. The journey evolves differently depending on how these questions are answered. The graphics are delightful and the sound interesting.

Magic Adventure is not a program to use all the time, it would spoil the excitement; but, used carefully, it brings something into the classroom that I could not do myself. I found that it was most successful when linked with a project on magic.

The interest and excitement which this program creates leads to much discussion. The two children playing the game have to make

decisions, and perhaps the hardest part for six and seven year olds is agreeing about what to do next. There is little distraction when children are using this game and the need to read what is on the screen greatly motivates the reluctant reader. These children gain confidence and I have had some whose reading has taken off, inspired, I am sure, by this program.

Whilst travelling on this adventure, things have to be remembered and situations recalled – the need to rush and fetch pencil and paper, to ensure nothing vital is forgotten, is a joy to see – writing for a purpose, not just because the teacher says so.

Many other activities have developed from this program – the children have written their own adventures, made sequence stories, zig zag books, their own adventure books (much of it in picture form), jigsaw stories for someone else to put together. We have work cards which stretch the imagination that bit further e.g. 'Write a spell to put in the spell jar', 'Put on the magic glasses (made from card and coloured cellophane). What can you see?' – all on castle-shaped cards.

Creating large pictures of the scenes – the talking tree loses its leaves (fits in well in Autumn), making tickets to go to the castle, fairies, butterflies, they all lend themselves to creative work of one kind and another, and, of course, the children are full of their own ideas. The program really 'came alive' when we made a talking tree out of cardboard boxes – it was large enough for a child to get inside and make the tree actually speak. The conversations which took place were well worth eavesdropping on; parents and younger brothers and sisters were brought in to listen to the tree!

I have found that some children are unfamiliar with some of the words in the adventure so . . . we now have a *Magic Adventure* board game which, although it doesn't give any secrets away, does help in an exciting way with word recognition. The object of the game is to collect as many tickets to the castle as you can before the jigsaw magic glasses are made. The game has proved most popular – other classes borrow it and it means you can still play *Magic Adventure* when it is not your turn for the computer.

These then are just a few of the ideas I have used in school, there must be many more. I think the reason for using the program really came to light when I taped two boys on their adventure – the conversation says it all. Here is only a small part of it:–

William and Patrick are near the beginning of the adventure and are discussing what to do first – they have tried to get to the castle before.

W: What next?
P: We need to go to the spell jar first.
W: But how do we get to the spell jar?
P: Look in the hole.
W: I know.
P: Oh yes, I need the ladder first.
W: I know but how do we get the ladder?
P: You use up one more spell.
W: How do you know?
P: Then we've got one spell left.
William presses the key that 'calls the fairy'.
W: The fairy says you need the magic glasses to see the castle – only one spell left.
P: What next?
W: I don't know, what next?
P: We haven't got the ladder.
W: How can we get the ladder;
P: We don't want to use our spell up, that's how we get to the castle.
W: Go to the . . .
P: Don't go to fairy.
W: I never went to the fairy.
P: It's lucky we've done that.
W: I know where the fairy is.
P: David and Sarah got there two times.
W: Richard knows how to get there.
P: Does he know?
W: He got there today.
P: How does he do it? Come on let's get to it, let's get to it fast, get to the butterfly again.
W: I don't know where the butterfly is, I pressed 'cage' and the butterfly wasn't there. . . .

As I said, the conversation says it all.

Reference

1. The program is available for the BBC from Kansas City Systems, Unit 3, Sutton Springs Wood, Chesterfield S44 5XF and for the 480Z from Northampton Teachers' Centre, Barry Road, Northampton NN1 5JS.

The main difference between the two versions is perhaps the fairy – she seems to have welly boots on in the 480Z version and hasn't quite got the 'twinkle' of the BBC fairy.

Expedition to Saqqara

Vyron Evans
Headmaster, Tre-Uchaf County Primary School Swansea

This program was used by J4 pupils in the school after I read two articles, one in *MICRO-SCOPE 12* and one in *Monitor*, issue 2. The article in *MICRO-SCOPE 12* was written by Mike Matson, then an Advisory Teacher in Devon. In his article he states that pupils, even the less able, want to miss playtime, discuss plans and strategies, work without misbehaving and so on because, for once, children are finding themselves in a non teacher-centred environment which is fun, rewarding, challenging and free of the mind-crippling influence of red ink. He goes on to state that enthusiasm is contagious and that the teacher can show an infectious enthusiasm which the computer will never match. This enthusiasm can take computer simulations a lot further than the micro where both teacher and child can become Prime Ministers, coal miners, Galileos or Romans.

The J4 class in Sepember 1984 contained a number of less able, less willing pupils who were difficult to stimulate. The class teacher, a very enthusiastic deputy head, was keen to bring out the best in all pupils. I decided to buy a computer simulation to see how much truth there was in Mike Matson's statements. The next question was which one?

In Issue 2 of *Monitor* there is a review of the program *Expedition to Saqqara*. The aims and objectives of the program, written in collaboration with a professor of Egyptology, require the children to map out sites, manage finances, organise teams of workers, direct and record details of excavations and undertake research using reference books on the finds they make. The program requires the children to think, make decisions and share in the frustrations of archaeology as well as the excitement.

This was the program for me and £32.50 seemed a small price to pay for a term's work. Before the program arrived the deputy head, Mr A. G. Martin, and myself decided to take the pupils to Swansea Museum to see the Egyptian Collection and the Egyptian slides they have there, and we also took them to see the Wellcome Collection of Egyptian Antiquities at the University College, Swansea. Both visits gave us valuable background information.

I also contacted Professor Lloyd at the Classics Department of the University as he has carried out excavations at Saqqara which is 20 miles South West of Cairo. He offered to come to the school to show us slides of his excavations and to tell us what he knew of the site. To add further realism to the project Dr Lloyd also gave us information we would need to organise a real expedition and the approximate cost of such an expedition.

Sponsors were now needed to provide the finance for our expedition so I contacted my bank manager at Lloyds (Appendix 1) who agreed to interview a group of pupils as prospective clients seeking sponsorship. He sent us a letter giving details of questions he needed answering (Appendix 2) and when the pupils had worked out their answers I took six of them to the bank to be interviewed. At the end of a gruelling interview, Mr A. George, the manager, said he had pulled no punches and, as all his questions had been well answered, he was willing to sponsor our expedition (Appendix 3). He then gave each child a money box and took us on a tour of the bank to show us how a modern bank functioned.

Letters could now be written to British Airways, the Passport Office and the Egyptian Authorities for our simulated expedition to begin. A full term's work followed where the aims and objectives outlined in Issue 2 of *Monitor* were achieved and work was produced across the curriculum. The class provided a beautiful display in the school andwe were asked to take it to the University for a regional meeting of MAPE. Dr Lloyd was able to come to the meeting with his slides and we had an enjoyable evening explaining the project to all who came.

Alex Frith of the *Evening Post* somehow became involved in the project and as a result she went to Saqqara to visit the actual site.

This has been the most exciting project I have been involved in in fifteen years of teaching and I look forward to using other simulation programs. Thank you Mike Matson for stimulating me with your article 'Failures in the System', for what you said in the article held true for a group of J4 pupils and their teacher at this school.

The excitement of the project was summed up for me when after days of fruitless excavation two very excited boys turned up at my office, having been sent by an equally excited teacher,

to tell me that a chamber had been found and as I entered the classroom a great cheer went up as a piece of sculpture was discovered. Even the less able, cynical J4 boys were cheering and eager to log this find in their notebooks.

Thank you *Monitor* and *MICRO-SCOPE* for helping to make this project possible.

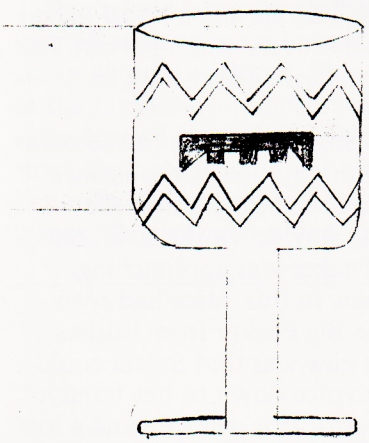
Treasures

Digging down in the sand
On the hot and dusty land
Digging for a Pharoahs tomb
Buried in a glorious room.

There we found the treasures of old
Trinkets, goblets and masks of gold
All of this was a fascinating sight
Jewels and stones all shining bright.

Boxed and crated for future display
To show us the Ancient Egyptian way
Now on view for all to see
The splendour that will ever be.

by
Louise Jones



Appendix 1
Initial letter to Bank Manager

Expedition to Saqqara

I should like to take six colleagues to an area 20 miles S.W. of Cairo to excavate the Necropolis of Saqqara and I should be very grateful if Lloyds Bank would finance our expedition.

The financial aid required is as follows:-

Air fares to and from Cairo 7 @ £500	£3,500
Film and processing 120 films @ £6	£ 720
Spare Camera	£ 150
Hotel in Cairo 2 nights @ £25 per night each while awaiting clearance	£ 350
Food £3 per person per day	£1,260
Local labour 40 men @ £2.50 per day	£6,000
Man at the E.S. Villa £4 per day	£ 240

We shall be on site for 60 days so the grand total is £12,270.

Our departure date depends upon how soon we can obtain sponsorship and naturally full credit will be given to our sponsors at all times. We are following in the footsteps of Walter Bryan Emery in his search for the grave of Imhotep, grand vizier to King Djoser and builders of the great Step Pyramid.

Appendix 2
Reply from Bank Manager

I was very interested to learn from your letter that you and your friends at school are following computer simulation of an expedition to Saqqara in Egypt and I am sure that it must be very interesting and enjoyable.

We would like to help you in raising suitable finance for the project, but I require more information.

Would you let me know the following:-

1. How many of you will make the journey and when you intend going?
2. How long will you stay and when are you coming back?
3. When you get to Egypt what will you be looking for or studying?
4. What would be the cost of the journey to and from Egypt? Are you flying?
5. How much will your equipment and special clothing for a hot climate cost?
6. Details are needed for the cost of staying in Egypt – hotels, food etc., or do you intend to live in tents?
7. Will you be using local guides and helpers, and if so will you have to pay them?

If you would like to call at the Bank to discuss your project, please let me know and at the same time I am sending you my best wishes for a successful expedition.

Appendix 3
Letter confirming sponsorship

Further to your call at the Bank with your Project Team, I was very impressed with the careful preparation of your computer simulated expedition to Egypt to excavate the Necropolis of Saqqara.

The cost of your 60 day visit is much higher than I expected but as you are all very keen and enthusiastic to undertake the exercise, I am pleased to say that Lloyds Bank will sponsor you for the expected costs.

Please let me know how the exercise proceeds and I send you again my best wishes.

Reference

Expedition to Saqqara, published by Ginn & Co Ltd, Prebendal House, Parson's Fee, Aylesbury, Bucks, HP20 2QZ. BBC disc, cassette, Spectrum cassette, RML 480Z disc, each £35 + VAT.

The 32 bit mice and the Big Pecker

Don Walton
Deputy Headteacher, Houghton CP School

For many years mice have lived in the hedge on the side of the cornfield. It's a long hedge so there is room for lots of different families of mice. There are the black mice with white feet which we shall call the Twinkle Toes. There are the ordinary brown mice with noses which were slightly pinker than normal. We shall simply call them the Nosers, and there is the family with the really beautiful white stomachs, which they were too embarrased to show anyone, they are called the Shys.

You would have thought that, with the corn only about ten yards away across fairly smooth ground, there would have been a lot more mice in the hedge in either more or bigger families. If you had counted them a while ago you would have found only six in the Shy family, five in the Twinkle Toes and only four in the Noses. These families were very small, for mouse families, but this was because of the Big Pecker.

None of the mice really knew what the Big Pecker was. They did know that it was like a big black mass with large yellow feet. Each foot had three toes at the front and one at the back and if it came near them, it wouldn't be long before a stabbing spike would come whooshing out of the air. If they weren't quick it would grab them, and carry them off, never to be seen again. The Big Pecker spent all his time walking around the cornfield looking for mice who were about to make a dash for the cornfield from the hedge or back again. He preferred them coming back because they were fatter.

The problem was that the mice had no way of telling each other about the Big Pecker. They had no means of communication and none of the mice had ever thought to develop one. Perhaps it was because they didn't live long enough. They could squeak but it didn't really mean anything until one day one of the Shy mice started experimenting.

We will call this mouse Sylvia. At this point, the mice couldn't give themselves names because they couldn't speak, but it is easier to tell you the story if she has a name.

She was the shyest Shy there had ever been. She spent lots of hours on her own in the hedge, under the branch, where the blackbird sang, just listening to his lovely voice. After a while she began to try and imitate his different notes but after a few days of hard trying she didn't think she had made any real progress. She had only managed to make two notes with her mouth, a high note and a low note. The high note she made by closing her mouth into a long, narrow, vertical shape like this:

and the low note she made by making her mouth into a very round open shape like this:

Having discovered this, it was some time before Sylvia put her new skill to any use. No one is quite sure how she worked it all out, but the Shy family began to grow in numbers as a result of Sylvia's discovery. It wasn't that the Shys were having any more baby mice because mother mice are very busy having a lot of babies all the time. Sylvia's discovery was all about The Big Pecker and information. This is how it worked.

Before any of the Shys ran across to the corn field Sylvia would climb up one of the bushes in the hedge and along the branch until she could see quite a long way down the field. She could see if the Big Pecker was approaching. There was nothing new in this. Mice had seen the black mass of the Big Pecker from bushes before but what was new was that Sylvia could send information by voice down to her family. She sent a high squeak 1, if it was safe and a low squeak, 0, if it was dangerous. This saved lots of little Shys from the Big Pecker and it meant they were able to get more food than the other families. You can see how important to the Shys information was. Even just one bit of information.

All the other families learned about 0 to 1 and after a while they too were able to save their children from the Big Pecker. What made it easier for all of them was that the Big Pecker always went round in the same direction so that when the high warning squeak was heard the mice always ran in a direction which took them away from the Big Pecker, and also towards the hedge. But disaster struck. The Big Pecker, who was feeling hungry, changed his habits. He began to go round in the other direction as well.

Many small mice lost their tails, and sometimes their lives, during this time, and it was

Norbert Noser who came up with the next big discovery. Again it was very simple but very important. Norbert discovered that if you sent information in pairs of squeaks you could say when danger threatened and where it came from, like this:

10 – that's a high squeak and a low squeak, meant 'Danger from the right'.
11 – that's a high squeak and another high squeak, meant 'Danger from the left'.
00 – that's two low squeaks, meant 'Safe'.
01 – that's a low and a high squeak, meant 'Safe but take care'.

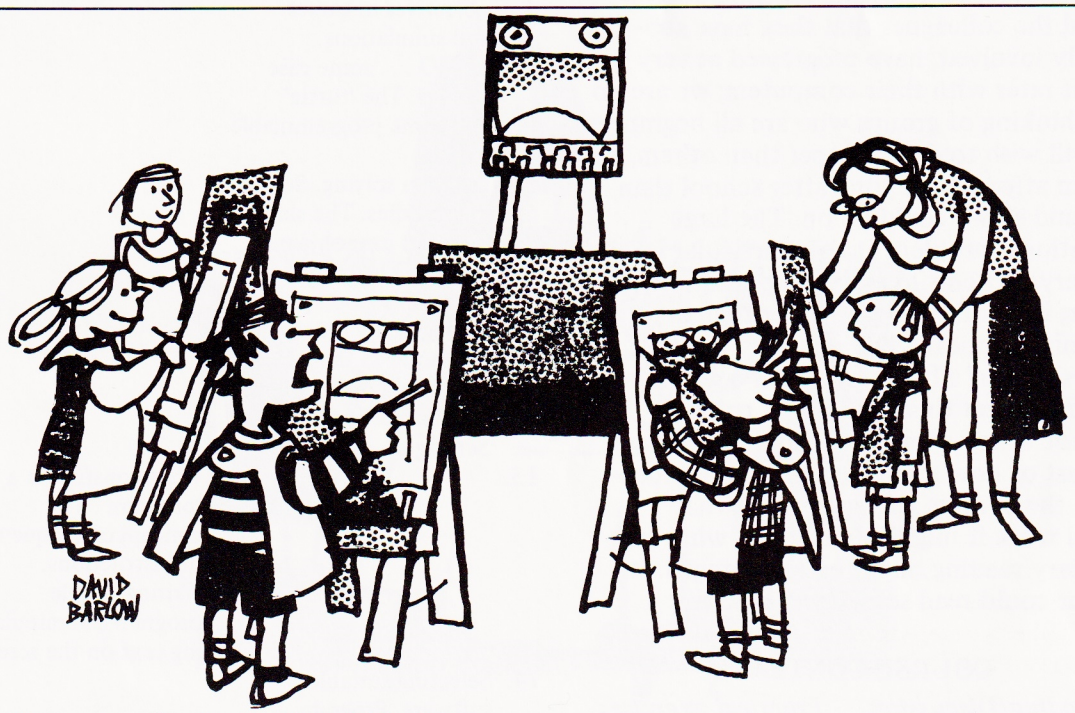
In fact Norbert had discovered that with two bits of information it was possible to send four messages. The Nosers were the first two bit mice.

Well you can imagine that the mice were not going to stop there. If you could join two bits of information together you could join 2,3,4, 5,6,7 and 8 squeaks. 8 squeaks joined together allowed the mice to send 256 different messages. I am not sure what all the messages are, but I do know that the Big Pecker became thinner and thinner and eventually had to eat lizards, which he hated, because they can't squeak and therefore have no method of sending information.

The mice were now really doing well and wanted to send more messages to each other about all sorts of things. This was very important as the families were becoming so big they were spreading all around the field. They wanted to share their information about food, danger and any other things important to mice. And they wanted to give each other names too. On they went, linking more and more squeaks together, but there were two difficulties which are still causing trouble and it will be some time before they can overcome them.

The first one is the problem of time. It takes quite a long time to do 16 squeaks. The mice soon found that they could communicate more quickly if they were closer together. They also found that they could shorten their squeaks to a quarter their usual length and get more squeaks to the second. They discovered another strange thing and that is they can talk faster on a cold day. Whenever they want to talk very fast they find somewhere really cold to do it.

The second and most difficult problem is teaching the mice, who were brought up on 8-bit squeaks, how to speak in the new 16-bit language. There are some mice, it is said, who are able to use a 32-bit language but very few people know where they are. Some say that they have gone off to see whether that big round thing in the sky at night, is really made of cheese.



'It was more fun drawing Mavis Titley!'

Learning more about your micro

Ron Gatfield
Advisory Teacher for Microcomputing, Hampshire

Many schools have now had their micro through the Department of Industry scheme for some months. A great many teachers now feel relatively competent at loading and running programs and are able to devote a little more thought to the essential educational aspects of integrating computer assisted work into the general curriculum and into their mode of classroom operation. There is, consequently, a growing demand for what might be termed '2nd stage courses'. Teachers are anxious to know a little more about this new machine and to use a few more of its many facilities. They are anxious too, to know something more of the general background of computing, 'computer appreciation' to use a much laboured term.

There are some obvious difficulties in setting up such courses particularly when we realise the very large numbers of teachers concerned. There are, as yet, few Teachers' Centres with adequate facilities unless teachers, tired at the end of a school day, are prepared to carry their school system into a Centre. Since the initial 'Two day' course, offered to a very small percentage of the teaching force, they and the colleagues that they have subsequently involved, have progressed at very different rates with their computers; we are no longer thinking of groups who are all beginners. Some will wish to delve deeper than others, some can afford more time after school than others, and so we could go on. The large organisational problem at this particular level seems very difficult to solve. The solution, however, is possibly much nearer than at first it might appear.

Let us first of all consider what a good course designed to meet this need might contain. Let us not worry overmuch about how long it would last or how many sessions but concentrate on the content of the course, what practical work it might include and what supplementary reading might be encouraged. In outline it could read something like this:

COURSE CONTENTS

	Reading/Discussion	*Practical exercises*
1.	General introduction to microcomputing.	Complete revision of the system connections.
2.	Some everyday applications.	Review of all the keyboard functions.
3.	Some implications of the new technology.	
4.		Storing material . . . saving programs.
5.	Ways of learning via a micro-computer. Reviews of educational computing techniques.	
6.		Various display modes . . . their uses, their advantages and disadvantages.
7.	Structured reinforcement or Drill and Practice. The role of the micro in the classroom.	
8.	Information Handling. Review of world implications. An approach to teaching information handling. A school case study.	Some information handling programs. How micros handle numbers and strings.
9.	Games and Simulations. Some case studies. Their use in language work. Aims and objectives in games and simulations.	
10.	LOGO . . . some case studies. The 'turtle' and some programmable toys.	
11.	Problem solving. Some case studies. The skills involved in problem solving. The contribution of the microcomputer.	
12.	Managing the micro-computer in the school. Classroom observations . . . the teacher's role. Setting up program libraries.	
13.		What constitutes a 'program'. The concept of a sequence of instructions. Writing simple programs. Manipulating text on the screen
14.	Selecting suitable software. Program evaluation. Some case studies. Teachers and programmers.	

15. Making 'back-up' copies of programs.

16. A review of values. The computer and education. Evaluating the effect on children's learning.

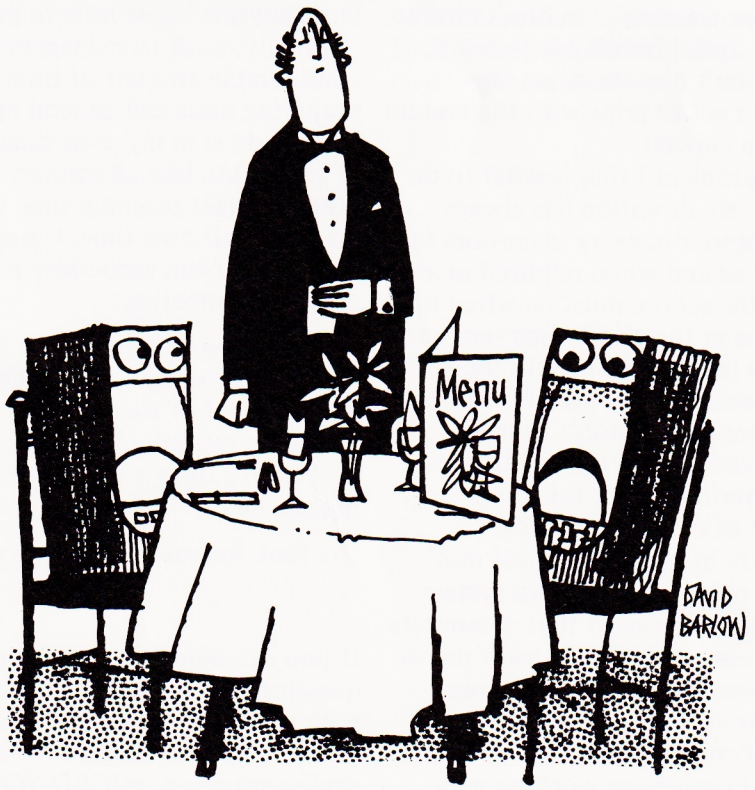
17. Further program techniques . . . e.g. Loops. Introducing colour. The use of the 'function' keys. Adapting programs for your own use.

18. The way forward . . . Education for the future.

A few, and I suspect very few, will have recognised the above course outline as the Micro Primer distance learning pack, provided to every school that has taken advantage of the Department of Industry's scheme for Primary Schools. This means that there is probably one in your school right now. It was housed in a large grey plastic wallet packed in with the software. I expect that you have at least seen it. I suppose, with hindsight, that it was a trifle naive of the planners to expect teachers to study this pack thoroughly at the time they first received their micros in the schools. Not unnaturally, teachers unpacked their boxes of goodies, connected up the micro system, read enough to get it under way and were soon totally engrossed in loading and running some of the programs provided. The study pack soon took a back seat and in many cases has not seen the light of day since. This is a great pity as it is a well planned, well constructed course of real benefit to those who take the trouble to work through it.

The course designers spoke of 30 hours of study involved in the pack, but I think this may well be an underestimate for many, if they work through it conscientiously and thoroughly. But you can take your own time, you are under no pressure. You can decide when to start each unit and when to stop. Study it at home or at school, or both. Make your mistakes in private and remember that we all make them. Remember also that typing in something in error can do no harm.

If you master the contents and concepts offered by this course you will certainly be well placed to develop the educational use of the micro in your classroom. In addition, you may find sufficient growing interest aroused to tempt you even further, wanting to get to grips with the increasingly important peripherals such as disc drives and printers, to develop the use of LOGO with your class, to understand more about the very important Information Handling programs and techniques that are going to become so significant in the educational scene of tomorrow. Give it a try. You may have a great deal to gain. It can be strongly recommended.



'Oh no, not turtle soup!'

Networking

Peter Long,
Headmaster, St John's CE Primary School, Sparkhill, Birmingham.

The purpose of writing this article is to stimulate a response. This is a cry for HELP – is anyone out there listening?

Having won a national competition, my school finds itself with a computer network consisting of an RML Server with twin double density 5.25" drives, four 480Zs and Microvitec monitors, and a printer. I know of one other primary school in the country with a network, and there must be others, and many I know are now considering purchasing such a system – or a shared disc system. I am sure that the pooling of experience would be beneficial to all of us so please do respond with your experiences and perhaps even answers to my questions.

The first problem I found was actually managing the system. There are not many, even in the computing centres, who have experience at managing a network. I have been fortunate with two contacts, and the *User Guide* is very good, so that now at least I feel fairly confident. If I can do it then most people can, for I have no specialised computer training – so don't give up. I do feel that some initial training is essential, but you certainly don't need to be an expert. Mind you when you get to grips with the system you will feel like an expert!

But the biggest problem I find is what to do with the machines. My intention has always been to have a computer in every classroom (and the office!) for use as and when required in any lesson. To do this the school must be wired up, and the connections in the classrooms very carefully soldered. One break anywhere in the wiring and the whole system fails to operate. Who will do this? And at what cost? I don't have an answer yet apart from employing an outside contractor whose quotation for the job is far more than the cost of two more 480Zs!

Used permanently in a single room (I don't have a spare single room) the network system is excellent. But I am convinced that computers should be in the classrooms. Which leads me to problem number two. Imagine the working server disc in one drive, and on my working server I also have *Wordstar*, *Quest* and *Logo*. Perhaps a couple of classes are working with these programs. Another class wishes to use *Surburban Fox* which is on disc 2. This is put into the second drive. But then another class wishes to use a program on yet another disc. Impossible! And those classes using *Wordstar* or *Quest* will want to save files, so they need to dash down to the server and put a blank disc in B drive – but they can't as this is being used. If the only answer is to buy Winchester drives, then I begin to question whether it is worth the cost. How many stand-alone stations could I provide for the cost of Winchesters, server and wiring?

I am extremely concerned about these practicalities of operation. Has anyone experienced using a network in different classrooms in this way and if so can it work? Or is the system limited in the way I have illustrated and if so is it more sensible to provide stand alone stations in the classroom? An immediate problem which would occur if several classes wished to use the same program at the same time would be the provision of several identical discs. But is this as likely to happen as in my illustration of different classes of different ages using different programs?

Problem number three is nowhere near as serious, but is very annoying. Every time the printer operates it uses a whole page to print a useless 'heading'. What a waste of paper! Does anyone know how to prevent this?

Finally, back to management. There is a considerable amount of time required for preparing discs and general upkeep of the network. I do it in my own time, and any members of staff who, like all primary teachers, have 100% contact teaching time would also have to do it in their own time. Compare this with comments from secondary colleagues overheard at a recent meeting:

One asked 'Do you think five periods a week in addition to my 'frees' is enough for the management of the system?' to which his colleague replied

'I have 2 days a week free for computer management'.

I look forward to reading your views . . .

* * *

If you can help Peter with answers to his questions or, if you are an RML network user, with more questions than answers, who would like to be put in touch with other people in a similar situation, *MICRO-SCOPE* will establish a contact list and provide a forum for the exchange of information. Please contact *MICRO-SCOPE*.

Software classification

Peter Hampson
Albany Junior School, Tyne and Wear

If software is to be used efficiently some kind of classification system needs to be introduced. One teacher's response to a specific piece of software is likely to differ from another teacher's response. In order to avoid this problem the scheme I am suggesting excludes value judgement. I would include the following areas of information, none of which are, necessarily, mutually exclusive:

1. *Type of program*
   a) structured re-inforcement
   b) information handling
   c) games and simulations
   d) problem solving
2. *Possible uses*
   a) learn facts and skills
   b) develop conceptual structures
   c) develop general strategies and procedures
3. *Teaching opportunities*
   a) exposition
   b) discussion
   c) practical work
   d) consolidation and practice of skills and routines
   e) investigations
4. *Group size*
   a) individual
   b) group
   c) class
5. *Areas of use in a topic*
   a) one stage only
   b) to generate work at different stages
   c) a topic in itself
6. *Documentation*
   a) ready to use
   b) instructions throughout
   c) initial instructions only
   d) skill needed before use
   e) other – written
      menu
      help
   f) option to turn the sound off
7. *Age range*

This information could be kept in a variety of forms. A ready duplicated pro-forma presenting all the categories in a tabular form would be easy to manage.

Acknowledgements

I would like to make the following acknowledgements:
1) The idea for classifying the type of program came from MEP Primary Project documents.
2) The teaching opportunities (Heading 3) are derived from *The Cockcroft Report*.
3) Ed Vaughan, Lecturer in Mathematics, North Riding College, Scarborough, helped me to develop this scheme.

Look — no hands!

Joe Telford
Assistant Director, Cleveland ECC

> 'Play that bit again Kirsty! The bit where you went Da Da Da-ah with the recorder.'
> 'You mean *Frere Jacques*, and its not Da Da Da-ah it's G A B G'.
> 'Great. I just need the note names to put in here.'
> 'We'll get it if Sir sees we've copied somebody else's tune instead of doing our own.'
> 'We're not really copying boring *Frere Jaques*, we can change it for our piece. Let's play it six or seven times and make it change to something different as it plays, 'cos its been *Frere Jaques* for so long it must be bored!'

A conversation from two children trialling *Musilog* in a Cleveland Primary School. Before examining just what facilities *Musilog* can bring to support music education, perhaps we should consider what aims we think are important in general terms in learning experiences with sound and music.

There is no doubt that the majority of children live in a sound-filled world. Television, parents, teachers, peers and even the natural world contribute greatly to an often ceaseless flow of information in terms of sound. This flow is selectively filtered by the children, often to the benefit of 'Top of the Pops' but occasionally to the detriment of the teacher. Many children live in a musical world, filled with jingles, schoolyard rhymes and pop music, yet what are the objectives which schools assign to music?

Certainly we are impressed by little Sarah and her violin lessons. Certainly we tell our children . . . 'wouldn't it be nice if you could play the guitar like John Williams'. Often, however, as parents and teachers we fail to consider that the musical world is progressing around us. Why shouldn't the little girl tapping out a rhyme on her skipping ropes become a drummer in a group, or why shouldn't the lad with a £35 Casio organ become an 'ace' keyboard performer?

Music technology is fast reaching the point where it is possible for everyone to become an executor of music. Perhaps then we need to widen the aims of our music education. 'Ah!', we say, 'but that isn't all there is to music!'. We do aim to help with socialising, co-operation, group activities, aural training, composition etc.

In real terms we place great importance on the compositional process and its attendant skills. However, how many readers of this article can honestly say that they have ever composed a single piece of music? Yet the real world is full of lyrics, tunes, sound pictures and jingles. Until now one of the main problems has been that the test of composition is execution, and execution has always been a province of the dedicated person. The more complex the composition the better the executor needed to be.

With the arrival of computers the reliance on execution by human hand is diminished. I don't mean that it should no longer be admired or sought after, simply that computers can release the composer in all of us, by handling the execution of complex (or otherwise) compositions. The leading example of this is probably the Yamaha CX5 music computer which will replay compositions with up to nine instruments simultaneously.

However, the route to composition has many bends, and perhaps we need to explore the more easily available facilities of the BBC Micro, as well as examining the more specialist keyboards and micros. Certainly, in my experience, teachers do not thank you for recommending that they spend large sums of money.

This is not the place for agonising as to the quality of the BBC micro sound. Suffice it to say that within the octave range from C below Middle C to C above Top C the chromatic scales are reasonably in tune when one voice is used at a time. With a simple extension to an 8 ohm loudspeaker the sound output is sufficient to fill a classroom, and will drive a couple of headphone sets.

The major problem which is encountered is the interface to the music commands of the BBC Micro. Although they are very flexible, they just aren't aimed at musicians, teachers or children. This means that external software has to be investigated. I found that for wide use, external software was either applicable but expensive (a £20 pack could cost a county an eventual £4400 for Primary Schools alone) or the material was of little value.

The end result was that over four months of evenings the basic *Musilog* was put together, and is now being trialled in Cleveland, Lincolnshire and Northern Ireland. From comments from these trials, *Musilog* is undergoing modification

and improvement. The aim was to produce a flexible and general purpose dialogue language which would support thinking skills in the area of music education. At the time that *Musilog* was being specified, LOGO was much in the news as implementation after implementation failed to appear.

Access to RML and Apple LOGOs indicated that the LOGO environment has much to offer the composer (who would almost certainly be programming). The idea was that children who could handle turtle graphics should be able to handle the music dialogue language. Despite concerns about the base level of potential users, it was decided to produce a language with LOGO-like features which could be immediately and powerfully used by children with some idea of musical notation.

This meant that *Musilog* would need teacher involvement, but because of the LOGO type environment, *Musilog* could support both teacher and child learning together.

It became obvious that numbers were not an initial way into composition, because traditional music notation uses note names or note shapes whose position on a staff indicates their name value. The closest approach to children handling note values with the 'QWERTY' keyboard is by resorting to note-names like: C D E F G# A B♭ etc. . .

To make the environment more immediate we decided to make these letters *Musilog* 'primitives' so that simply by typing

E D C

the matching notes will play. The duration of any note is set before calling it with a primitive from the list [SQUAVER QUAVER CROTCHET MINIM SBREVE]. For example:

QUAVER C C CROTCHET C

The procedural approach of LOGO is employed to build phrases of tunes, so that part of 'Three Blind Mice' might be:

```
TO part1
CROTCHET
REPEAT 2 (E D C R)
```

which would be played by simply typing:

part1

In addition to direct access to tune creation, there are several primitives which manipulate the music, for example:

TEMPO which slows down or speeds up the notes being played.
OCTAVE which transposes up or down by complete octaves.
VOLUME which controls the loudness of the piece.
TRANSPOSE which alters the pitch in semitones.
PITCH which allows quarter semitone control over the music.

A selection of instrument 'types' is provided:
[ORGAN KEYBOARD WOODWIND STRINGS CYMBAL TRIANGLE HIDRUM LODRUM MIDRUM UPDRUM DOWNDRUM]

Primitives for saving, loading, printing out procedures and editing are included and access to the BBC Micro Operating System is provided so that * commands can be used.

Apart from composition, *Musilog* has been used to introduce children to musical terms by themselves defining the language eg:

```
TO piano
VOLUME 6

TO forte
VOLUME 12

TO ff
VOLUME 15

KEYBOARD piano part1 forte part2 ff part3
```

might be a particular composition. While another might be

```
TO lento
TEMPO 18

ORGAN lento death.tune
```

Working with the Solfa scale might lead children to redefine primitives as

doh ray me . . . .

The importance of maintaining the *Musilog* experience in parallel both to standard notation and to normal classroom sound-making cannot be over emphasised. Often the basis for a *Musilog* composition might be a practical activity, singing, recorder playing or an exploration of the piano keyboard. Equally these activities might result in some *Musilog* work.

Schools with more than one micro available might wish to experiment with groups producing melody lines, descants, accompaniments or rhythm backing, producing complex compositions, played together on the multiple micros. Another interesting idea is in some children producing a *Musilog* melody line while other children play their own rhythm or bass accompaniment.

Rather than drilling the children with music facts, *Musilog* aims to provide a situation in which teacher and child can share control of part of the music environment, encouraging skill based learning, the vitally important thinking processes and making composition more accessible to the child who may not be an adept instrumentalist.

Musilog is not available yet, contact Joe Telford, CECC, Prissick Bay, Morton Road, Middlesborough, Cleveland.

Inky fingers? No, Quinkey fingers!

Yvette Blake

A word processing project by class 3, Alder Coppice Middle School, Autumn Term, 1984.

For me September 84 heralded not only a new class of 32, 10 to 11 year olds but also the start of an interesting new project, for I had been asked to trial Microwriter Quinkeys. I was pleased to accept as I believe in the varied use of a computer within the classroom and also I enthusiastically support the possibility of a viable alternative to the Qwerty keyboard, especially if this avoids the situation whereby children spend ages gazing at the keyboard, stabbing away at the keys with one or two fingers. With the increased improvement in data-base and word processing programs the ability to touch-type quickly and easily seems an obvious advantage. However, I am not, in general, an enthusiast of the 'teach yourself to type' keyboard skills programs and since watching my mother trying to learn touch-typing on a typewriter, have been quite put off! The Quinkey, then, seemed an interesting alternative. It is a small, paperback book sized, hand-held device with four keys positioned under the finger tips and a further two keys operated by the thumb. The keys are sensitive and easy to depress; however a character is produced only when the keys are released, allowing some leeway for twitchy fingers. It is attached to the BBC machine, via the analogue port, by a long lead which allows the user to sit comfortably away from the computer at a suitable distance from the monitor. To help learn the key combinations, (which produce letters, numbers, punctuation etc), Microwriter have produced a manual plus reference cards to guide you through their recommended sequence of learning. However, the Quinkey's greatest advantage, as far as I was concerned, was the facility to have up to four operating simultaneously. This allowed four children to work independently on the computer at any one time.

I introduced the project to the class, explaining that word processing could make writing a 'best' copy of their work for display purposes redundant, (heart-felt cheers at this news!), whilst touch-typing on the Quinkeys should allow them to concentrate solely on the screen and their work. At this stage I had only dabbled at using them and so could not be considered an expert; we would have to learn together. To increase the frequency with which each child used the Quinkeys, I split the class into two groups, each group using them for about six weeks, although anyone was free to use them during playtimes. The first group began by using a program called *Welcome*. Here the screen is divided into four differently coloured windows corresponding to Quinkeys 1–4. The children were encouraged to practice and experiment with the alphabet, numbers and punctuation at their own pace and order of preference. I encouraged them to use the manual and cards although this was not mandatory. I gave precise instructions only when necessary. Naturally they all wanted to learn and write their own name first. The four users would conclude their turn by playing *Skram*. This arcade type game would test the letters learned that day, for shooting them down required speed, accuracy and a good memory. It was very popular with the children. At the end of a fortnight, most of the children felt fairly happy and confident in using the Quinkeys and were ready to tackle longer pieces of work, so most switched to the program *Quad*. Here the children could write up to 73 lines of text. They could edit their text by moving around, inserting and deleting where necessary. At this stage, their work was saved on disc as we had no printer. *Quad* has certain limitations, notably lines of 37 character length which makes text insertion a little cumbersome. Using the edit commands efficiently took some practice and in the initial stages this is where problems occurred. Early users 'lost' their text from the screen by over zealous use of the carriage return. Other children accidentally 'bodged a hole', as they called it, in their story by pressing carriage return (command c) instead of its neighbour (command k) when they wanted to go backwards. Occasionally, pressing carriage return resulted in that line of text being deleted and we were unable to discover the reason for that peculiarity immediately. However, the people at Microwriter were very helpful, answering all my queries and immediately replacing a Quinkey when I had a rare technical problem. Eventually

our problems were smoothed out as our expertise in using the Quinkeys grew. The children used them with cheerful perseverance and considerable enthusiasm, copying poems and writing their stories.

A class meeting was held at the end of the six week period to discuss problems and pass on tips to the second group. Children who initially experienced difficulty in using only one hand, advised sitting on the left hand or holding the Quinkey with it. Others found it easier to think of fingers, rather than keys, making the letters and suggested having a cardboard diagram of a Quinkey so that they could practice 'fingering' at any time. Some children recommended recording *Skram* scores on a graph so that improvement was easily noted (and compared!) We decided to write out, on card, the edit commands they found difficult to remember. These were then displayed near the computer. For example, one read, 'Comand D (delete) and Command K (go backwards) mend bodged holes!' Other children thought it would be fun to write messages in Quinkey code or organise races, tapping or typing out the alphabet and simple sentences. Most of these activities took place during playtime rather than disturbing lesson time.

The second group, having seen the Quinkeys in use, knowing what was expected of them and profiting from the other's experience seemed to pass far more quickly through the *Welcome* and *Skram* stage and were soon writing stories. As their skill grew so did their creativity and pictures were drawn using the Quinkeys to illustrate their stories. They were used continually and for almost everything, including spelling tests, pieces of comprehension, computer reports, topic work, creative writing and on one occasion, preparing and illustrating a hand-out. This was designed, written, printed and photocopied during one lunch-hour. By December all the class were using the Quinkeys and we experimented with co-operative writing. In groups of two or three they planned an imaginative story based on the adventures of a Secret Agent. In one sitting, between 8 and 10 children were clustered around the monitor, Quinkeys at the ready, discussing, writing, amending and improving their story. In two to three hours, spread over a few days, they had produced from planning stage to mounted copy, a story of between 50 to 90 lines. Our final project was to compile all their work into a book which they called 'Inky Fingers? – No Quinkey Fingers.' This involved compiling, ordering, editing, illustrating and proof reading a book which eventually totalled 56 pages. Thanks to a generous parent each child has his/her own copy. Although the book is not perfect the children have the satisfaction of knowing it is all their own work and each copy has been extremely well thumbed.

I have been very impressed with the work produced using the Quinkeys and *Quad*. It has steadily improved in quality of content, presentation and in volume. The children have increasingly taken more care and pride in all their work both away from and using the computer. Word processing caters for every taste. Some children enjoyed the flexibility of putting down their ideas quickly and then correcting their work, while others preferred to read and correct work with the children concerned whenever possible and the lack of red pen highly motivated the less able or careless child. These children also enjoyed the opportunity to read and review their work over several sessions. Much reading was involved, both of their own and other childrens' work. Circulation of their stories grew as print-outs were stuck into books, mounted for display, taken home or passed around for friends to read. These comments may apply to other word processing packages. However, I feel that using the Quinkeys enriches and extends this experience by making the power of word processing accessible to more children more frequently. My class found learning to use the Quinkeys fun and were enthusiastic about using them. I received as many requests to stay in and use the Quinkeys during lunchtime as I did for the class Spectrum. The children did not seem to find sharing the monitor especially distracting and enjoyed helping each other. Nor were the rest of the class disturbed by them. Of course, not everyone shared the same degree of enthusiasm, speed of learning or working. I did not end up with a class of super-fast touch-typists but some real Quinkey enthusiasts emerged. One boy especially comes to mind. He can write neatly only if he puts a great deal of effort and concentration into this task at the expense of both content and volume. He now reckons that he is much faster typing than writing. We didn't put this to the test but he certainly enjoys his work being readable, smudge free and devoid of 'crossings out'. I am very pleased by what the class achieved in a term and would have liked to see their work at the end of a year. Quinkey experience has been very worthwhile and rewarding.

Points of information

1) The Quinkey Educational Pack, costing approximately £175 contains 4 Quinkey Keyboards, a Quinkey interface pack, and the program *Quad*. For further information contact Microwriter, Unit Two, Wandle Way, Willow

Lane, Mitcham, Surrey CR4 4NA.
Tel: 01 640 8811 or 01 695 0300.

2) After two years of small scale activity using Quinkeys in schools, Newcastle Education Authority has invested £20,000 in providing work stations (BBC, colour monitor, disc drive, four Quinkeys) in fourteen schools. These include eight Junior, three First, one Middle and two Secondary schools. One thousand children are currently involved in this research project with forty to fifty teachers. In addition Quinkeys have been put into Special Schools, ESL Units and Hearing and Speech Impaired Units throughout the city. Initial results reinforce their earlier findings, namely that children find the Quinkeys easy to use, the level of care and attention given to work improves, as do literary skills. These improvements, fostered by the use of Quinkeys and *Quad*, seem to carry over into other school work. Mike Clark, Heaton Manor School, Benton Road, Newcastle NE7 7EB, would be pleased to hear from other Quinkey users.

3) Newcastle Polytechnic have been awarded a £20,000 research grant by the SERC to fund a detailed, systematic analysis of the use of Quinkeys in four schools.

Old Mother Hubbard went to the cupboard
The dog sat in anticipation
But the cupboard was bare, and the tapes were not there,
For she'd spent all the year's capitation.

A close look at wordprocessing

Eric McDowell
Computer Centre, Rolle College, Exmouth

'We've just heard, Eric; we've got it!'. That, from Phil Brooman, Warden of Exmouth Teachers' Centre, was great news early in the New Year of 1985. The planning of November had borne fruit. Our application to SCDC for research support had become a reality: 'Our play is preferred!'

Reports from several teachers in the area served by Exmouth Teachers' Centre combined to suggest that a serious look at wordprocessing at all stages in the Primary School was rapidly becoming a priority, so the invitation from the LEA to consider projects suitable for an SCDC grant was quickly and enthusiastically accepted. The overall objective, to investigate the influence and implications of word processing on language development and use throughout the Primary School, was the central theme of the submission and remains the guiding principle.

The project has only just started, so this is more a statement of intent than of achievement. The findings and conclusions will appear at the end of the project, which, if the planned schedule is fulfilled, will be in March 1986. So a year from now you could be reading all about it.

In the meanwhile, some details might be of interest to individuals or groups similarly concerned. To these, and any others, we extend an invitation to contact us at any time on matters of mutual interest. The initial contact should be with Eric McDowell, Computer Centre, Rolle College, Exmouth, Devon EX8 2AT (tel 0395 265344 ext 58).

There are eight Primary Schools involved. Seven are local to Rolle College (a College of HE, with a large Teacher Education faculty strong in In-Service provision) and Exmouth Teachers' Centre, which is on the College site. In Exmouth there are Exeter Road CP, Bassett's Farm CP, Marpool CP and Brixington Junior, while in the nearby surrounding area are Otterton VP, Woodbury Salterton VP and Ottery St Mary CP. You'll be forgiven if you think that this sounds like a travel agent's publicity for holidays in Devon, but some of us have the good fortune to work here! The eighth school is an 'outpost' in Dorset: Young's Endowed School, Trent, near Sherborne. If this seems a little odd, it should be added that the Headmaster there has recently completed a term seconded to the Computer Centre of Rolle College as a Schoolteacher Fellow, during which time he has been studying the implications of wordprocessing at Infant and Junior levels. Naturally, he was keen to join up with the project.

Almost without exception, the eighteen teachers from these schools do not include the 'computer person' and more than a few have an open mind, a healthy scepticism. Indeed, the Project guiding committee indicated to the participating schools that this was their preference.

The basic hardware requirement is a BBC disc-based microcomputer system, and a printer (it has turned out that this is the Epson RX80 F/T, without exception). To cater for the full Primary age-range, three software packages have been selected: *Prompt, Telebook* and *Wordwise*. Although the finds are modest, they have been enough to top up all the schools to this common specification, and to supply each with printer paper and a number of discs.

The teachers have been introduced to the software in three training sessions, held in the Computer Centre of Rolle College during March 1985, and each has selected the most appropriate package for their age group. Any one teacher is expected to restrict themselves to one package, giving the clear advantage that familiarity and confidence should be quickly gained by the teachers and their children.

During the Summer Term of 1985 the real school-based work will happen. Teachers have been asked to select, randomly, four children and to prepare an appropriate profile on each of them. The profiles, and photocopies of a selection of recent work by these children will be held by the Project team for use in the evaluation, due to start in the Autumn Term of 1985. The brief is that children should be allowed to use the wordprocessing facility in whatever way the teacher thinks appropriate, making no special concessions by reason of their connections with the Project, nor making any special arrangements for the selected, profiled pupils, but allowing normal classroom circumstances and organisation to prevail. At the end of the Summer Term, any change in the childrens' profiles will be noted, and will be available for evaluation, as will all the wordprocessing efforts of the profiled children.

A number of group meetings for the Summer Term are planned, in which progress and problems will be discussed. It is also the intention that members of the Project committee will make some visits to each school. These mentors are (in alphabetical order!): Pat Fox, MEP Primary Link Co-ordinator for the SW; Eric McDowell, Co-ordinator of the Computer Centre, Rolle College; Martyn Reynolds, Teacher at Exeter Road Primary School, Exmouth; and Priscilla Wright, Advisory Teacher for Computers in Education for East Devon. The involvement of two independent evaluators, Howard Crossland (co-ordinator of the Language team in Rolle College) and John Gulliver (Devon LEA Advisor for Language) is an attempt to ensure that an objective assessment of the evidence is made.

Clearly the numbers of teachers and children are too small for rigorous research methods to have statistical significance. Instead it is hoped that teachers' skilled professional judgements on their children's performances will indicate trends, possibilities and policies which, taken together, will be a reliable guide for future curriculum decisions, and illuminate what seems to be potentially a very fruitful area of computer application to children's education.

The Project Committee are indebted to the SCDC for their generosity in funding this work, and to Exmouth Teachers' Centre for further funds and continued encouragement and support.

Write first time?

Tony Gray and Carl Billson
Loughborough Primary Micro Project
Loughborough University

> 'We cannot observe ourselves thinking, but we can observe the products of thought. And one of the most powerful tools for doing so is writing.'[1]
>
> 'Writing is fostered rather than taught, and what teachers require is . . . an understanding of the task a child faces in learning to write'.[2]

Writing helps us to think. It involves shaping and manipulating ideas, leading us in creative and sometimes unexpected directions. Writing can also help us to explore and express how we feel. Covering a page with words is like having a dialogue with oneself – a reflection. It can be enlightening, frightening, practical or loving. It is a means to sharing, knowing and keeping one's experiences.

Yet do children feel these benefits of writing? Do teachers? When was the last time you wrote anything for pleasure or reflection?

All too often writing is a chore: the 'Thank you' letter; writing about your day trip to Skegness, justifying the time 'off'; filling in school reports; making a shopping list. In other circumstances, potentially enjoyable writing may be spoiled by the mechanics of changing things once you've had a first try at saying what you want to say. This re-writing is a genuine chore, involving a little creation (which is interesting) and a lot of copying (which isn't).

One way of helping with the re-writing problem is to use new technology. A word processor may sound like some form of literary sausage machine, but it is in fact a marvellous tool for manipulating ideas in the form of text. Many teachers are now using them to foster writing because young authors are able to revise, edit and experiment easily and without boredom.

These benefits only arise, however, when the children have done some writing. What about those children who are unsure how to begin; those who frequently get stuck or perhaps have little grasp of writing for an audience? For them, an empty TV screen displaying an insistent flashing cursor is just as blank and intimidating as a fresh sheet of paper. For them a word processor may be too open-ended.

So how can we help them? To what extent can a non-intelligent machine provide the kinds of help that will foster writing?

The degree of prompting, questioning or encouragement needed to enable children to progress with writing is often minimal. What if a computer could 'converse' with an author with a view to helping develop their ideas? Using such a program, children may learn how to converse with themselves through writing.

Loughborough Primary Micro Project has designed two suites of programs which provide a supportive environment for inexperienced writers: *Terrible Tales – Monster* and *Giants,* and *Other Worlds – The Explorer* and *The Inhabitant.*[3] These packages engage children in dialogue on a theme, helping them as they simultaneously create, write and think about Giants, Monsters or Worlds. The software gives children insight into conversing with themselves by writing, because it provides a supportive framework for exploring and expressing ideas.

Let's consider some aspects of the Terrible Tales' *Giants* program, the support it offers children as they write and the way this resembles the help given by teachers.

Inexperienced authors rely on guidance and feedback from their teachers to sustain their writing. This may be in the form of an initial stimulus, a discussion of ideas or means of expression. It may involve prompting, questioning or encouragement. *Giants* does some of these things.

1 Providing a Stimulus

The program has a theme which gives focus to writing. Teachers often select a theme and provide stimulus by reading poems and stories or talking about a picture or object. In *Giants* there are short descriptions about several giants. Children reading these can gain ideas and vocabulary for use in making up their own giant.

Goliath
Could anyone be a match for the mighty Goliath? Everyone feared this huge soldier of the Philistine army. A shepherd boy called David was brave enough to face him. His only weapons were a stone and sling.

Hurtali
This friendly giant was so tall that his head was in the clouds. He ate whales which he caught and held up to the sun to roast. For salads he would nibble the branches of trees. Hurtali lived long ago and, during the time of the Great Flood, he helped steer Noah's Ark away from rocky mountain peaks.

The fact that these 'stories' are incomplete means that here is plenty to ask and write about these texts because only the bare bones of the circumstances are given.

2 Asking questions

Teachers are skilled at asking questions and commenting on ideas, their aim being to extend children's thinking. *Giants* conducts a simple dialogue which is also structured to do this. For example, the computer asks about the height of the children's giant and then makes an appropriate comment:

Wow! Your giant is as tall as three houses!

or

That's not very tall for a giant!

These comments and supplementary questions are designed to help children reflect upon their ideas. This interaction engages children's interest, helps sustain their writing and provides a sequence and framework for their thinking. The program also helps the children structure their answers by giving prompts which they can use to start them off. Schools using the software have found that these prompts, which are carefully chosen to give variety, are picked up and used by the children in their own writing.

3 Helping revise and re-think

Teachers encourage children to read through their work critically: Are the descriptions and ideas consistent and coherent? What changes could be made to improve the writing? Could the descriptions be more detailed or contain further explanation? These are key issues in writing – not to mention style, grammar, punctuation and spelling!

In *Giants,* those sections of dialogue written by the children are gathered together in a summary. All their short answers and ideas are put together as a larger piece of running text. The children can then read the entire description of their giant. Of course, they know the content because they wrote it! What's exciting is that they've never seen it in this form before. They can now see how their writing can be organised and notice the relationship of the ideas with one another. So what?

Well, authors need a less intimate perspective to revise and edit their work. In *Giants,* although this has not been tested formally, it seems that the effect of producing a summary is to 'distance' the children from their writing. Consequently, when the program now asks: 'Do you want to change anything?', they feel able to look at their work more objectively. The children can revise and re-read their descriptions until they have a version with which they are satisfied. And this revision is painless because it doesn't involve tedious copying. Clearly these advantages are the same as word processing, and the final printed copy looks neat and very satisfying.

Conclusion

Software alone cannot create as rich a learning environment as that formed by a teacher. However, by using the *Other Worlds* and *Terrible Tales* programs teachers can give children a supportive framework to develop their ideas in writing whilst acquiring techniques and skills of authorship. These insights into writing can then be extended and developed away from the computer in the form of paintings, research, experiments and creative writing without the help of software.

References

1. Frank Smith *Writing and the Writer*, 1982; page 32.
2. ibid; page 200.
3. The programs are published by Longmans, *Terrible Tales* BBC disc £12.95 + VAT, cassette £9.95 + VAT, *Other Worlds* BBC disc £12.95 + VAT, cassette £9.95 + VAT.

The authors would welcome comments from those who have used their programs or who have experience of using word-processors with early-writers.

Wordwise plus

Jacquetta Megarry

Wordwise Plus,[1] a powerful new development from Wordwise, was released at the end of last year. It introduces the Segment concept: by partitioning the memory space available, users can process up to 11 different documents simultaneously. This is useful if you want to break off from a longer job to do a quick letter without disturbing or having to save your main text. It is also far easier to assemble or rearrange bits of text when you can store each one in its own segment than when you can only see exactly what's there after merging it with your document. These benefits will be especially appreciated by cassette users.

Of greater long-term significance to primary teachers is the addition of a high-level programming language. Wordwise Plus allows you store programs, as well as text, in a Segment. This allows users to add almost unlimited extra features, either by typing in programs or by loading them from disc or cassette. The process of saving and loading programs is identical to that of saving and loading text, and all the familiar editing powers of Wordwise operate on the programs in exactly the same way.

Computer Concepts supply programs to do alphabetical sorting, mail merge, multi-column work, continuous processing and automatic indexing on a cassette as part of the package. (A disc is available at £3.50 for those who don't what to copy the cassette.) You load these just like text, without needing to know how they work; you make them run by pressing a red function key together with SHIFT; then you sit back and watch the sorting or indexing progressing on the screen. This is great fun, and even a simple alphabetic sort can be extremely useful in schools. The documentation also provides 5-line programs for users to type in: one gives you a single command to correct transpositions like htis. Another allows you to print multiple copies of a document automatically.

However, once primary teachers get hold of Wordwise Plus, there could be a free exchange of programs, perhaps through the columns of *MICRO-SCOPE*? The possibilities for doing simple operations on text already stored on cassette or disc (or just typed in by a pupil) are immense. It is a trivial matter to cause different red keys to calculate average word length, sentence length, and simple measures of readability that depend on them. It isn't much harder to make Wordwise Plus offer facilities for which a separate software package (with its own price tag and limitations) used to be necessary. For example, here is a procedure that will do a Cloze-type deletion of every sixth word on *any* text you like:

```
REPEAT
DOTHIS
FIND " "
CURSOR RIGHT
TIMES 6
DELETE WORD
TYPE "@"
UNTIL EOT
DISPLAY
```

The DOTHIS . . . TIMES 6 loop searches for every sixth word, which it locates by a simple instruction to FIND a space. DELETE WORD does just that, and TYPE "@" replaces the word by an @. TIMES 10 would instead select every tenth word, and so on. If a ? character is preferred to an @, TYPE "?" could be used instead. REPEAT . . . UNTIL EOT simply means that the operation is repeated until the End Of Text is reached. Incidentially, this will give slightly irregular results if the text contains multiple spaces, so if you are in the habit of putting two spaces after a full stop, it is advisable to strip out the extra one before doing the Cloze edition. (Using the search-and-replace menu option, this only takes a few seconds.)

Similar programs using DELETE AT to delete single characters (in place of DELETE WORD) can set up successive versions of text with various combinations of letters and punctuation characters deleted. The original text and successive partially deleted versions can all be stored in Segments. Programs like *Developing Tray* (available through MEP) show how powerful language development can be stimulated by progressively revealing text that has been through this kind of process.

The good news for overworked teachers is that great care has been taken to make Wordwise Plus fully compatible with Wordwise. Indeed beginners need never even see the Segment Menu (see Fig. 1) unless they choose to. Even the Main Menu looks almost the same as before; only the extra ninth option (to select the Segment Menu) and the new colour keystrip give away the existence of the new product. Experienced Wordwise users will not have to

SEGMENT MENU
© Computer Concepts 1984

1) Save segment
2) Load segment
3) Save marked text
4) Load text to cursor
5) Select segment (0)
6) Print segment
7) Preview segment
8) Delete segment
9) Main menu

ESC Edit Mode

Please enter choice

Fig. 1.

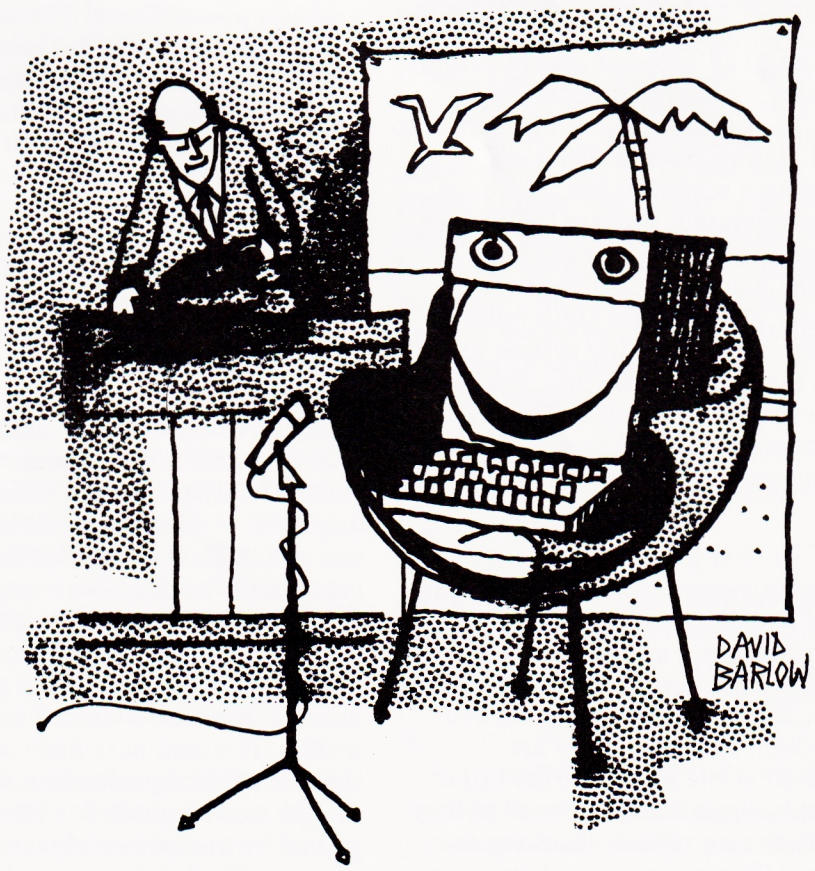
change their habits nor amend their Wordwise text files in any way when moving up to the new system; even the default values of the embedded commands have been kept identical.

Apart from Segments, Wordwise Plus includes a great many improvements. For example:

1. Disc loading and saving is at least ten times faster.
2. Safety-nets prevent accidental overwriting of an existing file or loading new text without first saving text in memory.
3. Special two-letter embedded commands give easier access to printer effects like underlining and double-strike.
4. More detail shown in preview, including printer effects like underlining and double-strike, and exact position of page-breaks.
5. Many additional embedded commands, e.g. pause for daisy wheel change, fully indent, *for* commands within text, lns to show line numbers at preview, etc.

The new package has completely new documentation which Computer Concepts commissioned from outside. It includes my own illustrated **Introduction** which was written for newcomers to Wordwise and Wordwise Plus, a 180-page Reference Manual by John Coll and Andrew Myers, and separate notes on running the programs supplied. The touch typing tutor and revised example document are also supplied on the cassette together with the sample program.

1. Wordwise Plus costs £49 plus VAT. Wordwise upgrades are available *direct* from Computer Concepts *only*, by returning the *complete* Wordwise package, at £17 plus VAT.
   Computer Concepts
   Gaddesden Place
   Hemel Hampstead
   Herts. HP2 6EX



'For my next Desert Island Disc . . . '

Sinclair news

Chris Robinson,
Newman College

The continuing Micro-Drive controversy

How often have you heard people challenge the reliability of microdrive cartridges, or criticise the Sinclair system because of them, only to find, upon closer questioning, that they have no personal experience of them but are propagating the rumour?

I think it's about time the record was put straight. I do not claim that they are as good as discs because, in general, they are slower. However, if anyone wants discs for the Spectrum, many makes are available at a similar price to comparable systems for other computers.

In terms of reliability, I possess 50 microdrive cartridges and have been using the microdrive constantly since August 1983 when I got number 7 off the production line. In that time I have had a total of 5 cartridges fail (10%). I wonder what failure rate disc users will admit to?

The main advantage, however, is cost. My school has been able to equip its eight Spectrums with interface 1s and microdrives for about £600.

Sinclair has asked all software manufacturers to provide an easy means for transferring programs, supplied on cassette, to microdrive, so for an extra £1.50 a microdrive 'back-up' of a new program is soon ready for use. This is an important consideration if you are thinking of opting for a disc alternative since the disc operating system is unlikely to accept the Sinclair protocol. This is where Opus must prove the winner. Their new disc system for the Spectrum, at a reasonable £199 (inc. VAT) from Boots, uses the same commands as the Microdrive system so, presumably, new software may be saved to disc just as easily.

Software news

New MacMillan Software: (All these programs are easily saved to microdrive. BBC versions are also available, though not seen.)

The new titles: *The Sunflower Number Show*, *Tops and Tails*, *Snapple Hopper*, *Castles and Clowns*, *Space Scan* and *QuizTimer* are presumably aimed at the home market rather than schools and will probably sell well as they are the sort of software parents think is educationally sound. The intended market has apparently affected the packaging which is now just a bare cassette box with practically no documentation (to fit the display racks of Boots and W.H. Smiths) rather than the A5 sized box and booklet produced for the Sinclair/MacMillan releases reviewed in the last edition of *MICRO-SCOPE*. I would challenge MacMillan's pricing policy however, that permits a 'simple' single program such as *The Sunflower Number Show* to sell for the same figure as the considerably more complex *QuizTimer* with its many sets of recorded databases.

I was a little disappointed to find that the software, in terms of what it does, is a couple of years out of date. It is rescued by the superb graphics (though they are not to the same standard as those employed on the excellent 'Learn to read' series).

The *Sunflower Number Show* is a drill and practice number testing program on the four rules. If you don't already own such a program, perhaps they have a small place (particularly for 'novice' teachers trying to give each child his/her six minute's worth on the school micro) and it would be worth considering this as the one to go for as it does permit a number of teacher options relating to difficulty and type of question posed. The print is large and clear and the graphical and musical rewards (3 different large scenes are set and drawn) provide motivation, though I call into question a program that permits 1×6 to be presented as being as difficult as $81 - 69$. This program was the poorest of the new software.

Snapple Hopper, *Castles and Clowns* and *Tops and Tails* provides six new ideas from Betty Root (two programs per tape).

Unfortunately, I could only get the review copy of *Hopper* to load once, despite experimenting with many different tape recorders at different volumes, tones and speed, so was unable to give it the same scrutiny as the others. It depicts lily pads upon which pictures are displayed. A picture of an object rhyming with one of the lily pad displays is shown in the centre and the child has to press the appropriate identification number to match it and make that lily flower.

Snapple is a game of snap played with the initial consonant blends of a vocabulary of 48 words. (It would have been useful to have had that vocabulary printed out somewhere in the meagre documentation.) The game may be played by one or two players. Trees are shown upon which the picture 'cards' are displayed. If the initial consonant blend of both objects depicted are similar, a key has to be pressed to

win an apple. It is a mistake to have to press the same key to reveal a new 'card', however, as it leads to many unintentional and erroneous calls of SNAP when the opponent, or computer, gains a point by default. Another serious coding error was noticed. Although SNAP is correctly rewarded when pictures of a flag and a flower are displayed, a fly and a flower are considered by the computer to have a different combination of initial two letters!

Snakes and Ladders is the game employed to test the child's recognition of the first two letters of a word on the *Tops and Tails* tape. Two children compete against each other. A random number is generated on a die which the child has to first identify. If he/she lands on a picture, the initial two letters of its name must be typed, whereupon his/her piece is advanced an extra square as a bonus.

Tailend is a game that tests the ability of the child to identify the sound of the end of a word, find the appropriate letter on the keyboard and press that key within a time limit. Granted the time may be set at any speed between 1 and 9 but I found level 9 impossibly quick, demanding a high degree of keyboard skill far above the level of ability this program is aimed at. One or two players may play and they are identified by cat and dog pictures. Pictures scroll from right to left across the middle of the screen and the player has that time to press the correct final letter key. Again it would have been nice if the publishers had included a list of the vocabulary used within the documentation. It is difficult to decide whether the word 'van' or 'lorry' is the word required within the half second that level nine permits!

Castles and Clowns also makes the mistake of permitting too high a speed to be set to be realistic for the abilities of the child user. In *Kings of the Castle* a one or two player option is given. In response to this, either one or two castles are drawn with numbered windows depicting various objects. A random number is generated and the child has to press the initial letter of the object represented by that number picture within the time limit. In *Clown* a one or two player option is presented. This time a randomly produced letter is shown on the clown's hat. 'Pages' of a book he is holding flip over quite quickly. If the initial letter of the object depicted on the page matches the letter on the clown's hat, SNAP has to be called by pressing the appropriate key to win a balloon as a reward.

I liked *Space Scan*. Even though there is only one program on this tape, it seemed to be of higher merit than some of the others reviewed above. It could prove quite a useful addition to a school's software collection if the topic of astronomy was to be taught. The printed documentation is extraordinarily sparse, but the cassette box insert does include a useful bibliography. The on-screen documentation is more comprehensive. The program uses the screen to depict stars and constellations. Five main options are presented from the initial menu:
1) Constellation Spotter, which displays 15 constellations visible in the Northern hemisphere, one at a time, and adds star names and information about each.
2) Constellation Choice, which permits the user to name any particular constellation for display.
3) Star Search enables selection from 75 named stars and nebulae. The relevant constellation and information is then presented.
4) A quiz option permits testing of constellations or stars and nebulae from their visual representations. 10, 20 or 50 questions may be requested.
5) A glossary of common astronomical terms is provided to complete this package.

QuizTimer was my other favourite from this collection. At last a program that really makes full use of the Microdrive. It is, however, another quiz program but with the option of permitting the teacher to create his/her own sets of questions to add to the 10 sets of 100 already provided. The documentation refers to these question lists as databases though I would question the use of the word here. The handling program and all the quiz databases, which fill both sides of the tape in this substantial package, saved themselves to microdrive easily, when tested, filling about 80K of the available space. There was an error in the documentation relating to this however. The initial program is saved under the title of "QT" and not "qt" as stated. Hence LOAD *"M";1;"qt" will produce error message "File not found"! Why it wasn't made to save as an autoboot program, since it practically fills a microdrive cartridge anyway, I don't know. I would recommend anyone using this program on microdrive to type in this simple one-line program:

```
10 LOAD *"m";1;"QT"
```

and save it on the same microdrive cartridge by typing:

```
SAVE *"m";1;"run" LINE 10
```

The quiz will automatically load now on pressing RUN from a reset computer.

The quiz presents a half-hidden word and a clue by which it may be identified:

eg. —u—zt——er

The name of a computer quiz program.

The options are of receiving a pictorial reward (a picture gradually building up of fireworks which go off at the end of the quiz) or a record on screen of the answers the child failed to get. (This list is presented after the quiz for 'revision'

purposes.) There are other options presented from a main menu enabling the quiz to be set with different time allowances to find the answers, load different questions, create different questions and save new lists of questions. A teachers' page may be accessed only by using a code word set by the teacher. It permits viewing the words currently in the computer's memory together with the relevant clues for editing if desired.

The whole program is very user friendly with clear on-screen instructions presented at each stage. However, the error trapping on the child's input routine has an odd quirk. It is a little slow in response and I discovered it is quite easy for it to 'ignore' certain letters if they are typed quickly.

MacMillan are to be congratulated at continuing to produce such a quantity of educational software particularly at a time when many other publishers are backing out, but, in view of the few 'faults' I discovered, I would recommend that more 'trialling' of new software is considered before releasing future programs.

New keyboards

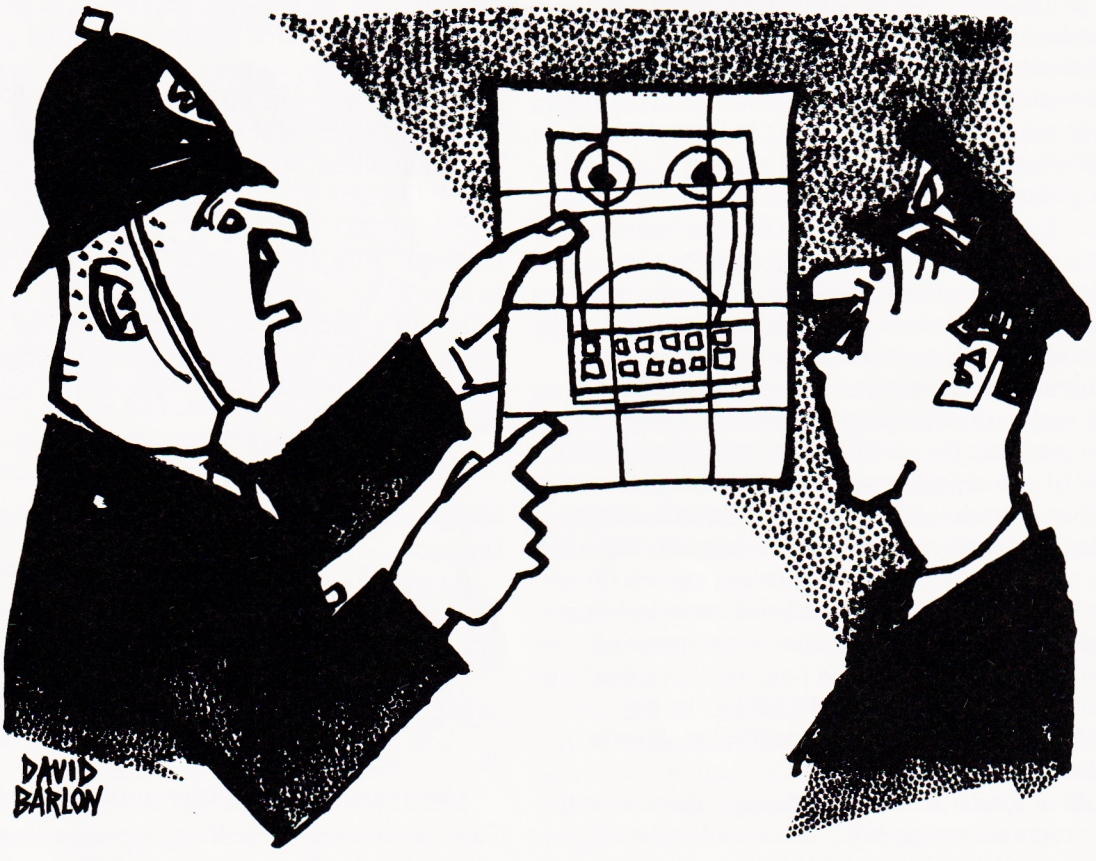
Despite what I said in the last issue, I have replaced the rubber buttons on my three-year old machine with Sinclair's £20 kit. Although my keys had NOT worn out after 3 years continual pounding by me and the children, some areas were becoming a little unresponsive and the rubber was getting weaker. Now I am used to these keys, I find the extra ones a boon for *Tasword* and LOGO which are the two applications that occupy my machine for the majority of the time. It was delivered within 3 weeks and would have been a 10 minute job to solder the reset button leads if I hadn't had 'help'!

LOGO

I would be interested to hear from teachers using Sinclair LOGO to any great extent who may be interested in the experimental 'trialling' of some materials I am preparing. (16 X 22 cm (C5) sae please to me at Newman College.)

* * *

Further information about the MacMillan Software may be obtained from Primary Project Manager, MacMillan Education Ltd, Houndsmills, Basingstoke, Hampshire RG21 2XS.



'We've made up this identikit picture of 'im Sir!'

Book review

Title: **Computer Club Birdwatch**
Authors: Chris Harbard and Tim Stowe
Publisher: Macdonald
Price: £5.95

This book claims that there are three different ways in which it can be used. These are, firstly, finding out more about birdwatching, secondly, using the information and the computer program (within the book) to develop a project on birds which includes the use of the microcomputer, and, thirdly, developing computer skills by typing in the programs listed in the book.

As a resource which is designed to encourage children to develop an interest in birdwatching, the book is well structured, covering many aspects involved in a study of birds, in a well presented and interesting format. The text is informative and interesting, although it does require a high level of reading ability. The illustrations, for the most part, are of a high quality, however, some of the less sophisticated illustrations which represent the bird within its environment are not justifiable in terms of the information they impart and the space they take. Various sections in the book encourage practical activities, observation and record keeping. Alongside these are activities which initiate work on displaying data in the form of graphs and charts and the development of databases.

It is in this context the computer can be introduced into the project. Packages like *Quest* and *Factfile* could be used.

Within the book there is a set of 6 listings of programs linked with the topic of birds. These programs are also available on cassette for the BBC and Spectrum. (Documentation for the programs is included in the book.) The programs are freely copiable, however one program does run out of room when copied to disc. The programs are:

1. An anagram game of birds' names
2. A simple sketch-a-bird program.
3. A bar/pie chart where the user can input information and the computer generates the bar/pie chart.
4. A colony simulation in which the user can alter some aspects of the environment which determine the approximate growth and decline of a colony.
5. A program which asks the user to match the bird to its habitat.
6. Identification of members of the crow family by inputting yes/no answers to computer prompts.

Although these programs are fairly unsophisticated the children enjoyed using them. However, the work we were doing would not have lost any of its impact if these programs had not been used.

Finally, the authors suggest that children can develop their computer skills by typing in the listings in the book. This is not the place to discuss whether children typing in listings in BASIC is a good use of computer time or whether such an activity develops computer skills. Suffice it to say that if the listings are typed in, the programs are bug free, apart from a few display problems, and are clearly printed and well documented.

The book has a brief but comprehensive glossary and a list of useful books and addresses relating both to birds and the use of the micro computer.

Overall this is a useful resource book for any project on birds. Its links with the computer however, are for the most part tenuous and unsophisticated. The greatest potential in terms of micro computing lies in its introduction and development of databases.

Bob Butcher
Newman College

Software reviews

Title: **Dataprobe**
Publisher: Addison Wesley, Finchampstead Road, Wokingham, Berks RG11 1BR.
Machine: RML380Z, RML480Z, Acorn BBC B (call disc only).
Price: £49.95 + VAT (add on pack of 3 datafiles and pupil's book £49.95 + VAT).
Reviewed on: RML480Z.

Dataprobe is a new information handling program written by Alistair Ross and Malcolm Hall. The package comes with one data file, a detailed teacher's guide and a useful pupils' booklet. The review version described here ran on a RML 480Z, but versions for the 380Z and the BBC are due to be released.

Dataprobe is a command-driven program which means that it gives a great deal of flexibility to the user. It allows a high level of enquiry and is a sophisticated searching tool; for example an enquiry can include ANDs and ORs, negations and full use of brackets. In addition the program allows the input of compound statements for the practised user, while the beginner can be prompted for each command in turn.

The package offers an impressive number of graphics routines, accessed via the SHOW command, in addition to the normal searching and sorting facilities of data retrieval packages. Piecharts, histograms, twin histograms, bar-charts, venn diagrams, maps, line graphs and scatter graphs can be displayed as well as some simple statistics such as maximum and minimum values, averages and totals.

I did not, however, find the program particularly user friendly. The screen display gives curt comments such as 'Busy' or 'No such command'. Although accepting that this would not be the first type of data handling program that primary pupils would be expected to use, it is a pity that it could not have been a bit more inviting. I would have found it useful to be able to directory the disc within the program, or ask for a list of fieldnames for the file you are searching. It is far too easy to enter an unacceptable enquiry with this package, but at times you get minimal help to find our your mistakes.

The 'values' page contains information on your current command (e.g. ENQUIRE) and what you are asking to show (e.g. PIECHART). The lower status line shows the records being interrogated and matched. A main criticism is that details of the current enquiry are not shown on screen. Hidden in the teachers' notes under 'histogram' were details of a recall key which should bring back the last SHOW or ENQUIRE command, but you cannot identify which of the two you require. Therefore, to make a simple search and then narrow it down later with the addition of further conditions means retyping the whole enquiry. It was too easy with this package to carry out an enquiry and forget what you had asked when the results arrived. This was all the more likely because of its slowness. The Kensington data file provided is long, 450 records, but it takes almost three minutes to find the forename of SURNAME=MARSHALL AND SEX=F, which is the first enquiry suggested in the notes. An enquiry with five conditions on the same file took about five minutes. A printer is essential to take hard copy of your results, because to repeat this enquiry would take a further five minutes.

The SORT facility that is provided is even more time consuming. The documentation suggests that you begin this option before a lunch-break! It appears to search through the whole file to sort the first 10 files or so, I did not wait for it to finish, but you would need a long lunch-break and trust to the reliability of your disc drive which is constantly on during the sorting operation. The saving grace about these routines is that you can stop them. You can interrupt at any stage by typing in a new command. The keyboard is very slow to respond if you do this, and you can type ahead of the screen display which is disconcerting, but it does give you an escape route. There is no other safe escape in the program, my attempts at hitting ESCAPE were to no avail and CTRL Z stopped the program on the version I was using.

The unfriendly user interface became a recurrent annoyance as I worked my way through the package. As an experienced user of information retrieval packages who had read the documentation carefully before I ran the program, I found *Dataprobe* difficult to handle. It might well be more off-putting to teachers than to pupils who seem to be more patient and tolerant in such circumstances. However, as educational packages are getting easier and faster to use, I found this one to be rather disappointing. Perhaps the writers have tried to get too much out of a BASIC program on an 8 bit micro.

The graphs such as pie chart and histogram are built up on the screen as the search proceeds. This gives you something to watch while the search is in progress, but it could be confusing for children as the slices in the pie chart change

size all the time and the histogram is continually being rescaled on the y-axis. There is a lot of information to be entered before the graphs can be drawn. For example, to display a histogram you must give the number of bars, the minimum value and the interval between the bars. An intelligent auto-scaling option would have been nice if you wanted to display data on a histogram for analysis. As it stands you have to know a good deal of information about the data *before* you can see it in histogram form, which might defeat the object for some enquiries. To overcome this, a facility exists for the teacher to create a 'layout'. This is a framework to act as the basis for a graph and avoids the need to put in the details for axis scaling.

I was particularly interested in the MAP option because this would appear to add a spatial dimension to the analysis of information. Maps for the birthplace data in the Kensington data file are provided on four scales, from the local area to a world map. The documentation suggests that the option could also be used to add other forms of pictures or text and displayed on the screen. The map-making option appears to require plenty of patience, it relies on moving a cursor around the screen to draw the outline of your map, following your plan from an overlay of acetate on the monitor. No mention is made of how to use a graphics tablet to enter your map, which might be an option available at a local teachers' centre (for some potential users).

The bulk of the documentation is made up of details of the data file and pupils notes. These are a very valuable resource especially the materials on the census. The worksheets can be reproduced for use in the educational establishments which purchase *Dataprobe* and would form the basis for much topic work, and encourage some good initial enquiries of the data files. Certainly the experience of Alistair Ross using data handling with his own class shows through in the design of the exercises. The quality of this support material does indicate an impor-- ant role that publishers can play in educational software. The well produced pupil book certainly points the way for teachers new to using information handling in topic work. Addison-Wesley state that they are interested in an exchange scheme for any further files produced for *Dataprobe* with possible additional pupils' booklets published as supplements.

In summary, I felt that although this package offers graphics extensions to a level of sophistication not yet widely available for information handling packages, *Dataprobe* was not user friendly enough to overtake well established rivals such as *Quest* in the information handling field. I wonder if the data files are, or could be, compatible with *Quest* format? *Dataprobe* could give those extra facilities that an in-depth data handling project needs but I was left feeling that an opportunity had been missed to bring out a really powerful data handling package for primary education that was easy to use and fast in execution.

Andrea Tapsfield
Newman College

Title: **First Steps with the Mr Men**
Publisher: Mirrorsoft, Holborn Circus, London EC1P 1DQ.
Machine: Acorn BBC B, Electron, Spectrum 48K, Commodore 64.
Price: £8.95 (all cassettes); £11.95 Acorn BBC B and Commodore 64 (discs).
Reviewed on: Acorn BBC B.

The package consists of four separate programs based on the ever-popular Mr. Men characters. They are designed to be used with children between the ages of four and eight. The programs are: *Mr. Greedy's Ice-cream Hunt, Mr. Silly's Hat Game, Mr. Forgetful's Wardrobe Game* and *Mr. Forgetful's Letter Game.*

Mr. Greedy's Ice-cream Hunt
This is a game to teach the children the four main directions: up, down, right and left, Mr. Greedy has to find an ice-cream which appears in one of the four corners. The first stage is very simple with the children having to move in the four directions without having to negotiate any obstacles. As each stage is completed the obstacles become increasingly difficult. A picture card showing the Mr. Man pointing out the directions is placed above the relevant function keys. This proved very popular and easy to read. After talking to the children about the card and asking them to point to the Mr. Man going up etc. I could leave most of the children to work on their own or in twos. Some of them tended to give up on the fourth or fifth stage when the maze became more difficult and they couldn't reach the ice-cream straight away. Generally an excellent game for four to five year olds.

Mr. Silly's Hat Game
This game is to teach left to right scanning. It can also be used for colour and shape matching. Mr. Silly wants a new hat – the selection is made, right along the shelves.

The idea of this program was good, especially if the teacher showed the children how we read and write from left to right thus reinforcing the basic ideas. However, I did not think the shapes of the hats were clear enough. Also, the colour

of the shelves made them too prominent and this distracted from the hats. The children quickly got the hang of the game and enjoyed it. Personally I found it too long.

Mr. Forgetful's Wardrobe
This is a one-to-one matching game. There are two lines of wardrobes and the child has to match an object in a wardrobe on the top line. One draw-back was that you had to position the Mr. Man right in the centre of the door before it would open. This often took the child several attempts. Also the objects behind the doors were rather small and difficult to distinguish. The children enjoyed the game but I would prefer to use it in conjunction with a topic on clothing and footwear.

Mr. Forgetful's Letter Game
This game was a variant on the previous one, but letters were used instead of objects. One good point was that you could choose which letters you wished to teach. However the actual letter formation may not agree with that used in the child's school.

Conclusion

I used the programs mostly with four to five year olds and fould them just right for this age group. All of them could be fitted into the school syllabus at some point thus reinforcing the teaching already taking place. The children enjoyed the programs and clamoured to have a turn. I think the package very worthwhile for any nursery or infant department to purchase.

Ann Willis
Head of Infant Department
Tividate Hall Primary School, Sandwell

Title: **Quick Thinking**
Publisher: Mirrorsoft, Holborn Circus, London EC1P 1DQ.
Machine: Acorn BBC B, Spectrum 48K, Commodore 64, Electron.
Price: £6.95 (all cassettes); £9.95 Acorn BBC B and Commodore 64 (discs).
Reviewed on: Acorn BBC B (disc).

Quick Thinking was received enthusiastically by my class of lively eight to nine year olds, though with considerably less enthusiasm by me. The children loved the graphics, the noise and the competition – however, enthusiasm waned rapidly among the less able and less successful children. The two games on the disc, *Sum Vaders* and *Robot Tables* appeal to the children as arcade-type games; both sound and graphics contribute to this. Good, clear instructions are provided and are also available on the program; those given on the program appeared to be unnecessarily complicated – perhaps due to the use of upper case letters. However, once understood, the games were simple to operate and it was not necessary to make further reference to the instructions.

Sum Vaders, the first of the two games, provides quick practice in addition or subtraction, with several levels of difficulty. Each incorrect answer, or lack of response, allows an alien robot to invade. A line of five robots signifies the end of the game and players are 'rewarded' (or consoled?) with a noisy arcade-type battle. It the difficulty level is too easy boredom soon sets in – continuous correct answers will only reward you with an infinitely high score and a game that will go on for ever. We were disappointed in the 'game for two' version, expecting to be able to play alternately, but the game for player 'A' must be completed before player 'B' can begin. There was no apparent advantage in this – even a 'What is your name Player B?' at the beginning and a 'Well done Simon – you have won by 7 points' at the end would help.

Robot Tables tests tables at various levels of difficulty. This program took the children a little longer to understand, but once they had grasped it (and if they were confident in the use of their tables) they enjoyed it. A complex machine is controlled by correctly accepting or rejecting numbers offered as answers to simple multiplication sums. Rejected numbers go for reprocessing, accepted numbers, if correct, are made into robots; deformed robots appear if incorrect numbers are accepted.

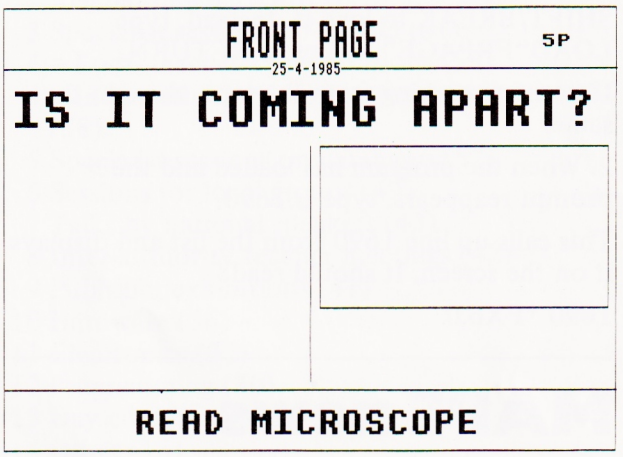
These programs certainly appeal to children and would probably rate highly on the home market, but 'skill and drill' programs such as these are unlikely to be popular with the teachers, though to be fair *Robot Tables* could prove useful. Even with the sound off, Space Invaders do not blend comfortably into the classroom – however modern and progressive that classroom may be.

Carol Mathieson
St. George's First School,
Kidderminster, Worcs

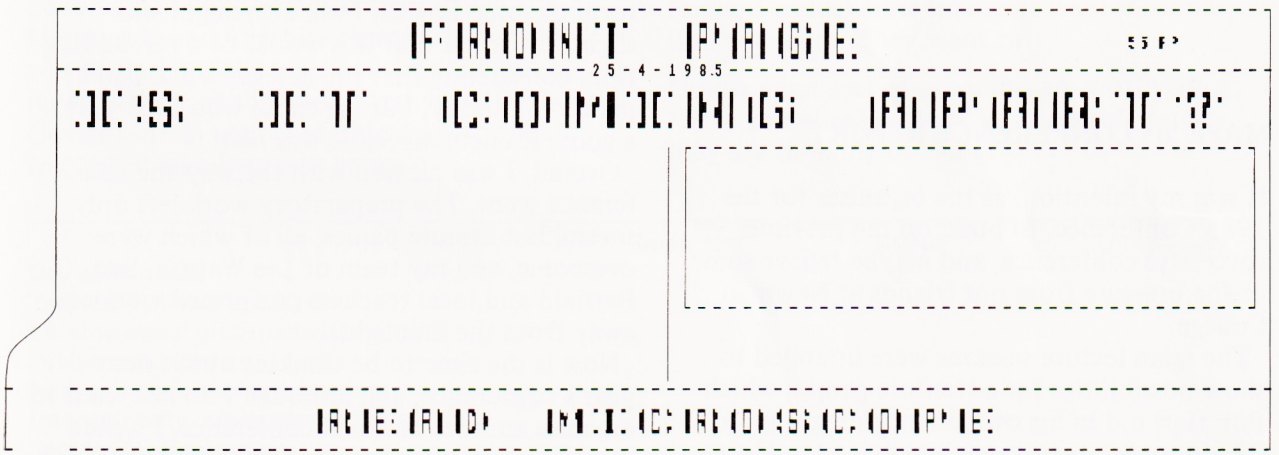
Is your front page coming apart?

Bill Bailey,
University of London Institute of Education

Does your Front Page look like this?



Or like this?



One of the programs on the second MAPE TAPE that I was dying to use with children was The Front Page. Our main problem initially was not having a printer. A week or two ago the school acquired a Kaga-810 printer. This has the name TAXAN rather than Kaga written on it and is apparently identical in most respects to the Epson FX80. However, it is faster and has a Near Letter Quality (NLQ) mode which gives a really good print-out of text.

The manual is virtually incomprehensible unless you know all about printers to start with, and a variety of possible options are controlled by something called DIP switches inside the machine. You have to literally take it apart to get at them. When it arrived, the only program I had to hand with a screen dump to test it was The Front Page.

We put The Front Page in and got a lovely print-out. When we tried using Wordwise however, we got twenty lines of text all over-printed on one line. Having cured this by resetting some of the DIP switches inside the machine, Wordwise became word-perfect, but The Front Page came apart!

Obviously printers can't be taken apart every time you load a different piece of software, so the answer is not to change the hardware, but to alter the software.

If you find that your attempts to print The Front Page come out in sliced elongated sections, then two minor alterations to the program should solve the problem. What seems to be happening is that the program is telling the printer to move the paper up a line, when the printer is set to do this automatically. The result is that the paper gets moved up two lines instead of just one! So, it splits the letters of the

title and headline and puts spaces between the letters of the date and the leading article. (There is a fix mentioned in the documentation, but several people I've come across have been printing elongated pages without either realising that this is in the booklet, or not being able to successfully achieve it. The following steps succeeded for me.)

How to cure it:

1. Put the disc in the drive, but don't use the SHIFT/BREAK to load it. Instead, type LOAD"FRPAGE" and press RETURN.

If you are working from the tape, then do the same.

2. When the program has loaded and the > prompt reappears, type L.1690.

This calls up line 1690 from the list and displays it on the screen. It should read:

1690 *FX6,0

Retype this as

1690 *FX6,10 and press RETURN

3. You also need to change line 1695, so type L.1695 and press RETURN. You will see

1695 Z=10

Retype this as

1695 Z=24 and press RETURN.

4. The two corrected lines have now replaced the old ones in your computer. The next stage is to save the altered program back to disc or tape.

Simply type SAVE"FRPAGE" and press RETURN.

Now when you print a finished Front Page, the title should be united. It worked for me, using the Kaga. (Which I would certainly recommend.) At the moment the children are using it to report the latest news of the Mary Rose survey.

MAPE news

MAPE '85 CONFERENCE REPORT

It was my intention, as the organiser for the 1985 Conference, to build on the previous successful conference, and maybe relieve some of the pressure from our friends at Newman College.

The main lecture sessions were intended to show possibilities for adventure games, which Bob Hart did in his own entertaining way; to stir up some controversy by having Ian Morris, who set up the Scottish equivalent of MEP, telling us how misguided had been the efforts of MEP in the area of in-service provision for teachers; and a final session by one of the National Primary Project team to give us insights into the in-service projects-packs being planned for 1985–6.

The emphasis for the workshops was to provide more sessions by teachers for teachers as well as extending choice by having repeated workshops. To this end, I managed to persuade four local teachers, 2 infant and 2 junior, to explain what is happening in Gloucestershire schools.

The other innovation for this year was to provide a counter-attraction to the bar in the form of some English Folk Dancing. I was slightly worried that this would be a resounding flop, considering that the delegates had had a packed Saturday, but for those who took part, a good, if energetic, time was had!

Overall, I was pleased with the way the conference went. The preparatory work left only several last minute panics, all of which were overcome, and my team of Les Watson, Sue Barfield and local teachers performed wonders away from the limelight.

Now is the time to be thinking about next year's conference, and although I do not want to organise another national conference, I would like to sound out some ideas. How about setting a theme for next year's conference? How about making the workshops far more participatory? How about a three-day conference with more talking time? How about writing *now* to next year's conference organiser and offering a workshop and/or ideas and/or help.

Reg Eyre
Conference Organiser

[Ed: Please write to next years' organiser c/o *MICRO-SCOPE*].

Regional news

Capital Region

Heather Govier has been appointed Publicity Officer for MAPE and Di Wailing and myself are the new joint Regional Representatives. We intend to set up a regional committee and hold a yearly one day conference. This is provisionally planned for mid July and we will be sending out details about this and the committee soon. May I thank those of you who returned the questionnaire that Heather sent out last December. If members have any thoughts about the ideas mentioned in my article then we would be grateful to receive them.

Controlling interests?

In *MICRO-SCOPE 13* Jim Fawcett wrote a brief summary of the findings of a questionnaire he had distributed to members in the Merseyside and Cheshire region. Its purpose was to find out the needs of the regional membership. At the end of last year Heather Govier sent an almost identical questionnaire to Capital members (see below):

	Important	Useful	Unnecessary
Day conferences			
Talks by 'national' speakers			
Local teachers' presentations			
Publisher exhibitions			
Inter-authority teachers' meetings			
Inter-authority information exchange			
Sessions for local groups			
Specialist sessions on – LOGO			
– electronics			
– databases			
– hardware			
– programming			
– software evaluation			
– other (please specify)			
Regular newsletter			
Other suggestions			

Having tallied the answers (just like those shepherds in maths textbooks I used at school), I followed Jim's example and prodded the wobbly keys on my calculator and turned everything I could see into a percentage of something else. No particular pattern emerged so I decided to weight the replies: ticks in the 'Important' column were given two points each and those in 'Useful' one. Once I had totalled the points for each 'need' I arrived at the following list of priorities:

1 Software evaluation (70 votes)
2 Regular newsletter (63)
3 Specialist sessions on LOGO (61)
4 = Local teacher's presentations (58)
4 = Inter-authority information exchange (58)
5 Specialist sessions on databases (52)
6 Sessions for local groups (49)
7 Talks by national speakers (43)
8 Inter-authority teacher meetings (42)
9 Publisher exhibitions (41)
10 Hardware (36)
11 Electronics (32)
12 Programming (30)
13 Day conferences (29)
14 Other (13)

An interpretation of the above seems straightforward enough: the members want information and ideas. They want to:

*know what sort of programs are worth using;
*have guidelines on how to assess software they are thinking of using;
*see how teachers are using programs;
*know more about the many implementations of LOGO currently available;
*learn about databases;
*have a regional newsletter.

I agree with all of these. There is much software around yet so little which is worth using in class. Then there are programs that seem to have little potential for classwork yet which a

teacher has used as a starting point for stimulating work. On the other points there are a number of as yet unresolved questions.

*Of all the LOGOs that are on the market which is most suitable for primary use? Is it important to have access to a 'full' LOGO in order, say, to be able to process lists, or will turtle graphics suffice?
*How can databases be integrated into school-work in a way that really does make use of the micro ability to sift through information?
*Which databases are the most effective to use in class – should a school use, say, *Fact-file* and *Picfile* right through the school or should there be a progression from one database to another more complex and powerful (e.g. *Factfile* . . . *Quest* . . . *Dataprobe*)?

The above are all matters which are not yet clear in my mind and on which, as far as I am aware, little or no educational research has been carried out. If, through the medium of a regional newsletter and regional conferences, these questions can be faced then it will help all of us to begin to clarify the best uses of micros in primary education.

Of course any attempt to quantify opinions as I have will usually lead to some measure of distortion. My interpretation of the questionnaire returns is inevitably coloured by what I feel would be useful for the Capital membership. For example, the following items received large 'Useful' votes but, due to my system of weighting, are not within the top six in my league table: talks by national speakers, electronics and inter-authority information exchange. Perhaps, like the 'bovver boy' character created by Dick Emery 'I got it wrong, ain't I', but I think that apart from the 'top six' needs listed above, two of the least popular 'needs' are also worth investigating: hardware and electronics (which to my mind includes control technology).

Neither was judged a particularly important need and it is not hard to see why. Peripherals are not cheap and a school's first priorities will be to acquire disc drives and printers. Touchpads, light pens, plotters, sound boxes, mice and so on are icing on the chocolate chip cake. However, it would be interesting to devote some thought to the effective use of printers. For example, there are several Eproms available for the professional touch to printouts used in language and topic work. Also, from my experience, discovering the correct printer control codes for *Wordwise, Edword* and *Quest* can be a far from easy task.

As for control technology, its poor showing should surprise nobody. Technology itself, never mind worrying about what device to shove into a Beeb's user port, is conspicuous by its absence from many primary classrooms. As Chris Schenk of the National Primary Project pointed out recently, if a Martian visited our classrooms it would assume that we were an agrarian society: much work about farms, plants and nature and very little on technology. How often do the teachers in your school use Lego or the Lego Technic kits? When top juniors tackle a topic similar to that being investigated in the first year classes do they, nevertheless, produce almost identical, if more carefully built, junk models? How often are top juniors encouraged and expected to construct *working* models?

These two needs should be met in different ways. Whereas articles on printer use could be contained in a regional newsletter and perhaps even in *MICRO-SCOPE* itself, the possibilities of control technology are best explored at first hand. That is why if a Capital Region conference can be organised for later this year then it will probably have control as its main theme.

Charles Bake

Chiltern Region

MAPE Road Show, Spring 1985

Last term the Chiltern Region Roadshow was held on Saturday, 2nd March, at the Huntingdon County Library. This is situated right next to the main shopping precinct in Huntingdon town centre. The idea, as always, was to engage the general public in some kind of meaningful discussion on the subject of microcomputers in education.

I am not sure that the library had anticipated the general influx of technology and people which the roadshow encouraged. A steady stream of exhibitors arrived complete with micros and children. School micros always look their worst at this stage, a mass of wires, in a heap, on top of an unpromising looking key-board covered in children's finger marks. Slowly things began to take shape and by 10.30 there were about 35 micros all working at 35 different applications.

Bill Bailey's micro attracted some interest because it was working away at analysing the census data for Chipperfield 1881, on *Quest* and demonstrating the new Kaga printer at the same time.

Betty Lumley who teaches infants and is working at an OU degree in maths was showing her very simple but effective programs for infants. I am sure many infant teachers are looking for these.

Gail Porterfield brought with her an RML and

what looked like two thousand infants, but which, when stood still and counted came to about eight. (Someone was still moving about.) Actually they were always engrossed in what they were doing and spent the whole day quite happily among the machines.

Sharon Harrison made the long trip up the A1 with a husband, BBC micro and three children. There were several parents and teachers showing an interest in their demonstration of *Developing Tray*. Are MEP going to allow this to be sold at a reasonable price to the public?

Paul Skinner brought along a lovely big input device linked to *Dart*, which he uses at his special school. He found that many of the visitors to his display enjoyed using this.

David Eldridge brought with him a couple of micros and a video to show off the ITV, 'Micros at Work' software. Unfortunately the video output was badly affected by a nearby heater fan and although the pictures were OK the sound was very like a cornflake crushing machine. The software seemed to illustrate some of the more useful computer applications we take for granted, such as air traffic control, travel agents booking system, railway automatic marshalling yards etc.

Our treasurer, Roger Henthorne, was demonstrating a program about the Good Samaritan written by one of his parents.

My section was churning out *Front Pages* using the program of that name from Mape Tape II. This program has produced a lot of creative work in my own school. It is an excellent example of a structured but open ended program which really appeals to children as it is so friendly. Other children were demonstrating *Dart* and *Artillery Duel* (BeeBug magazine). This latter is a good program for angles and also decimal fractions. Somewhere, in the main body of the library, *Podd* was doing his stuff with a steady stream of fans large and small.

I have left what could be the most significant part of the show until last, the Sinclair Spectrums. It was probably the biggest concentration of 'educational' Spectrums I have seen. Chris Robinson, Phil Morse and Eric Elsome-Cook brought along a very impressive array of machines. Chris was using LOGO and also using them for control as well as what looked like a very interesting weather forecasting game, simulation program. Phil was playing chess and demonstrating some historical war game simulation programs. Eric Elsome-Cook, from St Neots, believes in really getting his children involved in programming using BASIC. He uses a lot of Spectrums plus a couple of Ohio Challengers, which for a brief period, were one of Cambs' approved machines.

The Spectrum Plus machine is certainly good value for money. Many up and coming computer whizz kids are going to sharpen their byte on this technological teething ring. Strathclyde University thinks so too. Perhaps Sinclair machines are beginning to make a late run in the educational market.

I think I can say that this roadshow was a success, although as I write this, I have not yet been able to discuss it with the committee members. The librarian on duty said there had been a very significant rise in visitors, over and above a normal Saturday. Many teachers took the time to visit us.

I would like to thank all those who helped.

P.S. I am writing this with Wordwise Plus. The original Wordwise was good. Wordwise Plus is magnificent.

Don Walton

Northern Region

Two day conferences have been organised by the committee of MAPE Northern Region. Unfortunately the first of these, planned for March 26th at Newcastle Polytechnic had to be cancelled at short notice because publicity material and application forms had not been received by all schools. By the closing date for applications we had received 40 forms from teachers in the 3 LEAs where details had been circulated. We hope that we will be able to rearrange this conference in October.

The second conference is being held at Charlotte Mason College, Ambleside on Saturday, May 11th. Following an opening talk by Bryan Speilman, delegates will be able to attend 3 workshop sessions, selecting from a list of 10 options including such diverse topics as computerised speech, music and the micro, maths, microwriter and classroom management.

Cumbria LEA is providing generous financial assistance towards the running costs of the conference and are supporting Cumbrian teachers with travelling expenses.

We look forward to seeing all Cumbrian MAPE members and of course, members from neighbouring 'regions'.

With Charlotte Mason College as our centre, we must be able to claim the most attractive conference venue for 1985 so come and join us!

Tony Renkin

West and North Yorkshire

Thirteen members were present at the meeting held on January 31st at the T. F. Davies Teachers' Centre, Bradford.

A newsletter has been sent out and it is hoped in this way to keep in touch with members each term.

Planned events:

Sept. 19th Venue?
Demonstration of the Concept Keyboard.
Nov. 14th Venue?
A.G.M.

Marjorie Briggs

MUSE summer course/conference

MUSE is a national organisation which has existed for more than ten years to help all those involved in education to make effective use of computer systems in the promotion of learning.

The 1985 MUSE Summer Course/Conference is aimed at teachers in primary, secondary, further and higher education interested in using a computer as part of their work. The programme has been designed to appeal to a wide range of people, whatever their degree of knowledge. There are three main lectures and six sessions in which delegates can choose from one of six options.

The twenty-six speakers will present topics on a variety of important areas including:

The Primary Classroom
The Secondary Classroom
The Special Needs Child
Control Technology
Computer Studies
Software Resources
Developing Programming Skills

In addition to the formal programme, there will be ample opportunity for the beginner or experienced computer user to exchange news, views and experiences of education and all aspects of microtechnology. As usual, an exhibition of books and commercially available software has been arranged.

This year MUSE is taking advantage of the new facilities offered by the Jesse Boot Conference Centre in Nottingham University.

Further details of the Course can be obtained by sending a stamped, addressed evelope to the MUSE office:

MUSE
PO Box 43,
Hull HU1 2HD

Telephone 0482-20268

Bookings should be made before 1st July, although late applications will be regarded with sympathy.

MAPE Late news

REGIONAL

SW Region

The region has been divided into three sub-areas, with an organiser for each one:

1. Gloucestershire, Avon, Wiltshire
   Reg Eyre, College of St. Paul & St. Mary, The Park, Cheltenham 0242-513830. Reg is also the SW Regional rep.
2. Somerset, Dorset
   Peter Hunter 093-588-664
3. Devon, Cornwall
   Pat Fox 0803-607448

The following events have been organised for the Autumn term:

Saturday, 19th October 1985 at the College of St. Paul and St. Mary: a workshop on simulations and adventures.

Saturday 23rd November 1985 at Rolle College, Exmouth: database projects.

All SW members should have received fuller details on these two events. If there are any queries, please contact one of the area organisers.

Northern Region

A Regional Newsletter will be sent out to all members before the end of term. The newsletter will contain current information regarding M.A.P.E. activities nationally and regionally, and nomination forms for LEA area representatives for the Northern Region Committee for 1985/1986.

West Midlands

One day course, 'Micros in the Primary Curriculum' on Saturday 12th October, 9.15–4.00 at Newman College. W. Mids members will receive details. Others please contact W. Mids Representative.

GENERAL

MAPE is hoping to launch a discount service for its members on hardware, peripherals and software. Would interested *commercial* producers please get in touch with Reg Eyre, College of St. Paul and St. Mary, the Park, Cheltenham, Glos. GL50 2RH. The scheme will be announced to members in a future edition of *MICRO-SCOPE*.

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LEAs
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Miss Marjorie Briggs, Flat 3, 67 Leylands Lane, Bradford, BD9 5QT

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CHECK YOUR ADDRESS LABEL NOW

If regional activities are to be effective it is vital that each member is linked to the appropriate region. The regions are coded as follows:

22 BFPO
01 Capital
12 Chiltern
03 Eastern
10 East Midlands
21 Foreign
05 Greater Manchester and Lancashire
09 Merseyside with Cheshire
07 Northern
14 Northern Ireland
20 Scotland
11 Southern Counties
04 South West
08 South Yorkshire and Humerside
13 Wales
02 West Midlands
06 West and North Yorkshire

Please check your address label. The region code is the final two digits

MAP/membership number/county/Year REGION CODE

(e.g. MAP/01455/BIRM/0502). If yours is wrong please correct it and return the label to Janet Crawford, MAPE Subscriptions, BKT Subscription Services, Dowgate Works, Tonbridge, Kent. Your record will be corrected and you should receive all local MAPE information.

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