Micro Scope

Newman College with MAPE

Contents

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MICRO-SCOPE
Christmas Special

Micro Lessons and Carols

Charles Bake, Di Wailing

We have always been regular *Blue Peter* fans and. anyone who follows the program will know of the ceremony that takes place each autumn when Freda the tortoise is put into hibernation. Very often that seems to be the same fate suffered by the school micro each December! No, we don't mean that it is tucked up snugly in a box full of straw and placed in the airing cupboard, but it does seem that Christmas is not really a time when a micro is put to a lot of use. For one thing the plastic tree, rescued from the class stock cupboard and dusted down, often hogs the one available power outlet. Primarily, however, it is hard to find many good programs designed specifically for the festive season. At Christmas the micro can be locked away until the class parties are over, the decorations taken down and Santa's sleigh is having its yearly MOT at the North Pole.

True, there are various programs on the theme of Christmas that can be obtained through computer magazines. For example, last year the November issue of Primary Teaching and Micros gave details of where to obtain a BASIC listing that draws a snowman and plays 'We Wish You a Merry Christmas'. In addition, magazines like *Acorn User, The Micro User, Beebug* and *A & B Computing* produce discs with special festive programs.

We both enjoy using this sort of software as it offers the children light relief at the end of what is normally a very busy term. However, in this article we want to explore the possibilities of using the 'educational' software schools already have, not as separate stand-alone programs, but on a more ambitious project: to tell the story of Christmas.

Of course the idea of using two or more programs to support each other on a particular theme is not new. For example, many teachers have no doubt used commercial programs like *The 12 Days of Christmas* to introduce a mathematical investigation into the number of gifts sent by 'my true love'. The mathematical pattern that is generated is that of the triangle numbers (1, 3, 6, 10 . . .). Programs such as *Mystic Rose* [1] or *Lines* [2] can be used to aid the investigation since the triangle numbers appear there too.

Our idea, presented to a group of teachers from MAPE Capital Region last year, was to use programs that either they already had or would be likely to buy. These were: *Front Page Extra, Triple, Airbrush, Crackit, Mallory Manor* [3], *Wordplay, Tray* [4] *Quest* [5], *LOGO Challenge* [6], *Slyfox* [7] and *Box of Treasures* [8]. We also demonstrated the possiblities of using a wordsearch puzzle generator and a spreadsheet program (for calculating the cost of Santa's presents). Both programs had been produced locally in Croydon and may be made available to MAPE members later this year.

We offer our ideas not only on the particular subject of Christmas, but also as a possible model for the integration of software packages. We do not claim that our ideas are exhaustive: various exciting software packs (e.g. *Pazzaz* [9], *Fleet Street Editor* [10] and *AMX Pagemaker* [11] were published after we had drawn up our plans, and, much to our regret, we did not have the opportunity to experiment with music programs such as *The Music System* [12].

Some comments about the individual programs and the way in which we envisage them being used, are included here, others are on the relevant pages.

Create

Create is one of the programs included with *Box of Treasures*. We used it to tell the Christmas story in words and pictures. It is possible to include simple animation, although, clearly, this cannot be demonstrated in a print out. The text pages have not been included in this article, but the pictures will be found on the appropriate pages.

Front Page

This was used to give a modern-day journalistic slant to the story. The pages included were produced by 11-year-old pupils. The program could be used to tell the whole story through the eyes, say, of a Roman 'reporter' or a local Bethlehem newspaper.

Tray

There is enormous scope for the texts that could be used with this program — extracts from carols, Christmas tales, lists of Christmas gifts etc.

Triple

This was included as we thought that the shepherds would no doubt play some sort of game to while away the hours on the hillsides — why not *Triple*?

LOGO

There are many possibilities here. Children could investigate how to construct stars with given numbers of points, or build up more complex scenes by defining and combining procedures. Christmas trees, holly leaves, and angels are all possible subjects that could be tackled. The picture of a snowman and of candles are examples of work produced by 9 and 10-year-olds. The particular package we used was *LOGO Challenge*.

Slyfox

The idea behind *Slyfox* was a search for one of the Wise Men's gifts that had gone astray. The program could just as well be based on a shepherd hunting for a lost sheep or, on a more general Christmas theme, a scene could be devised where Santa is searching for Rudolph!

Crackit

We decided that the Wise Men, having been warned of Herod's wicked intentions, might nevertheless have wanted to leave him a cryptic message.

ORGANISATION

Christmas — a topic approach

Many primary schools have adopted a project-based approach to their curriculum, choosing to focus on skills and processes rather than discrete subject areas. Our approach to Christmas not only integrates the micro into classwork investigating the various Christmas themes, but also makes it a central part of the end product when all the ideas come together in a performance, presentation or display. This is something that can be shared with the whole school — pupils, teachers, parents and governors.

Organising the class

Five main events can be identified in the story of Christmas:

1. The Angel Gabriel comes to Mary
2. Census and Nativity
3. Angels and shepherds
4. The Wise Men
5. Herod and the flight to Egypt.

These events can be used as topics for investigation by five groups of children. This would involve not only work at the micro but also many varied and related activities away from it — after all, every child in a class of 30 cannot be using the computer at the same time. Thus each child could be given a photocopy of a blank *Front Page* screen in order to plan out their ideas before entering them at the micro. Similarly, for *WordPlay*, lists of nouns, adjectives, verbs and adverbs can be thought up prior to using the program itself. Activities away from the

micro are not just measures to facilitate classroom organisation. They ensure that the children are involved with the ideas of a computer program at a greater depth and for far longer than if they simply met them during a brief five-minute turn at the micro.

The activities undertaken by the children should not concentrate solely on the creative writing aspect — investigations into mathematics, art, science, environmental studies, history and music all have their relevant place under the topic umbrella. Furthermore, these curriculum areas are not exclusive to any one of the five areas — each group could carry out work in mathematics or science. As an example here are some ideas that could be explored within the topic 'Angels and Shepherds':

Mathematics: Strategy of Nine Men's Morris; symmetry of angels' wings; early counting rhymes

Science: Insulating properties of wool; different types of stables; making a flying angel; comparison of fabrics

History: The wool trade; angels; superstitions

Geography: Major wool producers in the world

Music: Carols; early folk music

Art: A visit to the National Gallery to do the Christmas quiz 'Minstrels Gallery'; natural wool dyes

Drama: York mystery plays

Certain computer programs could be common to the work of all five groups. Wordprocessing is an obvious choice and LOGO could be used to create pictures of angels, sheep, camels, stars. These might be used as designs for Christmas cards.

Presenting the work

How might our ideas be developed in school? One way that comes to mind would be to use the micro to tell the story of Christmas as part of a presentation for a class assembly. To do this would require at least two computers — one being dedicated to displaying the *Create* screens, the second for the other programs. Also, parents are interested, perhaps bewildered, by the educational benefits of the micro to their children. The autumn term open-evening would be an ideal opportunity to demonstrate its potential.

Obtaining discs of the datafiles

Master copies of the datafiles described above (both BBC and RML) have been sent to your regional representatives. Please contact them for information about how you can obtain a copy.

References

1. *Mystic Rose* — Micro Smile, The First 31
2. *Lines Set 4* — Maths 9–13 by Anita Straker
3. All from MAPE Tape III
4. *Tray* and *WordPlay* — MEP Language pack
5. *Quest* — *AUCBE*, Hertfordshire
6. *LOGO Challenge* — Addison-Wesley
7. *Slyfox* — *ITMA*
8. *Box of Treasures* — 4Mation
9. *Pazzaz* — *ESM*
10. *Fleet Street Editor* — Mirrorsoft
11. *AMX Pagemaker* — AMS
12. *The Music System* — Island Logic

THE CHRISTMAS STORY

The Angel Gabriel greets Mary.

THE DAILY MAIL   25$
25.6.81

A SHOCK FOR MARY

Yesterday I went to a little town called Nazareth because I heard rumours of strange happenings to a young peasant girl called Mary.

I tried to speak with Mary but she would not say anything.

I asked Joseph but he said he knew nothing.

Luckily the neighbours told me they saw what had happened.

They said it was about midday, while Mary was baking bread when a man came dressed in bright shiny clothes.

"I thought it was her boyfriend," said a neighbour.

They also talked a lot about the man flying through her window.

They said Mary seemed very shocked.

Afterwards they heard that the girl Mary was going to have a baby.

reported by Paul

THE GIRL MARY

WE WILL REPORT WHAT HAPPENS NEXT

Ballad of the Bread Man
(by Charles Causley, from The Rattle Bag, edited by
S. Healey & T. Hughes, Faber & Faber (1982))

Text for *Tray*:

```
M==y ====d == === k==c===
B=k==g = l==f =f b===d.
== ==g=l fl=w == ====yg= === w==d=w.
"W='v= = j=b f== y=u," == ===d.
"G=d == === b=g g=ld ===v==,
======g == === b=g blu= c====,
W====d = m===== f== === l===l= ===.
=udd==ly ==w y=u ====."
M==y ====k ==d ===mbl=d,
"== ===='= ==u= w=== y=u ==y."
"D=='= ==y ====," ===d === ==g=l.
"=== b=by = == ==' = w=y."
J===p= w== == === w==k===P
Pl====g = p==c= =f w==d.
"=ld m=='= p=== ==," ===g=b=u== ===d.
"==== g==l'= b=== up == g==d."
"==d w== w== ==== =l=g=== f=ll=w,
== =ll ==== ====y g===?"W=== w== ===d
=b=u= G=b===l, w===='= f== == ====.
```

Ballad of the Bread Man

Completed text:

```
Mary stood in the kitchen
Baking a loaf of bread.
An angel flew in through the window.
"We've a job for you," he said.
"God in his big gold heaven,
Sitting in his big blue chair,
Wanted a mother for his little son.
Suddenly saw you there."
Mary shook and trembled,
"It isn't true what you say."
"Don't say that," said the angel.
"The baby's on it's way."
Joseph was in his workshop
Planing a piece of wood.
"Old man's past it," neighbours said.
"That girl's been up to no good."
"And who was that elegant fellow,
In all that shiny gear?"What was said
about Gabriel, wasn't fit to hear.
```
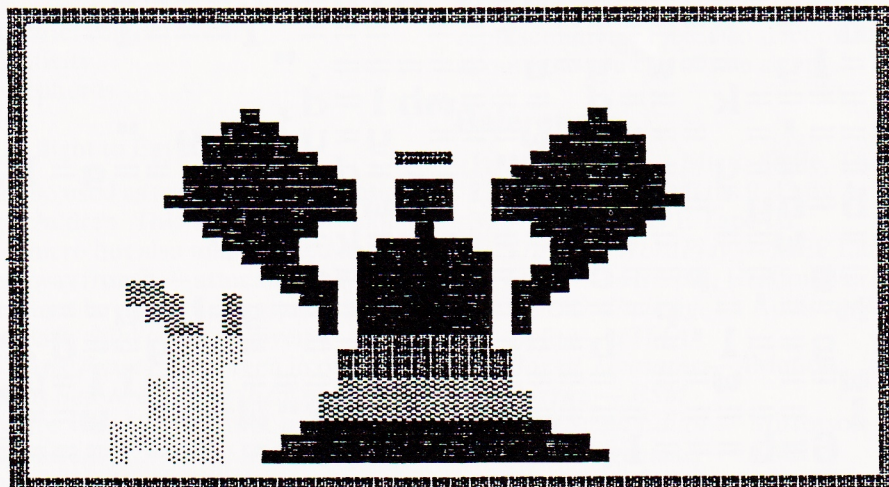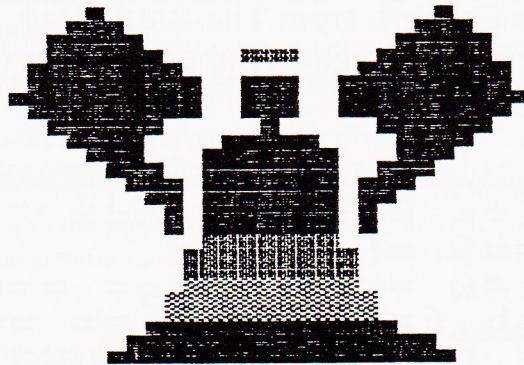
THE CHRISTMAS STORY

Mary and Joseph travel to Bethlehem for the Census.

THE JERUSALEM NEWS 23p

25/12/0

NO ROOM TO SPARE

Today I interviewed an inkeeper who said the town is jam packed, its so full up that he even had to give up his stable to a couple whose wife is expecting a baby.

All these people are in town for the counting. The Romans are counting people for the taxes.

John interviewed a passerby he said, "I had to sell my life stock to a merchant so that I could stay the night." Many people are stranded in the city and are sleeping in doorways.

The innkeeper John interviewed also said he even couldn't find a spare crib for the couple and if they needed one they'd have to make do with a manger.

Later we discovered that the young woman has had her baby, and mother and child are both doing very well.
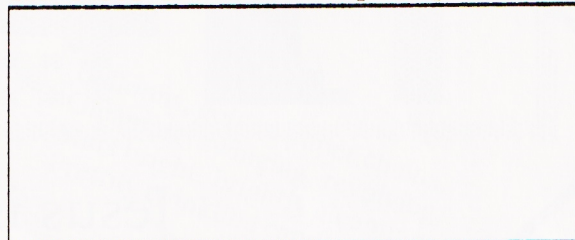
THE FAMILY IN THE STABLE

BOOK EARLY FOR CHRISTMAS

THE CHRISTMAS STORY

They shelter in a stable.

Jesus is born.

Playing with Christmas words

Senga Whiteman, Newman College

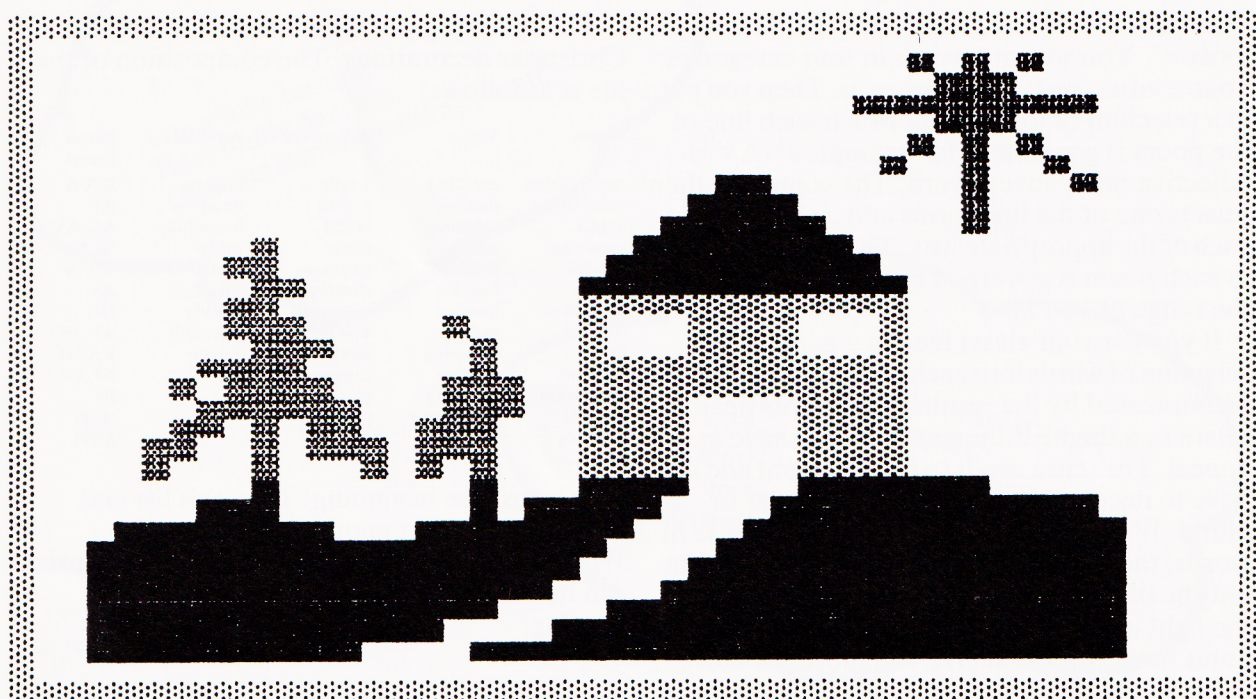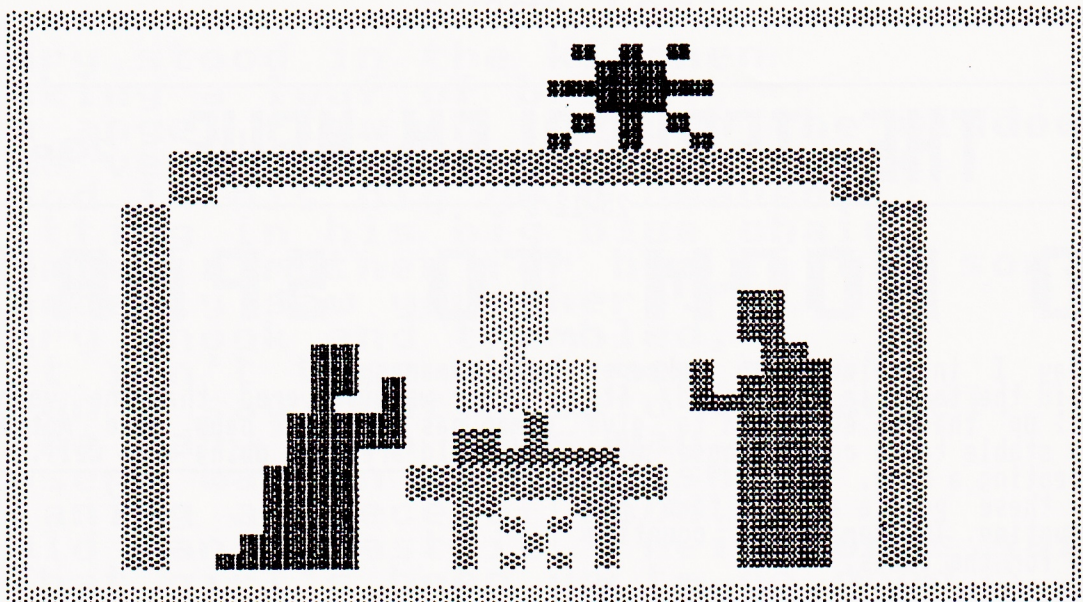*Wordplay* (MEP Language Pack) generates 'poems'. You sort out words in four categories: nouns; adjectives; verbs; adverbs. Then you put in a selection of forms from which each line of the poem is generated, for example JNAV is adjective noun adverb verb. The computer then selects one of the line forms and a word from each of the appropriate lists. The number of lines in each poem is governed by the micro (within the range of 3 to 7).

If you (or your class) feed in a general selection of words into each category you will not be impressed by the results. The words need to relate to a theme if the poems are to have any appeal. The tense needs to be consistent and you have to decide if items are to be singular or plural. *Wordplay* focuses attention on the use of words, the file you make initially will probably only be the starting point as changes are made in the light of anomalies in poems. The program notes in the pack will give you more guidance about using *Wordplay*.

The following poems are linked to the idea of Christmas decorations. The composition of the file is as follows:

Nouns	Verbs	Adjectives	Adverbs	Phrase Forms
paper chains	sparkling	fragile	brightly	JNVA
tinsel strings	dancing	golden	smoothly	AV
angels	spinning	bright	beautifully	AV,AV
snowmen	turning	frosty	softly	NJ,NJ
candles	twinkling	glistening	gently	V,V,V
fairies	swaying	cheerful	cheerfully	AV
baubles	hanging	colourful	prettily	JJN
lights	swinging	silvery	gracefully	AV,JN
bells	flickering	shiny	daintily	VA,NJ
balloons	twirling	shimmering		NJ,AV
snowflakes	gleaming	glowing		JN
lanterns	revolving	gleaming		N,JN
garlands				AVN
stars				

This is just the beginning! Take this list and improve it or start another from scratch. *Wordplay* is entirely open ended, the words used can be about any theme and at any level of reading.

Lanterns glowing, bells shimmering,
Cheerful silvery baubles,
Prettily gleaming, softly swinging,
Brightly spinning, daintily swaying,
Glowing gleaming tinsel springs,
Turning brightly, snowmen shiny,
Glowing tinsel strings.

Balloons, golden paper chains,
Gleaming, swinging, revolving,
Stars bright, brightly gleaming,
Prettily twinkling candles.

Gracefully turning,
Beautifully dancing,
Glowing fairies sparkling daintily.

Shimmering bright tinsel strings,
Prettily twirling angels,
Golden shimmering baubles,
Gently flickering, golden lanterns,
Stars bright, stars frosty,
Beautifully spinning.

THE CHRISTMAS STORY

Angels appear to shepherds watching their flocks.

BETHLEHEM LOCAL   2sc
25 DECEMBER YEAR 1

STRANGE FIGURE IN THE SKY

Last night sheperds reported that a strange figure was seen in the sky. I interviewed one of them and he said: "Well, we were sitting on the hill minding our own business when a bright light appeared.

Because of the bright light we had to cover our eyes and can only see a faint outline of a figure.

The light dimmed and we heard a voice saying that we had to go to Bethlehem and in a stable a new born baby was born."

We checked the sheperds had not been drinking. We asked if they thought someone was playing a trick on them. But they said it really happened.
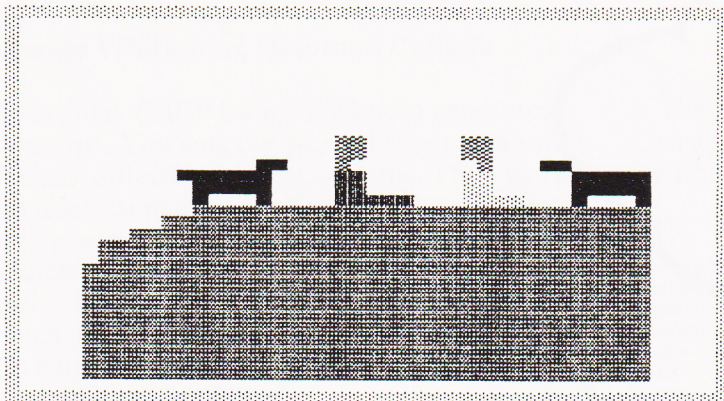
The sheperds have now gone back to their sheep.
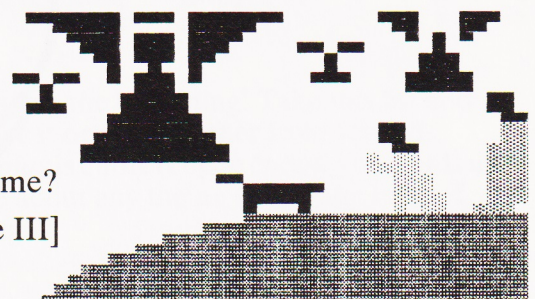
reported by Duc & Mark

THE SHEPERDS an out line of what they saw

WOOL KEEPS YOU WARMER

What do modern shepherds play, to while away the time?
Triple [MAPE Tape III]

THE CHRISTMAS STORY

Wise men travel to Bethlehem guided by a star. They offer their gifts.

THE STAR
45p
25.12.0

STRANGERS IN TOWN

As well as all the fuss over the census our spies report to us that there are some very mysterious people visiting the town of Bethlehem.

Rumours spread by their servants say that these men didn't use an ordinary map to get here but, and this is the strange bit, they followed a star. The same star which has puzzled lots of people lately because it is very bright and is shining right over Bethlehem.

These strange men have been spotted lurking around the back streets of the town and even visiting stables. We think this behaviour is very fishy and should be reported to the police.
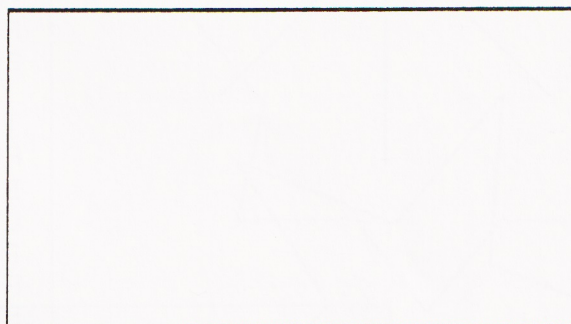
THE STRANGERS
They are easily spotted as they are dressed up as kings.

AN A-Z MAP WILL SHOW YOU THE WAY
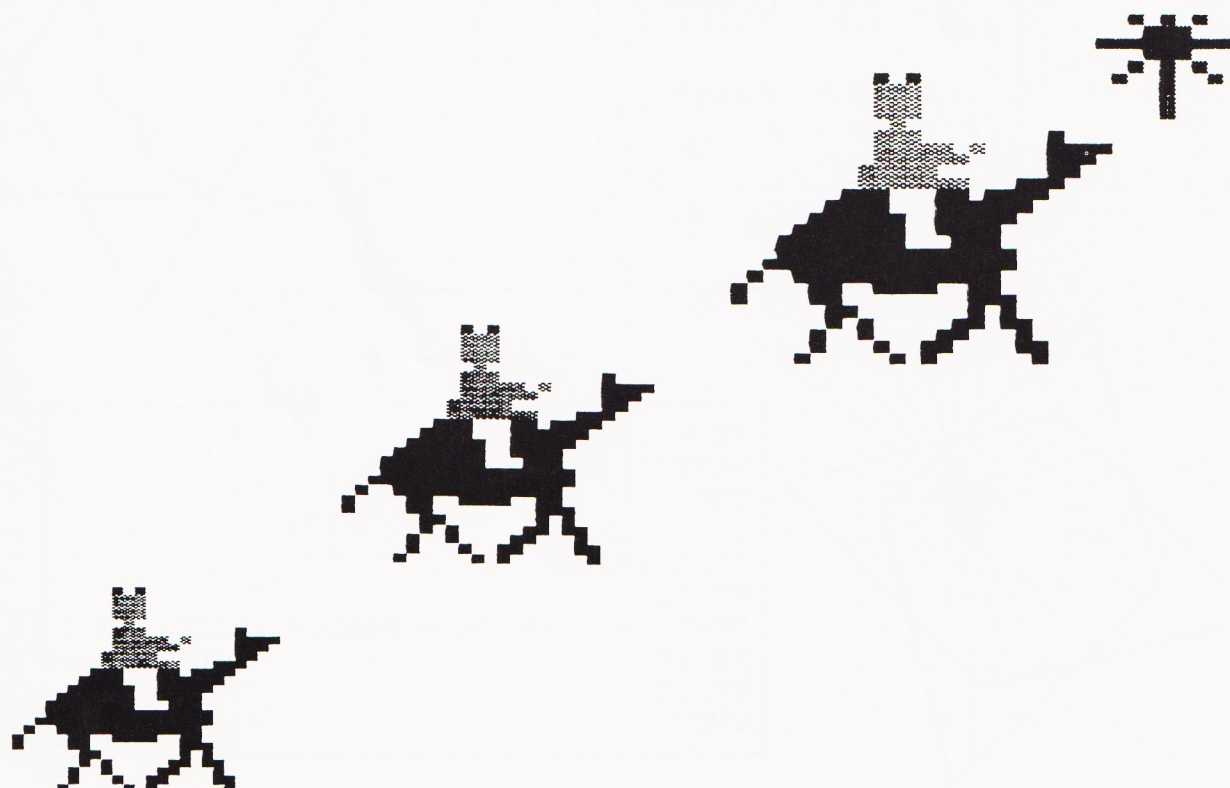
Seeing Stars!

Senga Whiteman, Phil Turner, Newman College

Match the sets of LOGO procedures to the appropriate star. (The listings are in Logotron LOGO).
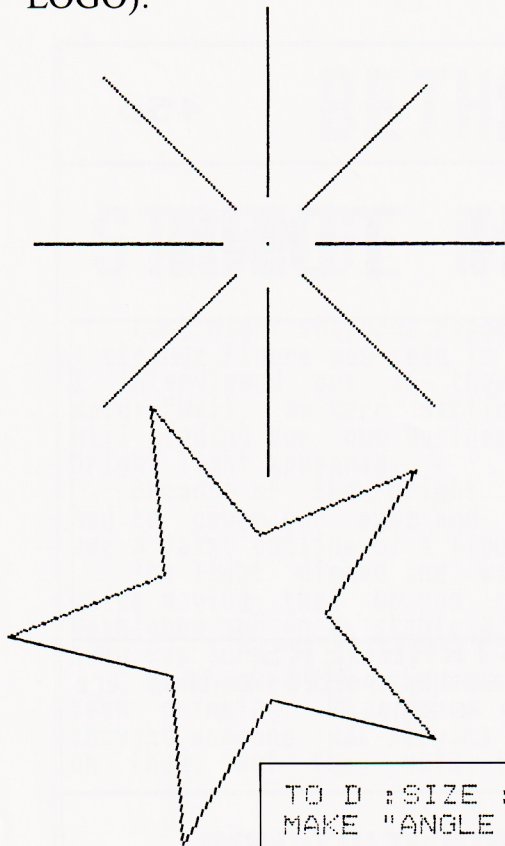
```
TO A :SIZE
REPEAT 2 [C :SIZE]
RT 90
FD :SIZE
RT 150
END

TO B :SIZE
REPEAT 3 [FD :SIZE RT 120]
END

TO C :SIZE
RT 90
B :SIZE
LT 30
PU
FD ( :SIZE / SQRT 3 )
PD
END
```

```
TO D :SIZE :POINTS
MAKE "ANGLE 360 / :POINTS
LT ( 180 - :ANGLE ) / 2
REPEAT :POINTS [E :SIZE :ANGLE]
RT ( 180 - :ANGLE ) / 2
END

TO E :SIZE :ANGLE
FD :SIZE / 2
LT :ANGLE
FD :SIZE / 2
RT 2 * :ANGLE
END
```
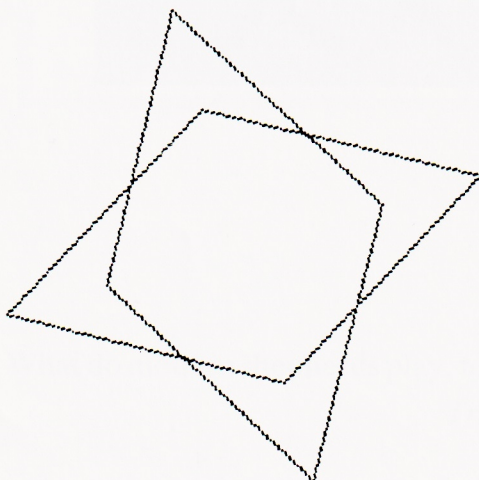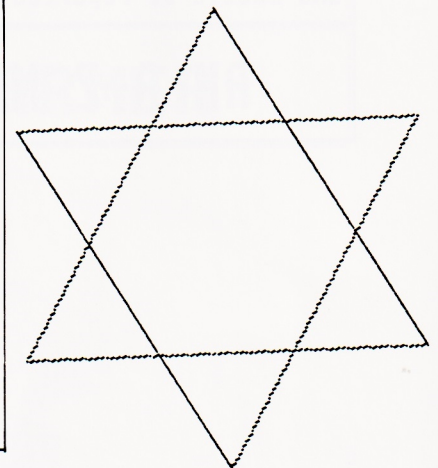
```
TO K :SIZE
REPEAT 30 [L :SIZE]
END

TO L :SIZE
RT 12
MAKE "D ( :SIZE + RANDOM :SIZE ) / 2
FD :D
BK :D
END
```

```
TO F :SIZE
REPEAT 2 [G :SIZE]
LT 180
END

TO G :SIZE
PU
FD :SIZE / 2
RT 120
PD
REPEAT 2 [H :SIZE]
LT 120
PU
BK :SIZE / 2
PD
RT 90
END

TO H :SIZE
FD :SIZE
RT 120
FD :SIZE
RT 60
END
```
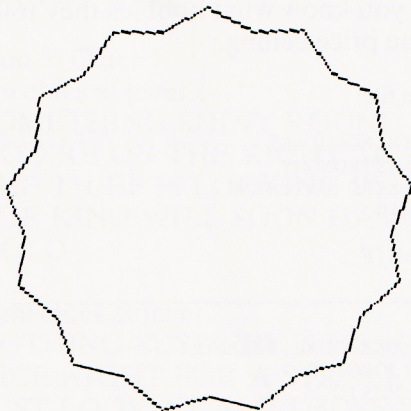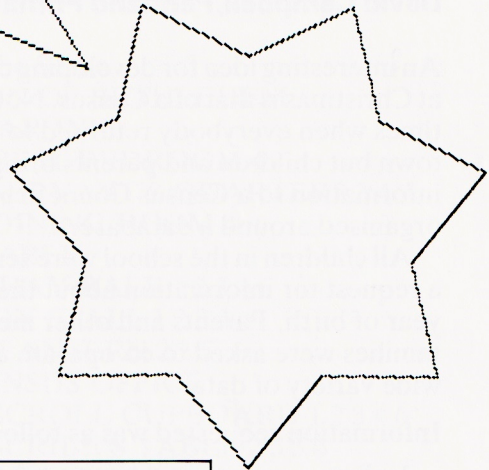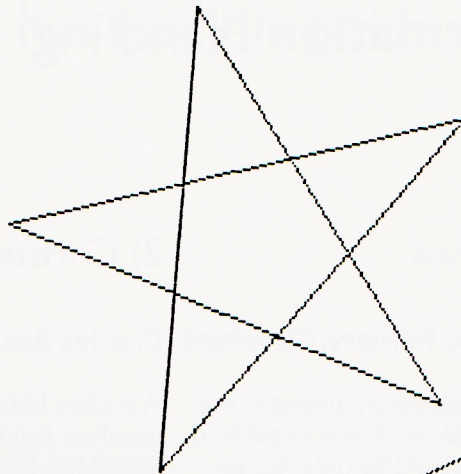
```
TO I :SIZE
FD 0
REPEAT 8 [J :SIZE]
END

TO J :SIZE
PU
FD :SIZE / 5
PD
FD :SIZE * 4 / 5
PU
BK :SIZE
PD
RT 45
END
```

```
TO M :SIZE
RT 18
REPEAT 5 [N :SIZE]
LT 18
END

TO N :SIZE
FD :SIZE
RT 144
END
```

Ideas for Information Handling

1) A Christmas Census

David Campbell, Pentland Primary, Cleveland

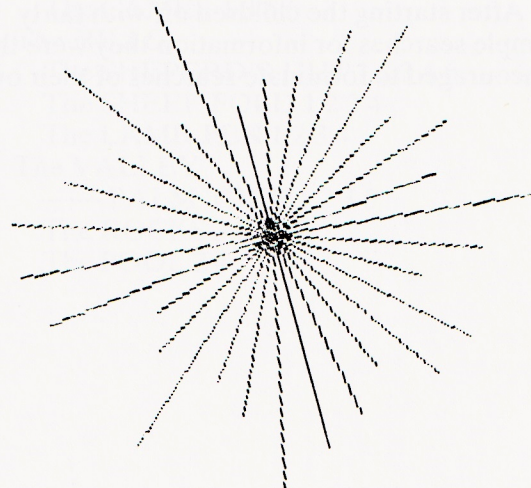An interesting idea for developing computer use at Christmas is that of a Census. Not as in biblical times when everybody returned to their home town but children and parents bringing their information to a Census Count in school organised around a database.

All children in the school were sent home with a request for information about their place and year of birth. Parents and other members of families were asked to co-operate and to give a wide variety of data.

Information requested was as follows:—

1. Sex   . . . . .
2. Year of Birth   . . . . .
3. Place of Birth   . . . .

It was decided to keep the information anonymous in an attempt to get as many people as possible to participate.

Once the data had been collected it was fed into a database with the intention of analysing the data to see if any interesting observations could be made, for example, are their more or less Maternity Hospitals now than there were 25 years ago; Have any maternity Hospitals opened in recent years.

Fairly detailed information was requested for question 3 – name of hospital, town and county, to allow for quite complex searches of the data at a later stage.

After starting the children off with fairly simple searches for information they were then encouraged to formulate searches of their own.

2) Christmas Gifts

Charles Bake, Di Wailing

Another idea for collecting data at Christmas involves linking hobbies to presents. The following field names can be used:

1. PRESENT
2. HOBBY1
3. HOBBY2
4. COST (price in pounds)
5. AGE (suitable age for recipient, we used a code – A (Adult), T (Teenager), S (Schoolchild), B (Any age))

If multiple entries are allowed then the HOBBY2 field can be incorporated into HOBBY1. This will make searching easier.

Once the information has been collected and entered into the micro a search can be made for suitable gifts for particular members of a family given that you know what hobbies they follow, and also the price ceiling.

Sample from file:

```
PRESENT    : BINOCULARS
HOBBY1     : ASTRONOMY
HOBBY2     : BIRD WATCHING
COST       : 40
AGE        : A
SEX        : M/F
------------------------------------------

PRESENT    : PERSONAL STEREO
HOBBY1     : JOGGING
HOBBY2     : MUSIC
COST       : 20
AGE        : T
SEX        : M/F
------------------------------------------
```

Sample from multiple entry file:

```
PRESENT    : PLAYING CARDS
HOBBY      : MAGIC INDOOR GAMES GAMBLING
COST       : 5
------------------------------------------

PRESENT    : BOOKS
HOBBY      : READING PUZZLES WORK
COST       : 10
------------------------------------------

PRESENT    : TOOLS
HOBBY      : DIY CAR MAINTENANCE GARDENING
COST       : 15
------------------------------------------
```

One of the Kings has lost his golden casket . . .

(*Slyfox* and *Scene*)

Charles Bake, Di Wailing

Section 1: Title: MISPLACED GOLD

Section 2: The object: The GOLDEN CASKET

Section 3: Treasure List
1. A ROMAN COIN
2. A PIECE OF PURPLE FABRIC
3. CAMEL HAIRS
4. HEROD'S SIGNET RING

Section 4: The final level
1. IN FRONT OF
2. BESIDE
3. BEHIND
4. INSIDE
5. UNDER
6. ON TOP OF

Section 5: Clues
Warm clues at level 2
1. SOMETHING SHINY ROUND HERE
2. YOU'RE ON THE RIGHT TRACK
3. THE THIEF IS LOOKING WORRIED
4. THE KING WILL SOON HAVE HIS GOLD

Neutral clues at level 2
1. NOTHING SUSPICIOUS HERE
2. NICE NIGHT FOR A STROLL
3. JUST LOOK AT ALL THOSE STARS
4. IS THAT SINGING I HEAR

Cold clues at level 2
1. THE ROMANS WERE HERE BEFORE YOU
2. THE THIEF IS LAUGHING TO HIMSELF
3. COLD WINDS BLOW FROM THE DESERT
4. NOTHING SUSPICIOUS HERE
5. YOU'RE ON THE WRONG TRACK
6. SERVANT'S HAVE SEARCHED HERE

Section 6: The Scene
  The TOWN OF BETHLEHEM
    The STAR INN
      The BEST BEDROOM 4
      The SERVANT'S QUARTERS 3 4
      The DINING ROOM 4
    The STABLE
      —— HAY BALE 1 2 3 4 6
      The OX STALL 1 2 3 4
      —— LANTERN 2 3 5
    The CENSUS OFFICE
      The SCROLL CUPBOARD 1 2 3 4 6
      The SCRIBE'S TABLE 2 3 5 6
      The ABACUS 2 3 5
  —— HEROD'S PLACE
    The THRONE ROOM
      The THRONE 1 2 3 5 6
      The TREASURE CHEST 2 3 1 4 6
      The CURTAINS 1 2 3 5 6
    The GUARD ROOM
      The CAMP BED 2 3 5 6
      The SPEAR RACK 2 3 1 6
      The PRINSONER'S CELL 4 1
    The PRIVATE APARTMENTS
      The ROYAL BED 2 3 4 5 6
      The JEWEL CUPBOARD 1 2 3 4 6
      —— LARGE POT 3 4 5
  The COUNTRYSIDE
    The OASIS
      —— PALM TREE 1 2 3 6
      The TENT 1 2 3 4 5 6
      The CAMEL 1 3 5 6
    The HILLS
      The SHEPERD'S HUT 1 2 3 4 6
      The SHEEP FOLD 1 2 3 4
      The LAMB PEN 1 2 3 4
    The VALLEY
      —— PALM TREE 1 2 3 6
      The ROCKS 3 6 2
      The POOL 2 4

INN

best bedroom

Servants Quaters

dining room

STABLE

hay bale

Ox stall

lantern

TOWN OF
BETHLEHEM

CENSUS OFFICE

Scribes table

abacus
Scroll cupboard

HERODS

THRONE ROOM

throne

treasure chest

Gu

Spear rack

PRISONERS

tent

camel

Palm tree

OASIS

Shepherds hut

Sheep fold

lamb pen

HILLS

COUNTRYSIDE

VALLEY

Pool

rocks

Palm trees

NAZARETH 3c

PALACE

PRIVATE APARTMENTS

Royal Bed

Guard Room

Pot

jewellery cupboard

Camp bed

CELL

*Drawn and adapted by Geoff Turrell
from an original by Caroline Emsden.*

THE CHRISTMAS STORY

Herod is told of the birth.
He orders the slaughter of the innocents.

PALACE TIMES   15p

26 12 YEAR 1

WHOLE PALACE TREMBLES

Rumours are coming out of the palace that Herod, our king, is in a terrible temper. Large orders for plates and cups have been made because the king is smashing everything he can get hold of. Not even the servants are safe.

We sent one of our bravest reporters to see they could find out what was wrong.

A servant whispered to them that a little while ago the king had some strange visitors. Three men from another country and they told him about a new king who had just been born in Bethlehem.

Ever since then he has been in a vile temper.

What does all this mean we wonder?
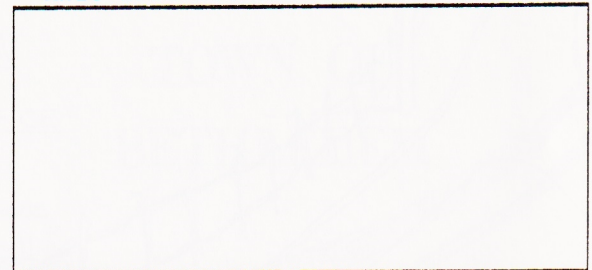
HEROD IN A RAGE
Perhaps everyone with a baby should leave Bethlehem.

PYREX PLATES DON'T BREAK
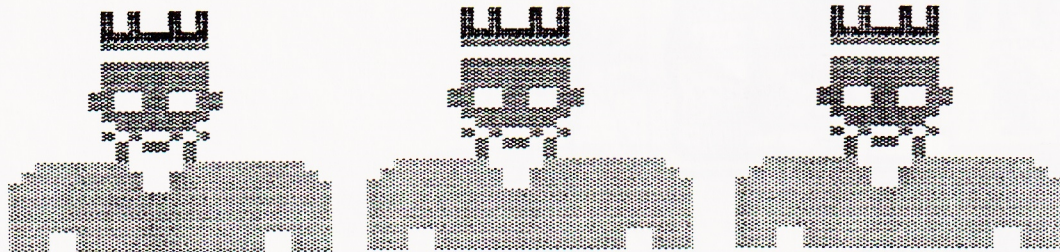
THE CHRISTMAS STORY

Mary and Joseph make good their escape.

Decode the message (*Crackit*)

Letter frequency

E	21	H	6	C	2
T	14	W	6	P	2
N	13	Y	6	K	1
O	12	L	5	V	1
R	11	S	5	X	—
A	8	G	4	Z	—
S	7	M	3		
U	7	D	3		
I	6	F	3		

```
DfdR cfRyD, k'n dFRdkD Wf'Rf kN d
RUmc ry Gfr cynf.  rcf KkNG yF rcf
JfWm CdN Bf FyUND kN BfrcLfcfn, BUr
BY rcf rknf YyU ndNdGf ry myLVf rckm
YyU'LL Bf ryy Ldrf - mcdnf!  BY rcf
WdY, "cdPPY CcRkmrndm".
```

Change [?]
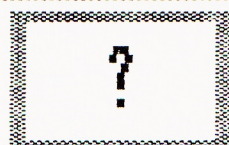
DEAR HEROD, I'M AFRAID WE'RE IN A RUSH TO GET HOME. THE KING OF THE JEWS CAN BE FOUND IN BETHLEHEM, BUT BY THE TIME YOU MANAGE TO SOLVE THIS YOU'LL BE TOO LATE - SHAME! BY THE WAY, "HAPPY CHRISTMAS".
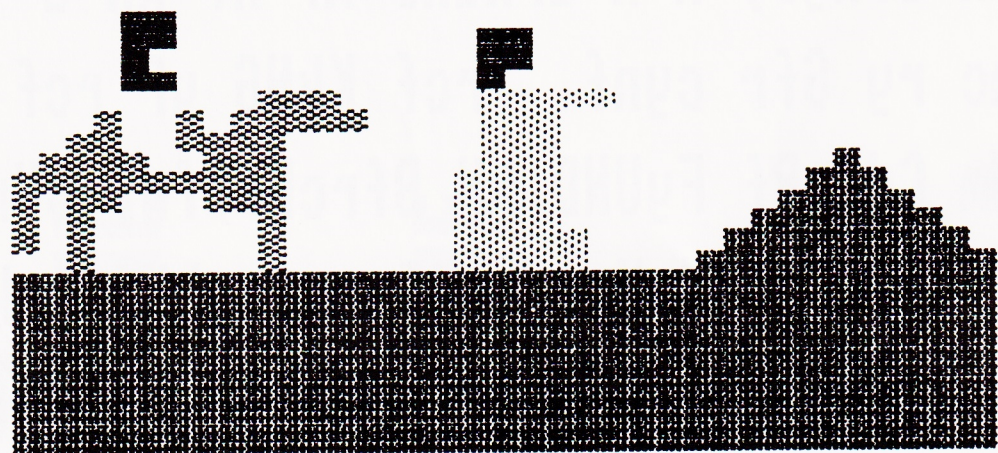
A Christmas Investigation (*Mallory*)

Charles Bake, Di Wailing

The file was created with the teacher audience for our presentation in mind rather than tying in strictly with the Nativity story, hence the tongue-in-cheek tone! It provided an injection of humour and the chance for us to explore various puns and plays on words.

File name: POLE

The Scene is The North Pole.

The time is the night before Christmas.

There are 10 objects.
(There can be between 3 and 15.)

a ticket for a panto
Santa's beard
a snow-elf
a Christmas tree
a mysterious parcel
a MAPE badge
a carol singer
a sprig of holly
a Christmas pud
some crackers

There are 20 rooms.
(You can have up to 25 rooms.)

silentnightsafe
reindeer stable
grotty grotto
pudding foundry
elves chamber
toy workshop
holly hall
star chamber
santa's study
dwarves den
snow machine
sleigh garage
ho ho ho hall
cracker factory
carol crusher
angels alcove
party room
chuckle cave
badger works
wine rink

There are 15 people.
(The number of people must be between 3 and 15.)

Each person is supplied with a name, an occupation and two remarks.

Wenceslas
good king
Bring me flesh and bring me wine.
And some Alka-Seltzer.

Mr Angry
arguer
I could throw the phone down.
It makes me seethe.

Gabriel
angel
Just look at my dress
Creases all over it.

Hark
herald angel
La la la, la la la la la, la la la.
La la la laaaaaa.

Scrooge
miser
Out upon Merry Christmas.
Bah! Humbug!

Yule
log
Creak creak roll creak.
Creak roll creak.

Santa Claus
entrepreneur
I hate snow, and I loathe Christmas.
Roll on Easter!

Puss
panto cat
Miaow.
Its a dog's life!

Melchior
wise man
My friend Frank is ever so incensed.
I suspect myrrh-der!

Ab Biding
shepherd
Must get myself a new sheepskin coat.
Mint sauce – yummy!

Chasndi
mape rep
Is this cheese on sale or return?
Think I'll join MUSE.

Anita Straker
programmer
Mallory is meant to be used sensibly.
MEP – wassat?

Zebedee
springer
Boing!!
Time for bed, Florence.

Pat
postman
This is the way we burn the mail.
Oops – run over moggy!

Janus
deity
Can't trust anyone around here.
All two-faced!

The searchers are the Hawaii Pie-0

Their ranks are:

Min Spycatcher
Min Spyglass
Min Spyrograph
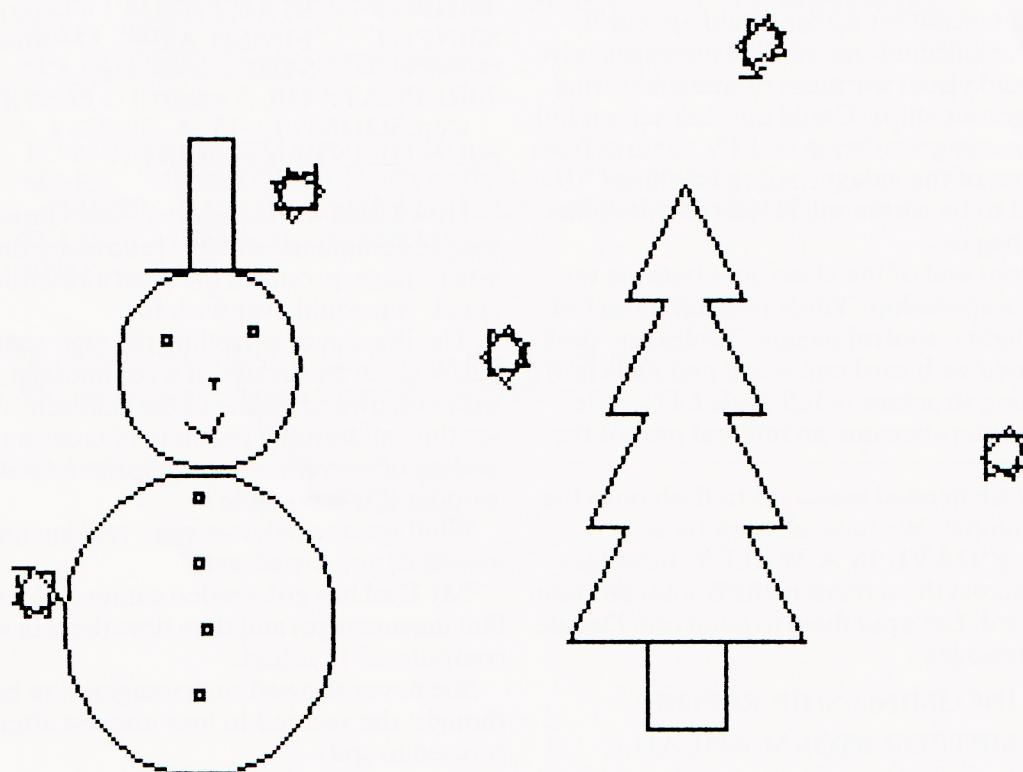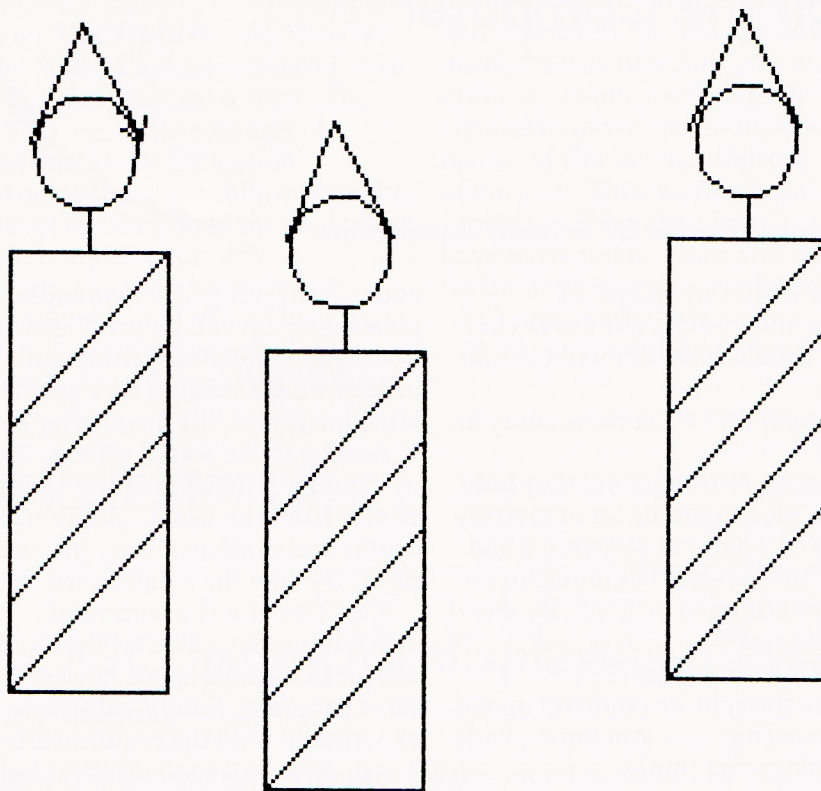Min Spyromaniac
Min Spyandcustard

MAPE

Annual Course/Conference 1987

at Newman College, Bartley Green,
Birmingham B32 3NT

Friday (evening) April 10th to Sunday (afternoon) April 12th

Further details from Dave Whitehead, 550 Whitworth Road,
Rochdale, Lancs OL12 0SW.

Christmas Turtles

A 'Play' on the Computer

Dave Clayton, Head, Frithville CP School, Lincolnshire

I was awoken from worn-out images of cardboard donkeys and endless tea-towel-clad heads. I suppose I should have known it would happen . . .

'Can we use the computer for some scenery in the Christmas play?'

The signs were there. No longer did they hold the machine in awe. No longer the air of mystery as they sat, victims of whatever software I had chosen for them. The kids were beginning to see the computer as something *to be used*. By *them*! Where might all this end?

'*Scenery for the Christmas play???*'

'Yeah, you see we thought we could set up the screens like in a spaceship . . . you know, with messages and warnings and things.'

'But . . .'

'Great, we can do it!!'

And do it we did. The ideas began to form. What we needed were some active TV screens. One screen could show space, planets, movement. Another screen could appear to show great calculations, receive messages, give audible and visual warnings of meteor storms and dangerous ships. Could another screen link with the messages to bring real TV pictures from other parts of the galaxy? All these things appeared to be within the realms of possibility, so work began.

The front end of the classroom became the inside of a spaceship. Yards of aluminium foil, flashing lights, control panels. Tables and desks were joined with card and wood and nails into a safe, strong structure in full-scale CDT style. The computers became an integral part of the spaceship.

Firstly we needed messages to flash onto the screen. Simple! We have all seen those infuriating 'DAVE IS A WALLY' messages flashing across the screens in the Boots computer department. Let's put them to good use. Decide on the messages,

<div style="text-align:center">

INCOMING SHIP REPORT

METEOR STORM AHEAD

CONTACT IMMINENT

</div>

add colour, suitable delays and sound and a very pleasing result can be produced. This can be done quite effectively from within LOGO (and indeed would seem to be a relatively painless introduction to 'list processing').

And so to the sound effects. Try as we may, we could not make genuine-sounding space effects from the usual zylophones, organs, drums and cymbals. They just would not sound right. By now the solution was obvious.

'Can't we use the computer?'

What is remarkable is how easily the computer will yield suitable space noises. The following short program, *Sound*, allows the children to experiment until the required effect is produced. Try it. Kids will soon discover landing, take-off, emergency, and smooth-running effects.

```
10*FX11,0
20*FX15,0
30MODE 7
40INPUT ' ' "START AT . . . ?" start
50INPUT ' ' "FINISH AT . . . ?" finish
60INPUT ' ' "STEP . . . ?" step
70REPEAT:FOR A=start TO finish STEP
   step:SOUND 1, –15, A, 3:NEXT
80UNTIL INKEY (–99):RUN
```

How I wish we had *Speech*[1] last Christmas. A simple command '*SAY', follows by the words you require, produces the most authentic dalek-speak you could ever wish for.

The illusion of travelling through space was easily given by the use of a commercial space program owned by one of the children. Why not set the children the problem of creating and feeling of movement using Sprite LOGO. I wonder if it is possible?

What we needed now were *real* incoming messages and broadcasts.

'My Dad has got a video camera. We could film the messages and then time them in with the computers.' says Sue.

She never showed such imagination before. I thought she seemed to lose interest after Podd refused to spit!

One exciting weekend was spent setting up 'messages' from the various characters we had

devised and filming them. The effect, in a play, of the action being interrupted by two computer screens flashing an 'INCOMING MESSAGE' warning, then the Ship's Captain appearing with the message on the giant central screen (The school's colour TV) was quite stunning. I particularly liked the 'Daily Education' broadcast which made the space children ask the question 'What ever did they do in the days when you couldn't switch the teacher off?'

The stage was set. Costumes were made. Everything was looking wonderful. There was an air of expectation and excitement. It was almost as if we were actually preparing for take-off.

1. A disc-based speech program from Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX. Price £11.95 (BBC disc).

There was only one thing left to do . . . we needed the story organising around the scenes and characters we had already created. We needed a way of writing the story so that everyone could contribute their own ideas. We needed to move scenes around, change the names of characters, improve and enrich parts of the play. Then we needed a script printing out for each child in the class. I suppose I should have expected it. Once you start them thinking for themselves you never know where it will end.

'Can't we use the . . .?'

And use it we did.

A LOGO listing for displaying messages

Senga Whiteman

This only displays the text. You can add the sound and colour!

```
TO SELECT.MESSAGE :MESSAGES
TS
REPEAT 15 [PRINT [ ] ]
PRINT ITEM ( RANDOM COUNT :MESSAGES ) + 1 :MESSAGES
WAIT 200
SELECT.MESSAGE :MESSAGES
END

TO MESSAGE.SETUP
MAKE "MESSAGES [ [INCOMING SHIP REPORT]
    [METEOR STORM AHEAD] [CONTACT IMMINENT] ]
SELECT.MESSAGE :MESSAGES
END
```

Type MESSAGE.SET UP to start the procedures.
The above listings pick a message at random.

A Robin Christmas Card

A Christmas Activity using *Picture Builder*

Gillian Welsh, Pentland Primary School, Cleveland

The program *Picture Builder* is very easy to use with small children. The children are given six shapes which they can move, enlarge, decrease, and rotate on the screen. After the teacher has started off the program according to the instructions then the children can take total control using the function keys and a picture instruction strip.

The Christmas Robin activity was used with a class of 5 to 6 year old children (reception and middle infants.) The children talked about robins, looked for a robin in the playground (in vain!), they learnt a song, and saw some pictures of robins. They discussed shapes in relation to the head, wings, and feet etc. Finally they were asked to see if they could make a robin using the computer which they could then have printed out to use as the front of a christmas card.

The children were put into working groups of 3's or 4's. The activity was arranged in three ability levels. One band of groups were allowed to use the program in a trial and error fashion with me talking to them at intervals helping them with their difficulties, and with their planning if it was necessary. This band tended to be the younger reception children.

The next banded groups were asked to draw what they would like their robins to look like. This involved the children discussing how shapes could be changed, how they could be fitted together etc. After their initial drawn plan the children went to try their 'plan' on the computer. (Fig 1) As they constructed their robin they wrote down their written plan. (Fig 2) All the basic words they needed were written down on language master cards so that they could be selected, heard and then copied.

The third banded groups of children were asked to write down their plan, and then try it on the computer finding errors and putting them right until they had completely solved the problem. (Fig 3) This is a very challenging activity for the children, and each of the small groups at this activity level spent a great deal of time discussing and planning prior to using the computer, and an even greater length of time sorting out their mistakes at the computer.
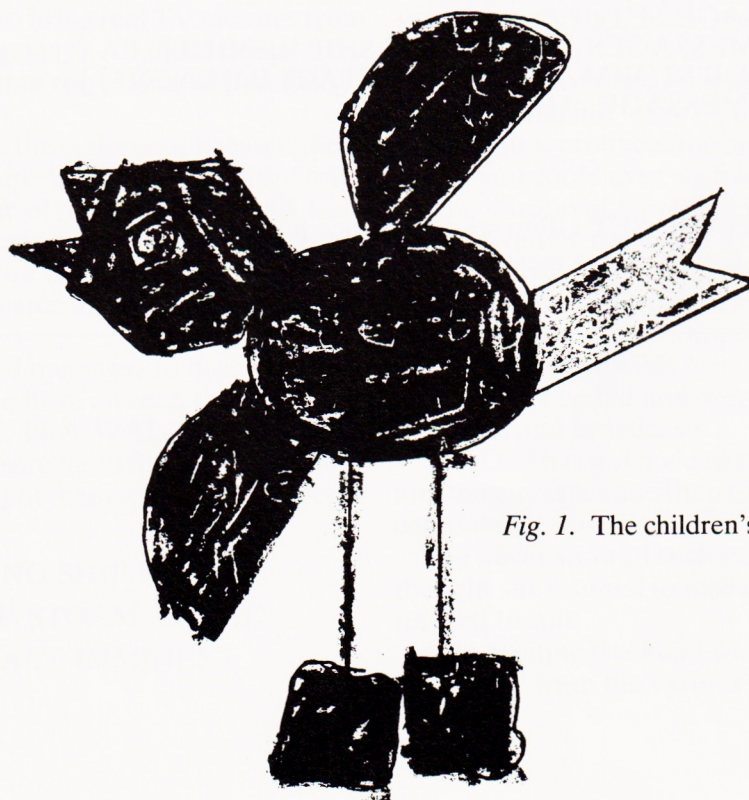
Fig. 1. The children's plan (Stage 1).

Make the picture on the computer.

Write down what you did on the computer.

1. get O	17. colour
2. make bigger	18. get —
3. Move ↓	19 Move ↓
4. colour	20 turn
5. get △	21 Make bigger
6. Make bigger	22 Colour
7. turn	23 repeat last 4
8. Move ↓ ←	24 get △
9. colour	25 Move ↓ ←
10. get △	26 Colour
11. Move ↓ ←	27 repeat last 3
12. colour	28 label
13. get □	29
14. Move → ↑	30
15. get O	31
16 Move ↑ ←	32

Fig. 2. Stage 2.

Make the picture on the computer.

Write down what you did on the computer.

1. Get shape	17 move → ↑
2. Mak bigge	18 turn
3. colour	19 make bigger *smaller
4. Get O	20 Colour
5. move → ↑	21 get ▢
6. make bigger	22 make bigger
7. colur	23 Squash
8. get o	24 move ↓ ← *make bigger
9. make smaller	25 turn
10. move → ↑	26 colour
11. Colour	27 get —
12. get D	28 make bigger *turn
13. make bigger	29 move ↓ → ←
14. turn	30 colour
15. colour	31 repeat last 4
16 get △	32 label *see below

*33 get ▢	
34 move ↓	
35 make smaller	
36 move →	* indicate where mistakes were identified and corrected.
37 Colour	
38 repeat.	

Fig. 3. Stage 3.

There were 10 groups of children and it took just over a week to complete a robin from each group using daily 'number' periods. Each group had their robin printed. So that the printed effect was not lost only the red breast was shaded in, then an oval shape was cut around the robin. The shape was mounted onto black card, and the edge of the oval was surrounded by green metallic holly leaves with a few shiny red paper berries added. The writing was done on white paper which was pasted to the inside of the card.

This activity was very worthwhile. Each group had been involved in planning, discussion, working together, predicting, solving a problem, and communicating their ideas. The discusssions involved a range of valuable language, there was a great many basic mathematical terms used eg. smaller, larger, round, straight, longer, shorter,

and of course the real shape names involved, (square, hexagon, oval etc). The children were helped to develop their spatial awareness and to use the related language, eg. next to, above, below, etc. Finally there was the motivation to use the computer, to succeed and to have a gratifying end result.

Although the children were all given the same task, I was quite astounded by the variety of individual robin shapes produced. (Figs 4,5,6,7) They served for a further discussion period when similarities and differences were mentioned, along with suggestions for improvements! The children felt a great deal of satisfaction from their work, and were quite convinced that their families would receive their best ever christmas card.
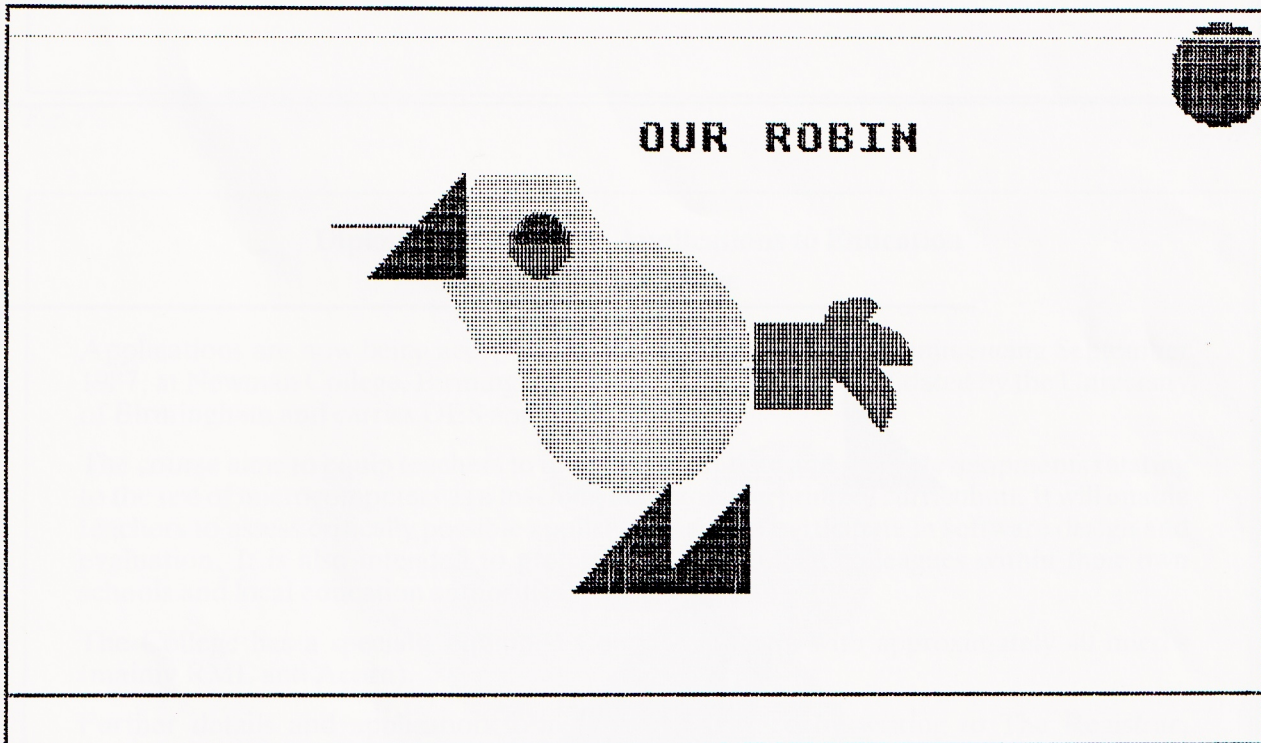
Fig. 4.
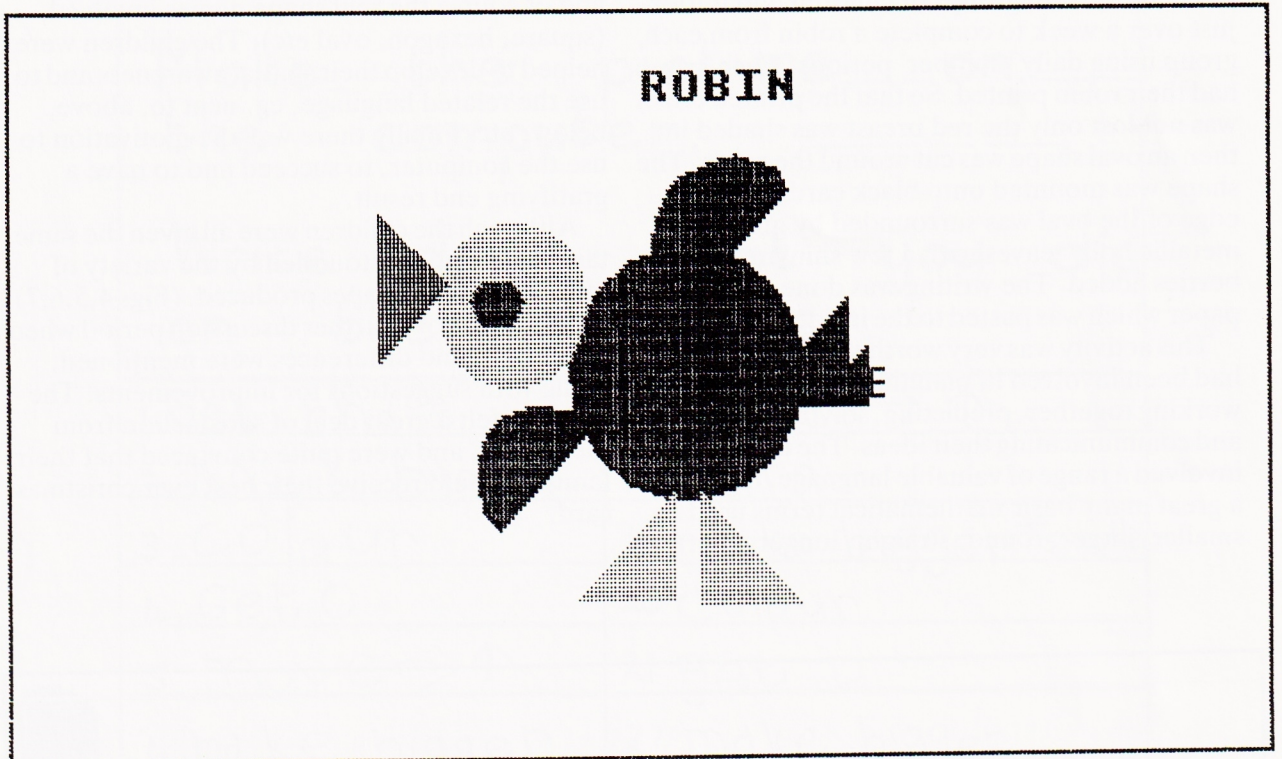
Fig. 5.
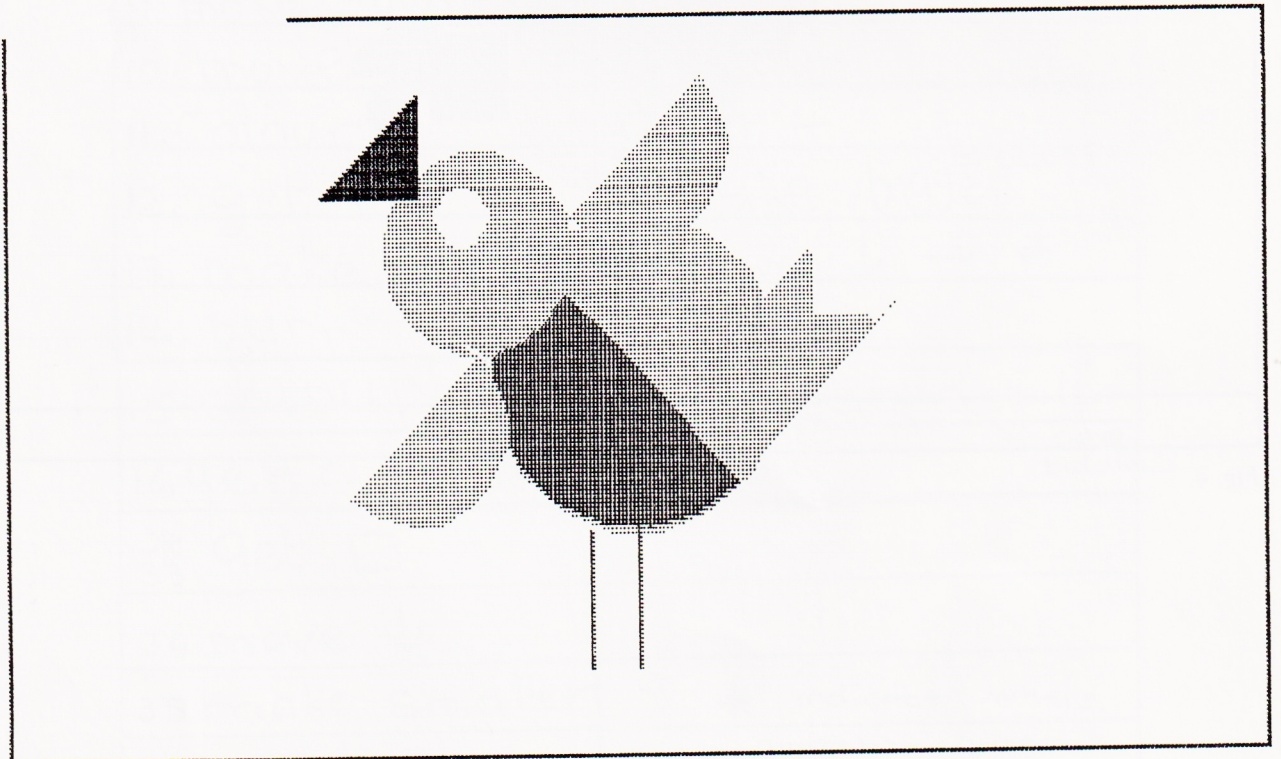
Fig. 6.

HUNGRY ROBIN
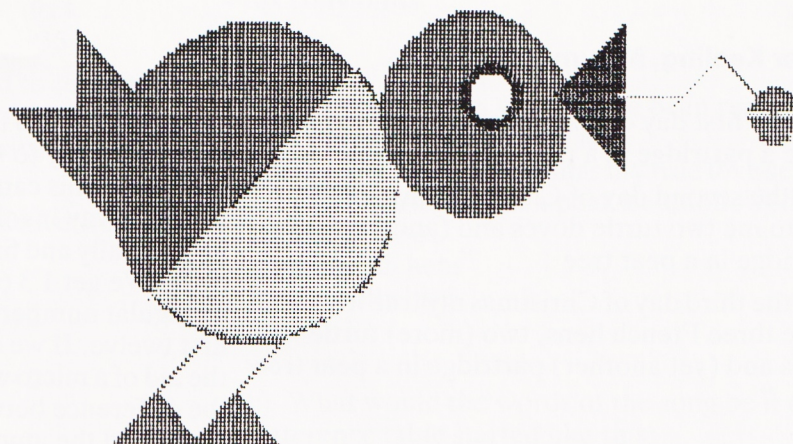
Fig. 7.

Diploma in Computer Applications to Education
5–13 age range

Applications are now being accepted for the full-time Diploma, commencing September 1987, at Newman College, Birmingham. It is a one-year course validated by the University of Birmingham and carries DES approval.

The course aims to equip teachers to understand, initiate and guide developments relating to the use of microcomputers as a teaching aid across the primary curriculum. It will enable teachers to assess critically possible applications and to participate in software design and evaluation. It is also intended to prepare teachers to lead colleagues within their own schools and local education authorities.

The College has a specially equipped Computer Centre with approximately 40 micros (mainly RML and Acorn).

Further details and application forms can be obtained by writing to The Registrar, Newman College, Bartley Green, Birmingham B32 3NT.

A Multitude of Gifts

Roger Keeling, Newman College

"On the first day of Christmas my true love sent to me a partridge in a pear tree . . . . "

"On the second day of Christmas my true love sent to me two turtle doves and (another) partridge in a pear tree . . . . "

"On the third day of Christmas my true love sent to me three French hens, two (more) turtle doves and (yet another) partridge in a pear tree . . . . "

. . . .

. . . .

"On the twelfth day of Christmas my true love sent to me:
twelve drummers drumming
eleven pipers piping
ten lords a leaping
nine ladies dancing
eight maids a milking
seven swams a swimming
six geese a laying
five gold rings
four colly birds
three French hens
two turtle doves
and a partidge in a pear tree."

This traditional English Christmas song, when interpreted in this way, suggests that the lucky(?) recepient was inundated with gifts from her/his true love.

How many gifts were received?

Try and work out an answer without a micro. One way is to add up a long list of numbers, although there could be problems over the omission of some numbers or errors in the addition. Another approach involves the adoption of a matrix layout.

Day	P	TD	FH	CB	GR	GL	SS	MM	LD	LL	PP	DD
1	1											
2	1	2										
3	1	2	3									
4	1	2	3	4								
5	1	2	3	4	5							
6	1	2	3	4	5	6						
7	1	2	3	4	5	6	7					
8	1	2	3	4	5	6	7	8				
9	1	2	3	4	5	6	7	8	9			
10	1	2	3	4	5	6	7	8	9	10		
11	1	2	3	4	5	6	7	8	9	10	11	
12	1	2	3	4	5	6	7	8	9	10	11	12

In order to find the answer to the question it is necessary only to find the sum total of all these numbers. This can be approached in two ways. The first way involves adding the numbers horizontally and finding the total of the different rows. We get 1 3 6 10 15 . . . . These are triangular numbers, and we want the total of the first twelve. If we are solving this problem with the aid of a micro we need to know the first term, the difference between the first and the second terms and the amount by which the difference increases each time you want a new term. The first task is to draw up a difference table:

Terms in the sequence	1st differences	2nd differences
1		
	2	
3		1
	3	
6		1
	4	
10		1
	5	
15		1
	6	
21		

For this investigation the second differences must always be constant (or zero).

This program will now total the first n terms, in this case twelve.
```
10 INPUT Number, Term, Diff1, Diff2
20 Total = Term
30 PRINT Total, Term
40 FOR N = 1 TO Number−1
50 Term = Term + Diff1
60 Total = Total + Term
70 PRINT Total, Term
80 Diff1 = Diff1 + Diff2
90 NEXT N
```

You have to provide four numbers. These are:
The number of terms required – Number
The first of the n terms – Term
The first number in the column of first differences – Diff1
The first number in the column of second differences – Diff2

If you run the program and type in 12,1,2,1 then you will get the answer to the number of presents received.

The second approach involves looking at the table vertically and adding the totals of the columns. This gives:

$$12\text{x}1 \; + \; 11\text{x}2 \; + \; 10\text{x}3 \; + \; 9\text{x}4 \; \ldots \ldots$$
$$12 \qquad 22 \qquad 30 \qquad 36 \; \ldots \ldots$$

The same program can be used to total this sequence of numbers, given that we can draw up a difference table in order to work out the four numbers to type in

Terms	1st differences	2nd differences
12		
	10	
22		−2
	8	
30		−2
	6	
36		−2
	4	
40		

The program will now give the same result as was found by adding horizontally, only this time the four numbers are 12, 12, 10 −2.

Once you have solved this problem there are several other possible lines of investigation:

a) How many gifts would have been received if the first line of the song was:
On the first day of Christmas my true love sent to me three partridges in a pear tree, followed by
four turtle doves
five French hens
six colly birds
. . . .
. . . .

b) How many gifts would have been received if the first line of the song was:
On the first day of Christmas my true love sent to me three partridges in a pear tree, followed by
six turtle doves
nine French hens
twelve colly birds
. . . .
. . . .

c) What would the words of the song be if the difference table started like this:
1st term: 1, 1st difference, 2, 2nd difference: 3.
There are twelve terms in the sequence and the total number of presents should be 804.

d) Is it possible to compose a song that gives the recipient one hundred presents? (There might be less than twelve verses.)
You can follow these up with investigations of your own – all from one apparently simple Christmas song.
(If you have got *Counter* from ATM then you can use that for your investigations. Or a spreadsheet!)
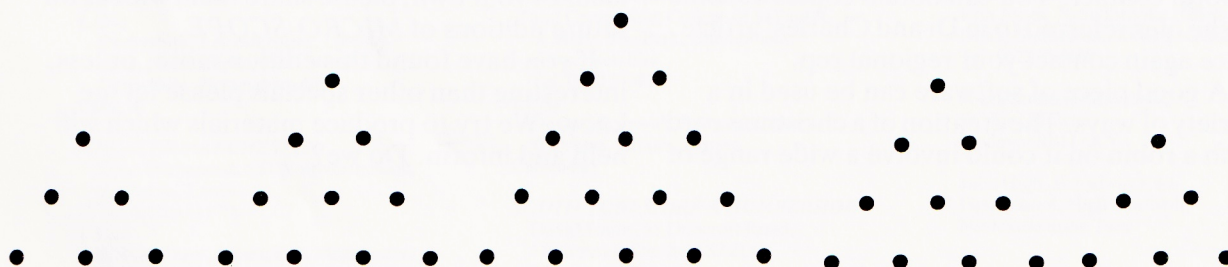
Editorial Post-Script

In the past *MICRO-SCOPE* specials have concentrated either on presenting a selection of detailed case studies about how one teacher has used a micro in the classroom for one specific application, information handling for example, or they have looked at the use of a micro with children of specific age group. This is the first special which has taken a theme from the classroom and demonstrated how the use of the micro can be integrated with familiar activities. Christmas is a good time for using the micro to enhance what usually happens. The micro is a tool with a great deal of potential. Most of this potential will remain unrealised unless the use of the micro becomes an integral part of other activities, not an end in itself.

Di Wailing and Charles Bake have suggested a wide range of activities which could be used as starting points. They have included a wealth of detail about what to put into a 'content-free' program in order to customise it to your own requirements. We have not included much information about how to do it. In all the examples cited the documentation which accompanies the program explains the processes involved in changing the program. For many people that is the hard bit, and we haven't helped. The best help comes in the form of a person who will reassure you as you do it yourself. If you are keen to have a go, find out if there is anyone in your LEA Computer Centre who can help, otherwise ring your local MAPE representative. He/She will try to arrange a helpful contact. You can obtain copies of some of the files referred to in Di and Charles' article, once again contact your regional rep.

A good piece of software can be used in a variety of ways. The creation of a christmas card with a robin on it could involve a wide range of learning opportunities or it could fill a spare five minutes. Sometimes it is difficult to see how to use a program in a way that accommodates children of varying abilities. Gillian Welsh has explained how all the children benefited from making a card. Sitting at the micro became a small part of a much broader experience. She also illustrated the fact that you don't need LOGO in order to begin to program logically. Record keeping and/or planning an activity away from the micro will add an extra dimension to the educational value in the use of many pieces of software.

Dave Clayton has described how his class has come to accept the micro as an integral part of all sorts of activities. One thing definitely leads to another as far as his class is concerned. Computers, video cameras . . . . video-discs? . . . . ???

In the past the micro has suffered from its close association with maths. It isn't just a tool for mathematicians. Nevertheless they can think of some interesting things to do with it. Roger Keeling has illustrated some of the ways in which the micro can lend itself to investigating numbers associated with Christmas.

Often I'm amazed at the ways in which different people use the same piece of software. Once you begin to think along a certain line, shifting your perspective becomes rather difficult. This *MICRO-SCOPE* special might offer you a few ideas about different approaches to the use of a program. You will probably have ideas of your own, please share them with us for future editions of *MICRO-SCOPE*.

If you have found this edition more, or less, interesting than other specials please let me know. We try to produce materials which will help and inform. Do we?

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