

**MESU**

**Ten teachers' accounts of using  
micros with children with  
special educational needs.**

**Compiled by Bristol SEMERC**



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The articles in this booklet represent the experiences of teachers in primary and secondary schools and units, and in one special school. They have been collected from various sources and our thanks go to everyone who has willingly allowed work to be reproduced here. Particular thanks go to the T.E.S. for permission to reprint the article on framework programs by David King.

Jean Johnston  
Marie Buckland  
July 1988

## **New Framework Programs**

by David King, Manager, Special Needs Software Centre

(first published in Times Educational Supplement 1987)

**“This is the type of program I’ve been waiting for for years - it’s so easy to make it do what I want it to do!”**

More and more teachers are moving away from trying to use a large number of specific computer programs, each dealing with one area of the curriculum. Instead they are concentrating on using a small number of versatile and easy-to-use “framework” (or “content-free”) programs, which they can tailor easily to meet the specific needs of their pupils. “Framework” programs are programs which provide a framework into which teachers (or pupils) can put the sort of contents that they want to use by making their own “files” for the program. In this article I shall describe briefly some framework programs for the BBC micro which have been released recently through the MESU Blue File system: all are freely copiable within the U.K. (see end of article for details of how to get hold of copies).

There are several framework programs that are already being widely used. One of these is PROMPT, the first word-processor in which it was easy for students to enter whole words and phrases by a single press on the Concept Keyboard. Another popular (and much more sophisticated) word processor was WRITER, from the Primary Project. These two programs have now been combined in a considerably-enhanced version, called PROMPT/WRITER, which is even easier to use than its predecessors, and has many new features (including two very clear large fonts for printouts). One of the best features of PROMPT/WRITER is how easy it is to make or change “overlay files” (i.e. vocabulary lists for the Concept Keyboard). What’s more, these overlay files can be used in other programs. PROMPT/WRITER files can be used directly in the popular word-processor FOLIO; and by using the new Blue File program CONCEPT, PROMPT/WRITER files can be adapted easily for use in other programs such as WORDWISE PLUS.

CONCEPT lets you set up the Concept Keyboard so that it can be used with many programs that were not written with the Concept Keyboard in mind. The teacher can make one or more files with CONCEPT for use with a particular program; children can then enter commands into the program by pressing on words or pictures on the Concept Keyboard rather than by laboriously typing words in letter by letter from the computer’s own keyboard. What these words are, and where they are on the Concept Keyboard, is up to the teacher: as a result many programs that might otherwise be offputtingly difficult for many children become accessible. One interesting and very popular use of CONCEPT is to control LOGO or turtle-graphics: the commands that are to be used can be shown as diagrams on the Concept Keyboard, and children can build up an understanding of LOGO in a logical and easy-to-understand way by using a succession of Concept Keyboard overlays.

TRAY is a framework program which has been available for several years, in various forms. A new version, DEVELOPING TRAY 2, has been prepared by Mike

Blamires of Redbridge SEMERC, and has been distributed through MESU Blue File. This is easier to use, and has many new features.

Databases are a class of framework programs which have been used for many years. It is, however, often difficult for children to visualise what a database is. A new program makes this task very much easier: this is LIST EXPLORER, perhaps the most exciting new framework program of the year. LIST EXPLORER is a database program which uses the Concept Keyboard in a natural and versatile way. All of the "records" (i.e. items in the database) and all of the "field names" (i.e. headings used in the database) are shown on the Concept Keyboard overlay sheet. "CHILDRN" is a typical LIST EXPLORER overlay; in the file, there are 8 children, with information stored under six headings. To find out about the children, users press one of the photographs on the overlay, and when appropriate one of more of the headings: the relevant information is then shown on the screen. New information can easily be added, or old information changed. The format lends itself readily to many exciting uses: science files using objects found on field trips; files for home economics using pictures of different types of foods; files using a map on the overlay, with information about the different places shown in the map. The most revolutionary thing about LIST EXPLORER is the way in which children can use pictures (or real objects) as their way into a database; like all worthwhile framework programs however, it can be used in many very different ways. The main limiting factor is our own imagination.

Finally, a different type of framework program is represented by WINDOW. Here, a high-resolution picture is "hidden" on the screen; pupils see a succession of different "windows" on the screen, and try to discover as much as they can about the picture from what they see. WINDOW is primarily deigned to get children thinking and talking; unlike the other programs described, it works best if there is an adult with the group of children who are using the program, to direct conversation sensitively. The window can be controlled from a switch, from a joystick, or from the Tandy Electronic Book or the Concept Keyboard (as well as from the computer's own keyboard). WINDOW comes with over 30 attractive and interesting screens; and it is easy to get new screens in to the program from other programs (such as IMAGE), or from video digitisers.

Many teachers are sceptical about computers. They want programs which are as easy as possible to use, and yet which have the versatility and flexibility to be used in many different ways. Above all, they want programs which supplement (rather than interfere with) what is already being done in the classroom. Well-designed framework programs are proving very popular indeed with those teachers who have discovered them. They are one of the most effective ways of using micros; what is needed now is a strong national effort directed at getting these valuable programs used as widely as possible in the classroom.

PROMPT/WRITER (£3), and WINDOW (£4.50) are MESU Blue File programs; they are available from MESU, Unit 6, Sir Williams Lyons Road, Science Park, University of Warwick, Coventry. CONCEPT and LIST EXPLORER are also MESU Blue File programs, and are expected to be available shortly.

DEVELOPING TRAY 2 is available from the Blue File contact person in your LEA. For a list of contact persons, please write to your regional SEMERC.

FOLIO from Tedimen Software, PO Box 23, Southampton, Hants SO9 7BD.

WORDWISE PLUS from Computer Concepts, Gaddesden Place, Hemel Hempstead, Herts HP2 6EX.

IMAGE from Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge

## **WORK TO BE PROUD OF.**

### **ACHIEVING SUCCESS WITH WORD PROCESSORS**

#### **SPECIAL ACCESS TO A MAINSTREAM CURRICULUM**

##### **Computer Programs Used:**

**PROMPT3 (Blue File Software)  
EASY TYPE (Sherston Software)**

John is a second year pupil in a comprehensive school. He has a reading age of 7.9, a spelling age of 6.3 and difficulties in writing. His major problem is the slow speed at which he can operate. John has help from the special needs teacher in the form of withdrawal, but the special needs teacher also produces specialist computer material to help John cope with the normal curriculum for the year group.

In one curriculum area John and his peer group were studying the Herring Gull and Baboons. They watched videos and were expected to complete work-sheets using reference booklets. John understood the content of the videos and when questioned, remembered the key points, but he was unable to read the booklets or to write answers to the worksheets. He produced little work even when the class teacher gave him extra time.

The special needs teacher used PROMPT3 (Blue File Software, now superseded by PROMPT/WRITER) with the Concept Keyboard to introduce John to certain keywords so that he could build up suitable answers. He quickly learned to sight read the words and to use the normal computer keyboard to produce answers to questions.

The next stage was to repeat these keywords in a close exercise using PROMPT3. John felt fairly confident in using the keywords in this manner.

John's bank of recognised words formed his own special dictionary and were inserted into a word processing program with a call-up dictionary facility, in this case EASY TYPE (Sherston Software).

The special needs teacher writes,

"Once the teacher has been through these key words, first using the Concept Keyboard, then moving on to EASY TYPE, a pupil whose ability is poor can manipulate a necessary vocabulary to express his ideas - something which would be impossible without these word-processor programs. At the end of the term John has a file of work which compares favourably with his peers".

**'He has understood the concepts covered, has good recall of them and feels that he has succeeded in this section of the curriculum.'**

John was one of six pupils in the 2nd year who were able to use these facilities. It

was done by withdrawal with direction by the Special Needs teacher. I would hope that once the procedure had been established and discs/overlays created, pupils themselves could use the facilities with either minimal teacher involvement or perhaps mainstream peer guidance.”

#### THE GULL

In Spring the herring gulls pair off and mate. They go off to an island, mate and build a nest. The female lays three eggs. Both parents incubate the eggs for four weeks.

When the chick hatches it is the same colour as the eggs. When it sees its mother it pecks at a red spot on her beak. Then the parent regurgitates food from its stomach for the chick. The chick is fed like this for two months.

The parents will attack chicks who come near the nest, they must recognize their own chicks. They know the pattern of spots on the chicks' heads, and their voices.

(sample of work produced for pupil's folder)



## A Project on Crime Detection Using Mallory Manor

by Joyce James.  
George Ward School, Melksham

Most teachers who have experience of using computers with upper juniors or secondary school pupils will have come across "Mallory Manor". It is a crime detection game which provides opportunities for discussion, note-taking, logical thinking, deduction and decision making. The programme is set in a country manor where a burglary has taken place. Police have to search the property and obtain statements from the occupants to try to solve the crime. The original programme has now been altered to include a content free option so that the users can create their own setting, rooms, characters, objects that might be stolen, and searchers to look for the the thief.

I used this program as part of an English project on crime / detection, with a third year special needs group who were of very low ability (most were statemented), many were presenting behaviour problems, most were unimaginative and were very difficult to motivate.

The first lesson in the project was to spend some time in groups of four or five, playing the original game of "Mallory Manor". One member of each group kept records of which rooms they had been in; how rooms link together; where people said they were at the time of the crime; who they said they were with; whose alibi was confirmed; and which people were suspected (the guilty person is never suspected). All enjoyed this activity. Each was extended at his / her own own level. For some even the reading involved was a useful exercise, while others used reasoning and logical thinking to attempt to solve the problem.

The second lesson was spent with the pupils and myself sitting around two tables. I explained that the framework of the "Mallory" programme could be used to make a programme of their own. It was decided that I would do the recording on this occasion as it would speed the process up and free the pupils to make the other decisions.

After some discussion it was decided that the game would be called "School". It would be set in the George Ward School as all of them were familiar with the various rooms there. The time was to be the afternoon "as things could get stolen in the lunch time". The next stage was to choose which objects might be stolen. There were fifteen people around the table and each chose one object. Some interesting objects were selected like "Mark Wood's bus pass", or "Mr. White's spectacles".

It was decided to have twenty rooms. This was not as easy as it sounds as each room had to start with a different set of three letters and capital letters could not be used. All pupils joined in the discussion and finally twenty different locations were suggested. There was no time in this lesson to choose the characters but there was time enough to tell the group what the requirements of the next stage of planning would be.

At the next session each pupil decided on a character for the programme. Some chose themselves and were prepared to use as "occupation" nicknames like "carrot top" or "galeforce", whose use in normal circumstances would rapidly lead to blows. Others chose one or other of their friends or their teachers. They also had to decide on two

remarks that each person would make. They had some difficulty in deciding on this as they had to avoid saying where they were at the time of the crime; the computer decides on that. Eventually suggestions were made like "Kirsty always says to teachers 'You should tell them off Miss'", or "Miss Gee always says 'This will have to be sorted out'", and gradually the data was built up.

Finally it had to be decided who would be the "searchers" (detectives), and since the crime was to take place in school it was considered to be suitable that teachers would attempt to solve it.

Pupils took it in turn to work in pairs entering the data into the computer. Some even worked in the lunch time and after school to complete the task. When they had finished, I did any editing that was necessary - where words had been spelt incorrectly or left out. There were not very many errors.

When 3A(5) arrived for their next English lesson the computers were ready and their programme, "School" was already loaded into each computer ready for use. Although they had spent so much time working on it they were still surprised and excited when they found a very efficient and professional programme working with their data and even their names in it. Most of it worked very well although there were some unforeseen incidents which were created by the computer, like Miss Wilde, the historian saying "I was going to check my history money. I was in the boys' toilets at the time with Matthew Booth." Fortunately Matthew is not easily upset. The rest of the group thought it was hilarious. It was slightly easier to solve the crime because they knew the people in the programme and were able to remember more easily who was where and with whom.

In the next English lesson for which the computers were available some pupils from another third year group were invited in to play "School". The self-esteem of 3A(5) reached new heights as they showed the other pupils the game that they had written and programmed into the computer, and explained how to play it.

When the time came to evaluate the programme, pupils were able to suggest ways in which it might have been improved. If there are thirteen people and twenty rooms it must follow that many of the rooms are empty. It is not very interesting to go into one empty room after another. It was decided that the next programme would have less rooms. Matthew Booth suggested that it might avoid some embarrassment for people if toilets were not used as some of the rooms. It was also pointed out that when the computer says what has been stolen it always starts with "a". While it might make sense to say "a school master key has been stolen", to say "a the video recorders have been stolen" sounds silly.

A further programme was designed. This time the place was "Bristol Zoo". The group had a very successful visit there last summer and they decided to use it as a setting for their next crime adventure. This game also inspired much interest, concentration and enjoyment.

The crime detection project involved much more than just the computer programmes. There were interesting discussions on; Is it wrong to steal? Should finders be keepers? Is shoplifting stealing? How do the police discover who is guilty? How

should a thief be punished? How is crime reported in the newspapers?

Written work on the project included some newspaper reports written by groups of pupils using "Front Page Extra". Two of the better of these reports are included. Some of the more able pupils in the group also wrote quite lengthy crime stories.

The project extended into drama sessions with "police" interviewing "suspects". The crime was planned while the police were outside the room. When questioned, all the suspects had to speak the truth except the guilty person, and the police had to decide who that was.

The project involved discussion, collaboration, logical thinking, planning, deduction, drama, reading, writing, punctuation and spelling. The computer played a major role in the activity but there was certainly transfer of learning. This was particularly obvious in the drama, in the discussion and in the written work. Last but not least, it kept a group of potentially troublesome pupils keen, enthusiastic, well motivated and learning for a full six weeks of English lessons.

### Computer programs used

Keeling, R.	1985	<u>Front Page Extra</u> Newman College with MAPE.
P. Hunter	1986	<u>PenDown</u> Logotron
Straker, A. et al.	1985	<u>Mallory</u> Newman College with MAPE

**MELKSHAM NEWS.** 15p

24TH MARCH 1987

### Strange Crime at Bristol Zoo.

**3A(5) Visit Zoo.** (This) visited Bristol Zoo yesterday as part of their solence and basic subjects course. There is no truth in the story that they went to visit Danny's sister in the orang-utan cage or Graham's brother in the gorilla house.

Some things were stolen at the zoo. Caroline lost her purse, Joseph lost a can of coke, Mark lost his camera and Mrs. James lost her sense of humour.

When they were searched, Ricki said, "I don't know nothings". Sharon said, "It's not fair. I always behave well. The boys always get us into trouble". Joseph said "You know me! I wouldn't do it. I am not worried".

Danny and Graham were too busy looking for food, and Sharon and Martin just wanted to have a disco.

In the end we found that Danny had Caroline's purse, Mark's camera was inside the reptile house. Joseph's can of coke was inside Graham. Mrs. James found her sense of humour when we got back to school.

He sang all the way home in the mini-bus. It was a good laugh. Gina was sick on the way back. Terry said it was her gun fault for eating too much. We all had a good time and we asked Mrs. James to take us next year.

**Visit Bristol Zoo.**

**DAILY DRUDGE.** 38p

17TH MARCH 1987

### CRIME WAVE IN MELKSHAM.

**COMPUTERS STOLEN.**

Three BBC Computers were stolen from the George Ward School on Monday night. Mrs. James said that she locked them away as usual before she went home on Monday afternoon, but they were missing when she went to get them out for her lesson with 3A(5) on Tuesday morning.

The police have been informed and they are questioning some suspects about the matter.

Mark Wood said that he was in the bicycle shed at the time with Matthew Booth. Ricki Lloyd said, "Why ask me? I don't know nothing."

Kirsty, Sharon, Gina and Caroline said that they were together at the time watching a Madonna video. They suspect the chatterbox.

Shaun the computer ace said that he saw two strange characters outside the school when he was on his way home.



**Computers for sale see Carrot Top.**

## Working with children with special educational needs in the secondary school

brief account by Doreen Jennings (SENS) March 1988

I have been working with Alan Croker, a second year pupil at Harold Hill Community School, supporting him in French.

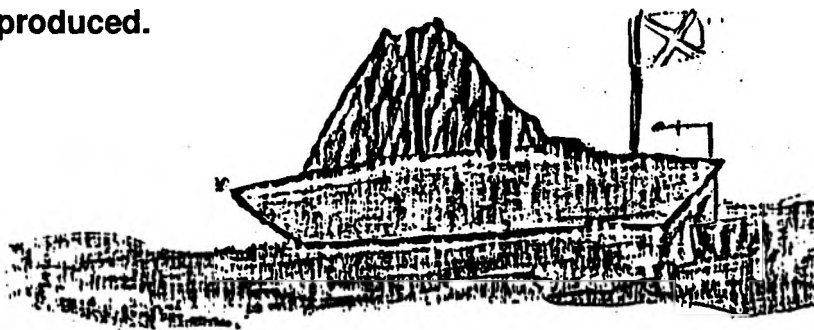
One of the exercises he had to do was to make sentences using particular beginnings, middles and endings. I thought it might be useful if he did this on a Concept Keyboard. I made an overlay and he constructed some sentences. I was doubtful whether he knew the meanings of his sentences so I got him to write just one sentence and then draw a picture to go with it. I then made the results into a little booklet. We asked him what he thought of the programme. He said, "It's better because you don't have to keep writing. It's easier for people with difficulties.

The PROMPT3 overlay designed for Alan.

le soir	je fais	de la voile	<b>Prompt3</b> le dimanche
En hiver	mon frère fait	des promenades	mes amis font
En été	ma soeur fait	de la gymnastique	du ski
Quand il fait beau	nous faisons	du camping	

This is the piece of writing Alan produced.

Le soir nous faisons de la voile.



Le soir mon frère fait du camping. Quand il fait beau nous faisons des promenades. En été je fais du camping. Le soir mes amis font de la gymnastique. En hiver nous faisons du ski. Le soir nous faisons de la voile.

## **USING AMX ART FOR EXAMINATION LEVEL WORK**

F. has cerebral palsy which causes him to have some difficulty with walking and a slight hand tremor which makes handwriting difficult and prevents him from doing fine line work with a pencil. He had always been to a special school, as his poor mobility and dependence on a typewriter militated against his working in the comprehensive.

When he was 12, he asked if he could join a group of his special school peers who were starting to join an art class in the adjoining comprehensive school. He chose to do this as he wished to experience life in the mainstream school and had no idea he had any artistic ability.

He discovered he had great skill in using pastels and water colour washes to create impressionistic pictures. He got such pleasure from this, worked so hard and made such progress, that he convinced the comprehensive school art department that he should be allowed to take art as a CSE subject.

While his painting progressed well, his art teacher told him he could not possibly get a high grade in his CSE unless he could produce work from all parts of the syllabus, including fine line work. His art work had to stand on its own merits as the examination board would make no allowances for his tremor.

It was at this stage that his special school acquired the newly available AMX SUPERART package and mouse. His computer teacher was no artist, but was able to get him going with the technology and able to use his own working disc.

His first effort was a church. He experimented with the angles of the walls and made attempts to get the perspective right by trial and error. The weathercock was assembled pixel by pixel, using the zoom facility. He took three lessons to complete this stage, printed the picture out at the end of each session and took all the pictures to his art teacher. The art teacher had not been very interested in computer art up to this point, but when he saw what F. had achieved, virtually unaided, he realised that here was a means for F. to bypass his handicap. He suggested that F. add a landscape to his church to complete the work.

At that time the class were drawing a skyscraper skyline as an exercise and F. did his on SUPERART. He lost his first morning's work, as he forgot to open the file before he started, but he never made that mistake again.

Unlike traditionally drawn drawing, by printing out each week's work, it is possible to keep a permanent record of each stage of the computer 'drawing' as it progresses. So F. was able to keep samples showing two stages of his picture of the colliery winding gear from his village. He also printed out several pictures showing the pro-

gressive compilation of a picture of a corner of his special school, where he was experimenting with texture and perspective.

During his two years CSE art course, he produced a great range of painting and computer art. His teacher convinced the examination board that his computer work should be accepted and he was rewarded with a Grade 1. The mainstream school were so impressed with his effort that he was awarded a school trophy for creative talent.

**Judith Stansfield, (Assistant Manager, Newcastle SEMERC.)**

(Sample pictures are reproduced in the Newcastle SEMERC News Bulletin for May/June 1988)

## **Manchester SEMERC's "Special Needs in Mainstream" Project**

**Celia Beeson, Manchester SEMERC**

"Can we play on the computer?" was a question some of the children involved in the "Special Needs in Mainstream" project asked their teachers. They didn't mean playing adventure games. What they wanted to do was to carry on writing and improving their stories - the kind of activity normally called "work". These were children who had previously proved hard to motivate, but who were staying in at lunchtime because they were so excited and involved in what they were doing.

The project, which was initiated in 1987 by Manchester SEMERC, aimed to identify ways in which IT could be used to help children with special needs in mainstream education. These are children who often have no striking single handicap, but are not making much of the school experience. The Warnock Report estimated the average number of such children at about 20% - one fifth of our classes - and the aim of this project was to find ways of using IT to support and encourage the learning of these children. The problems encountered are often to do with lack of motivation initially; and later a lack of the learning skills and strategies necessary to sustain and complete a task.

Special emphasis was laid on work related to language - partly because of the importance of language as a means of learning across the curriculum; and partly because word processing is an area where computers have been shown in the past to be particularly valuable for children with special needs. The ability to correct and improve work before it is printed, and the neat appearance obtained, has given many children who struggled with writing great help. Furthermore, good quality flexible word processing programs have been available for a long enough time to allow software to have been developed and modified to meet the needs of teachers and children. Display was also an area of interest, because micros are useful for helping to present work well, and because of the improvement in self esteem this can give. The teachers involved in the project shared the assumption that the use of computers should be integrated into the normal planning of topic and language work. The starting point was "How can the computer help with these planned activities, or with this particular problem?" rather than "Here's a computer - what can we do with it?". Specific problems which the teachers hoped to alleviate during the project were: unconfident handling of information, limited attention, restricted language, poor memory, hyperactivity and lack of sociability and cooperation.

Lyn Gee, a teacher at Kensington Junior School in inner city Liverpool, was particularly interested in how the computer could help with her class's language and topic work. The programs she used most heavily were **Prompt 3** (now available as **Prompt/Writer**) and **Folio** - although there were others used, including **Lists** (a database program designed to help children organise information) and **Facemaker**. **Prompt/Writer** is a word processing program which allows children to use the Concept Keyboard together with, or instead of, the ordinary keyboard. The Concept Keyboard is a flat, touch-sensitive surface available in either A3 or A4 size onto which are put paper overlays designed by the teacher. The teacher makes an "overlay file" to tell the computer which messages are associated with each area of the Concept Keyboard. By pressing on the keyboard, the corresponding words, phrases or numbers are made to appear on the screen and can later be printed out. This enables

children to enter a whole word or string of words at a time - on the overlay they can have sets of words which they have difficulty spelling; or words and phrases linked with a topic; or words which are important to the children, such as their own and their families' names. Overlays can also use pictures, photographs or drawings - or even have objects stuck on to them. **Folio** is a word processing program which enables children's work to be displayed and printed out in a wide variety of fonts, and can also be used with the Concept Keyboard. One of its strengths is that it can use **Prompt/Writer** overlays, so that teachers can use their overlays with whichever they feel is the appropriate word-processor for a particular task. **Facemaker** allows children to piece together an identikit-type picture on the screen by choosing from a range of options for each feature - hair, eyes, mouth and so on.

Lyn Gee was especially pleased with the improved sociability shown by her children during this project, and by the way in which they cooperated with one another. She was also hoping to improve reading, to make writing fuller and more varied, and to practise specific language skills such as sequencing and prediction. In one project, using **Facemaker**, the children worked in pairs to design a portrait for a "Wanted" poster. Sometimes children who were not particular friends were paired together in the hope that they would cooperate. This work led to some discussion about features, likenesses, identical and non-identical twins, mirror images, and some art work including modelling 3D heads. The children (including those with little reading ability) were able to use **Prompt** to make captions for their posters, which were then printed out and added to the pictures to make an attractive display. The written work was also used as a basis for considering sentence structure and cloze procedure (sometimes using the children's own work as the cloze passage).

Lyn Gee's current project, with 4th year juniors has the theme "Dull, wet and windy". The children have been using **Folio** to write haiku and stories. A starter sentence about a magic umbrella was provided to start the children off - the resulting stories were collated into a book and the middle infants were invited in to have the stories read to them, and they then produced the illustrations. Lyn found that the computer was a great help with motivation and in encouraging children to work together. Working in a group with one child typing in helped cooperation and tolerance: they had to listen to one another's ideas and come to an agreement. She also found that the written work of children taking part in the project improved both in quantity and in quality - their work was generally longer and had more varied vocabulary than previously, whether they were using word processing or handwriting. -

Irene Bullock, who teaches at Valewood Primary School in Sefton (Merseyside), is in an area with fewer obvious social problems than Kensington Junior School. Nevertheless, she is coping with similar problems to do with limited attention span and concentration, and difficulty in completing tasks, with some of her vertically grouped 5-7 year olds. She was looking for something that would provide a flexible and open-ended task because of the wide range of age and ability in her groups., and therefore chose to work mainly with **Prompt/Writer**.

She was able to prepare overlays with a variety of words which could be used to make many different sentences, simple or complex. This task was designed to suit children just beginning to read and those who were more advanced: the children could find their own level. Her particular concerns were with language, maths and information handling and she aimed to introduce and reinforce concepts such as one-to-one correspondence, sequencing, sets, logical ordering, classification, sentence structure, and understanding a word



both as a discrete entity and as part of a sentence. For example, some of the simplest overlays were intended only to make the connection between one picture or object and one word; others were arranged with nouns, verbs and other parts of speech grouped together so that following the sequence provided the sentence structure and helped with left-to-right ordering. Many of the overlays were personalised to use the children's own vocabulary and to reflect their own interests and activities; these were prepared as an aid to reporting and creative writing and fitted in well with the "Breakthrough to Literacy" approach already in use at the school.

The overlays were also visually exciting and often used texture and colour to provide interest; many were made with coloured felt shapes and actual objects. These were tactile and tempting to touch, and helped to make the transition between the concrete objects and symbols relating to them - children press the object and up pops the word or number on the screen. In one example, an overlay used to record an experiment in growing mung beans had beans, cotton wool and the seed packet stuck onto it. In associated work on Jack and the Beanstalk there were overlays made using the children's own drawings and vocabulary.

Also used at Valewood was **Podd**, a program with a cartoon-type character who can be animated by typing in the correct words. He appears on the screen beneath the incomplete sentence "Podd can ....." . The children have to guess what Podd can do and complete the sentence. If their guess is correct Podd will perform the action. This program is useful for language work, especially on verbs, and can be used well in groups. Irene Bullock made **Prompt/Writer** overlays as a follow up to Podd; children used these to record in sentences what Podd could and couldn't do, and the printouts were used to make personal books. This provides a good example of how programs can be used together.

Computers can play an exciting part in helping overcome learning difficulties; this is particularly the case with open-ended software. Only a few examples of the use that can be made of educational software have been mentioned here; but there are many similar examples to be found in schools around the country. Good software, creatively used, can catch and hold children's imagination, and can help them tackle learning with confidence and enthusiasm.

Celia Beeson  
MESU Special Needs Software Centre  
May 1988

Acknowledgements to Valewood Primary School, Kensington Junior School, and Manchester SEMERC.

**Prompt/Writer:** available from MESU, Unit 6, Sir William Lyons Road, University of Warwick, Coventry CV4 7EZ.

**Folio:** available from Tedimen Software, PO Box 23, Southampton, Hants. SO9 7BD.

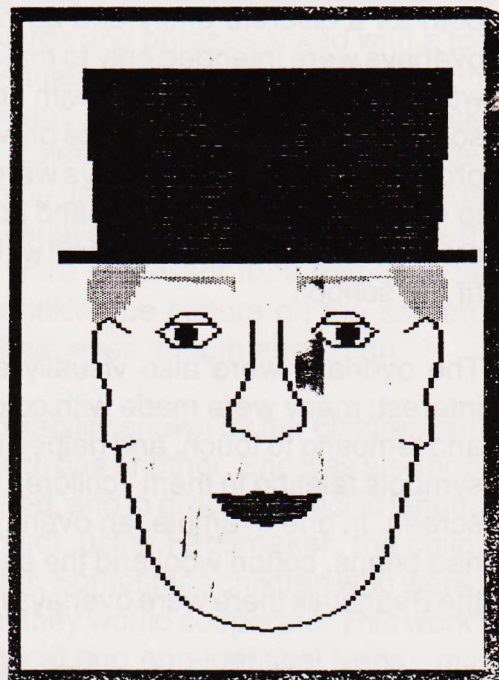
**Podd and Facemaker:** available from ESM, Duke Street, Wisbech, Cambs. PE13 2AE.

**Lists:** available from SEMERCS or LEA co-ordinators.

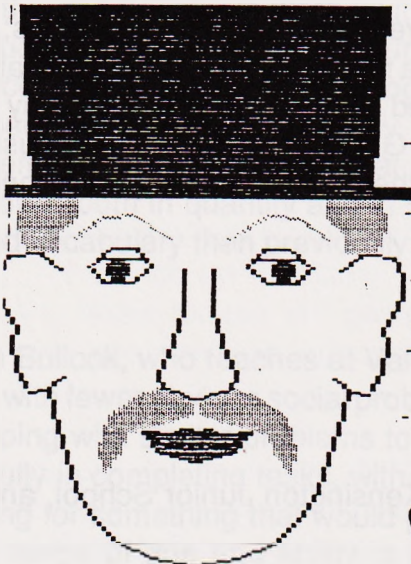
**Concept Keyboards:** available from AB European Marketing, Wharfedale Road, Pen-twyn, CARDIFF, CF2 7HB.

This is a description of Gerard.  
 My eyes are small., my eyebrows  
 are straight and my nose is small.  
 My mouth is small, my hair  
 straight and my chin is round. My  
 ears are small.  
 I am happy. My mum and my sister  
 help me. My dad and my uncle  
 help me too.






Gerard.



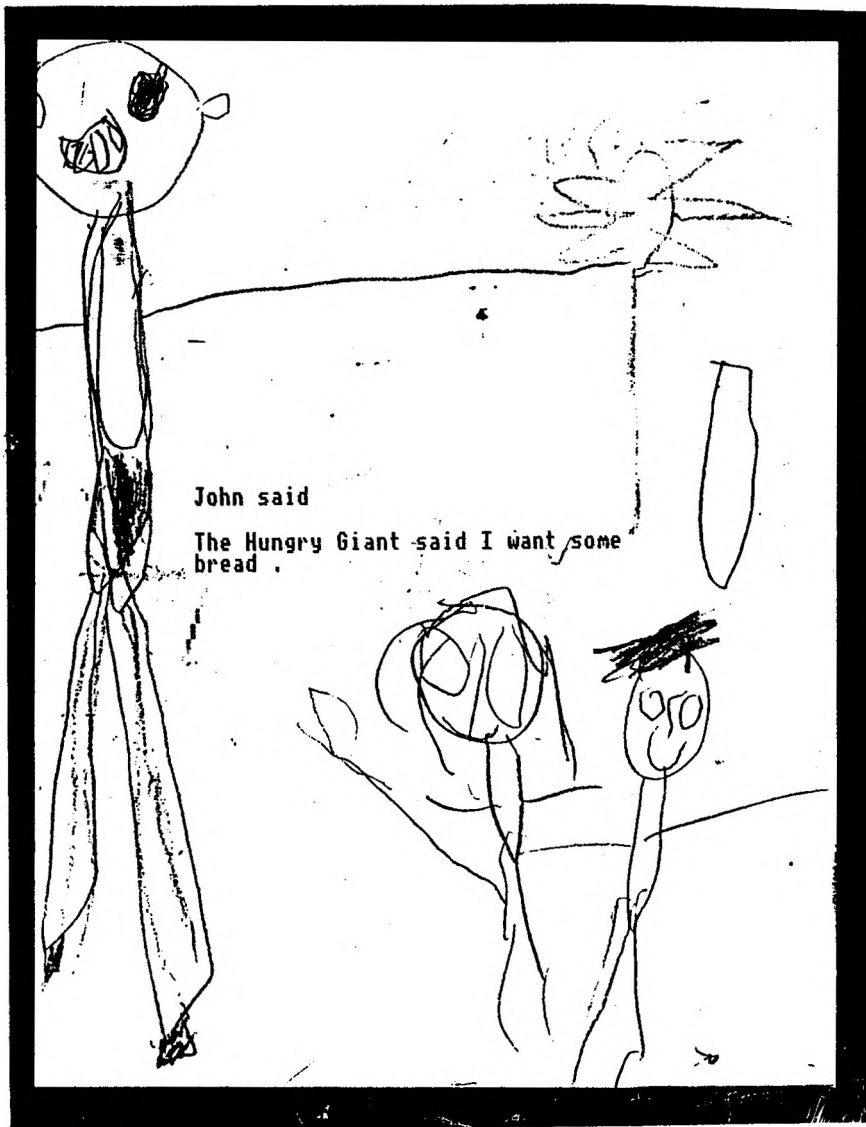
Writing produced as follow up to 'Facemaker'  
 using the attached 'Prompt/Writer overlay'.



face

I	have	eyes	
a		nose	ears
is	are	hair	chin
My		mouth	blond
one 1	two 2	long	blue 
		short	grey 
			brown 
			green 
Return	↓	↑	
	←	→	• Rub Out

Prompt/Writer Overlay used in conjunction with  
 'Facemaker' as part of Lyn Gee's project.

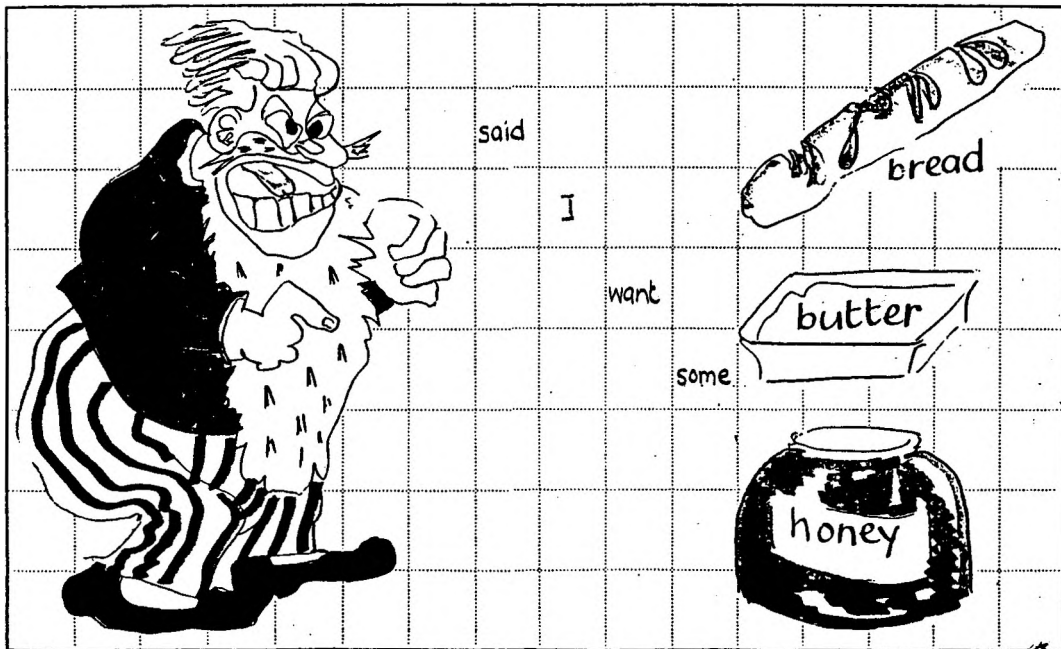


Work produced using the Prompt/Writer overlay shown below.

(light)  
○

PROMPT/WRITER

(light)  
○  
Filename: hungry3 (saved)



Prompt/Writer Overlay produced by Irene Bullock, based on 'The Hungry Giant'

# "MEETING SPECIAL EDUCATIONAL NEEDS IN THE PRIMARY CLASSROOM"

*A Personal Experience of a SEMERC Inset Course.*

This two-day inset course at SEMERC attracted a wide variety of teachers ranging from mainstream class teachers concerned to meet special needs within their classrooms to special needs teachers looking for resources both to support integration and to use in special units. I went as a teacher of the deaf from a partially-hearing unit of nursery/ infants which had just acquired its own computer. As a virtual novice to computers, I had already found the standard infant programs useful only in a rather limited way and was looking for more flexible programs which I could adapt to genuinely meet individual special needs.

The course was organised as follows:

**Day One** - An introduction to two new programs "PROMPT/WRITER" from MESU and "TOUCH EXPLORER" from SEMERC. The afternoon was spent designing and setting up overlays using these programs.

This was strategically followed by a fortnight back in school using and extending our new materials.

**Day Two** - A 'reporting back' session in which teachers shared their work - the successes and failures of different overlays, the problems we'd encountered and any plans for future work. This was, for me, one of the most exciting parts of the course as people passed on their enthusiasm, revealed alternative uses of the program or had perhaps explored areas and ideas I hadn't had time to. This session was followed by frantic photocopying and disk copying! The remaining time was spent exploring the possibilities of "TOUCH EXPLORER" or 'hands on' experience of the variety of programs in the SEMERC library.

The course was for many people, including myself, their first contact with the Concept Keyboard and its use in conjunction with the "PROMPT WRITER" program revealed endless possibilities for helping a wide variety of specific problems.

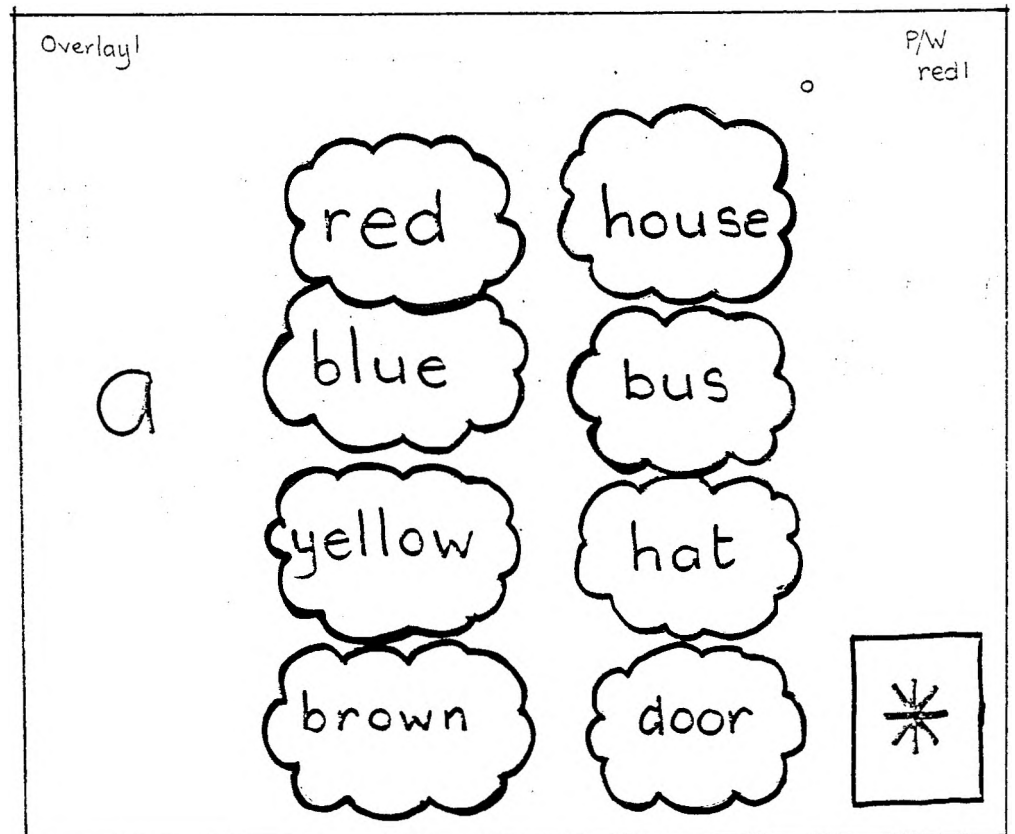
I set about using the program to help a five year old (middle infant) partially-hearing boy. N— has been having particular problems with the initial stages of independent writing. Hearing problems lead to a number of difficulties with written work.

1. Typically, N— has quite a large sight vocabulary but is slow acquiring phonic skills making the use of word cards or dictionaries problematic.
2. A poor verbal memory also makes lengthy searching for a word difficult.
3. As with all language problems, word order and sentence structure can be muddled so the 'word processing' aspect of the program is useful.
4. Crucially, N— lacks confidence in his ability to tackle anything new. If the computer can help his attitude, its effect will have been positive.

So far N— has begun work with 3 overlays:

1. A tightly structured reading activity game based on N—'s sight vocabulary from the school reading scheme.
2. A limited vocabulary overlay relating to a story and vocabulary N— knows well which was used to write a simple story.
3. A more flexible overlay used as a 'word bank' for personal narrative.

### Overlay1



This was designed with 2 main aims:

1. To introduce N— to the Concept Keyboard and accustom him to 'finding his way round it' for vocabulary.
2. To introduce N— to 'writing' through reading, retaining a sense of word order and sentence structure whilst looking for the next word.

I have since used this overlay with other children for additional reasons:

1. To reinforce left-to-right orientation.
2. To reinforce a basic sight vocabulary.
3. With a profound deaf child to introduce the conjunction - adjective - noun structure as one of her first experiences of putting words together in a phrase.

N— used the overlay in two ways:-

1. Making up his own phrases, drawing a picture to show he has attached the correct meaning to it.
2. Using the card pack for early word games from the '1,2,3 and away!' Scheme to 'write' a phrase describing a particular picture.

Overlay 1

a brown door.  
a brown door.  
a red house.  
a blue bus.  
a yellow hat.  
a brown hat.  
a blue bus.  
a yellow house.

The illustrations include a door, a house, a bus, a yellow hat, a brown hat, a blue bus, and a yellow house. Lines connect the text to the drawings: 'a brown door.' to the door, 'a red house.' to the house, 'a blue bus.' to the bus, 'a yellow hat.' to the yellow hat, 'a brown hat.' to the brown hat, 'a blue bus.' to the blue bus, and 'a yellow house.' to the yellow house. There are also some unexplained lines connecting 'a brown door.' to the yellow hat and 'a blue bus.' to the yellow house.

N— loved this and very soon found his way happily round the keyboard.

### Overlay2

Overlay2

Roger and the pond

P/W Pond.

Roger Jennifer Johnny ran fell looked saw got

pond window home bed ladder ice snow

and

out on in to the she of .

The icons are: a pond, a window, a house, a bed, a ladder, a block of ice, and a pile of snow.

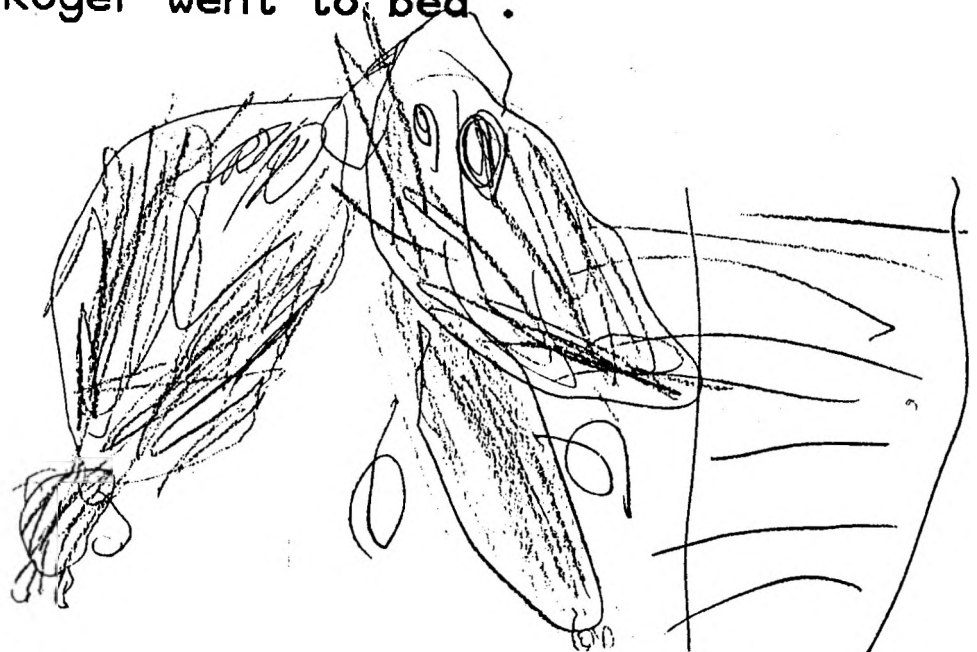
This contained a vocabulary with which I knew N— was familiar, if not I gave him an explanatory picture. The overlay was simply colour coded according to syntax; for example, verbs were green, nouns blue etc. This was intended to help N— locate a word more quickly and also begin to point out the structure of language. N— had already read 'Roger and the Pond' and the story had recently been the subject of a story/drama session. I therefore knew that the vocabulary and sequence of events were familiar to N— (two potential problem areas with the hearing-impaired).

The overlay was introduced as part of a reverse integration lesson with a small peer group at a similar level to N—. This group were eager to try the overlay and N— watched them complete their work before he began his own. The piece of work in print is his first attempt completed with no input from me other than 'typing in' words which did not appear on the overlay.

Overlay 2



N  
Roger put on his hat . Roger fell in  
the water. Jennifer pulled Roger out .  
Roger went to bed .



### Overlay3

P/W

Overlay3  
o

a b c d e f g h i j k l m space

n o p q r s t u v w x y z capitals

N      Chrissy mummy daddy nanny grandad Larry

Mrs   Mrs   Jonathan Gemma Lewis Harry Natalie  
Pester   Harding

Mrs      I   me my we with to out on in of  
Tonkin

came went ran got saw had has was

the      •      —      and

To create this overlay I combined words from N—'s personal sight vocabulary with those he seemed to need most frequently. Again, the words were colour coded and I tried to set them out according to their estimated amount of use (for instance, 'and' and 'the' are prominently placed). I also introduced the alphabet and the 'magic line' in order to write as the Avon Writing Project suggests (instead of stumbling over a word he doesn't know, the child records the initial sound, if he knows it, and a 'magic line').

The overlay was an instant success and N—'s first piece of writing was completed quickly and easily. N— now uses the overlay as a 'word bank' to write when he doesn't have access to the computer and he is quickly learning the layout. I hope he will soon be writing independently both on the computer and in his book.

N                  went to Chrissy b\_\_\_\_\_.

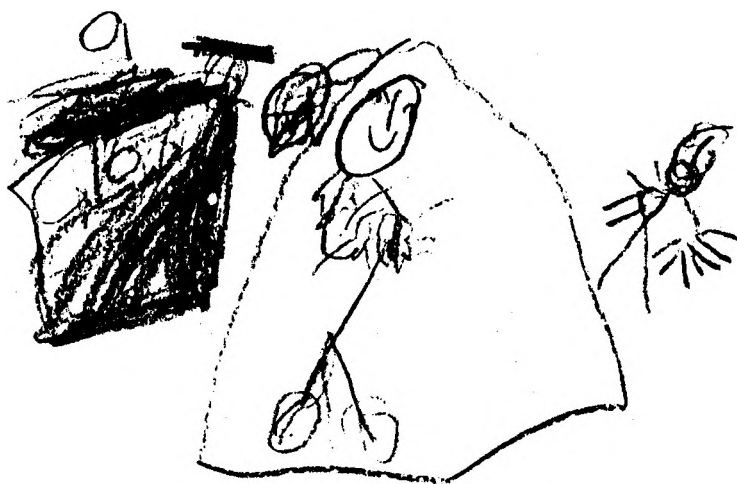
Chrissy said g\_\_\_\_\_. I went to

b\_\_\_\_\_. I had my b\_\_\_\_\_. I got

d\_\_\_\_\_. I went to school .



N went to Chrissy bedroom.  
Chrissy said go away. I went to  
bed. I had my breakfast. I got  
dressed. I went to school.



### Conclusion

The combination of the 'PROMPT/WRITER' program and Concept Keyboard provides an immensely flexible resource for meeting very specific needs - I have, as yet, explored relatively limited usage. It should also be said that the program is extremely easy to use and as quick as any other special needs resource to set up.

Katie Pester  
Henbury Court Infants School  
Partially-Hearing Unit

# ROBOTIX

*Some Classroom Experiences.*

*by Margaret Goodall, Wiltshire.*

Recently my Head introduced a visitor to our Special Unit by commenting, "They're all automated in here now." Well of course we haven't exactly reached that point yet but my group of 7 - 11 year olds have certainly taken to building simple models, particularly working models, both from commercial construction kits and junk materials with great enthusiasm.

The starting point for this, which is for me a completely new activity, was the arrival of the construction kit, 'Robotix', together with an interface and disk which enables us to control our finished models from the computer. The kit itself consists of four motors and a variety of plastic pieces which push together to allow the children to build models which can move forwards and backwards, open and close a grab-arm or jaws, and rotate guns or sonar disks etc. Each individual part is fairly large and easy to handle so interesting models can be produced satisfyingly quickly. Indeed I was surprised by the speed with which even the younger children learnt to use it. The finished models can be powered either by batteries or linked to the computer and controlled by using the function keys. Again this is very simple and the control programme, which allows for manual control or a predetermined sequence to be built up and then stored in the computer's memory, is simple to use and self-explanatory.

Obviously this type of apparatus can aid childrens' learning in a variety of ways. Already I have found it to be of use in encouraging logical thinking, language development and imaginative play. It has also proved an excellent starting point for a wide variety of art work and creative writing. Discussions about imaginary rides on one of our space buggies or what would happen if one of the robots came alive, for example, have encouraged my pupils to produce some of the best stories they have ever written. Moreover they wanted to write about their models and actually enjoyed doing so.

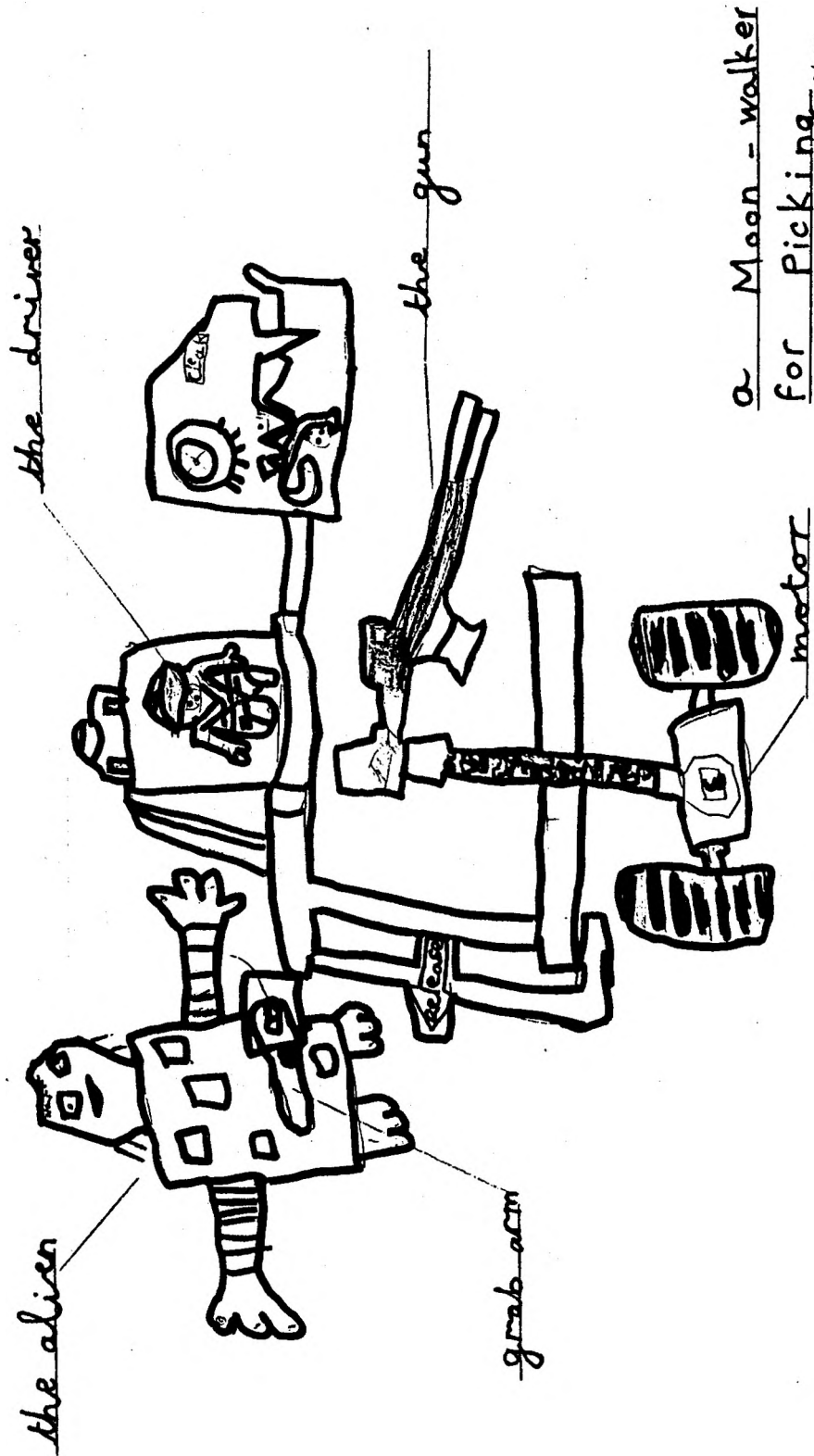
But surely the best recommendation for using such control technology with children with Special Needs is the benefit it can be to individual children. W....., for instance, is one our younger children. He has quite severe problems with any task requiring fine motor control and finds using any sort of small apparatus or writing and drawing very difficult. His concentration span is consequently usually very short.

We had previously given W..... other construction toys to play with but he quickly became frustrated with them and lost interest. However the satisfaction of seeing models he has made himself actually working seems to have provided him with the stimulus he needed, for he will now work for periods of easily up to an hour playing with and refining the models he has made.

Another child S..... has also benefitted, but in a quite different way, from using the kit. S..... was very timid when she joined us about eighteen months ago and in spite of all our efforts is still inclined to worry over much about her ability to cope especially when asked to try something new. Fortunately S..... is naturally artistic and very inventive. Her attempts to use the kit were immediately satisfactory and drew spontaneous congratulations from the other children. So much so that her advice and assistance is now being constantly sought. The extent to which this must have pleased S....., and we think boosted her self esteem, is hinted at in the extract from S's own writing below.

I like playing with the  
Robotix because it is  
good and fun. you can  
build lots of different  
things with it. you can  
make the models move.  
I built a moon walker  
it can pick up aliens  
I like drawing pictures of  
the models I have  
made the boys all  
keep saying "That's  
good S....."

But clearly the greatest recommendation my pupils would make for 'Robotix' is that it is fun. They are constantly asking to use the kit and have shown no sign of becoming bored with it. In fact my only reservation when recommending anyone to invest in such a kit would be to add the warning that when the models are completed and ready to be linked to the computer, if you wish to continue to use your word processors etc. only one computer in each classroom is really no longer sufficient!



on Moon-walker  
for Picking up  
aliens By S.....

# ***A Special Child in the Mainstream.***

***by David Montgomery, Isle of Wight.***

This story revolves around a girl with a progressive degenerative disorder in a mainstream school. The girl was in the process of being statemented and the idea of microelectronic equipment had not been considered before my arrival. The school had not the experience or expertise to know what was available or possible with the right sort of equipment.

L..., 12 years old, attends a 9 to 13 middle school. This year I moved to the school as head of mathematics. Through the experience gained in my role of part time co-ordinator for microelectronics for learners with special needs, I was able to offer advice and begin to plan a programme, at first for mathematics, so that we could understand L...'s problems and begin to overcome those problems created by the lack of knowledge of suitable equipment. We could then plan the use of equipment in the school so she could use it successfully enabling her to compete with other children.

The recently adopted mathematics programme for the middle and high schools in the L.E.A. was S.M.P. 11 to 16, so whatever L... can achieve in the middle school should benefit her in the high school. The S.M.P. scheme is a G.C.S.E. scheme which, because of the needs of the children in high schools, has been introduced into the middle schools in order to have a common thread for children in the local authority area. The scheme consists of a series of booklets that are used as a curriculum resource.

Not wanting to make too many changes to her methods of working before understanding her problems, I watched her attempt to work and noticed that she spent a major part of her mathematics lessons not learning mathematics but overcoming her motor problems. She wrote laboriously and as neatly as she was able. It meant that instead of learning and enjoying the thrills of discovery and solving problems; she was able to avoid the risks of failure and striving to succeed by submerging herself in a pool of mechanical effort. Writing effectively put a stop to her learning. We expected a lower standard from her because she had problems. Obviously we had to make her aware that we wanted her to understand new ideas, learn new skills and not become stifled by having to produce written records. We also needed her to be aware that she could achieve more if we allowed her to use mechanical or electronic means.

Within the first few weeks of the year I told L... that I didn't expect her to write so much in her maths lessons but I had not considered how she would respond. L... just kept on writing as much as before. Even when a teacher sat with her and discussed her work and made her realise how much she was learning the minute she was on her own she reverted to her tried and trusted methods.

By the second week of September I had decided to use a simple word processor with a concept keyboard facility. The choice at that time was between Prompt-3 and Folio. L... liked the idea of having handwriting that was better than the other children in her class so Folio was chosen. The next job was to take the individual booklets and analyse how the necessary information could be transferred to Concept Keyboard overlays.

Having decided the strategy it was now a matter of implementing it. The big factor was time; time to read, time to analyse, time to plan, time to prepare overlays. The annual SEMERC course for coordinators of microelectronics for special needs gave me the time to start work on the overlays.

September 22nd

A3 ca) 7 korbes bhoad ✓  
cb) 3 left over ✓

A4 ca) 3 in each = 21 ✓  
cb) 2 left over ✓

A5 ca) 6 boxes filled ✓  
cb) 0 left over ✓

Ab ca) 5 pencils each ✓  
cb) 2 left over ✓

September 24th  
A7 ca) 4, 2 ✓    ce) 4, 5 ✓  
cb) 4, 11 x  
cd) 4, 3 ✓  
ed) 6, 3 ✓

An example of L... 's work in early September.

## 1a Maps D

<b>1</b>	<b>2</b>	Ape	Insect	Reptile	heaviest	January	Sunday
<b>3</b>	<b>4</b>	Bear	Kangaroo	Zebra	oldest	March	Monday
<b>5</b>	<b>6</b>	Bird	Lion	black	polar	April	Tuesday
<b>7</b>	<b>8</b>	Chimpanzee	Monkey	of prey	sea	May	Wednesday
<b>9</b>	<b>0</b>	Elephant	Penguin	was	is	June	Thursday
<b>A</b>	<b>B</b>	s	he	Kilo	gram	July	Friday
<b>C</b>	<b>D</b>	The	she	hour	minute	October	Saturday
<b>E</b>	<b>F</b>	Time	:	a.m.	p.m.	November	

The overlay used in the example dated early December.

Some overlays are page specific, some are booklet specific, some are topic specific, some are general. Slowly a bank of material is being prepared for L... but as she has gained expertise in using Folio she has shown a greater awareness of mathematical concepts.

B 1 6 th 5 th Right B 2 4 th  
 Right 5 th C 1 A Clock Tower B  
 Cinema C C4 D E3 C 2 E1 C 3  
 Kangaroos C 4 A Penguins B Apes  
 C Insects C 5 A A2 B Monkeys  
 C Zebras C 6 A

D 1 A 9:30a.m. B Friday C  
 SeaLions D 40 minutes D2 A  
 6 hours B 8 hours 30 minutes C  
 8 hours 30 minutes D3 A 325  
 grams B 72 kilograms C November  
 D Lion E she F The Lion is. F1  
 Tortoise F2 2 kilograms F3 70 kilo  
 grams/ Heavier

An example of L... 's work dated early December.

Late in December we were visited by the staff of Bristol SEMERC to discuss various other matters and L... 's needs were mentioned. We were given advice as to how we could improve further the quality of provision for L.... Apart from an expanded keyboard and keyguards there seems to be great potential in Predictype as an aid to wordprocessing. This piece of software does not work with Folio but it does work with View and with Writer but not with Prompt.(1,2 or 3).

Most likely the best possible combination will be Predictype with either Writer or View plus, of course, Concept Keyboard overlays and pre-written pages designed around particular course material. The present material will be kept on Folio, and as Prompt-Writer overlays can be transferred to Folio, there is no problem if we wish to use Folio in the future.

There is also the problem of how to overcome L... 's lack of fine drawing skills. Drawing and design programs such as Image, Picturecraft and Picture Builder allow the manipulation of shapes and lines but we also need to give her the facility to draw and measure angles accurately.

What ever success we have in the Middle school will allow us to present the high school with a model for them to work from, plus a record of achievement for L.... Meanwhile we have also undertaken a monthly record keeping system using a set of constant tasks that are videoed so we have a permanent record of L... 's progress.

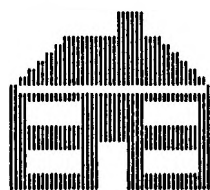
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## DOSSers Guide

**In the very near future  
the MESU will be publishing  
this guide to software for the IBM PC  
and RM Nimbus that is suitable for use  
with special needs children.**

**For further details contact SEMERC or MESU**





## **COMPOSE**

### **a classroom report**

I have used COMPOSE with a class of 8 to 10 year old children with cerebral palsy. The children have a mixture of disabilities including motor impairment affecting one or both hands, inability to keep rhythm, poor visual perception and inadequate sequencing. They have been used to weekly music lessons with one of Avon's leading Advisory Teachers to whom they owe their interest and enthusiasm. However their ability to participate actively is obviously limited not only in the physical sense but also intellectually, and has consisted chiefly of singing and using untuned percussion which although enjoyable in themselves left something to be desired in performance satisfaction and in overall control by the children of what they were attempting.

The children are all familiar with the BBC computer (we have one for the class's sole use) and when I introduced COMPOSE most of them quickly learnt how to use the program facilities.

Initially I used the program with the whole group of 9 children., They were enthusiastic from the start, deciding whether phrases were beginning, middle or finishing tunes, tapping the rhythm where possible, fitting in words or sounds with the same rhythm, adjusting the speed and discussing the results. Collectively they put phrases together, recorded and and amplified the results adding words, untuned percussion accompaniment and, where applicable, hand chimes and/or chime bar in the pentatonic scale.

From then on small groups or individuals spent all their free time (and some class time) working on the program. They discussed, made up songs, fitted accompaniment and performed to whomever would listen.

Our Music Advisory teacher has given enthusiastic help and support in suggesting further uses of the program and writing piano accompaniment for the children's compositions.

The modified program using one or two switch entry has made COMPOSE available to even the very severely physically handicapped to their great joy.

I feel that COMPOSE has provided opportunities for this group of children to experience music making and performing which would otherwise be denied them and being a non specialist music enthusiast myself even I can join in the fun.

Jean Taylor  
Claremont School, Henleaze Park, Westbury on Trym, Bristol BS59 4LR





