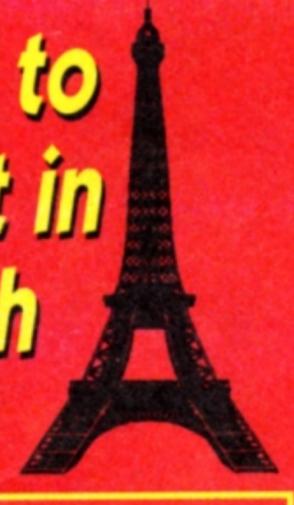


# LET'S COMPUTE!

99p

Learn to count in French



For ALL users of:  
Electron, BBC, Amiga,  
C64/128, Archimedes,  
Spectrum, Atari ST,  
PC, Amstrad CPC

Start collecting  
**LET'S COMPUTE!**  
badges  
See Page 4

No 5 December 1990  
A Database Publication



**WIN** A YEAR'S SUPPLY OF FREE GAMES! **PLUS** LOTS OF OTHER CONTEST PRIZES!

TEENAGE MUTANT HERO

# TURTLES™



**COWABUNGA!!**

**THE HEROES IN A HALF SHELL™ ARE COMING!**

**AVAILABLE SOON ON:**

Amiga, Atari ST, Commodore 64, Spectrum, Amstrad and PC.



Teenage Mutant Hero Turtles,™ April O'Neil,™ Shredder,™ Heroes in a Half Shell,™ Mouser,™ Bebop,™ Rocksteady™ are all registered trade marks of Mirage Studios, USA. ALL RIGHTS RESERVED.  
Used with permission. Based on characters and comic books created by Kevin Eastman and Peter Laird. © 1990 Mirage Studios, USA.

Published by Mirrosoft Ltd. under licence from Konami™ and under sub-licence from Mirage Studios, USA.

Konami™ is a registered trademark of Konami Industry Co. Ltd. © 1989 Konami. © 1990 Mirrosoft Ltd.

Image Works, Irwin House, 118 Southwark Street, London SE1 0SW. Tel: 071 928 1454. Fax: 071 583 3494.





**Make money with your micro**  
**GOTO 26**

**WIN!**  
 Free games for a year..  
 Plus LOTS more prizes!  
**GOTO 9, 28 and 37**

**French can be fun!**  
**GOTO 10**

**Shine at the Brain Game**  
**GOTO 34**

**Build a Santa Claus detector!**  
**GOTO 32**

**Cartoon capers on your computer**  
**GOTO 18**

**Published by Database Publications Ltd, Europa House, Adlington Park, Macclesfield ST10 4NP**  
**Tel: 0625 878888 (All departments) 051-357 2961 (Subscriptions)**  
**Telex: 94081191 Fax: 0625 879966 MicroLink: MAG001**

**Managing Editor** Derek Meakin  
**Features Editor** Peter Davidson  
**Creative Editor** Mark Nolan  
**Ace Cartoonist** Mike Goldberg  
**Production Editor** Peter Glover  
**Ad Manager** John Snowden  
**Ad Sales** Yvonne Benson/John Weir  
**Circulation Exec** Carolyn Wood

© 1990 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles or advertisements.  
 News trade distribution: Comag, Telephone: 0895-444055.  
**Database Publications is a division of Europress Ltd**

**REGULARS**

- The Games Gang** **GOTO 6**
- Rom and Ram** **GOTO 13**
- Program Doctor** **GOTO 17**
- Safe Scientist** **GOTO 22**
- Final Front Ear** **GOTO 25**
- Build a Database** **GOTO 30**
- Logo Lowdown** **GOTO 43**
- How a Computer Works** **GOTO 50**

# Notice

I'm puzzled about building boots on the BBC B. First I enter:

```
*BUILD !BOOT
```

Then I type in the commands and press Escape.

But when I press Shift+Break it doesn't work. Please tell me how to do it.

— Michael Carvers (11),  
Greenlaw, Scotland.

**You're right so far. All you have to do now is type:**

```
*OPT 4,3
```

**The disc will then be ready to load using Shift+Break.**

I have typed in the Witches' Brew program from the October issue. It is brilliant.

I have made an improvement to it. With a few extra lines it will also tell you how many people there are enough drinks for. Here are the changes:

```
31 LET TV=0
221 PRINT:PRINT "Enough for
";INT(TV/1.25)+FNr(2);"people"
222 LET TV=0
330 IF C=3 THEN LET TV=TV+0.5:
PRINT"and some ";GOTO 370
341 TV=TV+T
```

The number of people is roughly proportional to the measures.

— Alex Waddell (10), Reading, Berks.

## Send for your full set of badges . . .

The badge you received free on the cover of this issue is just one of the set of four shown here.

To get the whole set send two £1 coins to Let's Compute! Badge Offer, PO Box 2, Ellesmere Port, South Wirral L65 3EB.

### AND HERE'S A SPECIAL OFFER FOR LET'S COMPUTE CLUB MEMBERS

Club members can get the badges for half price. Just quote your membership number and send one £1 coin when you order.

**Remember to tell us your name and address!**

**If you have any tips for other readers, send them in. And if you have any questions about your computer or software just ask us. We'll try to answer them on the Noticeboard.**

**Let us know what you want to see in future issues. And if we use your letter or ideas we'll send you a Let's Compute! baseball hat!**

Send your letters to:



**Let's Compute!**  
Europa House,  
Adlington Park,  
Macclesfield  
SK10 4NP.

**Remember to tell us your age.**

I like trying the programs in Al's Gorithms.

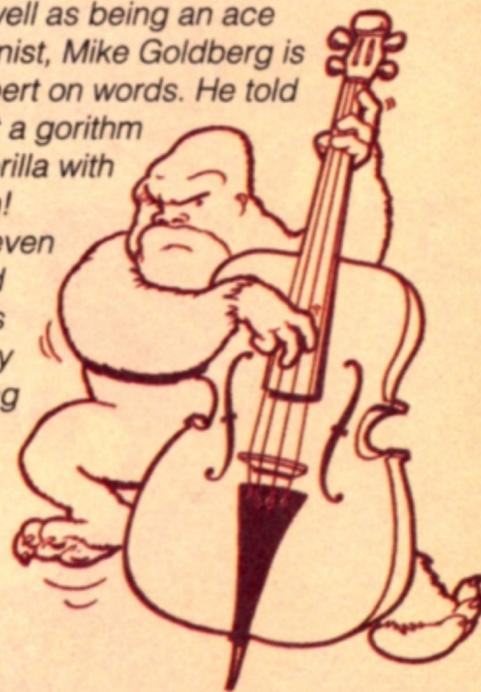
Can you please tell me what gorithm means?

— Stuart Forsyth (9) Barnsley, Yorks

The headline Al's Gorithms is a shortened version of Alan's Algorithms. There's no such word as gorithm but an algorithm is the method used to solve a problem.

As well as being an ace cartoonist, Mike Goldberg is an expert on words. He told us that a gorithm is a gorilla with rhythm!

He even proved he was right by drawing one for us.



I've tried to type some programs from the November issue into my Spectrum. But any lines that start with FOR won't go in. For example, in the Database program I can't enter:

```
40 FOR X=1 TO 255
```

Should these lines be different for a Spectrum or am I doing anything wrong?

— Ian Holdsworth (12), Newcastle-upon-Tyne

**These lines are all correct. Make sure you use the key marked FOR and the one marked TO. If you type the letters to make either word it won't work.**

**We'll be giving lots of hints and tips for typing in programs in the next issue of Let's Compute!**

# board

*Let's Compute!* is terrific. Especially in the last issue when the ducks flew up in the air for Rom's food and Rom fell on the micro.

But the programs aren't suitable for my Tatung Einstein computer. Could you please publish conversions for it?

— Michael Seaton (9), Birmingham

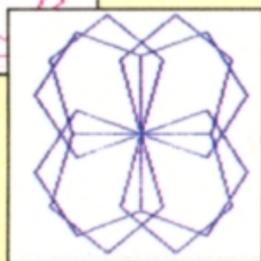
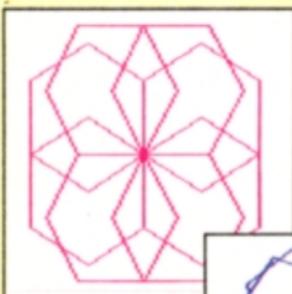
May I congratulate you on publishing such a brilliant magazine. It's educational and at the same time fun.

Is it possible to include listings for the Atari 130XE so I and many other XE owners can join in the fun?

— Hazel Gornall, Leeds

We've had lots of letters asking us to cover even more computers. We're looking at the possibility of giving programs for additional machines, but which ones should we do?

Let us know what YOU want to see in **Let's Compute!** We always try to do what you want.



I am very pleased with *Let's Compute!* I am learning a lot from it.

I have drawn lots of patterns on my Electron using Logo. They use shapes like circles and hexagons.

The routines to do them are quite easy. For circles use:

```
REPEAT 360 [ FD 5 LT 1 ]
```

For the hexagons use:

```
REPEAT 6 [ FD 300 LT 60 ]
```

— Mr Ken Weeks (70),  
Blackwood, Gwent.

I have just discovered *Let's Compute!* When I saw PC on the front I got excited. I have been looking for a mag which has programs and is for the PC.

I tried out the Pop Quiz. It is very good because you can use your own questions.

I like the cartoons and my favourite is Rom and Ram. The Games Gang are great.

— Daniel Byrd (11), Bath, Avon

## HIGH SCORES!

Lot's of you have sent in the coupon from last month's noticeboard. There are loads of high scores on Page 39.

If you haven't sent your scores yet – or want to send us more – there's another coupon on the page. If you don't want to cut up your copy of *Let's Compute!* just copy it onto a piece of paper.

What a great mag. Cartoons, compos and programs. I love it. I own a Speccy +2 and have even joined the Let's Compute! club.

Just one slight niggle. There are no reviews.

Could you feature one or two please? Keep up the good work.

— Darren Randle (13),  
Gravesend, Kent

**Lot's of people have asked for reviews so we'll be printing them soon. Let us know what you want us to look at.**

## RESULTS

We've so many contest winners to tell you about this month that there isn't room on the noticeboard. They're on Page 53.

I've tried the Shooting Star program from the November issue on my school's BBC Micro. I had no problems and it worked well.

But I couldn't get it working on my Spectrum at home. Is there anything wrong in the Is this your computer? section?

— Jason Williams (14), Glasgow

**The changes listed for Line 130 for all the computers should be made to Line 220 instead.**

**The main program was renumbered after the alterations needed were worked out.**

**Unfortunately, the new numbers were not copied on to the right places.**

**Also, the change listed for Line 220 in the C64 version should be made to Line 240 instead. Sorry!**

# The Games Gang



Robocop 2 from Ocean a top seller this Christmas?

## Licensed to sell

Lots of software has the name of a film, a famous person or something else that's a real crowd puller. The software houses have to pay the person who owns the name before they use it. It's called a licence.

Every December sees the big software companies getting ready to pull out their mega-selling licensed games for Christmas. And this year is no exception!

There are three hot hits from Ocean. **Robocop 2** is the sequel – you've guessed it – to Robocop. And watch out for **Special Criminal Investigat-ion**. It's the follow-up to the driving extravaganza Chase HQ.

There's also the conversion of Arnie Schwarzenegger's big summer film, **Total Recall**.

## Charlie's cheats!



**Superman from the now defunct Tynesoft was a brilliant game – but oh so hard. James Hallett from Abergavenny has found a neat solution to level one anyway. When the first canon/ship appears on screen switch to heat vision and start shooting it. When it is out of energy move down, still firing. As it disappears off screen keep going down and firing.**

## MORE YOU MUST NOT MISS

Top on US Gold's list are two really action-packed coin-op conversions. **UN Squadron** is a shoot-'em-up set right in the centre of the Middle East. And **Strider 2** features the original muscle-bound hero sporting the handy ability to transform himself into a robot.

Activision also have two major arcade conversions up their sleeves. **Atomic Robokid** is a cutesy shoot-'em-up, complete with secret rooms and metallic monsters.

If you want the chance to sample the ultimate experience of riding a lethal dragon straight into the enemy's den take a look at **Dragon Breed**.

You can get all these titles on all popular formats except PC, Archimedes and BBC.

Meanwhile from Mindscape there's **Days Of Thunder**. It's a

racing game based on Tom Cruise's exploits in the film of the same name.

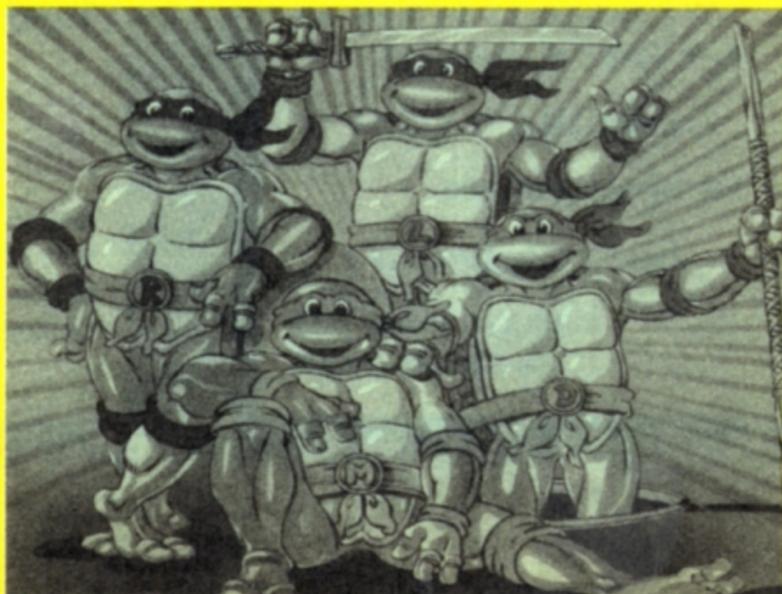
It should be on the shelves now on all formats except Amstrad, Archimedes and BBC.

Another film heart-throb waiting to make his way into your computer is Roger Moore. He's in Domark's **The Spy Who Loved Me**. It's for all computers except BBC and Archimedes and it's the best Bond game so far.

And there's one Yuletide release everybody is waiting for. In the October issue of *Let's Compute!* we told you that Imageworks' **Teenage Mutant Ninja Turtles** was on the way. It's now out and it's got to be the Christmas biggy.

You can get it on all formats except Archimedes, BBC and PC. But a PC version is available directly from the US.

**Turtle power... they're green and they're mean and they're out NOW!**



## Alternative Xmas...

If you fancy something a bit different from the usual licence crop there are plenty of offerings to get your gnashers into.

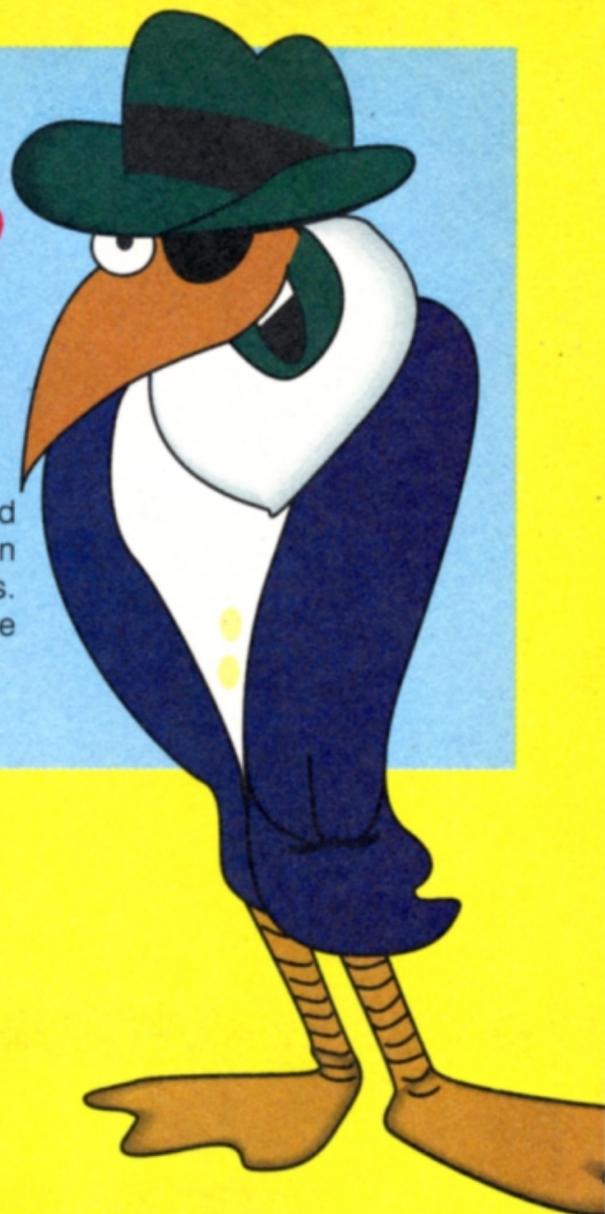
There are far too many to mention them all here, but let's look at some of the best.

Keep a special lookout for two Lucasfilm titles. The quirky puzzler **Night Shift** comes on all formats except BBC and Archimedes. The hilarious adventure **Secret Of Monkey Island** is for the PC only.

Among the pick of the rest is Electronic Art's **Powermonger**. It's the staggeringly impressive sequel to Populous.

There's also Rainbird's medieval strategy game **Betrayal** and Millenium's **James Pond**. It's a cutesy underwater action romp for the Amiga and Atari ST.

# Peter's Patch!



Anyone who has played **Sabre Wulf** and has a Computer Concepts Spellmaster in their BBC will have been having problems. The solution is to type in the following before you start to play:

!&210=!(!&FFB7+&10)

## WATCH OUT, ACORN OWNERS!

Most of the major multi-format software houses seem to forget the humble Electron, BBC and Archimedes. But don't despair. There are still plenty of games for you around.

If you have a Master 128 or Archimedes with PC emulator you'll find that most games for the PC will work on your computer. Check the screen modes before you buy and make sure your machine can cope with them.

But to get the most from your micro stick with the software houses who write for those machines. Here are some look out for this Christmas:

Title	Company	Computer	What the game is	Comment
SimCity	Superior Software	BBC/Electron	Run a city, coping with natural disasters and economic disaster	Brilliant.
The Wimp Game	4th Dimension	Archimedes	Pointer-driven graphic adventure you can run while in other programs	Mousemania
TwinWorld	Cygnus	Archimedes	A superbly wicked arcade adventure	Eat your heart out ST and Amiga owners



Struggling with Gremlin's **Venus: The Flytrap**? Well here's a list of the passwords to make life easier.

Level	Password
2	MANTIDS
3	CICADAS
4	PSYLLIDS
5	PIERIDS
6	SATYRID
7	LYCAENID
8	PYRALID
9	NOCTUI
10	no password

David Ward from Rushden has been working/playing very hard with **Thundermonk**. He has sent in the following:

Level	Password
1	no password
2	SPOOK
3	SHIVER
4	HALLOWEEN



## IT'S THE SIMPSONS

Have you heard of the Simpsons? If you haven't yet you soon will. In America this grouchy cartoon family are even bigger than the Teenage Mutant Hero Turtles.

They're now starting to become trendy over here. Ocean have picked up the computer games licence so you should be able to sample Simpson humour first hand some time next summer.



If you've any hints, pokes or cheats you'd like us to print send them to at:  
**Let's Compute! Europa House, Adlington Park, Macclesfield SK10 4NP.**

# Cat and mouse



**Sometimes the**

SO WHEN ITS LIFE OR DEATH

**Situation Allows**

CONFLICT ON YOUR COMPUTER GAME

**No Second**

YOU CAN RELY ON CONTRIVER!

**Chances . . .**

BREEDER OF SMART MICE!

By



**CONTRIVER**

eu rope ltd

# Henrietta's Tree of Presents!

**HOORAY!**

£1,000 worth of software **MUST** be won!

Hopeless Henry and Henrietta are the two heroes in Scotlander's games - Hooray for Henrietta and Henrietta's Book of Spells. Now YOU can meet them.

We've 25 copies of both to give away. This is your chance to win a copy of each!

They're available for the IBM PC, Atari ST, Commodore Amiga and Spectrum.

*Hooray for Henrietta* has both Henry and Henrietta in a jam. John the parrot has kidnapped Henry, his coat, hat, boots and trousers.

All this is very upsetting for Henrietta as they are to be married in the morning. To rescue Henry she must solve some puzzles. Fail and Henry is covered in cold custard!

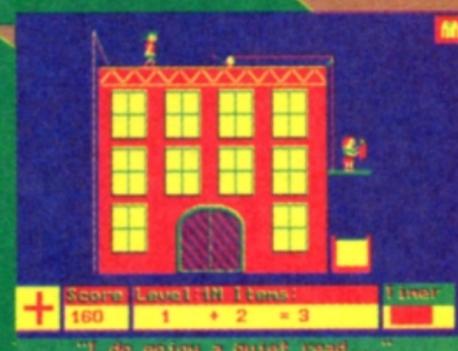
*Henrietta's Book of Spells* is where you will meet Cedric the Skeleton and the wicked Morgana the Morbid.

Henry is in trouble again. He bumped into Castle Spellalot so Morgana turned him into a frog. It's up to you to help Henrietta rescue him.

There are 25 sets of the two games to win. All you have to do is to find the names of some people in the wordsquare on the entry form.

Here are the names: Cedric, Henry, John and Morgana. Just draw a circle round them.

Hurry! Only the first 25 correct entries will receive a prize. So make sure you fill in the entry form and send it to Let's Compute! before December 31 1990.



## Entry form

C	E	D	R	I	C	J
E	R	T	N	S	W	Q
M	B	H	P	O	I	U
L	O	E	X	D	V	G
J	M	N	E	R	T	C
M	O	R	G	A	N	A
S	A	Y	B	E	S	T

Please tick your choice:

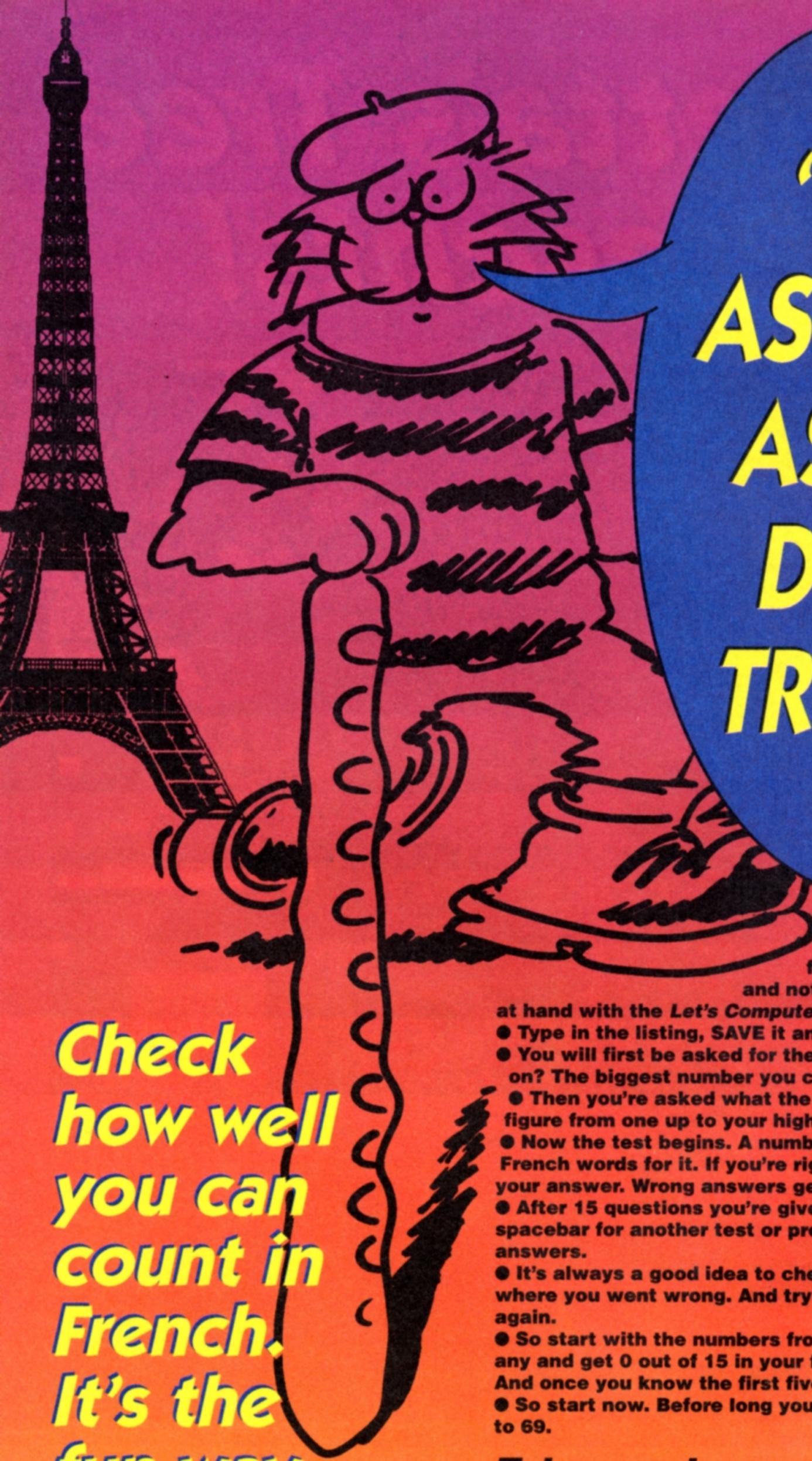
- PC 3.5in disc
- PC 5.25in disc
- Spectrum tape
- Spectrum disc
- Atari ST
- Amiga

Name .....

Address .....

Postcode .....Age .....

Send to Henrietta Contest, Let's Compute! Europa House, Adlington Park, Macclesfield SK10 4NP.



**"IT'S  
AS EASY  
AS UN,  
DEUX,  
TROIS!"**

**Check  
how well  
you can  
count in  
French.  
It's the  
fun way  
to learn**

Have you ever stared at lists of foreign words you need to learn – and not know where to start? Help is now

at hand with the *Let's Compute!* French number test.

- Type in the listing, **SAVE** it and **RUN** it.
- You will first be asked for the highest number you want testing on? The biggest number you can answer is 69.
- Then you're asked what the lowest number is. This can be any figure from one up to your highest.
- Now the test begins. A number will be shown. Just type in the French words for it. If you're right a tick will be shown next to your answer. Wrong answers get a cross.
- After 15 questions you're given your score. You can press the spacebar for another test or press **C** to look at the correct answers.
- It's always a good idea to check your answers. You can see where you went wrong. And try not to make the same mistake again.
- So start with the numbers from 1 to 5. Even if you don't know any and get 0 out of 15 in your first test, you'll soon learn them. And once you know the first five, try a few more.
- So start now. Before long you'll know all the French numbers up to 69.

### **Take care!**

Make sure you enter the **DATA** lines exactly as they are printed. If you make a mistake you could be learning the wrong spelling of a French word.

*Note that, as we've used lower case letters you should answer in lower case. If, instead, you enter the listing in capitals, answer in capitals.*

# Un

What is the highest number you want?75  
69 is the biggest

What is the highest number you want?45

What is the lowest number you want?56  
Don't be silly!

What is the highest number you want?45

What is the lowest number you want?20

### Choosing the size of your test

# Trois

Press Space for  
another go.  
Press C for  
correct answers.

quarante cinq	x
vingt-trois	/
trente-sept	/
vingt-neuf	/
vingt-huite	x
quarante-quatre	/
trente-trois	/
quarante-quatre	/
trente-et-un	x
trente-trois	/
vingt-cinq	/
quarante-quatre	/
vingt	/
trente-sept	/
vingt et un	/

You got 12 out of 15.

### Checking your score

```

10 REM FRENCH NUMBERS
20 REM (c) Let's Compute!
30 DIM N(100):DIM WS(100)
40 PRINT:LET X=RND(-TIME)
50 LET S=0:LET SS=""
60 FOR I=1 TO 19:LET SS=SS+" ":NEXT I
70 FOR I=1 TO 19:READ WS(I):NEXT I
80 FOR I=20 TO 60 STEP 10
90 READ AS:LET WS(I)=AS
100 LET WS(I+1)=AS+" et un"
110 FOR J=2 TO 9
120 LET WS(I+J)=AS+"-"+WS(J)
130 NEXT J:NEXT I
140 CLS
150 PRINT:INPUT "What is the highest n
umber you want";H
160 IF H>69 THEN PRINT "69 is the bigg
est":GOTO 150
170 PRINT:INPUT "What is the lowest nu
mber you want";L
180 IF L=0 OR L>=H THEN PRINT "Don't b
e silly!":GOTO 150
190 CLS
200 FOR I=1 TO 15
210 LET N(I)=RND(H-L+1)+L-1

```

```

220 NEXT I
230 FOR Q=1 TO 15
240 LET QU=N(Q)
250 LET X=0:LET Y=19:LET TS="What is F
rench for "+STR$(QU):GOSUB 430
260 INPUT RS
270 LET X=0:LET Y=19:LET TS=SS+SS:GOSU
B 430
280 IF RS=WS(QU) THEN LET S=S+1:LET MS
="/"
290 IF RS<>WS(QU) THEN LET MS="x"
300 LET X=20:LET Y=Q+2:LET TS=RS:GOSUB
430
310 LET X=39:LET Y=Q+2:LET TS=MS:GOSUB
430
320 NEXT Q
330 LET X=0:LET Y=19:LET TS="You got "
+STR$(S)+" out of 15.":GOSUB 430
340 LET X=0:LET Y=8:LET TS="Press Spac
e for":GOSUB 430
350 PRINT:PRINT "another go."
360 PRINT "Press C for"
370 PRINT "correct answers."
380 GOSUB 510
390 IF AS="C" OR AS="c" THEN GOSUB 450

```

quarante-deux	/
vingt-cinq	/
trente-trois	/
trente-huit	/
quarante-quatre	/
quarante-et-un	x
trente-neuf	/
quatreante-trois	x
trente-trois	/
vingt-quatre	/
quatrennte-cinq	x
vingt	/
quateante-cinq	x

What is French for 34?

# Deux

### Answering the questions

43	quarante-trois	quatreante-trois	x
33	trente-trois	trente-trois	/
24	vingt-quatre	vingt-quatre	/
45	quarante-cinq	quatrennte-cinq	x
20	vingt	vingt	/
45	quarante-cinq	quateante-cinq	x
33	trente-trois	trente-trois	/
44	quarante-quatre	quarante-quatre	/
45	quarante-cinq	quarante-cinq	/
35	trente-cinq	trente-cinq	/
24	vingt-quatre	vingt-quatre	/
20	vingt	vingt	/
43	quarante-trois	quarante-trois	/
44	quarante-quatre	quarante-quatre	/
34	trente-quatre	trente-trois	x

Press Space for another go.

# Quatre

### Looking at the right answers

(Note: Spectrum display is slightly different)

```

400 IF AS<>" " THEN GOTO 380
410 RUN
420 REM ** PRINT SUBROUTINE **
430 PRINTTAB(X,Y)TS;
440 RETURN
450 REM ** PRINT CORRECT ANSWERS **
460 LET X=0:LET Y=8:LET TS=SS:GOSUB 43
0
470 PRINT:PRINT SS:PRINT SS:PRINT SS:L
ET X=0:LET Y=3:LET TS="":GOSUB 430
480 FOR Q=1 TO 15:PRINT STR$(N(Q));" "
;WS(N(Q)):NEXT Q
490 PRINT:PRINT "Press Space for anoth
er go.":GOSUB 510
500 RETURN
510 LET AS=GETS
520 RETURN
530 DATA "un","deux","trois","quatre",
"cing","six","sept","huit","neuf","dix"
540 DATA "onze","douze","treize","quat
orze","quinze","seize","dix-sept"
550 DATA "dix-huit","dix-neuf","vingt"
,"trente","quarante","cinquante"
560 DATA "soixante"

```

## IS THIS YOUR COMPUTER?

### Electron/BBC/Archimedes

The program works as shown

### Commodore 64/128

Enter the program in capitals.

Change these lines:

```

140 PRINT CHR$(147);
190 PRINT CHR$(147);
210 LET N(I)=INT(RND(0)*(H-L+1)+L)
310 LET X=38:LET Y=Q+2:LET TS=MS:GOSUB
430
430 POKE 211,X:POKE 214,Y:SYS 58732:PR
INT TS;
510 GET AS:IF AS="" THEN 510

```

### Spectrum

Select 48k mode. Change these lines:

```

30 DIM N(100): DIM WS(100,16): DIM RS
(16)
40 PRINT : RANDOMIZE
60 FOR I=1 TO 11:LET SS=SS+" ":NEXT I
210 LET N(I)=INT(RND*(H-L+1)+L)
300 LET X=14:LET Y=Q+2:LET TS=RS:GOSUB
430
310 LET X=31:LET Y=Q+2:LET TS=MS:GOSUB
430
430 PRINT AT Y,X;TS;
510 LET AS=INKEY$:IF AS="" THEN GOTO 5
10

```

### PC (GW-Basic)/Amstrad CPC

Change these lines:

```

40 PRINT:RANDOMIZE TIMER
210 LET N(I)=INT(RND*(H-L+1)+L)
430 LOCATE Y+1,X+1:PRINT TS;
510 LET AS=INKEY$:WHILE AS="":L
ET AS=INKEY$:WEND

```

CPC: Use TIME instead of TIMER in Line 40.

Use X+1,Y+1 instead of Y+1,X+1 in Line 430

### Amiga and Atari ST

Use Amos or Stos. Change these lines:

```

40 PRINT:LET X=RND(TIMER)
210 LET N(I)=RND(H-L)+L
430 LOCATE X,Y : PRINT TS;
510 AS=INPUT$(1)

```



**24 Hours Orderline  
0597 87 784**

**... for prices that appear to have fallen off the back of a lorry**

### AT-286-12 COMPUTER

- 12 MHz Speed
- 512KB RAM. Space up to 40Mb
- 2HD/2FD Controller
- 5.25" 1.2Mb Disk Drive
- Hercules Mono Card
- Parallel and Serial Ports
- Space for 3 extra Drives
- Enhanced Keyboard
- 12" or 14" Monitor
- 1 year warranty RTM

**OUR PRICE £595**

SUPER AT+  
AS ABOVE WITH 1Mb RAM  
20Mb HARD DISK

**OUR PRICE £795**

### BRANDED DISKS



	<b>BENCHMARK 3 1/2" DS/DD 135 TPI</b>	
25	.....	£15.95
50	.....	£27.95
100	.....	£49.95
200	.....	£92.95
400	.....	£177.95

<b>BENCHMARK DS/HIGH DENSITY</b>		
25	.....	£32.00
50	.....	£58.00
100	.....	£106.00
200	.....	£199.00
400	.....	£370.00

	<b>BENCHMARK 5 1/4" DISKS DS/DD 48/96 TPI</b>	
25	.....	£10.64
50	.....	£17.25
100	.....	£29.90
200	.....	£54.00
400	.....	£124.20

<b>BENCHMARK DS/HIGH DENSITY</b>		
25	.....	£17.40
50	.....	£30.00
100	.....	£55.00
200	.....	£104.00

	<b>BENCHMARK 3 1/2" DISKS AND BOX OFFER</b>	
400	.....	£245.00
20 3.5" DS/DD +80 cap. box	.....	£19.95
40 3.5" DS/DD +80 cap. box	.....	£29.95
50 3.5" DS/DD +80 cap. box	.....	£34.95
70 3.5" DS/DD +80 cap. box	.....	£44.95

	<b>BENCHMARK 5 1/4" DISKS AND BOX OFFER</b>	
All boxes inc. lock and dividers		
25 5.25" DS/DD +100 cap. box	.....	£13.62
50 5.25" DS/DD +100 cap. box	.....	£20.24
75 5.25" DS/DD +100 cap. box	.....	£26.28
100 5.25" DS/DD +100 cap. box	.....	£31.50

All disks 100% certified & guaranteed  
All boxes inc. lock and dividers

### UNBRANDED DISKS

<b>5.25" DS/DD</b>		<b>5.25" DS/HD</b>	
100	.....	100	.....
200	.....	200	.....
400	.....	400	.....
600	.....	600	.....
800	.....	800	.....
1000	.....	1000	.....
<b>3.5" DS/DD</b>		<b>3.5" DS/HD</b>	
100	.....	100	.....
200	.....	200	.....
400	.....	400	.....
600	.....	600	.....
800	.....	800	.....
1000	.....	1000	.....

All disks 100% certified & guaranteed

### DISK BOX SPECIAL



3.5" 50 capacity	.....	£5.50
3.5" 100 capacity	.....	£7.00
5.25" 50 capacity	.....	£5.50
5.25" 100 capacity	.....	£7.00

Inc. locks and dividers

### ACCESSORIES

Rigid Mouse Mat	.....	£4.50
3.5" Library Case x 5	.....	£4.75
5.25" Library Case x 5	.....	£4.75

### DISK DRIVES (External)

3.5" for Atari 1Meg (720k) inc PSU	.....	£69.50
---------------------------------------	-------	--------



### STACKABLE DISK BOX

3.5" 240 Capacity	.....	£17.99
5.25" 160 Capacity	.....	£17.99

Boxes are lockable and stackable horizontally and vertically

**SEE US AT THE COMPUTER SHOPPER  
SHOW ON STAND G10A**



### MICE

Tecklink inc. Image 72	.....	£29.99
Aero Mouse inc. Dr Halo	.....	£29.99
<b>Above inc. Software &amp; Accessories</b>		
Atari Mouse	.....	£17.99
Amiga Mouse	.....	£19.99
Amstrad 1512/1640	.....	£9.99

### DATA SWITCHES

#### FOR USE WITH ALL COMPUTERS

All metal case with rotary switch		
2-way 36 pin Cent	.....	£14.50
2-way 25 pin D-Type	.....	£12.50
X-over 36 pin Cent	.....	£19.22
X-over 25 pin D-Type	.....	£18.22

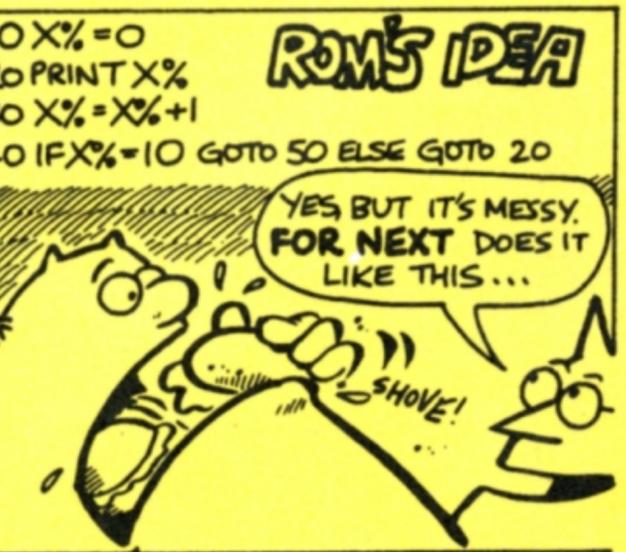
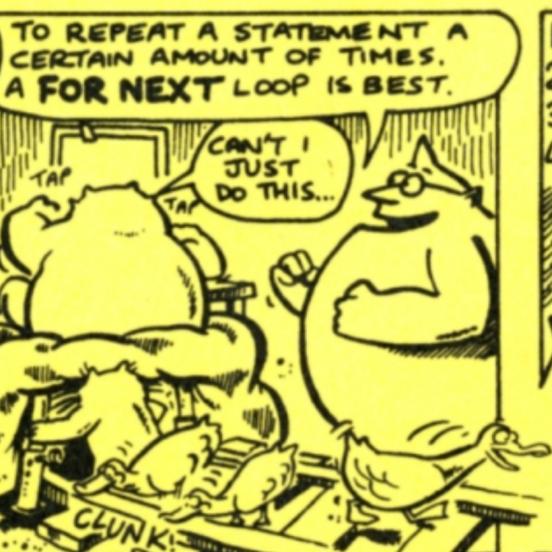
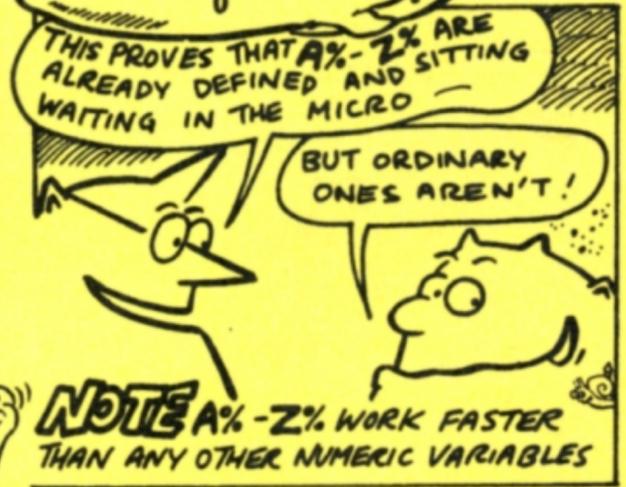
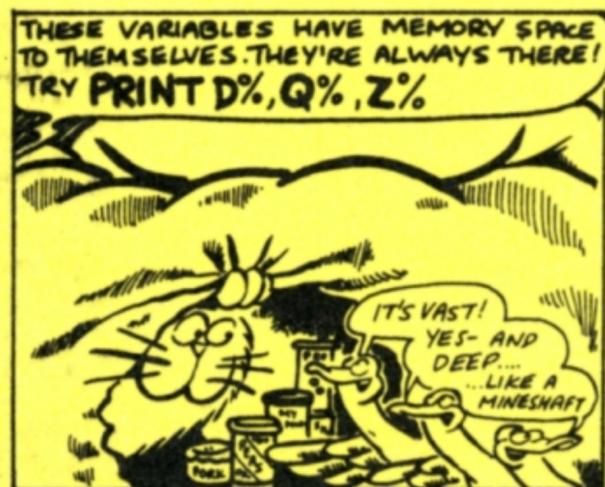
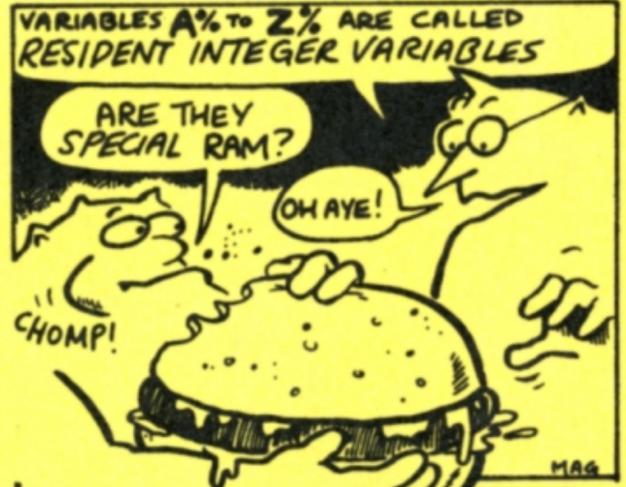
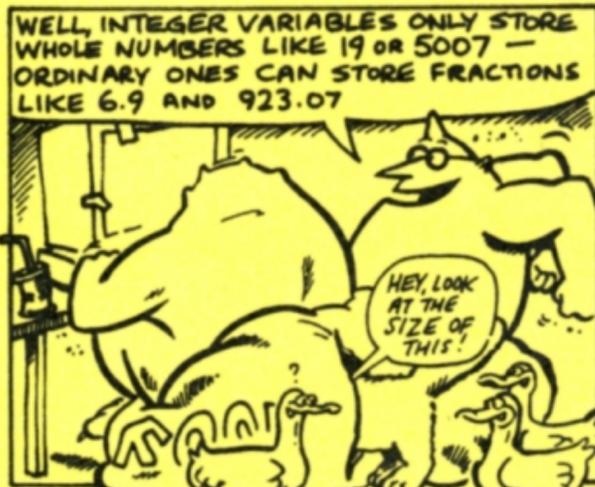
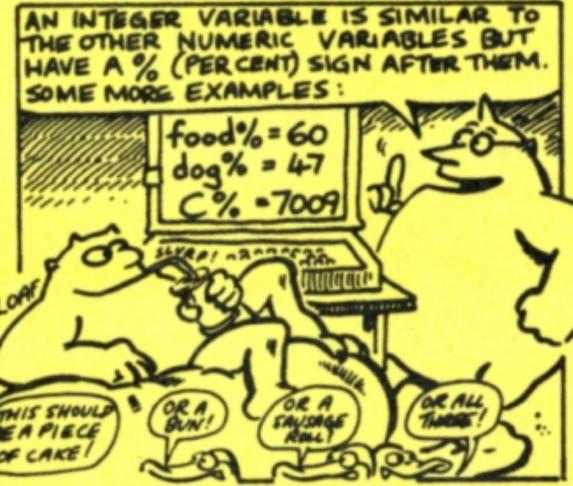
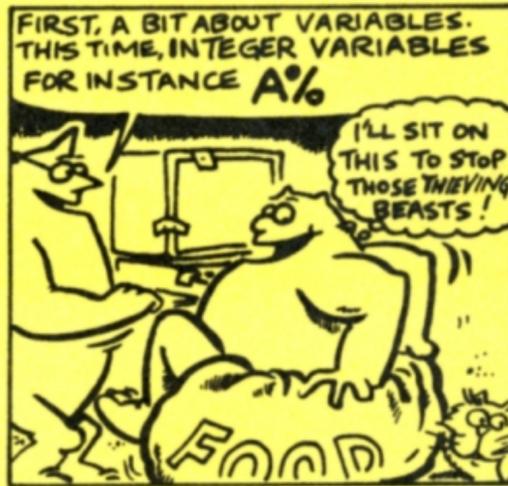
### DATA CABLES

IBM Parallel 2MTR	.....	£7.25
25 to 25 M/M 2MTR	.....	£7.25
25 to 25 M/F 2MTR	.....	£7.25
36 to 36 M/M 2MTR	.....	£8.25

**Manor Court Supplies Ltd, Glen Celyn House, Penybont, Llandrindod Wells, Powys, LD1 5SY**

All prices include VAT & P&P. UK orders only Telephone 0597 87 792 Fax No. 0597 87 416 Educational and Government orders welcome

# BBC BASIC WITH ROM & RAM



10 FOR X% = 1 TO 10  
20 PRINT X%  
30 NEXT X%

TYPE NEW, THEN TYPE THIS IN

TAP TAP

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

FOOD

LABOR

CAN YOU SEE WHAT'S HAPPENING?  
YES, VARIABLE X% IS INCREASED BY ONE EACH TIME AT LINE 10...

... LINE 20 PRINTS X% AND LINE 30 SAYS NEXT X% -

THAT'S RIGHT!

WHICH MEANS GO BACK TO THE FOR AT LINE 10

THE LOOP STOPS WHEN X% REACHES THE VALUE OF TEN - BUT ADD THIS -

WHEAT  
RICE  
DOGGY MUNCHIES  
CATERING PACK TRUFFLES  
S OIL  
PAST  
PIGS!

40 PRINT X% NOW RUN IT AGAIN

HEY, IT SAYS 11!

THAT'S SOMETHING YOU MUST LEARN. LOOPS ALWAYS END WITH THE VARIABLE BEING MORE THAN THE REQUIRED LOOP AMOUNT

LOOK AT ALL THIS!

YES, WE'D BETTER GET WEAVING!

I THOUGHT WE WERE HERE TO MINE!

YOU DON'T HAVE TO INCREASE THE LOOP VARIABLE IN ONES. ADD STEP TO LINE 10 LIKE THIS:  
10 FOR X% = 1 TO 10 STEP 2

MEANWHILE -

DIG

10  
8  
6  
4  
2  
0

YOU CAN COUNT DOWNWARDS TOO! CHANGE LINE 10 TO:  
10 FOR X% = 10 TO 1 STEP -2

LOOPS ARE ALWAYS CARRIED OUT AT LEAST ONCE. CHANGE LINE 10 TO:  
FOR X% = 1 TO 0. IT'S A POINT WORTH NOTING.

HAPPEN!

YOU DON'T HAVE TO PUT THE VARIABLE AFTER NEXT

WHY'S THAT?  
BECAUSE THE MICRO HAS SEEN A FOR AND LOOKS FOR A NEXT ANYWAY

HOWEVER, IT'S A GOOD IDEA TO KEEP THE VARIABLE AFTER NEXT...

I KNOW! I KNOW! SO YOU CAN SEE CLEARLY WHAT'S HAPPENING!

LEAP  
BOUNCE!  
EXCITED!  
HOOP  
QUAKE!  
... YES! GOOD GRIEF ROM, YOU SWAPPED BRAINS WITH ONE OF THOSE DUCKS?!

RUMBLE

WHAT THE PUMPKIN'S THAT?

ALSO, YOU CAN NEST LOOPS - LIKE THIS: TYPE NEW, THEN THIS LISTING

10 FOR J% = 1 TO 5  
20 FOR I% = 1 TO 4  
30 PRINT TAB(I%, J%) "X"  
40 NEXT I%  
50 NEXT J%

YOU SEE THIS LOOP - THE I% ONE, IS NESTED INSIDE THE J% LOOP.

WHAT SHOULD HAPPEN

GOOD EH?  
I LIKE IT!

"MORE BOUNCING"  
OVER EXCITED  
FLAP  
THRASH

BUT INSIDE THE SACK...

QUAKE!

SNAP!  
QUICK EVERYBODY OUT!

DUCK!!

YES, THAT'S RIGHT!

THE LOOP AT LINES 20 TO 40 IS PERFORMED 5 TIMES BECAUSE OF THE LOOP J% IT IS ENCLOSED IN.

HEY, I'M SINKING!

**RUMBLE !!**

BUT YOU MUST NEVER JUMP OUT OF A LOOP ...

SQUIRM

ARE YOU GETTING SMALLER ROM? -OR IS IT ME?

**SHAKE!**

DON'T DO THIS:

```

10 FOR I%=1 TO 10
20 IF I%=5 GOTO 40
30 NEXT I%
40 PRINT "JUMPED OUT!"

```

HELP!

WHAT THE...?

**CRUNCH**

IT'S BAD PROGRAMMING AND YOU COULD GET ERRORS GENERATED-

HEY, THE FLOOR'S GOING

**COLLAPSE !!**

QUACK!

WE'LL DO MORE ON LOOPS NEXT TIME ROM-ROM? WHERE ARE YOU ULLERRR?

**CRASH!**

I RECKON WE MUST'VE DUG TOO DEEP!

SHAME!

**?**

MUNCH!

SLURP! CHOMP! CHEW!

IF I GET HOLD OF YOU ROM...

**NEXT MONTH MORE LOOPING THE LOOP WITH: REPEAT-UNTIL -IF ROM BUYS ANOTHER MICRO !!!**

© Copyright Let's Compute! Not to be reproduced without written permission



### BLOWPIPE

Five levels of alien warfare lie before you – the most devilishly ingenious terra incognita you have ever faced awaits you, determined to question your genius and cause your downfall – can you keep ahead of this masterpiece of technical wizardry – conquer hitherto uncharted, undreamed of heights?

At the controls of the top specification ship, **The Annihilator**, you must establish a strategy to survive each level and collect as many credits as possible to use in the trading posts en route where you can equip your ship with even more powerful weaponry.

At the end of each stage, a fiendishly gruesome arch-guardian will try to check your progress through the portal to the next level – get it before it gets you and revel in your cunning.



**Blowpipe** is a masterpiece of Archimedes games' coding with over 2.5 megabytes of 256 colour graphics with up to 64 sprites on screen simultaneously. Over fifteen separate pieces of 4 channel stereo music with stunningly realistic sound effects heighten the excitement – explosive, mind-blowing, meteoric mega-action, all compressed onto just two discs.

### WORLDSCAPE

Can you rectify world devastation? **Worldscape** affords you the opportunity to try, combining man's knowledge with your own ingenuity.

The fine balance of the planet Earth has been maintained by natural phenomena however catastrophic – volcanic eruption, earthquakes, tidal waves, plagues – but crucially, in the three hundred years since the Industrial Revolution, the human race has caused the global problems facing us today:

Atmospheric pollution caused by industrial gases

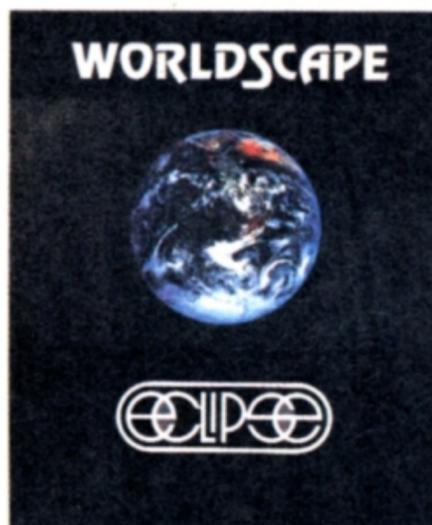
The hole in the ozone layer due to excessive use of CFC's

The "greenhouse" effect brought about by thoughtless and ill-considered deforestation.

Unless we act NOW, our legacy to future generations will be irreversible.

Can you improve on present-day thinking? **Worldscape** gives you the opportunity to try – use its built-in landscape generator to create totally unique landscapes – build cities, erect power stations, deal with sewage, plant your own forests – these and countless other options are available to you.

Remember you hold the advantage over scientists in the real world – you can correct your errors – mankind rarely can.



Complete on two discs with an accompanying comprehensive manual, **Worldscape** challenges you to change the world.

*Your ultimate goal – world peace and harmony – perfection with **Worldscape***



## Puts other Computer Games in the Shade

Available through all good dealers or purchase direct from **ECLIPSE**  
 £19.95 each inc VAT and p&p Order by Card or Cheque

Burcott Manor Wells Somerset BA5 1NH  
 Tel: 0243 531194 Fax: 0243 531196

PHONE FOR DETAILS OF  
 ST, AMIGA & PC  
 COMPATIBLE VERSIONS



# THE PROGRAM DOCTOR

*It's never a good idea to jump out of loops. But lots of people do! Our tame micro medic tells of other ways.*



## **This is the original program:**

```
10 CLS
20 PRINT "TYPE THE ALPHABET NOW!"
30 FOR I = 1 TO 26
40 GOSUB 160
50 PRINT K$;
60 IF K$ <> CHR$(I+64) THEN GOTO 100
70 NEXT I
80 PRINT:PRINT:PRINT "WELL DONE"
90 GOTO 110
100 PRINT:PRINT:PRINT "YOU GOT IT
WRONG"
110 PRINT:PRINT "DO YOU WANT ANOTH
ER GO?"
120 GOSUB 160
130 IF K$="Y" THEN GOTO 10
140 PRINT:PRINT "BYE"
150 END:REM ON SPECTRUM USE STOP
160 INPUT K$
170 RETURN
```

## **Here are Doc's changes:**

```
25 LET F=0
60 IF K$ <> CHR$(I+64) THEN LET F=1
:LET I=26
75 IF F=1 THEN GOTO 100
```

**This program works on all home micros**

Here's another program that fell on to Doc's operating table. It's a simple game that tests how well you know the alphabet.

Type it in and try it. It appears to work OK. But it has several faults.

For example, after asking if you want *Another Go?* it only checks whether you press Y. But what if a different key is pressed? Doc showed the answer to that one in our October issue.

What worries Doc most is the jump out of the loop. The loop is from Line 30 to Line 70. If you press a wrong key the program jumps to Line 100.

This works when you first run the program. But on most computers you'll soon get an error message if you keep typing the wrong letter.

On the BBC Micro, after you've made about 20 mistakes, you'll get this message:

*Too many FORs at line 30.*

But whether you get an error message or not, it's still bad programming! So how do you cure it? There are lots of ways.

Doc has found four.

The changes you need to make depend on the Basic language that is in your computer. Two of Doc's cures will work on all computers but the others will only work on ones that understand the new commands he uses.

Doc's first remedy is to change the GOTO 100 in Line 60 to LET I=26. This means that when the loop reaches the NEXT I it has reached the highest value of I and it leaves the loop without the jump.

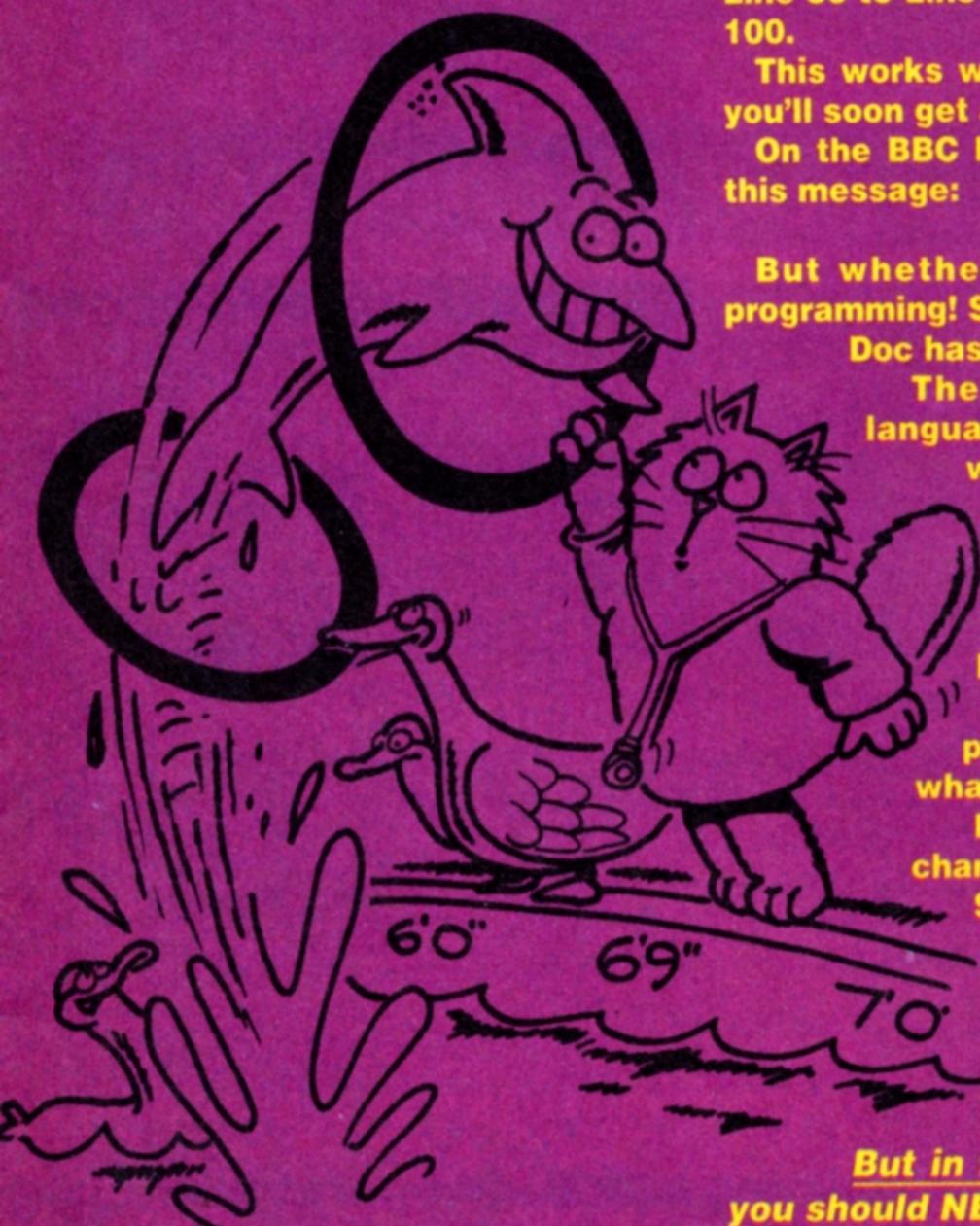
But now the program doesn't know whether to print a won or lost message. To get round this Doc uses what is known by programmers as a flag.

In Line 25 he sets his flag to 0. Then, in Line 60, it is changed to 1 if a mistake is made as a letter is typed.

So at Line 75, if the flag has been changed from 0 to 1, the program knows it has to jump to line 100. The other three methods also use the flag.

Next month Doc will look at three other ways to solve this problem. They are REPEAT...UNTIL, WHILE...WEND and Doc's own repeat.

**But in the meantime, the main point to remember is that you should NEVER jump out of a loop.**



Do you think YOU have written a program that can't be improved? Then send it along to the Program Doctor. He loves a challenge!

# Electron/BBC Micro/Archimedes core

```

10 REM AL'S GORITHMS ... ELLIPSES
20 REM (c) LET'S COMPUTE!
30 MODE 1
40 GCOLOR,129
50 CLS
60 PRINT:PRINT "JUST A MO, CALCULATIN
6....."
70 REM LOOK-UP TABLE
80 DIM T(72,2)
90 FOR I=0 TO 72
100 LET T(I,1)=COS (RAD (I*5))
110 LET T(I,2)=SIN (RAD (I*5))

```

```

120 PRINT TAB(5,5) I
130 NEXT I
140 CLG
150 FOR P=0 TO 27
160 READ M1,M2,IC,XC,YC,CL
170 GOSUB 200: REM DRAW ELLIPSE
180 NEXT P
190 GOTO 190
200 REM ELLIPSE ROUTINE
220 GCOLOR,CL
230 MOVE XC,YC
240 DRAW XC+M1*T(IC/5,1),YC+M1*T(IC/5,

```

```

2)
250 FOR A=0 TO 360 STEP 15
260 MOVE XC,YC
270 LET X=M1*T(A/5,1)
280 LET Y=M2*T(A/5,2)
290 LET XT=X*T(IC/5,1)-Y*T(IC/5,2)+XC
300 LET YT=X*T(IC/5,2)+Y*T(IC/5,1)+YC
310 PLOT 85,XT,YT
320 NEXT A
330 RETURN

```

## PROGRAMMING NOTE!

This program uses SIN and COS in a lot of calculations.

To save your computer working them out each time an ellipse is drawn, they are all calculated at once in Lines 70 to 130.

The results are saved in all the

memory locations called T. Then the answer can be looked up whenever it is needed.

This is a common method of speeding up programs.

It's called using a look-up table.

# Spectrum core

```

10 REM AL'S GORITHMS ... ELLIPSES
20 REM (c) LET'S COMPUTE!
30 PAPER 7
40 INK 0
50 CLS
60 PRINT:PRINT "JUST A MO, CALCULATIN
6....."
70 REM LOOK-UP TABLE
80 DIM T(750,2)
90 FOR I=1 TO 750
100 LET T(I,1)=COS (I*PI/360)
110 LET T(I,2)=SIN (I*PI/360)
120 PRINT AT 1,0; I
130 NEXT I
135 FOR I=0 TO 6 STEP 2: POKE USR "A"+
I,BIN 01010101: POKE USR "A"+I+1,BIN 101
01010: NEXT I
140 FOR I=0 TO 21: PRINT AT I,0;"
";NEXT I

```

```

150 FOR P=0 TO 27
160 READ M1,M2,IC,XC,YC,CL
170 GOSUB 200: REM DRAW ELLIPSE
180 NEXT P
190 GOTO 190
200 REM ELLIPSE ROUTINE
210 INVERSE 1:IF CL=0 THEN INVERSE 0
220 LET S=1+500/(M1+M2)
230 LET M1=M1/6: LET M2=M2/6: LETXC=XC
/6: LET YC=YC/6: LET IC=IC*2+1
235 LET XC0=M1+T(IC,1): LET YC0=M1*T(I
C,2)
240 LET XC1=XC+XC0:LET YC1=YC+YC0
250 FOR A=1 TO 721 STEP S
260 PLOT XC1,YC1
270 LET X=M1*T(A,1)
280 LET Y=M2*T(A,2)
290 LET XT=(X*T(IC,1)-Y*T(IC,2))
300 LET YT=(X*T(IC,2)+Y*T(IC,1))
310 DRAW XT-XC0,YT-YC0
315 DRAW -XT-XC0,-YT-YC0
320 NEXT A
330 RETURN

```

NOTE: Line 140 contains 32 graphic characters. To use one, go into graphics mode and type the letter A.

To get into graphics mode press the key labeled GRAPH or press Caps Shift and 9. The cursor will then appear as **G** Press the same key to leave graphics mode.

Until you RUN the program the character will show as A. Once it has been run it will look like it is in the listing above.

# Amstrad CPC core

```

10 REM AL'S GORITHMS ... ELLIPSES
20 REM (c) LET'S COMPUTE!
30 MODE 1
35 INK 0,0:INK 1,6:INK 2,24:INK 3,26
40 PAPER 1:PEN 0
50 CLS
60 PRINT:PRINT "JUST A MO, CALCULATIN
6....."
70 REM LOOK-UP TABLE
80 DIM T(750,2):DEG
90 FOR I=0 TO 750
100 LET T(I,1)=COS (I/2)
110 LET T(I,2)=SIN (I/2)
120 LOCATE 5,5:PRINT I
130 NEXT I
140 CLS
150 FOR P=0 TO 27
160 READ M1,M2,IC,XC,YC,CL
170 GOSUB 200: REM DRAW ELLIPSE
180 NEXT P

```

```

190 GOTO 190
200 REM ELLIPSE ROUTINE
210 PLOT -5,-5,CL
220 LET S=1+500/(M1+M2)
230 LET XC=XC/2:LET YC=YC*5/12:LET IC=
IC*2
235 LET XC0=M1+T(IC,1)/2:LET YC0=M1*T(
IC,2)*5/12
240 LET XC1=XC+XC0:LET YC1=YC+YC0
245 LET XC2=XC-XC0:LET YC2=YC-YC0
250 FOR A=0 TO 360 STEP S
260 MOVE XC,YC
270 LET X=M1*T(A,1)
280 LET Y=M2*T(A,2)
290 LET XT=(X*T(IC,1)-Y*T(IC,2))/2+XC
300 LET YT=(X*T(IC,2)+Y*T(IC,1))*5/12+
YC
310 DRAW XT,YT:DRAW XC2,YC2
320 NEXT A
330 RETURN

```

# ST (Stos)/Amiga (Amos) core

```

10 REM AL'S GORITHMS ... ELLIPSES
20 REM (c) LET'S COMPUTE!
30 KEY OFF:MODE 0:HIDE ON:CURS OFF
40 PALETTE $0,$700,$700,$777
50 REM
60 PRINT:PRINT "JUST A MO, CALCULATIN
6....."
70 REM LOOK-UP TABLE
80 DIM T(72,2)
90 FOR I=0 TO 72
100 LET T(I,1)=COS (RAD (I*5))
110 LET T(I,2)=SIN (RAD (I*5))
120 LOCATE 5,5:PRINT I
130 NEXT I
140 INK 3:BAR 0,0 TO 319,199
150 FOR P=0 TO 27
160 READ M1,M2,IC,XC,YC,CL
170 GOSUB 170: REM DRAW ELLIPSE
180 NEXT P
190 GOTO 160
200 REM ELLIPSE ROUTINE
210 INK CL
220 LET XC=XC/4:LET YC#YC/5:LET M1=M1/

```

```

4:LET M2=M2/5:LET OXT#=XC+M1*T(I/5,1):L
ET OYTH#=YC+M1*T(I/5,2)
230 LET XC=320-XC:YC=200-YC
240 LET OXT#=320-OXT#:OYTH#=200-OYTH#
250 FOR A=0 TO 360 STEP 15
260 LET X#=M1*T(A/5,1)
270 LET Y#=M2*T(A/5,2)
280 LET XT#=X#*T(IC/5,1)-Y#*T(IC/5,2
)+XC
290 LET YT#=X#*T(IC/5,2)+Y#*T(IC/5,1
)+YC
300 POLYGON XC,YC TO OXT#,OYTH# TO XT#,
YT#
310 LET OXT#=XT#:OYTH#=YT#
320 NEXT A
330 RETURN

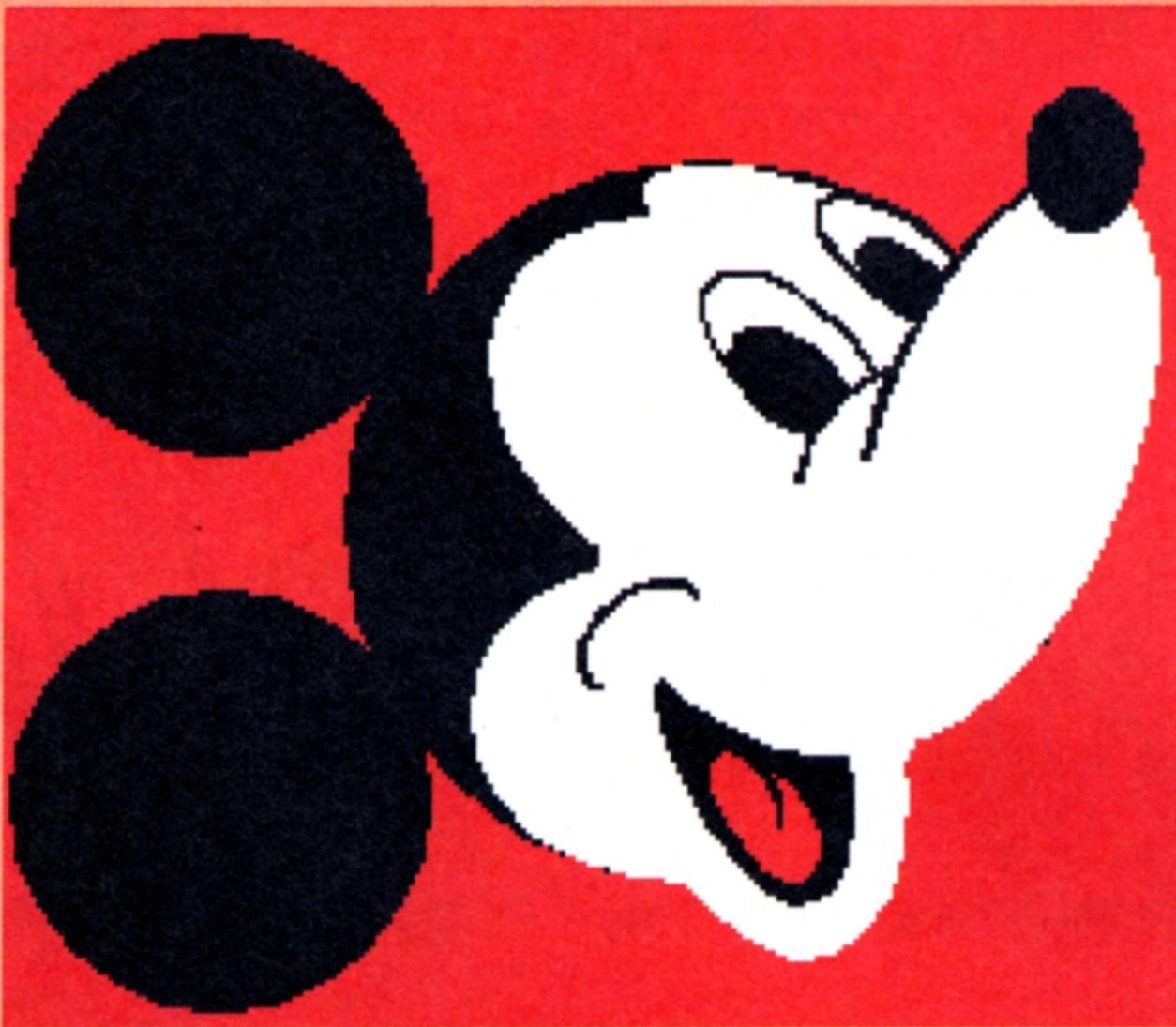
```

Amos users: Replace Line 30 with:

```

30 SCREEN OPEN 0,320,,,200,16,LOWRES:HI
DE:CURS OFF

```



# AL'S GORITHMS

**THIS IS IT!** The page where the budding artists among you can pick up a tip or two. And a chance for you to show what YOU can do yourself.

Making a lot with a few lines of code is what it's all about. Alan McLachlan gives you some more bright ideas.

# SQUASHING THE CIRCLES

Two issues ago we created some great pictures from circles. But squash the circles – some just a little bit and some a lot – and you've got lots more shapes to draw with.

So this month we're going to make even better pictures from ellipses – a fancy name for flattened circles. We'll show you how you can draw an ellipse of any size and shape. And to add even more fun you can also tilt it about its centre.

So the listing is a little more complex than before. It has to work out how much to squash the ellipse and how much to tilt it. But you don't need to know how it works to draw your own pictures. Just change the 27 in Line 150 to the number of ellipses you want to draw.

Then put the numbers that the program needs to draw the ellipses in DATA lines starting at Line 340. Each ellipse needs six numbers. You'll see them in each of the DATA lines opposite. They have to be entered in this order:

Order	What it does
First	Measures the distance across one way
Second	Measures the distance across the other
Third	Gives the angle of tilt (0 to 180)
Fourth	Gives the X location of the centre
Fifth	Gives the Y location of the centre
Sixth	Gives the colour

When you've keyed in the main core of the program you're ready to draw your own pictures.

But before you do so let your computer draw the Micky Mouse shown above.

To do this, enter these DATA lines:

```

340 DATA 150,150,0,300,300,0
350 DATA 150,150,0,300,700,0
360 DATA 260,260,0,650,500,0
370 DATA 160,100,20,750,340,1
380 DATA 160,120,0,640,360,3
390 DATA 160,120,140,640,580,3
400 DATA 120,40,160,720,700,3
410 DATA 160,120,90,780,500,3
420 DATA 80,40,140,710,620,0
430 DATA 74,34,140,710,620,3
440 DATA 70,30,146,788,688,0
450 DATA 64,24,146,788,688,3
460 DATA 50,30,140,710,600,0
470 DATA 40,20,140,792,672,0
480 DATA 180,100,110,680,360,3
490 DATA 140,60,110,680,360,3
500 DATA 140,100,140,700,450,3
510 DATA 60,30,50,760,560,0
520 DATA 60,30,50,764,554,3
530 DATA 200,90,70,860,560,0
540 DATA 200,90,70,866,554,3
550 DATA 80,60,90,760,460,3
560 DATA 50,40,90,920,760,0
570 DATA 40,25,120,700,280,1
580 DATA 30,20,120,680,300,0
590 DATA 36,18,120,676,300,1
600 DATA 50,30,40,600,420,0
610 DATA 44,28,40,604,416,3

```

When you RUN it you'll find that the result is quite impressive.

But can you come up with something better?

The challenge is there!

**Send us your masterpiece drawn using just ellipses and let everyone see it!**



# Everyone (yes, **EVERYONE**) saves money buying presents at the Computer Shopper Show!

An exit poll conducted at last year's Computer Shopper Show revealed that 95 per cent of customers reported "substantial savings" from purchases – with individual figures ranging from £50 to more than £1,000!

- ★ **One-stop shopping for ALL your computer Christmas presents!**
- ★ **Hundreds of stands packed with special show bargains!**
- ★ **Expert advice to help you make the right choice!**

Thursday  
**6**  
December  
10am-6pm

Friday  
**7**  
December  
10am-6pm

Saturday  
**8**  
December  
9am-6pm

Sunday  
**9**  
December  
10am-5pm

# COMPUTER SHOPPER SHOW '90

Wembley, London • 6-9 December



And if all that wasn't enough, cut out the special voucher on this leaflet and save up to 70p off the price of your ticket!

## SAVE!



This voucher is worth 70p per person off the admission price to Computer Shopper '90

Only valid Thursday or Friday December 6 or 7.

OR SAVE £4 off the price of a family ticket (two adults and two children)



**COMPUTER SHOPPER SHOW '90**  
Wembley, London • 6-9 December

Only one discount per person is allowable

## SAVE!



This voucher is worth 50p per person off the admission price to Computer Shopper '90

Only valid Saturday or Sunday December 8 or 9.

OR SAVE £3 off the price of a family ticket (two adults and two children)



**COMPUTER SHOPPER SHOW '90**  
Wembley, London • 6-9 December



Learn how to  
look after  
yourself  
with the  
Safe Scientist

# GOOD

# HEALTHY?

Do you know what's good for you? Then try this fun survey. It gives a score based on your answers to a few questions. And it could open your eyes. Try it. But be honest - pick the choice which is nearest to the truth. The program gives a mark of 2 for the healthiest answer and 0 for the least healthy.

After each question you are also given some advice about what might have been the best answer. So you can learn from the program.

But to be a really good scientist you must carry out as big a survey as possible. So why not check the health of your friends?

Keep a record of the results and plot them on some kind of a chart.

You might even be able to say something about the health of your school. Or even the whole population of the country.

If you know something about programming you can easily extend or alter the program. For example, you can have more than 10 different questions.

Whatever you do with the program, remember that there is more to life than your computer screen. Good old fresh air and exercise really are important!

● **Next month you'll need your sunglasses at the ready.**

**We'll be investigating the dazzling world of colour!**

```
10 REM HEALTHY LIFE STYLE
20 REM By The Safe Scientist
30 DIM S(3)
40 MODE 3:VDU19,0,4,0;
50 FOR N=23 TO 1 STEP-1
60 LET X=32:LET Y=N:GOSUB 400:PRINT "
HEALTHY LIFESTYLE"
70 LET Y=Y+1:GOSUB 400:PRINT "
":REM 16 SPACES
80 LET T=10:GOSUB 420
90 NEXT N
100 LET SC=0
110 READ QS:IF QS<>"end" THEN GOSUB 16
0:GOTO 110
120 GOSUB 300
130 PRINT:PRINT"PRESS SPACE TO TRY AGA
IN."
140 GOSUB 440:IF AS<>" " THEN GOTO 140
150 RUN
160 REM QUESTION
170 PRINT:PRINT QS
180 FOR N=1 TO 3:READ AS,S(N)
190 PRINT:PRINT N;" ";AS
200 NEXT N
210 PRINT
220 INPUT "Which choice";C:IF C<1 OR C
```

```
>3 THEN GOTO 220
230 LET SC=SC+S(C)
240 PRINT:PRINT"You scored ";S(C);" fo
r that."
250 READ MS:PRINT:PRINT MS
260 PRINT:PRINT "PRESS SPACE"
270 GOSUB 440:IF AS<>" " THEN GOTO 270
280 CLS
290 RETURN
300 REM SCORE
310 CLS
320 PRINT "You have scored ";SC
330 PRINT:PRINT
340 IF SC=20 THEN PRINT "Perfect! What
a healthy little soul you are!":RETURN
350 IF SC>15 THEN PRINT "Pretty good!
You know what's good for you.":RETURN
360 IF SC>10 THEN PRINT "Not bad, but
some aspects could be healthier.":RETURN
370 IF SC>5 THEN PRINT "Do more to mak
e sure you stay healthy.":RETURN
380 IF SC>1 THEN PRINT "Help! You need
it if you value good health.":RETURN
390 PRINT "Check your pulse! With your
lifestyle you're struggling.":RETURN
400 REM TAB(X,Y)
```

```
410 PRINT TAB(X,Y);:RETURN
420 REM DELAY
430 TIME=0:REPEAT UNTIL TIME>T:RETURN
440 REM GET
450 LET AS=GET$:RETURN
460 DATA "It is 7.15 on a Friday morni
ng. Your alarm has just sounded."
470 DATA "Get up, wash and clean your
teeth.",2
480 DATA "Turn the alarm off and go ba
ck to sleep.",0
490 DATA "Get up but be in a really ba
d temper.",1
500 DATA "Keeping clean is important.
So is learning to rely on yourself."
510 DATA "It is now 7.45 and you are t
hinking about breakfast."
520 DATA "Skip breakfast because you h
aven't time.",0
530 DATA "Tuck into bacon and eggs wit
h fried bread.",1
540 DATA "Have a bowl of cereal and fr
uit juice.",2
550 DATA "It is most important to star
t the day with a well balanced meal."
560 DATA "Twenty to nine and you are n
```



# IS THIS YOUR COMPUTER?

## Electron/BBC/Archimedes

The program works as shown.

## Commodore 64/128

Enter the program in capitals.

Change the following lines:

```
40 PRINT CHR$(147);
60 LET X=10:LET Y=N:GOSUB 400:PRINT "
HEALTHY LIFESTYLE"
280 PRINT CHR$(147);
310 PRINT CHR$(147);
410 POKE 211,X:POKE 214,Y:SYS 58732:RE
TURN
430 LET T=TIME+T*3
435 IF T>TIME THEN 435
436 RETURN
450 LET GET AS:IF AS="" THEN 450
455 RETURN
```

## Spectrum

Change or add the following lines:

```
40 CLS
50 FOR N=20 TO 1 STEP-1
60 LET X=8:LET Y=N:GOSUB 400:PRINT "H
EALTHY LIFESTYLE"
410 PRINT AT Y,X;:RETURN
425 LET T=PEEK(23672)+T/2:IF T>255 THE
N LET T=T-256
430 IF PEEK(23672)<>T THEN GOTO 430
435 RETURN
450 LET AS=INKEYS:IF AS="" THEN GO TO
450
455 RETURN
```

## PC (GW-Basic)

Change the following lines:

```
40 CLS
410 LOCATE Y,X:RETURN
430 LET T=TIMER+T/8:WHILE T>TIMER:WEND
:RETURN
450 LET AS=INKEY$:WHILE AS="":LET AS=I
NKEY$:WEND:RETURN
```

## Atari ST (Stos)

Change the following lines:

```
40 MODE 1:KEY OFF:CURS OFF:HIDE
50 FOR N=21 TO 1 STEP-1
410 LOCATE X+1,Y+1:RETURN
430 LET T=TIMER+T*3:WHILE T>TIMER:WEND
:RETURN
450 LET AS=INPUT$(1):RETURN
```

## Amiga (Amos)

Change the following lines:

```
40 CLS
50 FOR N=21 TO 1 STEP-1
410 LOCATE X+1,Y+1:RETURN
430 LET T=TIMER+T*3:WHILE T>TIMER:WEND
:RETURN
450 LET AS=INPUT$(1):RETURN
```

## Amstrad CPC

Change the following lines:

```
40 MODE 2
410 LOCATE X+1,Y+1:RETURN
430 LET T=TIME+T*3:WHILE T>TIME:WEND:R
ETURN
450 LET AS=INKEY$:WHILE AS="":LET AS=I
NKEY$:WEND:RETURN
```

**Health in the National Curriculum**  
**You need know something about diet and a healthy life style.**  
**You are also expected to know that some things, like tobacco, really are bad for you.**

ow at school."

570 DATA "Tuck into a Mars bar you bought on the way to school.",1

580 DATA "Nip round the back of the bike shed for a quick fag.",0

590 DATA "Play a game of tennis with your mates.",2

600 DATA "It's not a bad idea to get some FRESH air and exercise."

610 DATA "At last! It's morning break time."

620 DATA "Race to the tuck shop for some bags of crisps.",0

630 DATA "Nip into the toilets to brush your hair and have a chat.",1

640 DATA "Play a game of tennis with your mates.",2

650 DATA "Better to avoid greasy, salty tuck. Exercise is much more useful."

660 DATA "It's the dreaded double maths lesson."

670 DATA "Quietly eat the Polo mints you bought earlier.",1

680 DATA "Just get on quietly with the problems you've been set.",2

690 DATA "Claim to feel ill so that you

u can escape to the medical room.",0

700 DATA "You'll feel much better if you stick to your set tasks."

710 DATA "Hurrah! It's lunchtime."

720 DATA "Eat the balanced 'meal of the day'.",2

730 DATA "Tuck into hot dog and chips.",1

740 DATA "Skip dinner so you can keep the money you were given.",0

750 DATA "Once again, the well balanced meal is best."

760 DATA "It's games this afternoon."

770 DATA "Take a full and active part in the game.",2

780 DATA "Forge a note from your mum to say you are ill.",1

790 DATA "Skip off and hide in the toilets.",0

800 DATA "You may or may not enjoy it but the exercise is good for you."

810 DATA "School has ended. You are now back at home thinking about tea."

820 DATA "Scoff a couple of chocolate bars and a bag of crisps.",1

830 DATA "Eat a tuna fish salad.",2

840 DATA "Don't bother with tea because you're watching Neighbours.",0

850 DATA "You need that well balanced meal again."

860 DATA "After tea. What a range of activities are possible."

870 DATA "Go to the park to play with your mates.",2

880 DATA "Flop in front of the telly for the evening.",0

890 DATA "Sit in your room doing your homework.",1

900 DATA "Get the fresh air and exercise but make sure homework is done."

910 DATA "Your parents tell you it is time for bed."

920 DATA "Settle down because you know your bed time is sensible.",2

930 DATA "Pretend to settle down but get up later to see the horror movie.",0

940 DATA "Ask Dad about dinosaurs' intestines to hang out bed time.",1

950 DATA "You really need your sleep."

960 DATA "end"

# 1ST CHOICE SOFTWARE LIMITED

for fast friendly service

## HAND HELD GAMES

You can play them anywhere!

1943	17.95
After Burner	23.95
Back 2 Heaven	8.95
Batman-Fight	22.95
Batman-Video Bowling	22.95
C	13.95
Clay Shot	18.95
Combat Attack	13.95
Combat Zone	7.95
Double Dragon	17.95
Double Dribble	24.95
Football	18.95
Formula 1	15.95
Gauntlet	8.95
Ghost Catcher	22.95
Gradius	8.95
Grand Prix	18.95
Gun Fight	18.95
Indiana Jones	9.95
Karate King	15.95
Karnov	15.95
Knight Rider	22.95
Mouse Maze	17.95
Outrun	15.95
Pinball Wizard 1	23.95
Pinball Wiz. 5 Skill	11.95
Ring King	15.95
River Crossing	17.95
Runaway	9.95
Simons Quest	8.95
Skate or Die	24.95
Space Attack	18.95
Space Battle	7.95
Star Force	9.95
Sub Wars	18.95
Submarine	18.95
Teenage Turtles	6.95
Top Gun	18.95
Vampire Strike	18.95
Vindicators	8.95
	24.95

## COMMODORE 64 2.99 TAPES

4x4 Off Road Race  
Arcade Fruit Machine  
Barbarian  
Bards Tale 1  
Impossible Mission 2  
Little Puff  
Quattro Adventure  
Quattro Power  
Quattro Sport  
R-Type

## 3.99 TAPES

Blue Angel  
Chubby Gristle  
Circus  
Fire Trap  
Flintstones  
Pandora  
Tracker  
Wall Street  
Wicked

## 4.99 TAPES

Ballistix  
Crack Down  
Dynasty Wars  
E-Motion  
Scramble Spirits  
Steel Thunder

## 4.99 DISCS

Air Wolf  
Baal  
Ballistix  
Barbarian  
Flying Shark  
Gremilins  
Oink  
Spitting Image  
Sound Studio

## 5.99 DISCS

Real Ghostbusters  
TV Sports Football

## SPECTRUM 2.99 TAPES

Arcade Fruit Machine  
Barbarian  
Bards Tale 1  
Big Foot  
Buggy Boy  
Crazy Cars  
Fantasy World Dizzy  
Ghost & Goblins  
Ikari Warriors  
Paperboy  
Postman Pat 2  
Quattro Adventure  
Quattro Power  
Quattro Sport  
R-Type  
Rock Star  
Tetris  
Thomas The Tank Engine  
Wonderboy  
Yogi's Great Escape

## 3.99 TAPES

After the War  
Dynasty Wars  
E-Motion  
Galaxy Force  
Gilbert  
Hard Drivin'  
Heavy Metal  
Licence to Kill  
Question of Sport  
Spitting Image  
Superman Man of Steel  
Toobin  
Wibsters

## 4.99 TAPES

Barbarian 2  
Compact Office  
Cycles  
Moonwalker  
Scramble Spirits  
Sonic Boom  
Thunderbirds

## 7.99 DISCS

A.P.B.  
Pacland  
Pacmania  
Scramble Spirits  
Tetris  
Thunderbirds  
Toobin

## AMSTRAD CPC 2.99 TAPES

Beyond The Ice Palace  
City Slicker  
Dr. Who & Mine of Terror  
Fire Lord  
Fourth Protocol  
Galaxy Force  
Karnov  
Not a Penny More  
Pyroword  
R-Type  
Spitting Image  
Tetris

## 3.99 TAPES

3D Chess  
Count Down  
Every Second Counts  
Fire Trap  
Hard Drivin'  
Licence to Kill  
Moonwalker  
Pacmania  
Power Drift  
Scramble Spirits  
Thunderbirds  
Wibsters

## 4.99 TAPES

Crack Down  
Dynasty Wars  
E-Motion  
Sonic Boom

## 5.99 DISCS

After Burner  
Fire Trap  
Galaxy Force  
Karnov  
Screen Designer  
Tetris  
Time Scanner  
Toobin

## 6.99 DISCS

Archon Collection  
Arctic Fox  
Cyrus 2 Chess (3D)  
Hard Drivin'  
Pegasus

## 7.99 DISCS

Grand Prix Master  
Pacland  
Scrambled Spirits  
Thunderbirds

## ATARI ST 5.99 DISCS

Amazon  
Artura  
Dark Fusion  
Flintstones  
Phoenix  
Pink Panther  
Quink  
Roy of the Rovers  
Spaceball  
Technocop  
Top Gun  
Trantor  
Vindicators

## 6.99 DISCS

Arctic Fox  
Blue Angel  
Conflict in Europe  
Crack Down  
Dynasty Wars  
E-Motion  
Heavy Metal  
Time Scanner

## 7.99 DISCS

Barbarian  
Cosmic Pirates  
Harrier Combat  
Interphase  
Orbiter  
Pacmania  
Scramble Spirits  
Sonic Boom

## 9.99 DISCS

After Burner  
Ballistix  
Theme Park Mystery

## AMIGA 5.99 DISCS

After The war  
Atron 500  
Beat it  
Delux Paint  
Galaxy Force  
High Steel  
Rocket Attack  
Shooting Star  
Speed  
Tracers

## 6.99 DISCS

Crack Down  
Dynasty Wars  
E-Motion  
Heavy Metal

## 7.99 DISCS

Driving Force  
Keef the Thief  
Sonic Boom

## 9.99 DISCS

Cycles  
Solitaire  
Terrorpods  
Theme Park Mystery

## BBC/ELECTRON 2.99 TAPES

3D Snooker  
Barbarian  
Footballer of the Year  
Fruit Machine Simulator  
Grid Iron 2  
Hob Goblin  
Karate Combat  
Life of Repton  
Paperboy  
Pipeline  
Pro Boxing Simulator  
Pro Golf  
Ravenskull  
Repton  
Repton 2  
Repton Thru Time  
Spellbinder  
Spitfire 40  
Thrust  
Yie Ar Kung Fu

## IBM PC State 3 1/2 or 5 1/4 4.99 DISCS

Action Service  
Dizzy Dice  
Eagles Nest  
Eye of Horus  
Impact (5 1/4 only)  
On Safari  
Prohibition  
Quadrailen  
Star Goose  
Star Ray  
Targhan

## 5.99 DISCS

A. Higgins W. Snooker (5 1/4)  
Quink (5 1/4 only)  
Tetris (5 1/4 only)

## 7.99 DISCS

Bards Tale 2  
Caveman Ugh-lympics (5 1/4)  
Chuck Yeager  
Keef the Thief  
Power Drome  
Question of Sport (5 1/4 only)  
Skate or Die  
Strike Fleet

## 8.99 DISCS

Blockbuster  
Blue Angel (3 1/2 only)  
Cycles (3 1/2 only)  
Roller Coaster Rumbler (5 1/4)

## 9.99 DISCS

Baal (5 1/4 only)  
Menace (3 1/2 only)  
Never Mind (3 1/2 only)  
Stryx (3 1/2 only)  
UMS (5 1/4 only)

AMS CPC	C 64	SPECTRUM	EDUCATION	BBC/ELEC.	IBM PC	ST	AMIGA
Tape Disc	Tape Disc	Tape Disc		Tape Disc	5 1/4 3 1/2	Disc	Disc
7.45 10.45	- -	6.70 8.20	Answer Back Quiz Junior	7.45 8.20	14.95 14.95	14.95	14.95
3.70 6.70	- -	3.70 6.70	* Fact Files for Ans.B.Quiz	3.70 4.45	7.45 7.45	7.45	7.45
3.70 6.70	- -	3.70 6.70	* Arithmetic (6-11)	3.70 4.45	7.45 7.45	7.45	7.45
3.70 6.70	- -	3.70 6.70	* English Words (12+)	3.70 4.45	7.45 7.45	7.45	7.45
3.70 6.70	- -	3.70 6.70	* Gen. Science (14+)	3.70 4.45	7.45 7.45	7.45	7.45
3.70 6.70	- -	3.70 6.70	* Nat. History (10+)	3.70 4.45	7.45 7.45	7.45	7.45
3.70 6.70	- -	3.70 6.70	* Spelling (6-11)	3.70 4.45	7.45 7.45	7.45	7.45
12.70 14.95	- -	12.70 14.95	French Mistress (A+B)	12.70 14.95	14.95 14.95	14.95	14.95
7.45 9.70	7.45 9.70	7.45 9.70	Fun School 2 (Under 6)	7.45 9.70	12.95 12.95	12.95	12.95
7.45 9.70	7.45 9.70	7.45 9.70	Fun School 2 (6-8)	7.45 9.70	12.95 12.95	12.95	12.95
7.45 9.70	7.45 9.70	7.45 9.70	Fun School 2 (Over 8)	7.45 9.70	12.95 12.95	12.95	12.95
9.70 12.70	9.70 12.70	9.70 12.70	Fun School 3 (under 5)	9.70 12.70	18.70 18.70	18.70	18.70
9.70 12.70	9.70 12.70	9.70 12.70	Fun School 3 (5-7)	9.70 12.70	18.70 18.70	18.70	18.70
9.70 12.70	9.70 12.70	9.70 12.70	Fun School 3 (over 7)	9.70 12.70	18.70 18.70	18.70	18.70
12.70 14.95	- -	12.70 14.95	German Master (A+B)	12.70 14.95	14.95 14.95	14.95	14.95
17.95 17.95	- -	17.95 17.95	Micro English (8-17)	17.95 17.95	- -	-	17.95
17.95 17.95	17.95 17.95	17.95 17.95	Micro Maths (8-17)	17.95 17.95	17.95 17.95	17.95	17.95
17.95 17.95	- -	17.95 17.95	Primary Maths (3-11)	17.95 17.95	17.95 17.95	17.95	17.95
7.45 10.95	7.45 10.95	7.45 10.95	Sooty's Fun With Numbers	7.45 10.95	- -	14.95	14.95
7.45 10.95	7.45 10.95	7.45 10.95	ThomasTank Fun Words	7.45 10.95	- -	14.95	14.95

Prices include VAT and P & P. Items subject to availability. UK orders only.

To order fill in the coupon or write the details on paper and send it with a cheque or postal order or credit card details to

**1st Choice Software Ltd.,  
Dept LC12, 4 Paul Row,  
Summit, Littleborough,  
Lancashire. OL15 9QG**

Phone: 0706 372728



Access and Visa holders can order by phone.

Computer

Title

Disc/Tape Price Name Address

Total  
I enclose a cheque/PO or debit my Access/Visa  
Credit Card Number

Signature:

Postcode Expiry date

FIRST THE LEFT EAR. THEN THE RIGHT EAR, AND NOW  
**THE FINAL FRONT-EAR**

THE OTHER HALF OF THE SHIP IS IN SIGHT— BUT THE DOCKING COMPUTERS ARE STILL ON STRIKE



AND SO, AT LAST, THE TWO HALVES OF THE SHIP ARE FINALLY REJOINED —



AND SO "THE SHED" AND CREW FINALLY FIND A CHIP SHOP THAT'S OPEN...



... AND WITH DIPLOMATIC EASE, DIM BARGES TO THE FRONT OF THE QUEUE —



WE WERE HERE FIRST—GET TO THE BACK OF THE LINE!



I DON'T THINK I LIKE THE TONE OF YOUR VOICE!



QUICKLY, DIM REACHES FOR HIS HOME MADE COMPUTER CONTROLLED INFLATABLE FAZER...



HEY, WHERE'S THE UNIVERSE?



# LET'S MAKE MONEY!

## Discover how easy it is to use your computer to raise funds

If you ask someone how to raise funds using a computer the answer you often get is: "Let people play computer games and charge them".

But it's just not worth the effort. Look at the costs involved:

Suppose a game lasts about five minutes. And you charge 20p a go.

In an hour the most you can make is £2.40. This means that at an event like a school fair you'd be lucky to get a fiver.

If you liven up the challenge by offering a cash prize for the highest score of the day you could even lose money. And don't forget that while the games are being played your keyboard, joystick or mouse will get quite a bashing.

**So can computers be used in fund-raising events?**

The answer is YES. But there are three important things to remember:

- Make sure it's going to be profitable.
- Try to do something unusual. That way, if it's advertised, it will bring people to the event to see it.
- Don't do anything that may damage or quickly wear out your computer.

**Over the next few months, Let's Compute! will look at ways computers like yours have been used to raise money. If you have any fund-raising ideas you have tried, let us know.**

Fairgrounds often have a stall printing pictures of people on T-shirts. The personalised shirts cost up to £10 each.

Do it at a school fair and you can easily make lots of cash. And it's a great attraction.

You need at least one computer and a printer. You also need a video camera and digitiser. Many education authorities loan these to schools which don't have their own.

The other bit of equipment you'll need is a special ribbon. The panel on the right tells you where you can get them.

Set the equipment up in a bright corner of the hall. A spotlight and a good backdrop help, but aren't vital.

Then, with the special ribbon in your printer, just print pictures of people on ordinary paper. Next you use a hot iron to transfer them on to a T-shirt.

Rather than having stocks of shirts you can just sell the transfers for, say, £1. It's a good idea to have a ready made shirt on display to show the final result.

To speed up the process you can have more than one computer and printer working. To do that, don't have a printer connected to the computer the camera is plugged into.

Save the digitised picture on disc and take it to the computer with the printer. That way you can be taking the next picture while one is printing.

You can have several computers and printers on the go at once. If you have ordinary ribbons in some of the printers you can sell computer portraits on paper for, say, 40p.

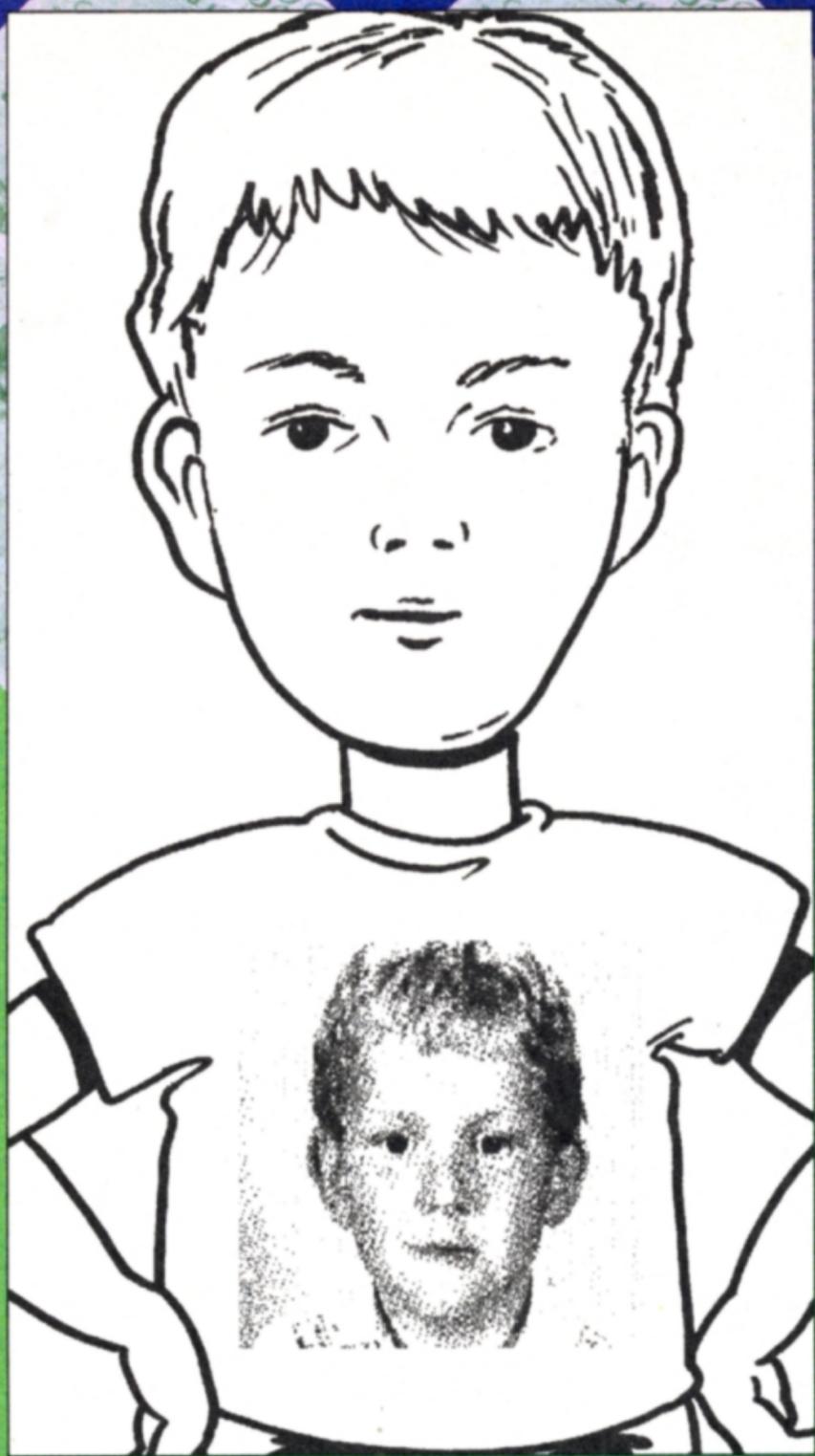
Using just one computer and printer you can do about one picture every five minutes.

That's 12 an hour – or about 25 in an afternoon.

A special ribbon costs about £10. So if you take £25 you're left with only £15 profit. But it's a great attraction and there are always lots of people around the stall.

One good tip: Put it next to a very profitable stall and you'll get even more customers!





## The special ribbons

To get pictures on T-shirts you need heat-transfer ribbons. They look like ordinary ribbons and the printout looks the same.

But if you place the printout on a T shirt and iron over it the picture is transferred to the cloth.

A ribbon costs about £10 from Morley Electronics (091-257 6355) or Care Electronics (0923 672102).

*The pictures on this page were all taken at a school fair. The equipment used was the school's BBC Micro and Epson printer together with a borrowed digitiser and video camera.*

*Transfers for T-shirts were sold for £1 and ordinary digitised pictures for 25p. About £18 profit was made on the stall during the afternoon.*

## FURTHER IDEAS

Use a digitised picture on a "Wanted" poster or fun newspaper page. Just prepare the poster or page beforehand. Then you only have to fill in a name and fit the picture.

If you can't get a digitiser and camera, you can still sell T-shirt transfers. People could put any message they want on them.

Remember you'll need to get the computer to print the mirror image of any words. Then they come out right when they're ironed on.

● You can get art programs for most computers to do this. You should really do it with pictures of people as well. But it takes time and nobody usually notices that face is the wrong way round!

# Creating and editing BASIC programs is fun with



**BET** is a set of tools designed to make the creation and editing of BASIC programs a real pleasure.

BET handles program text like a word-processor. Using features like Copy, Move, Automatic Renumber, Search and Replace you'll find it easy to write programs in a well-structured, readable style.

Unlike a word-processor, however, BET produces a ready-to-run BASIC program.

## Here's what BET can do

Create new program • Edit existing program (disc or tape) • Select screen mode and colour • Automatic generation of new numbered lines • Abbreviated BASIC keywords expanded as you type • Insert or overwrite • Enable/disable scrolling • Full cursor control • Block move, copy, delete (renumbering of lines and GOTOs is automatic whenever required) • Insert new lines anywhere • Global/selective renumbering • Global/selective search and replace with wildcards • Join and split lines • Swap case • Labels for referring to lines whose numbers are not yet known • Programmable function keys (except Electron) • Show function key definitions • Undo changes • Join programs • Pack to minimise program size, unpack to reverse the process • Automatically formatted listing • List disc/tape program while another is in memory • Debugging and bad program recovery aids • Detailed cross-reference tables for variables, procedures, functions and GOTOs • List current variable values • Quick save using remembered filename • Manipulate computer memory • Identify roms • Screen summary of command syntax • Helpful error messages • Electron keypresses custom-designed, not just adapted from the BBC.

## INTRODUCTORY PRICES

Excl VAT

**Rom £19 • Rom in cartridge £25**

Credit cards and official orders welcome

Site licences available

## You'll soon wonder how you ever wrote BASIC without it

**Ian Copestake Software**

10 Frost Drive, Wirral, Merseyside, England  
L61 4XL. Tel/Fax: 051-648 6287

# Our super competition

# FREE GAMES FOR A WHOLE YEAR...

*It's a computer owner's wildest dream come true. You could win EVERY game released in a year by one of the biggest names in games software*

**This is a once-in-a-lifetime opportunity! We want to find EIGHT winners - that's one for each of the most popular computer.**

The eight software houses listed below will each adopt one *Let's Compute!* reader for a year. From January to December 1991 the lucky winners will get a copy of each new release from that software house.

## **AND THAT'S NOT ALL!**

Each of the eight winners will also receive the impressive Certificate of Adoption shown here.

It will be signed by the software house and is a promise of a full 12 months' supply of games.

## **WHAT YOU HAVE TO DO**

Simply fill in the answers to the five questions on the entry form on the right. Then send it to *Let's Compute!* before December 31.

## **PLUS**

To complete this incredible prize each winner will also get lots of goodies from the software house. There are loads of posters, badges and other special bits and pieces waiting for them all.

### **ELECTRONIC ARTS**

With USA and UK offices, their PC games are some of the most innovative you can get. They already have Silpheed, Battle Chess and Populous to their credit. The winner with a PC will get ALL their releases next year.



Calling all Atari ST owners. A copy of each of next year's US Gold coin-op and original games could be yours. They have some of the best graphics and sound around. Can you afford not to enter the contest?



Supreme on the BBC/Electron, they now want to adopt someone who has one of these micros. With 1990 titles like Hostages, SimCity, Superior Golf and Soccer under their belts, 1991 looks like being a very exciting year.



Famous for budget titles, their full-priced games are often top of the charts. The lucky person they adopt will be the first to know what they have on offer for Commodore 64 owners in 1991.



Producing more and more Archimedes games, 4th Dimension will be giving away a whole host of exciting games due to be released next year. With past hits like E-type and Holed Out! There are bound to be several classics coming up.



Some of the best Amiga programmers around are working on their 1991 releases. Mirrorsoft are offering a very special year of games to one lucky Commodore Amiga owner.

# will sleigh you!



**LET'S COMPUTE!**

This is to certify that

has been adopted by

Signed \_\_\_\_\_

### THE QUESTIONS

- Which reindeer had the red nose?  
a) Rudolph b) Randolph c) Prancer
- The Scots give New Years Day a special name. What is it?  
a) First Foot b) Hogmanay c) Twelfth Night
- What is the December 26 called?  
a) Christmas Day b) Christmas Eve c) Boxing Day
- What did the Three Wise Men bring to the baby Jesus?  
a) Gold, silver and jewels  
b) Gold, frankinsence and myrrh  
c) Lamb, a camel and a donkey
- Christmas decorations should be taken down on which date?  
a) Twelfth Night  
b) Boxing Day  
c) New Year's Day

### ENTRY FORM

Name .....

Address .....

Postcode .....

Age .....

Answers (please tick)

1	<input type="checkbox"/> a	<input type="checkbox"/> b	<input type="checkbox"/> c
2	<input type="checkbox"/> a	<input type="checkbox"/> b	<input type="checkbox"/> c
3	<input type="checkbox"/> a	<input type="checkbox"/> b	<input type="checkbox"/> c
4	<input type="checkbox"/> a	<input type="checkbox"/> b	<input type="checkbox"/> c
5	<input type="checkbox"/> a	<input type="checkbox"/> b	<input type="checkbox"/> c

Send to: Christmas Contest,  
Let's Compute! Europa House,  
Adlington Park, Macclesfield  
SK10 4NP.

My computer is a (please tick):

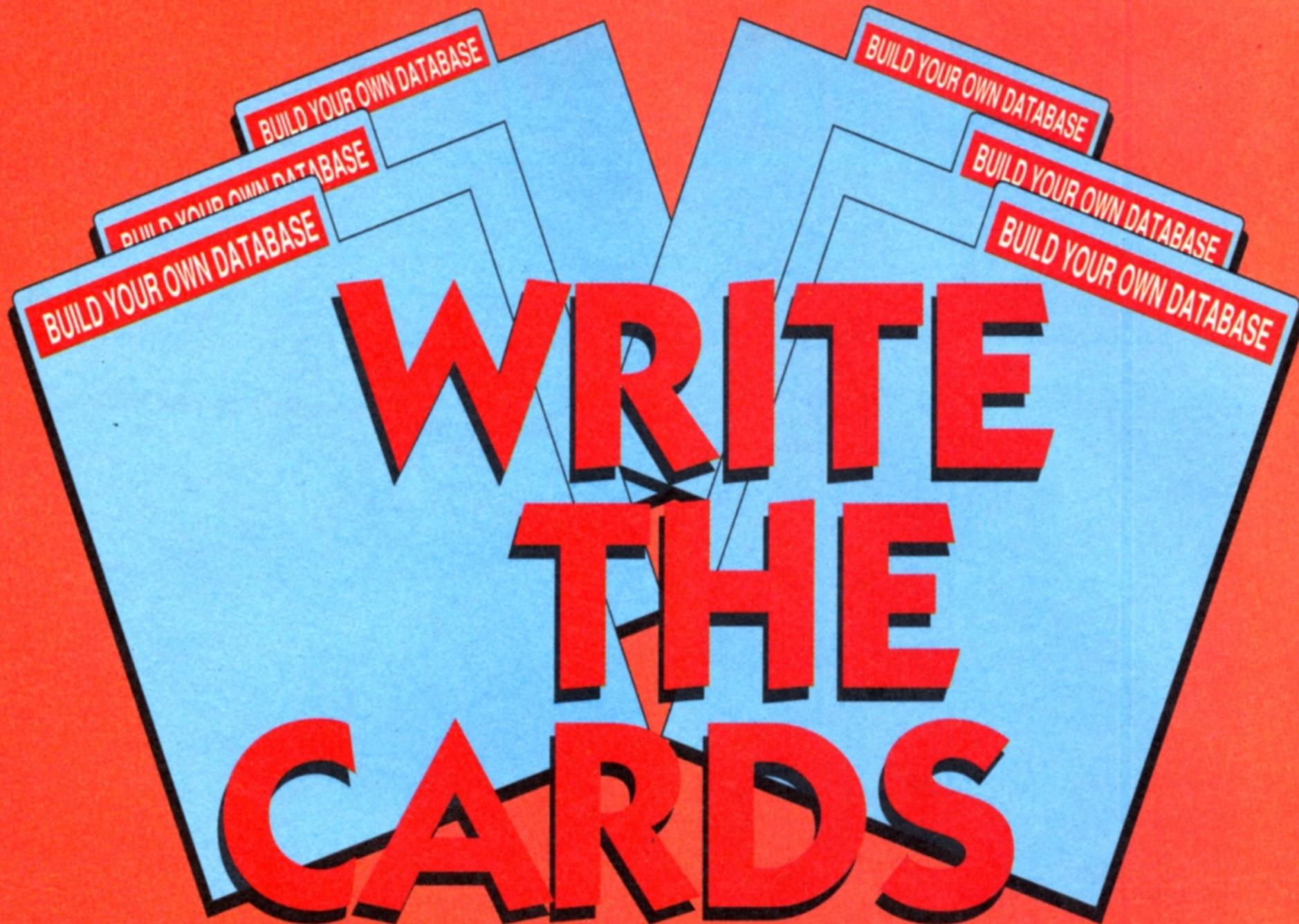
- BBC (tape)
- BBC (disc)
- BBC Master Compact
- Acorn Electron (tape)
- Acorn Electron (3.5in disc)
- Acorn Electron (5.25in disc)
- Commodore 64 (tape)
- Commodore 64 (disc)
- Spectrum (tape)
- Spectrum (disc)
- Amstrad CPC (tape)
- Amstrad CPC (disc)
- Commodore Amiga
- Atari ST
- A3000/Archimedes
- IBM PC compatible (3.5in disc)
- IBM PC compatible (5.25in disc)



Games for the Spectrum are still many and various. Zeppelin produce some of the most original and unusual. With a pedigree of such classics as Draconus, the winner could be in for a busy year.



With a well-earned reputation for quality and quantity they produce all types of games. From simulators to shoot-'em-ups, Code-masters do lots for the Amstrad CPC. The winner will get plenty of chances to practise joystick techniques.



**Last month we started creating the Let's Compute! Card Index Database. Now Roland Waddilove shows what to do next**

### What is a database?

A database is a collection of facts and figures. We are surrounded by them.

A bus or train timetable is a database. So is the list of programmes in Radio Times.

We often use a database to look up facts and figures. But it takes time to find out information when its only written on paper.

How long would it take you to go through the phone book and find the number of Mr Smith who lives at 57 High Street, Manchester? You would have to spend ages wading through pages of Smiths looking for the right address.

But ring directory enquiries and you'll be told the correct number in a flash.

#### How do they do it?

The answer is that everyone's name, address and telephone number is stored on a computer.

The operator types in a name, presses a few more keys and, hey presto, the number is displayed on the screen.

Last month we started building our database by creating the main menu screen. This month we'll add more lines to the program so you'll be able to enter information on to the blank cards.

The section of code you need is in Lines 4000 to 4100. It is a subroutine called Write on Card.

Line 4000 is a REM to tell us what the following lines do. The next line sets a counter, called X, which points to the first card.

Line 4020 searches for the first card that hasn't been written on. It contains an asterisk character, which is what the program is looking for.

There can be up to five lines of text on each card. So a FOR ... NEXT loop (Lines 4050 to 4090) is used to put the lines into the array C\$. This is where the card information is held. If you want to leave a blank line just press Return without typing anything else.

But what if you make a mistake while entering information? Or if you change you mind after typing something in and want to throw away a card? A second subroutine starting at Line 5000 will sort things out.

Again, a REM at the start tells us what the subroutine does. Then Lines 5010 and 5020 search for cards that have information written on them. That means any card that hasn't got an asterisk.

When a card is found it is printed on the screen. You are then asked whether this is the card you want to throw away.

All you need to do is type Y or N. Your answer is read by the INPUT instruction in Line 5080.

Type in these two subroutines and try selecting Choices 4 and 5 from your menu. You can now enter some information and try throwing away cards or enter some new information.

But lets face it: A database isn't much use if you have to enter the information each time you want to use it!

**Next month you'll find out how to save your cards on to tape or disc.**

### CARD INDEX DATABASE

1. Load a box of cards
  2. Save a box of cards
  3. Read/search for a card
  4. Write on a new card
  5. Throw away old cards
  6. Change something on a card
  7. Print the cards
  8. Sort the cards into order
  9. Stop the program
- Cards free=45/Cards used=6  
What do you want to do?  
Please type in a number (1-9)

```

4000 REM ===== Write on Card =====
4010 LET X=1
4020 IF C$(X) <> "*" AND X < 255 THEN X=X+
5 : GOTO 4020
4030 PRINT "Enter 5 lines of text on t
his card..."
4040 PRINT
4050 FOR Y=0 TO 4
4060 PRINT "Line";Y+1;
4070 INPUT T$
4080 LET C$(X+Y)=T$
4090 NEXT Y
4100 RETURN
5000 REM == Throw away old cards ==
5010 LET X=1
5020 IF C$(X)="*" THEN GOTO 5100
5030 CLS
5040 FOR Y=0 TO 4
5050 PRINT C$(X+Y)
5060 NEXT Y
5070 PRINT
5080 INPUT "Throw away this card (Y or
N)";K$
5090 IF K$="y" OR K$="Y" THEN LET C$(X
)="*"
5100 LET X=X+5
5110 IF X < 255 THEN GOTO 5020
5120 RETURN

```

## TYPING TIP!

When you type things on your cards avoid commas (,) and quotes ("). On some computers these could make the program mess up your data.

## IS THIS YOUR COMPUTER?

Electron/BBC/Archimedes/PC(GW BASIC)  
Amstrad CPC/ Atari ST(stos)/Amiga(Amos)

The program will work as shown

### Commodore 64/128

Change or add the following lines:

```

4050 FOR Y=0 TO 4:T$=""
4075 IF T$="" THEN 4090
5030 PRINT CHR$(147);

```

### Spectrum

Change or add the following lines:

```

4020 IF C$(X) <> B$ AND X < 255 THEN LET X=X
+5 : GOTO 4020
4075 PRINT " ";T$
5020 IF C$(X)=B$ THEN GOTO 5100

```

NEXT MONTH

You'll find out how to save your cards on to tape or disc

Fine fonts  
Fun fonts  
Frightening fonts  
FORMAL FONTS

See us on Stand  
**J5**  
at the  
Computer Shopper  
Show

We have over 200 high quality fonts for use with Archimedes and 13000 DTP programs. Contact us for a free 24pp font catalogue.

As well as fonts, we supply everything you need for DTP at very competitive prices - computers, monitors, printers, software and more. We also give discounts to educational establishments.

Whatever you need for DTP, contact The Electronic Font Foundry first.

The Electronic Font Foundry, 18 Brockenhurst Rd., Ascot, SL5 9DL.  
Telephone or Fax (24hrs) 0844 872923

## MASTER COMPACT CARTRIDGE ADAPTOR

Connects MASTER and ELECTRON cartridges (including our ROMPlus-144) to the COMPACT - Price £25. SAE for details

## INCREASE ELECTRON PERFORMANCE AND BBC COMPATIBILITY WITH OUR RANGE OF ADD-ONS

### E2P SECOND PROCESSOR

Gives the Electron equivalent performance to a BBC with a Second Processor. Adds a complete processor with its own 64k memory bank to run all programs while the Electron handles screen, keyboard, discs, etc.

Gives 30k memory for BASIC programs and 44k memory for HIBASIC programs. (Electron HIBASIC available separately) Gives up to 300% speed increase in programs.

Fits into a Plus One/ROMbox Plus slot.

Operating system available on ROM or 3.5" ADFS disc or Tape (state requirement)

Price £79 + £5 for case.

### MODE 7 Mk2 UNIT

Gives exactly the same Mode 7 display screen as the BBC. Allows BBC Mode 7 software to run on the Electron: Magazine programs, Adventure games, Educational, Wordwise, Prestel, Teletext. Includes Prestel software - Prestel requires a modem and our RS423 adaptor. You will need a ROM socket to hold the Mode 7 ROM, eg. in our RS423 adaptor. For Mode 7 programs with HIMEM above 84000 you will need a Shadow RAM board. Fits inside the Electron, alongside the Shadow RAM Board.

Price £49 for you to fit, or £59 fitted.

Also available as a kit - board and ROM for £25 - you buy the components.

### RS423 SERIAL CARTRIDGE

Connects the Electron to serial RS423/RS232 devices, eg. printers, modems. Allows the transfer of programs, data, etc. from one computer to another. Has the same socket, so uses the same leads as the BBC. Includes a socket for a 32k RAM or 16k ROM, eg. the Mode 7 ROM. Fits into a Plus One/ROMbox Plus slot.

Price £29.95 + £5 for a case + £20 for a 32k RAM.

### ROMPLUS - 144 ROM CARTRIDGE

Sideways ROM cartridge with Printer Buffer and RAM Filling System. Holds 8 ROMs or 7 ROMs and a 32k RAM. Fits into a Plus One/ROMbox Plus slot.

Price £39 + £20 for a 32k RAM

All prices inclusive of post, etc. - Please allow 28 days delivery.

### WE ALSO REPAIR ELECTRONS

### Jafa SYSTEMS

9, Lon-y-Garwa, Caerphilly

Mid-Glamorgan CF8 1NL. Tel: 0222 887203



# Let's Gadget

# Watch out!

**Gadget Shop boss Mike Cook shows a clever way you can find out when those Christmas presents arrive**

# Santa's about!

Santa Claus will soon be on his way. But the old chap moves around as quiet as a mouse. You never hear him delivering presents.

So how can you tell when he's arrived?

That's no problem for Gadget Shop fans. With the help of your computer you can catch him red handed. All you need to do is to link up a *Let's Compute!* Santa Claus detector.

In our October Issue we used magnetic reed relays to detect doors opening. But that's no use if Santa doesn't open doors.

We need to detect his foot fall instead. To do this we have to use a pressure pad.

We'll look at two types of pad. The first you can make yourself out of odds and ends. The other you can buy ready made.

#### How does a pressure pad work?

Two contacts are held apart and the weight of someone stepping on them forces them together. When they touch it sends a signal to your computer.

You have two problems to solve: What to use for contacts and how to keep them apart. As you'll see it's really very easy.

You'll need some aluminium baking foil, some thin strips of plastic foam, a length of wire and a couple of pieces of cardboard about 10cm by 10cm.

Wrap one piece of card in baking foil. Then make eight holes in the other card as shown in the diagram on the right. Through these you should thread some wire - but strip the insulation off first. Make sure the wires lie flat

along the cardboard. The diagram shows how you should thread them.

It helps to hold them down with spots of glue. But make sure you don't use too much. Now connect the wires as shown.

Next you need to make a sandwich with the foam and the two pieces of card. The diagram below right shows you how it all goes together.

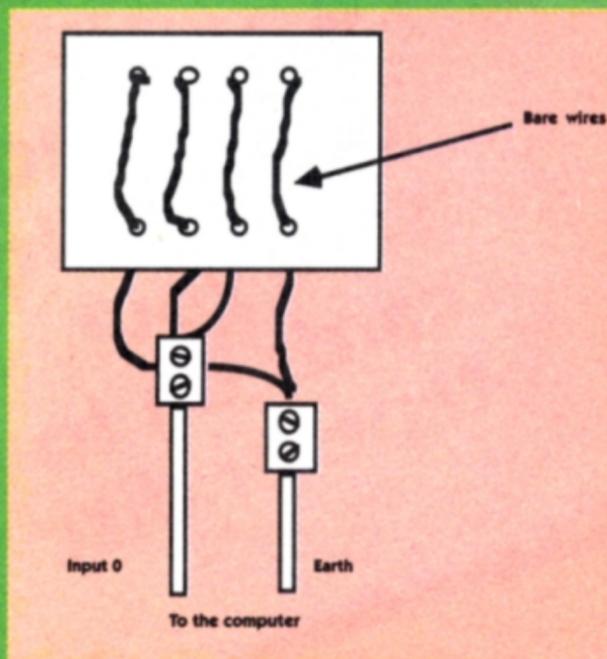
How hard you need to press on the pad to trigger it depends on how solid the foam is.

You may need to experiment with different thicknesses of foam for best results.

To conceal the pad simply slip it under the carpet. Near a door is best.

Make sure that the weight of the carpet doesn't trigger it off. If it does you will have to use thicker foam.

If you don't feel like making your



How to thread the wires through the card



own pressure pads you can buy them from the Gadget Shop. These are black welded heavy duty PVC floor pressure pads. They measure 575mm by 170mm.

You can use as many pads as you have inputs to your computer. Acorn computers, except the Compact, have eight of them. Other makes, and the Compact, let you connect five.

To connect pads to your computer you need the Gadget shop Pack 1. This was explained in the August issue of *Let's Compute!* If you order one from the Gadget Shop you'll also get instructions.

The software is the same as for the burglar alarm described in October's *Let's Compute!* In case you missed it, details will be supplied when you buy a pad.

**Are you good at programming?**

Why not modify the software to record the time Santa arrives? Or make an even louder noise to wake you up?

If you want you can put the pressure pad in a different room

### IS THIS YOUR COMPUTER?

**BBC Micro:** The gadget connects to the User Port.

**Archimedes and BBC A3000:** You need an i/o podule.

**Electron:** You need a Plus One and User Port expansion - available from Pres (0276 72046).

**Spectrum:** The gadget connects to the joystick port. You'll also need an Interface 1.

**Amstrad CPC, Commodore 64/128, Amiga and ST:** The gadget connects to the joystick port.

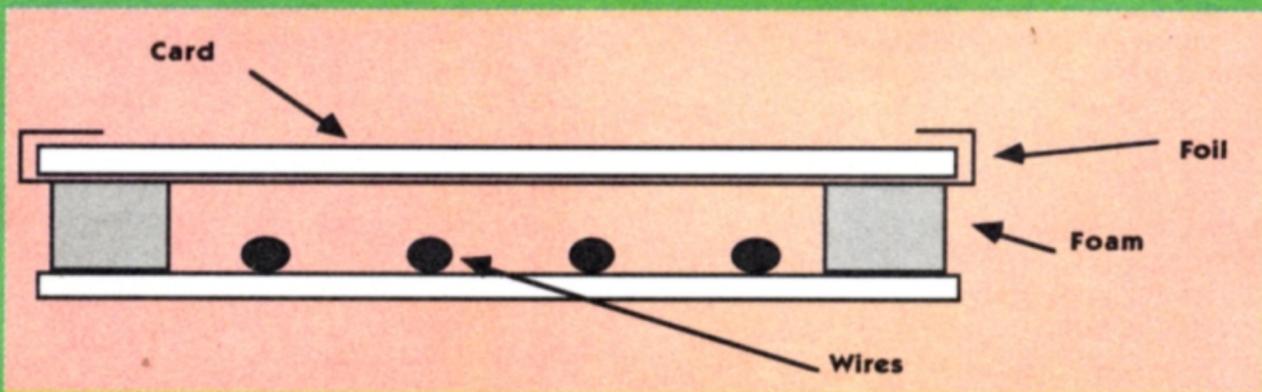
● The full assembly instructions are in Gadget Shop Packs 1 and 5. The short Basic routine to operate the gadget will be supplied when you order it.

to your computer. You can have several areas bugged and monitored from your own control room.

So, now you know how easy it is to detect that annual present intruder.

With all his great bulk and a sack of presents he'll certainly be caught by your trap.

**Unless, of course, there is some other magic afoot!**



The pressure pad sandwich

## NEXT MONTH

**What is a joystick? Something you use to control a game by wobbling it with your hand? Not always!**

**Next month in *Let's Compute!* discover how you can make a unique joystick you control with your feet!**

### ORDER FORM

**Pack 5 - Floor pressure pad**

This pack contains a ready-made pressure pad ready to make your Santa Claus Detector. You also need the connector cable (Pack 1). This is still available and you can use this form to get one.

Show what you want by ticking the correct box below.

Floor pressure pad .... £3.55 each.

**You'll also need Pack 1 - the User Port connector cable:**

20 way IDC plug, length of 20 way ribbon cable, 12 way chock block, cardboard base, 2 foam sticky pads PLUS 2 spare connectors and a resistor .....£1.99

As above but with IDC plug ready connected ...£2.49

As above but with connector for Master Compact in place of IDC plug ... £3.99

As above but with connector for joystick port of Spectrum, Amstrad CPC, Commodore 64/128, ST or Amiga in place of IDC plug. Basic program and instructions will also be supplied ... £3.99

Please state your type of computer:

.....  
Educational establishment orders accepted.

**Make cheques payable to Musbury Consultants and send to: Musbury Consultants, 8 Fairhill, Helmshore, Rossendale, Lancs BB4 4JX**

Name .....

Address .....

.....

.....

Post code.....

# THE BRAIN GAME

How good is your memory? Here's a game that will put it to the test!

In the popular game Simon you have to remember the sequence of four flashing lights. This unique *Let's Compute!* version uses the alphabet in place of the lights. But the idea is the same.

When you RUN the program the alphabet is shown on your computer screen. Press the spacebar to start. Arrows will point to a letter and then disappear.

All you have to do is remember which letter the arrows pointed to. Then press the same letter on your keyboard. You must use capital letters. If you get it right it will appear again, followed by a second letter.

You now have two keys to press. If you get them right another will be added and you have another go. So the pattern of letters keeps increasing one by one.

If you press the wrong letter your computer will show you the order in which you should have pressed the letters.

Now type the listing in, RUN it and test your memory!

## POSSIBLE PROGRAM IMPROVEMENTS

- The program is set up so your computer can remember a pattern of 100 letters. If you think you can do better, change the DIM S(100) in Line 60 to, say, DIM S(500). The biggest number you're allowed to put there depends on the type of computer you're using.
- Put your own routine in the program to time how long it takes to type the letters. Make the program add some points to the score if you're quick.
- Add colour to brighten up the display.

```

10 REM THE BRAIN GAME
20 REM (c) LET'S COMPUTE!
30 LET AS="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
"
40 LET SS=" ":LET B=0
50 FOR N = 1 TO 5:LET SS=SS+SS:NEXT
60 DIM S(100)
70 LET W=40:LET X=RND(-TIME)
80 CLS
90 LET Y=3:LET MS="THE LET'S COMPUTE!
BRAIN GAME":GOSUB 340
100 LET Y=10:LET MS=AS:GOSUB 340
110 LET M=1:LET N=1
120 GOSUB 730
130 GOSUB 690
140 LET X=26:GOSUB 320:LET S(M)=X
150 LET Y=15:LET MS="WATCH!":GOSUB 340
160 FOR N=1 TO M
170 GOSUB 520
180 LET H=S(N):GOSUB 480
190 LET D=1:GOSUB 440:GOSUB 400
200 NEXT N
210 GOSUB 520
220 LET Y=15:LET MS="NOW IT'S YOUR GO"
:GOSUB 340
230 FOR N=1 TO M
240 LET F=0:GOSUB 460:IF KS<"A" OR KS>
"Z" THEN GOTO 240
250 IF KS<>CHR$(S(N)+64) THEN LET F=1:
LET N=M
260 LET H=ASC(KS)-64:GOSUB 520:GOSUB 4
80:GOSUB 440
270 NEXT N
280 IF F=1 THEN GOSUB 620:GOTO 80
290 GOSUB 560
300 LET M=M+1:GOSUB 520:LET D=2:GOSUB
400:GOTO140
310 REM ** START OF SUBROUTINES **
320 REM RANDOM
330 LET X=RND(X):RETURN
340 REM PRINT MESSAGE
350 LET X=4:GOSUB 380:PRINT SS
360 LET X=(W-LEN(MS))/2-1
370 GOSUB 380:PRINT MS
380 REM TAB(X,Y)
390 PRINT TAB(X,Y);:RETURN
400 REM DELAY
410 TIME=0
420 IF TIME<D*100 THEN GOTO 420
430 RETURN
440 REM BEEP
450 VDU7:RETURN
460 REM GET A KEY
470 LET KS=GET$:RETURN
480 REM POINTERS
490 LET X=(W-30)/2+H:LET Y=9:GOSUB 380
:PRINT"V"
500 LET Y=11:GOSUB 380:PRINT"^"
510 RETURN
520 REM CLEAR POINTERS
530 LET Y=9:LET MS=SS:GOSUB 340
540 LET Y=11:GOSUB 340
550 RETURN
560 REM WIN
570 IF (N-1)>B THEN LET B=N-1
580 GOSUB 730
590 SOUND 1,-15,200,30
600 LET Y=15:LET MS="WELL DONE":GOSUB
340:LET D=2:GOSUB 400
610 RETURN
620 REM LOOSE
630 SOUND 1,-15,2,30
640 LET Y=15:LET MS="HARD LUCK":GOSUB
340:LET D=2:GOSUB 400:GOSUB 690
650 LET MS="HERE'S WHAT YOU SHOULD HAV
E DONE":GOSUB 340:LET D=1:GOSUB 400
660 FOR N=1 TO M
670 LET H=S(N):GOSUB 520:GOSUB 480:GOS
UB 440:GOSUB400:NEXT N
680 RETURN
690 REM PRESS SPACE
700 LET Y=15:LET MS="PRESS SPACE":GOSU
B 340
710 GOSUB 460:IF KS<>" " THEN GOTO 710
720 RETURN
730 REM PRINT SCORE
740 LET Y=6:LET MS="SCORE "+STR$(N-1)+
LEFT$(SS,W/2)+"BEST "+STR$(B):GOSUB 340
750 RETURN

```

# IS THIS YOUR COMPUTER?

## Electron/BBC/Archimedes

The programs work as shown

### Commodore 64/128

Enter the program in capitals

Change the following lines:

```
25 S=54272:POKES+24,15:POKES+6,240
80 PRINT CHR$(147);
330 LET X=INT(RND(0)*X)+1:RETURN
390 POKE 211,X:POKE 214,Y:SYS 58732:RE
TURN
410 TIS="000000"
450 DU=300:FR=32:GOSUB 800:RETURN
470 GET K$:IF K$="" THEN 470
475 RETURN
590 DU=800:FR=64:GOSUB 800
630 DU=800:FR=16:GOSUB 800
800 POKE S+1,FR:POKE S+4,17:FOR T=1 TO
DU:NEXT:POKE S+4,16:RETURN
```

### Spectrum

Select 48k mode

```
70 LET W=34:RANDOMIZE
260 LET H=CODE(K$)-64:GO SUB 520:GO S
UB 480:GO SUB 440
330 LET X=INT(RND*X+1):RETURN
350 LET X=4:GO SUB 380:PRINT SS( TO
31)
390 PRINT AT Y,X,:RETURN
410 LET T=PEEK(23672)+D*50:IF T>255
THEN LET T=T-256
420 IF PEEK(23672)<>T THEN GOTO 420
450 BEEP .2,9:RETURN
470 LET K$=INKEY$:IF K$="" THEN GO TO
470
475 RETURN
500 LET Y=11:GOSUB 380:PRINT"T"
530 LET Y=9:LET M$=SS( TO 26):GO SUB
340
590 BEEP 1.5,36
630 BEEP 1.5,-12
740 LET Y=6:LET M$="SCORE "+STR$(N-1)
+SS( TO W/2)+"BEST "+STR$(B):GOSUB 340
```

### Amstrad CPC

Change the following lines:

```
70 LET W=40:RANDOMIZE TIME
330 LET X=INT(RND*X+1):RETURN
390 LOCATE X+1,Y+1:RETURN
410 LET T=TIME+D*300
420 WHILE T>TIME:WEND
450 SOUND 1,142,20,15:RETURN
470 LET K$=INKEY$:WHILE K$="":LET K$=I
NKEYS:WEND:RETURN
500 LET Y=11:GOSUB 380:PRINT"T"
590 SOUND 1,28,150,15
630 SOUND 1,500,150,15
```

### PC (GW-Basic)

Change the following lines:

```
70 LET W=40:RANDOMIZE TIMER
330 LET X=INT(RND*X+1):RETURN
390 LOCATE Y+1,X+1:RETURN
410 LET T=TIMER+D/2
420 WHILE T>TIMER:WEND
450 BEEP:RETURN
470 LET K$=INKEY$:WHILE K$="":LET K$=I
NKEYS:WEND:RETURN
590 SOUND 253,18
630 SOUND 150,8
```

### Amiga and Atari ST

Use Amos or Stos

```
70 LET W=40:LET X=RND(TIMER)
80 MODE 1:KEY OFF:CURS OFF:HIDE:CL
ICK OFF
330 LET X=RND(X-1)+1:RETURN
390 LOCATE X,Y:RETURN
410 LET T=TIMER+D*300
420 WHILE T>TIMER:WEND
450 BELL:RETURN
470 LET K$=INPUT$(1):RETURN
590 VOLUME 10:PLAY 2,55,30:VOLUME 0
630 BOOM
```

Amos: Leave Line 80 as:

80 CLS

# COMPUTER EXPRESS



## A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the Commodore Amiga 500 computer with mouse controller and TV modulator, plus four top software titles. The software includes: 'Batman The Movie' - rid Gotham City of the cunning Joker, in Ocean's top selling title based on the blockbuster Batman film; 'New Zealand Story' - high quality conversion of the leading arcade game; 'Interceptor' - dogfight with two F-16s in this leading flight simulator; 'Deluxe Paint II' - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:	
A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
<b>TOTAL RRP:</b>	<b>£549.78</b>
Less Pack Saving:	£150.78
<b>PACK PRICE:</b>	<b>£399.00</b>

**£399** INC VAT

### AMIGA SOFTWARE

### ACCESSORIES

Full range of Amiga accessories available.

### CLASS OF THE 90s EDUCATION BUNDLE

Amiga 500, Midi Interface, D Paint II, Superbase, Publisher's Choice, Dr T's Midi Recording Studio, BBC Emulator and BBC Programs, Maxiplan 500, plus lots of accessories.

### AMIGA HARDWARE

A1084 colour monitor - stereo sound	259.00
3.5" disk drive external	86.00
A500 memory expansion with clock	80.00
A590 external hard disk	375.99
Philips colour monitor 8833	264.99
Minigen	109.00

### PRINTERS

Star LC10 - No1 low cost printer  
Star LC10 Colour  
Epson LX400  
Panasonic 1180

**24 HOUR SALES LINE**  
**0582 475577**

SHOWROOM OPENING HOURS: Monday-Friday 9am-5.30pm Saturday 10am-4pm  
HEAD OFFICE: COMPUTER EXPRESS • 15 APEX BUSINESS CENTRE • BOSCOMBE ROAD • DUNSTABLE • BEDS • LU5 4SB • 0582 475577 • FAX 0582 968311

All prices and specifications subject to availability and change without notice. All items guaranteed. All prices correct at time of going to press.

STOP PRESS CHRISTMAS PACK ... 4 arcade games deluxe paint & modulator and mouse ONLY 399.00

# KEYBOARD KAPERS



**★ STAR CAT ★**

STAR CATS GOT A GIG...

...AND THE DUCKS ARE PROGRAMMING THE COMPUTER CONTROLLED LIGHTS

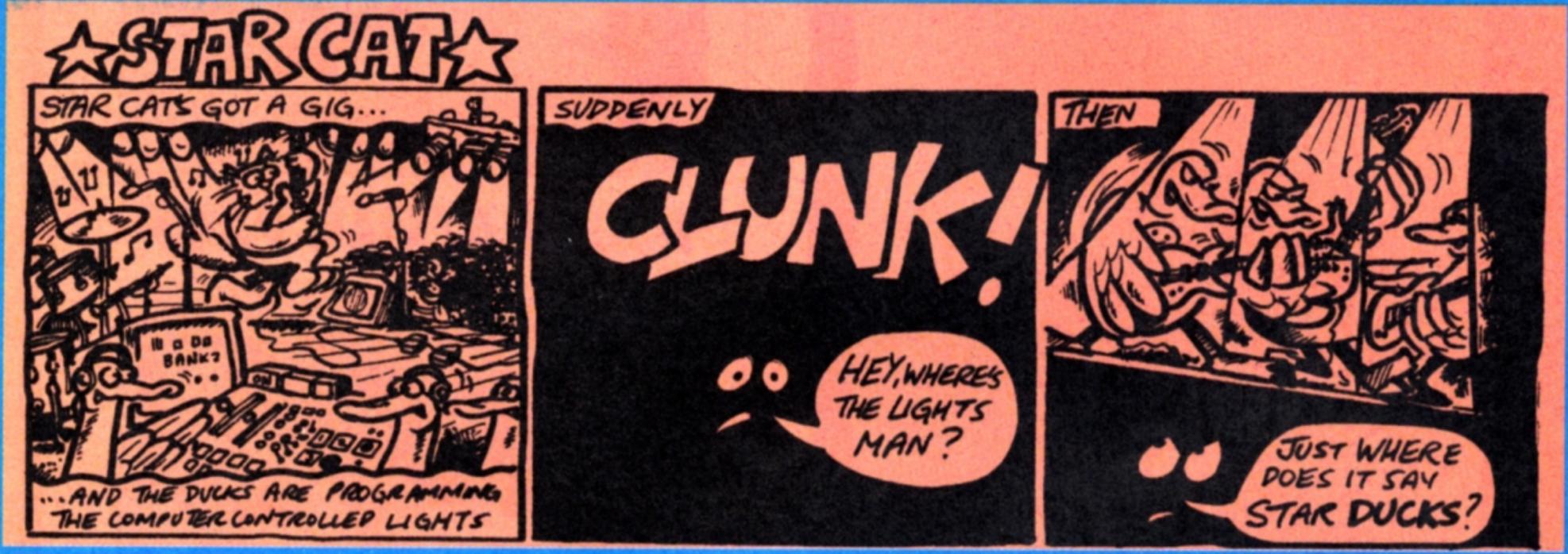
SUDDENLY

**CLUNK!**

HEY, WHERE'S THE LIGHTS MAN?

THEN

JUST WHERE DOES IT SAY STAR DUCKS?



**STEVE ARDIE**

I'M OFF TO BUY A MOUSE FOR MY MICRO!

YOU CAN HAVE ONE OF MINE!

GREAT! SUPER! TERRIFIC!

TAKE YOUR PICK!

I GIVE UP!



## The Micro Kid

I USED TO PLAY GAMES WITH MY COMPUTER...

...NOW MY COMPUTER PLAYS GAMES WITH ME!

No such variable.. Mistake at Line 140. Too many FORS... Bad Mode.....



**155 super games are just waiting to be won...**

# CALLING ALL AMIGA OWNERS!

**£2,000 of super prizes to give away**



Feel like bashing a few bugs? - we've got 155 packs to give away

Are you an Amiga user looking for original and unique games? Here's YOUR chance win two!

Nucleus/Bug Bash is a superb new budget double-pack release from Microtec Entertainment. And *Let's Compute!* has 155 copies waiting to be won - each worth £12.99.

So send your entry now. You could be one of the lucky winners.

## BugBash

Here's a game that has you donning the costume of the ace bug hunter and gardener's friend - a ladybird. Waking up one morning you see that the normally beautiful garden is untidy.

The usually helpful insects have been brain-washed by the Evil Slug. Only you with your insecticide spray gun can put everything right.

With beautiful graphics and lovely sound effects this garden-based blast-'em-up is really good fun.

## Nucleus

Set in a more futuristic world, you have a mission to compete against the clock.

You must destroy the electric power core of the the planet Cetorium.

If you succeed you will destroy the alien invaders' power supply. Fail and ...

## HOW TO WIN

All you have to do is change the word Pest to Care by altering one letter at a time. Just fill in the missing words on the entry form.

Each word must only have one letter changed from the one above it. The first 155 correct entries to be pulled from the sack on December 31 will each receive a copy of BugBash/Nucleus.



Future worlds of Nucleus... Can you destroy the power core before time runs out?

## Entry form

P	E	S	T
C	A	R	E

Name.....

Address.....

Postcode ..... Age .....

Send this to: BugBash/Nucleus Contest, *Let's Compute!*  
Europa House, Adlington Park, Macclesfield SK10 4NP.



**Now you can own probably the toughest set of pens in the world – for much less than half price!**

*(Or buy two – and get them both for almost a quarter of the normal price)*

The three pens that make up the Pentech 200 pen set can stand up to the roughest treatment you can inflict on them – and still give you best possible writing quality. The pens, made to the highest standards of workmanship, are not only robust but are of classic appearance suitable for all occasions from the home to the Board Room, from the school essay to the best selling novel

*We have made a special purchase of a limited number of Pentech sets and can now offer you this unique, high-quality writing technology at a price never before possible.*

The normal retail price is £37.85. But with this special offer you can buy one set for just £14.95. Buy a second to offer a colleague as a present and we'll send you the two sets for £20!

*You can buy with confidence. Each set comes with a lifetime guarantee.*

**The three pull-top pens in their presentation case consist of**

One cartridge pen

One ballpoint pen

One fine liner

**Choose from smart matt black or satin chrome metal finish**

**To order, please use the form below**

## It's Amazing It's Radical It's the Rolling Ruler



**A complete drawing board in one simple unit. With a rolling ruler you can draw:**

- ★ Horizontal parallel lines
- ★ Vertical parallel lines
- ★ Perfect right angles with ease
- ★ Any other angles from 1° to 359°
- ★ Clever circles

*Available in two sizes 22cm (8in) and 30cm (12in) this great offer gets you **both** rolling rulers for just £5.95 (RRP £9.99)*

It's innovative design gives the new rolling ruler the ability to draw vertical and horizontal lines without lifting it off the paper, parallel lines, angles, circles, musical staves and graphs with ease, making it ideal for the home, the office, schools, workshops and 3D design work.

**Two rulers for just £5.95**



**READER OFFERS**

### RULER SET

£5.95 3605

### PEN TECH 2000

Matt Black £14.95 3606   
 Silver £14.95 3607   
 Silver + Black £20.00 3608

Payment: Please indicate method (✓)

- Cheque/Eurocheque made payable to Database Direct  
 Access/Mastercard/Eurocard/Barclaycard/Visa/Connect

No.

Expiry Date  /  Signed .....

Name .....

Address .....

Post code .....

Daytime telephone number .....

Send to: Database Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB (No stamp needed if posted in UK)

Products are normally despatched within 48 hours of receipt but delivery of certain items could take up to 28 days

**ORDERS AT ANY TIME OF THE DAY OR NIGHT**

By phone: 051-357 1275 By Fax: 051-357 2813  
 By MicroLink: MAG001 General Enquiries: 051-3572961  
 Don't forget to give your name, address and credit card number

LET'S  
COMPUTE!

# HIGH SCORE CHALLENGE!

Game	Computer	Score	Name	Age	Game	Computer	Score	Name	Age
Arcadians	BBC	10,001	Jonathan English	8	Hopper	BBC	69,300	Winston Chambers	12
Arkanoid	Amstrad CPC	679,535	Clair Brooks	14	Hopper	Electron	12,330	James Jagger	12
Bananaman	BBC	87,920	Eleanor Dickenson	11	Key Man	BBC	83,500	Jonathan Rawle	11
Battle Tank	Archimedes	2,000	Alex Waddell	10	Killer Gorilla	BBC	12,600	Heetan Patel	11
Bird Basher	BBC	Level 8	Katie Penny	10	Labyrinth	BBC	225,890	James Greenstreet	12
Blitzkrieg	Electron	59,800	James Hollis	14	Nevryon	BBC	252,200	Sattar Shakoore	12
Bubble Bobble	Commodore 64	367,200	Nathan Phillips	9	Pacmania	Archimedes	355,630	Mark Truman	13
Chuckie Egg	Electron	32,540	Tom Bason	11	Pipemania	Spectrum	70,650	Alan Whysall	14
Crack up	Electron	1,002,050	Mr B Ashdown	18+	Quazer	Archimedes	49,501	John Edwards	13
Despatch Rider	BBC	23,375	Ryan Simpson	10	Rainbow Islands	Amiga	1,481,060	James Butler	13
E-Type	Archimedes	346,656	Gregg Bailes	13	Renegade	Commodore 64	379,150	Dermot Al Bergin	12
Emelyn Hughes	Amstrad CPC	24-0	Steven Esdale	12	Robocop	Amiga	238,880	Alex Crawford	15
Firetrack	BBC	409,920	Matthew Thompson	16	Shadow Warriors	Spectrum	36,000	Paul Maggs	13
Galactic Player	Amstrad CPC	2,380	Samantha Terrace	12	Skirmish	BBC	96,100	A. Jenkins	12
Galaforce	Electron	34,840	James Brand	15	Stellar Rescue	BBC	1,420	Matthew Chatterley	11
Ghosts & Goblins	Atari ST	48,600	James Laidlaw	13	WDW2	Amstrad CPC	80,102	James Notean	10
Ghoules	BBC	754	Paul Tarring	8	Zarch	Archimedes	11,511	Jon Bell	8

Send us YOUR scores NOW!

Name ..... Computer .....

Address ..... Game ..... Score .....

..... Game ..... Score .....

..... Age ..... Game ..... Score .....

## Educational Software from Sherston

- ★ Looking for software that's educational and fun?
- ★ Looking for software that is colourful, motivating and is recommended by teachers throughout the UK?
- ★ Then you needn't look any further! Sherston Software has a wide range of educational software for the BBC, MS128, A3000 and Archimedes that is reputed to be some of the best there is.
- ★ Just read what the press say about it!

"one of the most consistently creative and reliable of the British software houses." *The Times Educational Supplement*. 23.3.90

"Sherston Software have an enviable and well deserved reputation for quality educational software." *Micro User* Oct1990

"Sherston Software are well known for their innovative and splendidly executed BBC Micro software" *Education Equipment* November 1990

- ★ Write or phone today for your free catalogue of over 40 top educational titles for all ages from 3 to 13 years. ★ All titles are available of 28 days free approval so you can try before you buy!



Animated Numbers



Wizard's Return



Space Mission Mada

Sherston Software, Swan Barton, Sherston, Malmesbury, Wilts, SN16 OLH

Phone: 0666 840433 Fax: 0666 840048 BTGold: 72:MAG31653

# PUBLIC APOLOGY

WE AT M.D. OFFICE SUPPLIES OFFER OUR SINCERE APOLOGIES TO ALL OUR COMPETITORS IN THIS MAGAZINE. WE SHALL AS ALWAYS OFFER YOU THE PUBLIC OUR GOODS AT PRICES THAT ARE SIMPLY UNBEATABLE

**WE GUARANTEE IT!**

**JUST LOOK AT THESE UNBEATABLE PRICES**

## 3.5" DS-DD DISCS WITH DELUXE STORAGE BOXES

35 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£21.95
45 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£27.95
55 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£32.95
65 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£38.95
75 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£42.95

100 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£49.95
150 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£69.95
200 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£79.95

OUR 3.5" DISCS ARE VERY CAREFULLY SELECTED TO GIVE YOU 100% ERROR FREE PERFORMANCE. EACH DISC IS OFFERED WITH OUR 100% MONEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS

### 5.25" DISCS & BOXES

25 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£13.50
50 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£18.50
75 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£24.50
100 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£29.50
200 5.25" DS-DD 96 tpi with 100 capacity lockable storage boxes.....	£52.99

Our 5.25" discs are very carefully selected to give you 100% error free performance. Each disc is offered with our 100% money back guarantee and is supplied with labels

### PRICE & QUALITY GUARANTEE

MD Office Supplies prides itself on offering the highest quality product at the best possible prices. In the unlikely event you should ever see a comparable product offered cheaper DO NOT HESITATE, give us a call because we will not match it

**WE WILL BEAT THAT PRICE WE ABSOLUTELY GUARANTEE IT**

### LOW LOW PRICES FOR BULK BUYERS

For all you large users we have some unbeatable BULK RATES ON OUR SUPERB DS-DD 3.5 DISCS

400 DS DD 135 tpi.....	£155.00
500 DS DD 135 tpi.....	£170.00
600 DS DD 188 tpi.....	£210.00
800 DS DD 188 tpi.....	£269.00
1000 DS DD 135 tpi.....	£295.00

AS ALWAYS LIFETIME GUARANTEED UNQUESTIONABLE RELIABILITY, EACH DISC IS SUPPLIED WITH LABEL.

### HIGH DENSITY 3.5" DISCS

10 DS HD 3.5" DISCS IN LIBRARY CASE .....	£14.99
30 DS HD 3.5" DISCS WITH 50 CAPACITY BOX .....	£39.95
50 DS HD 3.5" DISCS WITH 100 CAPACITY BOX .....	£49.95
100 DS HD 3.5" DISCS WITH 100 CAPACITY BOX .....	£89.95

### HIGH DENSITY 5.25" DISCS

20 DS HD 1.6 MEG WITH LOCKABLE STORAGE BOX .....	£14.99
50 DS HD 1.6 MEG WITH LOCKABLE STORAGE BOX .....	£27.99
75 DS HD 1.6 MEG WITH LOCKABLE STORAGE BOX .....	£39.99
100 DS HD 1.6 MEG WITH LOCKABLE STORAGE BOX.....	<b>£47.99</b>
200 DS HD 1.6 MEG WITH 2,100 CAPACITY BOX .....	<b>£89.95</b>

### SONY DISC OFFER

We have very limited supplies of **GENUINE SONY BULK DISKETTES** at give away prices. These diskettes come in Sony cutters to prove authenticity this is the real thing. Please quote Sony offer when ordering.

100 genuine Sony diskettes DS-DD 135 tpi .....	£44.95
200 genuine Sony diskettes DS-DD 135 tpi .....	£82.95
400 genuine Sony diskettes DS-DD 135 tpi .....	£159.95
800 genuine Sony diskettes DS-DD 135 tpi .....	£309.95

With each 100 Sony why not have a deluxe 100 box only £2.99 (Max 2 per person)

This offer must end soon  
**Hurry Hurry**

With each 100 Sony why not have a deluxe 100 box only £2.99 (Max 2 per person)



Trade Accounts Welcome

## M.D. OFFICE SUPPLIES

18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS

TELESALES HOTLINE: 0689-861400

All prices include VAT and delivery UK only. E/OE



Education Orders Welcome

**RETURN THE COUPON FOR FREE COLOUR BROCHURES!**

# NEW! - AMIGA PACK

Commodore A500  
Flight Of Fantasy

# £399

INC VAT



## A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the Commodore Amiga 500 computer with mouse controller and TV modulator, plus four top software titles. The software includes: 'Batman The Movie' - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

### PACK INCLUDES:

A500 Computer & Mouse £399.99  
A520 TV Modulator ..... £24.99  
Batman The Movie ..... £24.95  
New Zealand Story ..... £24.95  
Interceptor ..... £24.95  
Deluxe Paint II ..... £49.95

TOTAL RRP: £549.78  
Less Pack Saving: £150.78

PACK PRICE: £399.00

# £399

INC VAT

## AMIGA 2000



For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

# £1295

+VAT= £1489.25

## FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

### DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

### ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

### RAINBOW ISLANDS:

Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

### F29 RETALIATOR:

The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers ... the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

### PACK INCLUDES:

A500 Computer & Mouse £399.99  
A520 TV Modulator ..... £24.99  
Deluxe Paint II ..... £49.95  
Escape/Robot Monsters £19.99  
Rainbow Islands ..... £24.95  
F29 Retaliator ..... £24.95

TOTAL RRP: £544.82  
Less Pack Saving: £145.82

PACK PRICE: £399.00

# £399

INC VAT

**FOR FURTHER DETAILS OF THE AMIGA RANGE, COMPLETE THE COUPON AND RETURN IT TO SILICA SHOP**  
**THE UK's No1 AMIGA SPECIALISTS**

## SILICA SHOP OFFER YOU

**FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.  
**TECHNICAL SUPPORT HELPLINE:** Team of Amiga technical experts at your service.  
**PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.  
**ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.  
**£13M TURNOVER (with 60 staff):** Solid and reliable with maintained growth.  
**BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders.  
**SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.  
**THE FULL STOCK RANGE:** All of your Amiga requirements from one supplier.  
**FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.  
**PAYMENT:** By cash, cheque and all major credit cards.  
**CREDIT PAYMENT TERMS:** Silica are licensed credit brokers - return coupon for details.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Shop Service".

RETURN THE COUPON NOW FOR  
**FREE BROCHURES**

**SILICA SHOP**



**MAIL ORDER:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111  
Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening Fax No: 081-308 0608

**LONDON SHOP:** 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000  
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Fax No: 071-323 4737

**SIDCUP SHOP:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811  
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017

**BUSINESS/EDUCATION:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-308 0888  
Order Lines Open: Mon-Fri 9.00am-6.00pm Closed on Saturdays Fax No: 081-308 0608

To: Silica Shop, Dept LETSC 1290-32, 1-4 The Mews, Hatherley Rd, Sidcup, Kent DA14 4DX

**PLEASE SEND INFORMATION ON THE AMIGA**

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

Postcode: ..... Tel: .....

Which computer(s), if any, do you own? ..... A2000

©SUE - Advertised prices and specifications may change - please return the coupon to the nearest Silica Shop

**Your own logo disc or tape for £1!**

Turtle graphics is a vital part of any Logo program. And that's what Turtle Logo is. Specially written for the Electron, BBC Micro and A3000/Archimedes series, it is on the tape or disc that comes with the Let's Compute! Club bumper pack.

You can find out how to join the Club on Page 32 - and about all the other goodies sent out to members.

However, if you only want Turtle Logo we'll send it to you for just £1 if you complete and return the coupon below

## ORDER FORM

Please send me the *Let's Compute! Turtle Logo*. I enclose cheque, postal order or stamps the value of £1.

(Only suitable for Electron, BBC Micro or Archimedes series.)

Name.....

Address.....

Post code.....

Age.....

Please send it on:

- 5.25in 40T disc
- 5.25in 80T disc
- 3.5in disc
- Cassette

SEND TO:

Logo Offer,  
Let's Compute!  
Europa House  
Adlington Park  
Macclesfield  
SK10 5NY

# KNOT LOGO?

## Oh yes it is!

Noel Turtle is always losing things. He searched everywhere for a star to put on his Christmas tree. But the poor Christmas turtle couldn't find one.

So he decided to make his own. He made a knot in the shape of an interweaving eight-pointed star.

The program he used to do it is shown below.

You can easily draw a star using Noel's program. The result will be like the star Noel is seen putting on top of his Christmas tree.

You first need to run the Logo language. This is available for most computers.

If you haven't got Logo and you're using an Acorn computer the *Let's Compute! Turtle Logo* is an ideal starting point - see the offer on the left.

Once your Logo language is running type in Noel's program. Then save it by entering:

```
SAVE "STAR
```

Now the program's in your computer you can see Noel's star by typing:

```
STAR8 50
```

To draw stars of different sizes just change the 50 to another number.

If you're using the *Let's Compute! Turtle* you can make the star twinkle. To do this add an extra line before the END of STAR8. On that line

```
TO STAR8 :SIZE          JUMP :SIZE          TO INNER :SIZE
RT 22.5                 FD :SIZE * 14 / 10  REPEAT 8
OUTER :SIZE             JUMP :SIZE * 14 / 10 [FD :SIZE * 14 / 10
RT 90                   FD :SIZE * 34 / 10  JUMP :SIZE
JUMP :SIZE              RT 135]   FD :SIZE * 18 / 10
LT 90                   END       JUMP :SIZE * 14 / 10
JUMP :SIZE * 24 / 10    TO JUMP :SIZE       FD :SIZE * 2
INNER :SIZE             PU          RT 135]
END                     PD          END
                        FD :SIZE * 41 / 100
TO OUTER :SIZE          PD
REPEAT 8                END
[FD :SIZE * 24 / 10
```



you just put the word TWINKLE. Then add these four lines to the end of the program:

```
TO TWINKLE
DOFOREVER
INK RANDOM 8
END
```

Like before, just type STAR8 50 to see the star being drawn. Once it is complete it will start twinkling.

Can you draw an interesting, interweaving pattern in Logo? If you can we'd love to see it.

Post it to: *Let's Compute!* Adlington Park, Macclesfield SK10 4NP.

**There's a super Let's Compute! baseball cap for the writer of every one we print.**

**Note:** If you're using *Let's Compute! Turtle Logo* enter the program as it is printed.

If you're using *Logotron Logo*, put the [ and everything following it up to the ] on the same line as REPEAT 8. Do not press Return until you have typed ].

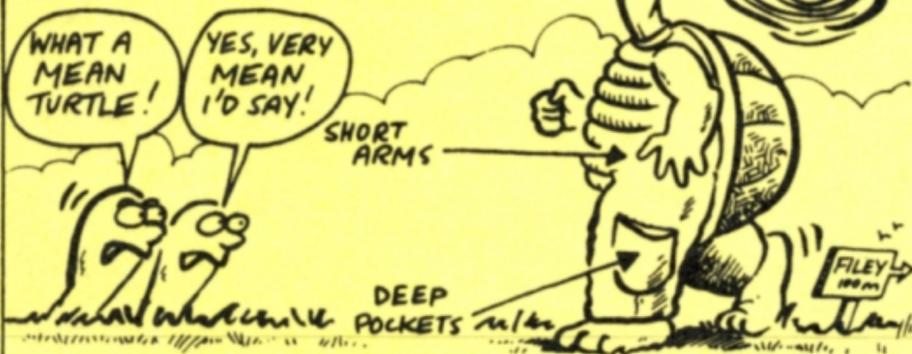
If what you are typing is too long to fit on one line of the screen, *Logotron Logo* puts ! at the end of your line and lets you continue on the next one. Ignore the ! and imagine you are still typing one line.

Other versions of Logo have different ways of treating REPEAT if it won't all go on one line. Most of them are similar to the two we've mentioned so check your instructions.

# LOGO LOWDOWN

BY MICHAEL NOELS

Q. WHY ARE TURTLES MEAN?



A. BECAUSE THEY NEVER SHELL OUT!

- AN EXSHELLENT JOKE

LAST MONTH THE TURTLE TOTS LEARNT HOW TO DO SUMS

## SUMS

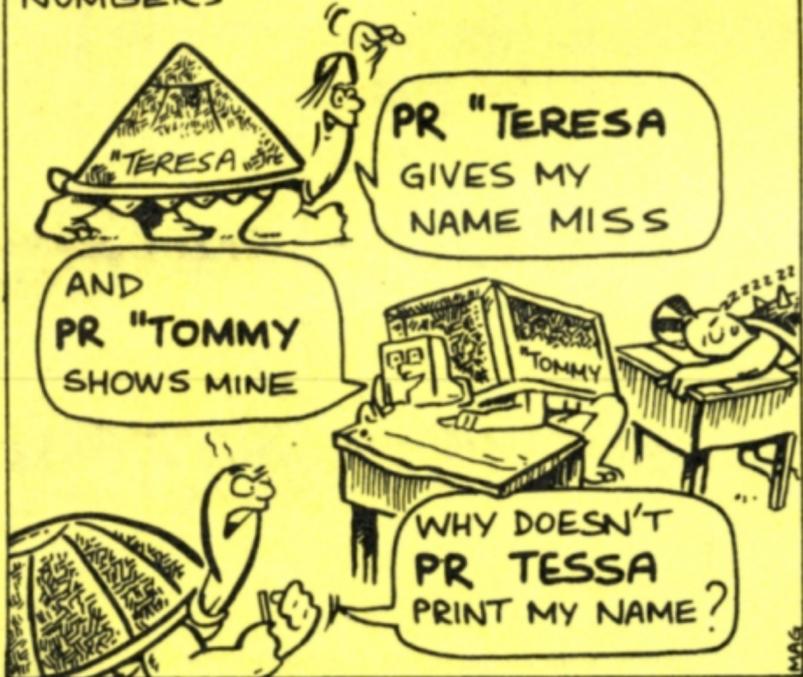
PR 2 + 2

### RULES

- A. PR STANDS FOR PRINT
- B. USE \* FOR MULTIPLY  
USE / FOR DIVIDE
- C. LEAVE SPACES BETWEEN EVERYTHING

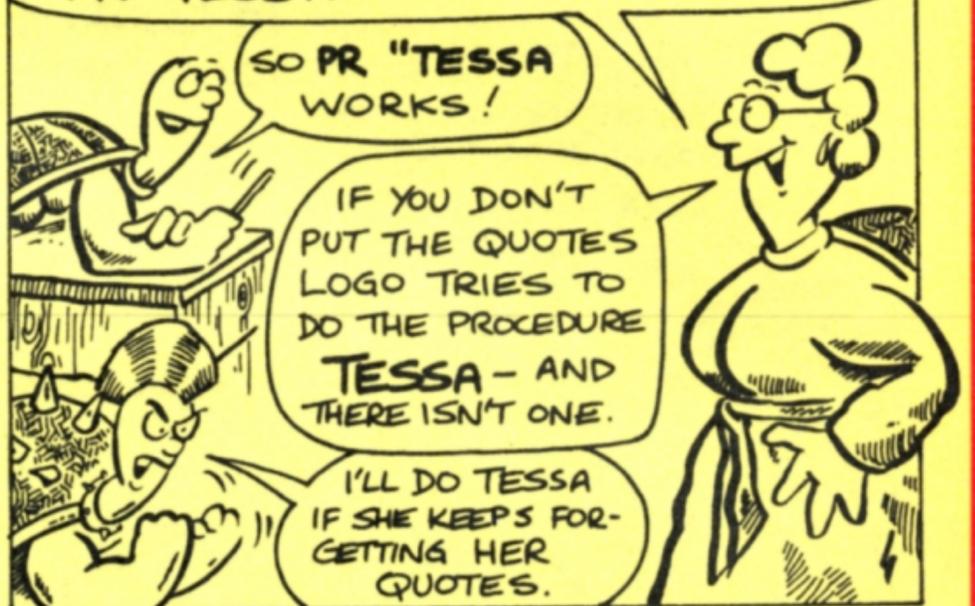
SO THAT'S THE ABC OF DOING SUMS

THEN THE TOTS FOUND THAT PRINT COULD DO MORE THAN PRINT OUT NUMBERS



WELL, YOUR NAME IS A WORD ISN'T IT? LOGO ALWAYS WANTS TO SEE QUOTES " IN FRONT OF WORDS.

PR TESSA HASN'T ANY QUOTES.



TERRY TURTLE GOT REALLY UPSET...

IT WON'T LET ME PRINT MY FULL NAME. I'VE TRIED

PR "TERRY TURTLE

AND

PR "TERRY "TURTLE

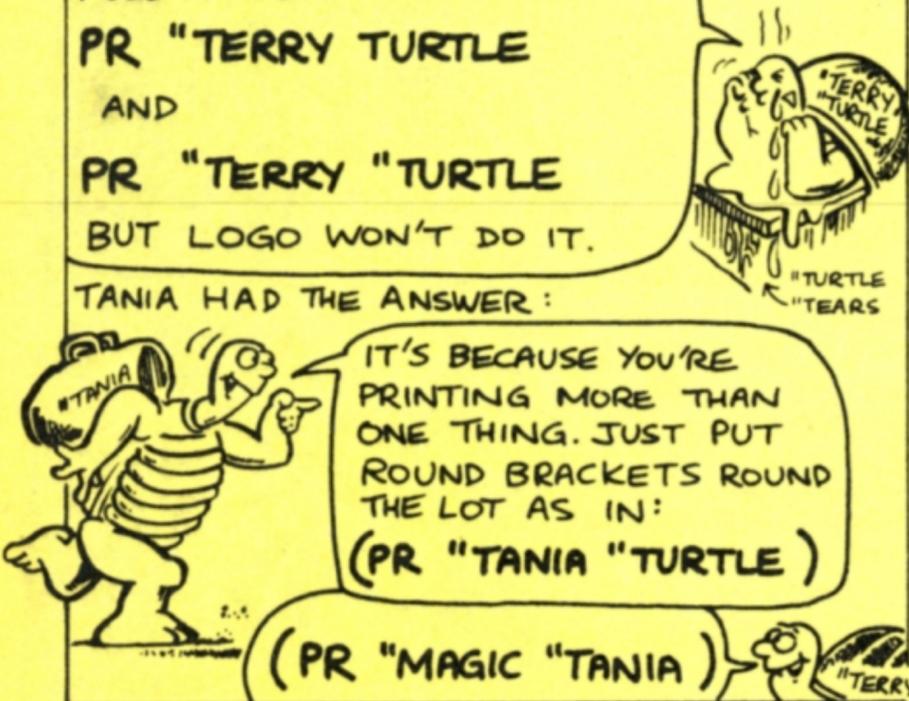
BUT LOGO WON'T DO IT.

TANIA HAD THE ANSWER:

IT'S BECAUSE YOU'RE PRINTING MORE THAN ONE THING. JUST PUT ROUND BRACKETS ROUND THE LOT AS IN:

(PR "TANIA "TURTLE)

(PR "MAGIC "TANIA)



## TURTLE TIP

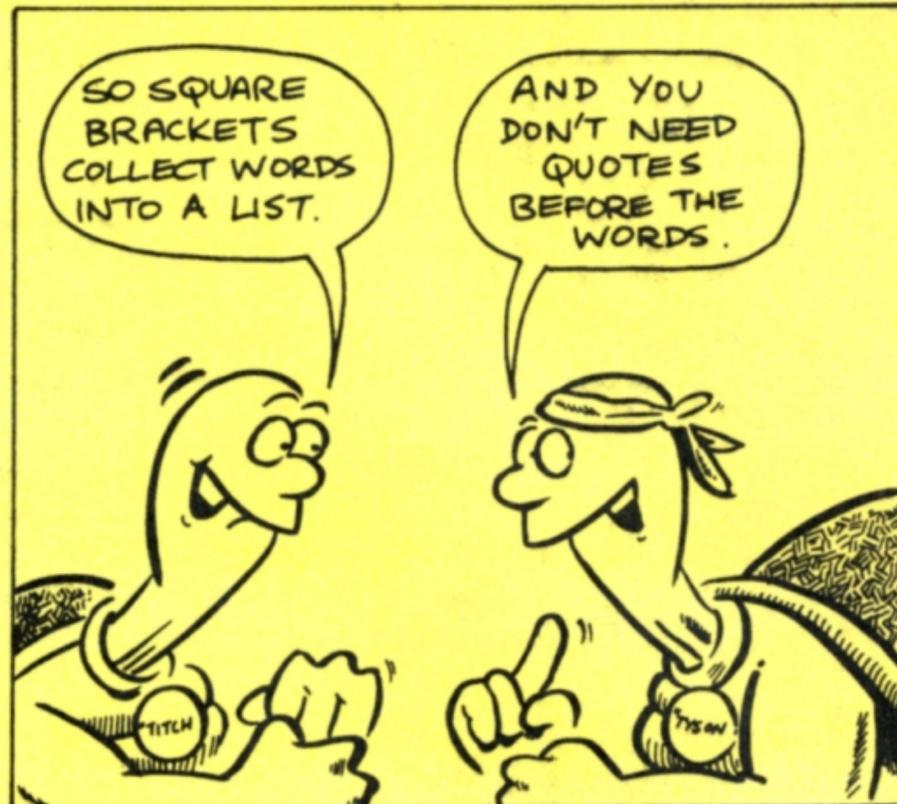
SO PRINT CAN PRINT OUT MORE THAN ONE WORD

**BUT...**

- ooo "EACH "WORD "STARTS "WITH "QUOTES
- ooo SURROUND THE LOT - INCLUDING PRINT - WITH BRACKETS

PR "A "TURTLE "SANDWICH

ROUND BRACKETS MAKE PRINT GREEDY FOR WORDS. SOME LOGOS WON'T DO THIS!



SO ONE WAY TO PRINT OUT A SET OF WORDS IS:

- A. USE PR
- B. PUT QUOTES IN
- C. SANDWICH THE LOT IN ROUND BRACKETS

(PR "USE "ROUND "BRACKETS")

ANOTHER WAY IS:

- A. COLLECT THE WORDS INTO A LIST USING SQUARE BRACKETS
- B. NO QUOTES
- C. PUT PR IN FRONT

PR [SQUARE BRACKETS FOR LISTS]

PR "HELLO  
PR "HELLO "THERE  
(PR "HELLO "THERE)  
PR [HELLO THERE]  
PR [HELLO] [THERE]  
(PR [HELLO] [THERE])

WHICH OF THESE WORK ON YOUR LOGO - AND WHY?

WE'VE USED SQUARE BRACKETS BEFORE. CAN ANYONE REMEMBER WHERE?

"TOM" "TIM" YES MISS-IN REPEAT

? TO TRIANGLE  
> REPEAT 3 [RT 120 FD 200]  
> END

? TO HEX  
> CS  
> REPEAT 6 [RT 60 TRIANGLE]

★ ○ **TURTLE PROFILE** ○ ★

**TINA TURTLE**  
- SINGER!

**FACTS:**  
HEIGHT: 5'-2"  
EYES: 2  
HAIR: MESS  
CLOTHES: 2 SIZES TOO SMALL  
LIKES: SINGING, POUTING  
DISLIKES: GETTING OLDER  
FAVOURITE FOOD: CHIPS  
HOBBIES: EATING CHIPS

**TINA SAYS:-**  
"I'M A ROCK N' ROLLER AND I GUESS BEING 93 YEARS OLD AIN'T GONNA STOP ME!"

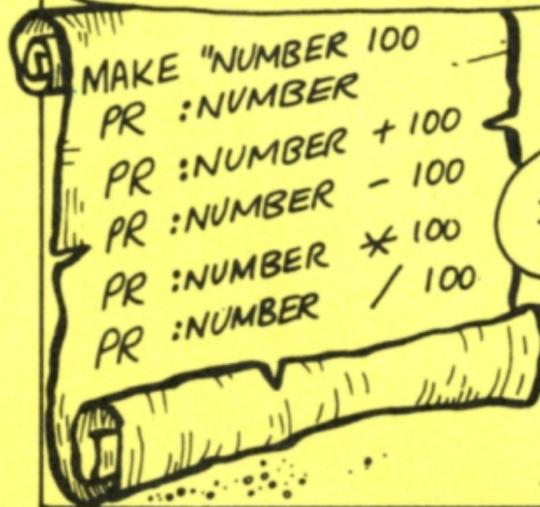
THAT'S RIGHT. WHEN WE USE REPEAT WE PUT THE LIST OF INSTRUCTIONS WE WANT TO REPEAT INSIDE SQUARE BRACKETS.



WE'VE USED QUOTES BEFORE TOO WHEN WE USED MAKE

YES, THAT IS TO GIVE NUMBERS NAMES. WE USE:

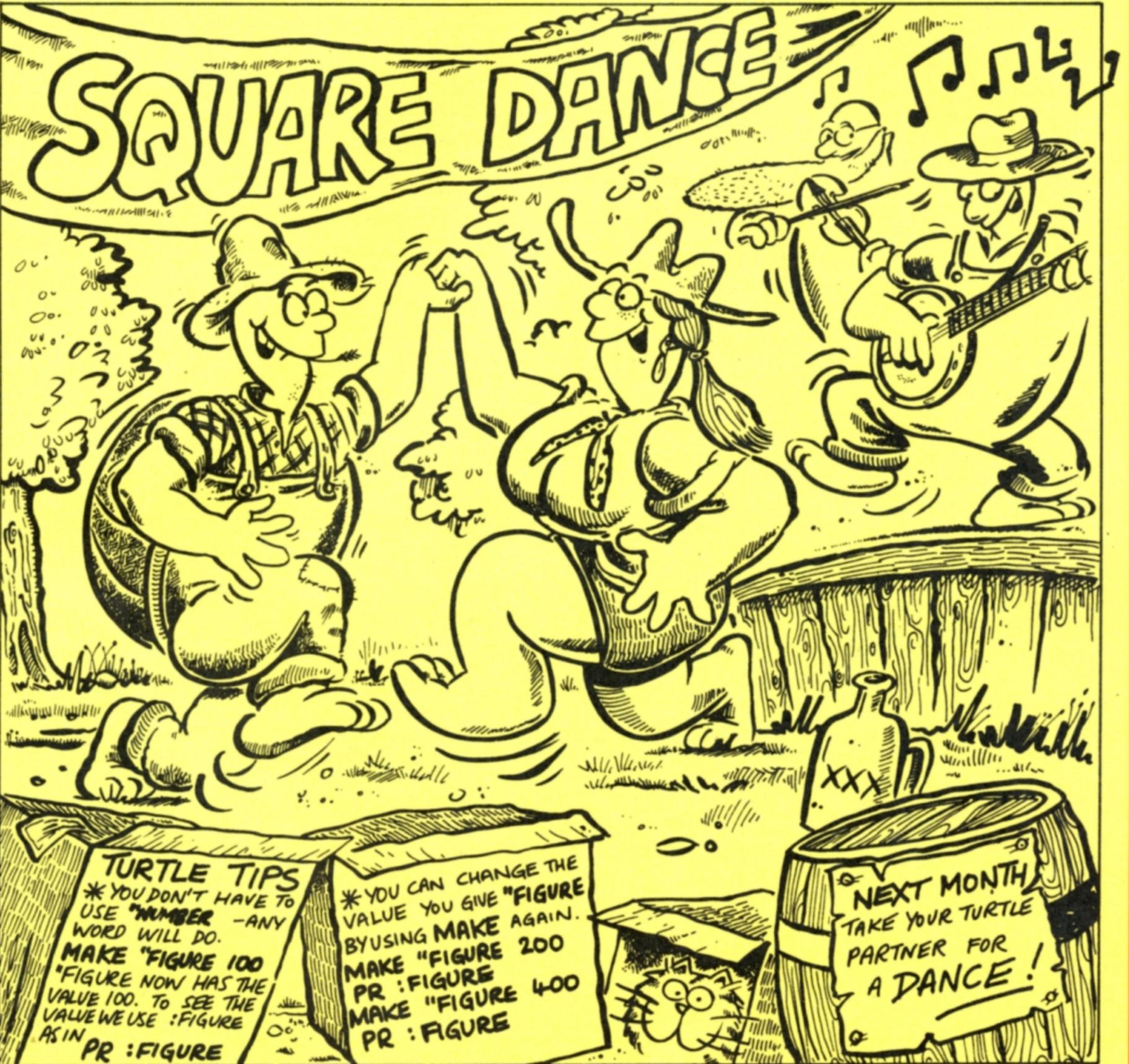
MAKE "NUMBER 100  
THE WORD "NUMBER NOW HAS THE VALUE 100. SO WE CAN DO SUMS WITH :NUMBER



```
MAKE "NUMBER 100  
PR :NUMBER  
PR :NUMBER + 100  
PR :NUMBER - 100  
PR :NUMBER * 100  
PR :NUMBER / 100
```

HEY, NUMBERS DON'T NEED QUOTES

# SQUARE DANCE



## TURTLE TIPS

\* YOU DON'T HAVE TO USE "NUMBER - ANY WORD WILL DO.

MAKE "FIGURE 100  
"FIGURE NOW HAS THE VALUE 100. TO SEE THE VALUE WE USE :FIGURE AS IN  
PR :FIGURE

\* YOU CAN CHANGE THE VALUE YOU GIVE "FIGURE BY USING MAKE AGAIN.  
MAKE "FIGURE 200  
PR :FIGURE  
MAKE "FIGURE 400  
PR :FIGURE

NEXT MONTH  
TAKE YOUR TURTLE PARTNER FOR A DANCE!

# TURBOSOFT

TOP MOVERS	SPEC		AMS		C64	
	Cass	Disc	Cass	Disc	Cass	Disc
Adidas Football	9.99	12.99	N/A	N/A	9.99	12.99
Batman Movie	7.99	11.99	7.99	11.99	7.99	11.99
Bloodwych	7.99	11.99	7.99	11.99	7.99	11.99
Bomber	6.99	N/A	6.99	8.99	6.99	8.99
Chase HQ	7.99	11.99	7.99	11.99	7.99	11.99
Back to the Future 2	8.99	11.99	8.99	11.99	8.99	11.99
Cricket Master	6.99	11.99	6.99	11.99	6.99	11.99
Double Dragon 2	7.99	11.99	7.99	11.99	7.99	11.99
Emlyn Hughes	7.99	11.99	7.99	11.99	7.99	11.99
Football Director	6.99	N/A	6.99	N/A	6.99	N/A
Ghoul n Ghosts	7.99	11.99	7.99	11.99	7.99	11.99
Golden Axe	7.99	11.99	7.99	11.99	7.99	11.99
Gunship	7.99	11.99	7.99	11.99	7.99	11.99
Hammerfist	4.99	N/A	4.99	7.99	4.99	N/A
Hostages	7.99	11.99	7.99	11.99	N/A	N/A
Hammerfist	4.99	N/A	4.99	7.99	4.99	11.99
International 3D Tennis	7.99	N/A	7.99	11.99	7.99	11.99
Jack Nicklaus Golf	N/A	N/A	7.99	12.99	7.99	12.99
Klax	7.99	11.99	7.99	11.99	N/A	N/A
Kick Off 2	7.99	11.99	7.99	11.99	7.99	11.99
Lords of Chaos	7.99	11.99	7.99	11.99	7.99	11.99
Laser Squad	4.99	N/A	4.99	7.99	4.99	N/A
Manchester United	6.99	10.99	6.99	10.99	6.99	10.99
Microprose Soccer	7.99	11.99	11.99	14.99	11.99	14.99
Midnight Resistance	7.99	11.99	7.99	11.99	7.99	11.99
New Zealand Story	7.99	11.99	7.99	11.99	7.99	11.99
Operation Thunderbolt	7.99	11.99	7.99	11.99	7.99	11.99
Oriental Games	11.99	14.99	11.99	14.99	11.99	14.99
Pipmania	7.99	11.99	7.99	11.99	7.99	11.99
Project Stealth Fighter	7.99	11.99	N/A	N/A	11.99	14.99
Robocop	7.99	11.99	7.99	11.99	7.99	11.99
Rainbow Islands	7.99	11.99	7.99	11.99	7.99	11.99
Satan	7.99	11.99	7.99	11.99	7.99	11.99
Shadow Warriors	7.99	11.99	7.99	11.99	7.99	11.99
Sim City	8.99	12.99	8.99	12.99	8.99	12.99
Stunt Car Racer	7.99	11.99	7.99	11.99	7.99	11.99
Strider	7.99	11.99	7.99	11.99	7.99	11.99
Subbuteo	7.99	11.99	7.99	11.99	7.99	11.99
Turrican	7.99	11.99	7.99	11.99	7.99	11.99
Time Machine	7.99	11.99	7.99	11.99	7.99	11.99
Treble Champions	7.99	N/A	7.99	11.99	7.99	11.99
Turbo Outrun	7.99	11.99	7.99	11.99	7.99	11.99
Test Drive 2 The Duel	7.99	11.99	7.99	11.99	7.99	11.99
X Out	7.99	11.99	7.99	11.99	7.99	11.99

SPECIAL OFFERS	SPEC		AMS		C64	
	Cass	Disc	Cass	Disc	Cass	Disc
AMC	3.99	N/A	3.99	N/A	3.99	N/A
After the War	3.99	N/A	3.99	N/A	N/A	N/A
Brian Cloughs	3.99	7.99	3.99	7.99	3.99	7.99
Barbarian II	3.99	N/A	3.99	N/A	3.99	N/A
Crackdown	4.99	N/A	4.99	N/A	4.99	N/A
Chuck Yeager	2.99	6.99	2.99	6.99	2.99	6.99
Dragon Spirit	3.99	N/A	3.99	N/A	3.99	N/A
Dynasty Wars	3.99	N/A	3.99	N/A	3.99	N/A
Emotion	4.99	N/A	4.99	N/A	4.99	N/A
Football Manager 2 + Exp	6.99	9.99	6.99	9.99	6.99	9.99
F15 Strike Eagle	6.99	N/A	6.99	11.99	6.99	11.99
Ghosts n Goblins	2.99	N/A	2.99	N/A	2.99	4.99
Ghost Busters II	3.99	6.99	3.99	6.99	N/A	N/A
Hunt for Red October	6.99		6.99	9.99	6.99	7.99
Hard Drivin'	3.99	7.99	3.99	7.99	N/A	N/A
Mr Heli	4.99	N/A	4.99	N/A	4.99	N/A
Hot Rod	3.99	N/A	3.99	N/A	3.99	N/A
Myth	4.99	N/A	4.99	7.99	N/A	N/A
Ninja Spirit	4.99	N/A	4.99	7.99	4.99	N/A
P47 Thunderbolt	4.99	11.99	4.99	11.99	4.99	11.99
Pacland	4.99	7.99	4.99	7.99	4.99	7.99
Pacmania	4.99	7.99	4.99	7.99	N/A	7.99
SDI	1.99	N/A	N/A	N/A	1.99	N/A
Sonic Boom	3.99	N/A	3.99	4.99	3.99	N/A
Skate or Die	2.99	6.99	2.99	6.99	2.99	6.99
Starwars	6.99	N/A	6.99	N/A	6.99	N/A
Time and Magic	3.99	8.99	3.99	8.99	3.99	3.99
Vendetta	4.99	N/A	4.99	7.99	4.99	7.99
World Championship Boxing Manager	4.99	N/A	4.99	N/A	4.99	N/A

EDUCATIONAL						
Answer Back Junior	7.99	9.99	7.99	10.99	N/A	N/A
Better Maths 12-16	N/A	N/A	8.99	13.99	N/A	N/A
Better Spelling 9-14	N/A	N/A	8.99	13.99	N/A	N/A
Fun School 2 Under 6	7.99	11.99	7.99	9.99	7.99	11.99
6-8	7.99	11.99	7.99	9.99	7.99	11.99
8+	7.99	11.99	7.99	9.99	7.99	11.99
Fun School 3 U5	9.99	12.99	9.99	12.99	9.99	12.99
5-7	9.99	12.99	9.99	12.99	9.99	12.99
7+	9.99	12.99	9.99	12.99	9.99	12.99
French Mistress Adv or Beg	6.99	9.99	6.99	9.99	N/A	N/A
German Master	6.99	9.99	6.99	9.99	N/A	N/A

TOP MOVERS	AST	Amiga
Apprentice	N/A	19.99
Battlechess	17.99	17.99
Corporation	N/A	17.99
Chase HQ	14.99	17.99
Damocles	14.99	14.99
Escape from Singes Castle	N/A	26.99
F29 Retaliator	17.99	17.99
Flood	17.99	17.99
Falcon Mission Disc 2	13.99	13.99
F16 Falcon	17.99	19.99
F19 Stealth Fighter	18.99	18.99
Golden Axe	14.99	14.99
Imperium	17.99	17.99
Immortal	17.99	17.99
International 3D Tennis	16.99	14.99
Kick Off 2 World Cup Edition	17.99	17.99
Kick Off 2	13.99	13.99
Last Ninja 2	17.99	17.99
Lost Patrol	N/A	17.99
Leisure Suit Larry 3	26.99	26.99
Midwinter	19.99	19.99
Midnight Resistance	13.99	17.99
Magic Fly	17.99	17.99
Night Breed	17.99	17.99
Operation Thunderbolt	13.99	17.99
Postman Pat	6.99	6.99
Player Manager	11.99	11.99
Projectile	17.99	17.99
Rainbow Islands	13.99	13.99
Satan	12.99	12.99
Shadow of Beast 1	16.99	10.99
Shadow of Beast 2	N/A	22.99
Shadow Warriors	13.99	17.99
Space Ace (1 Meg Amiga)	26.99	26.99
Supremacy	N/A	19.99
Team Yankee	18.99	18.99
Their Finest Hour	19.99	19.99
Turrican	13.99	13.99
Unreal	N/A	17.99
Weltris	N/A	16.99
Wings	N/A	19.99
X-Out	13.99	13.99
688 Attack Sub	N/A	17.99

SPECIAL OFFERS	AST	Amiga
Airborne Ranger	9.99	9.99
Afterburner	4.99	N/A
Barbarian 2 (Palace)	7.99	7.99
Boulderdash Construction Kit	4.99	4.99
Beach Volley	9.99	N/A
Balance of Power	7.99	7.99
Centrefold Squares	7.99	7.99
Commando	N/A	4.99
Crackdown	9.99	9.99
Drakken	14.99	14.99
Dynamite Dux	7.99	N/A
Dragon Spirit	4.99	4.99
Dungeon Master	14.99	14.99
Dynasty Wars	9.99	9.99
E-Motion	9.99	9.99
Faery Tale	N/A	4.99
Ferrari Formula 1	7.99	7.99
Grand Prix Circuit	N/A	9.99
Hammerfist	9.99	9.99
Hunt for Red October	9.99	9.99
Hard Drivin'	7.99	N/A
Infestation	9.99	9.99
Interphase	7.99	7.99
Laser Squad	6.99	6.99
Lombard Rally	9.99	9.99
Lords of Rising Sun	N/A	11.99
Marble Madness	6.99	6.99
North & South	9.99	9.99
P47 Thunderbolt	N/A	7.99
Pacland	7.99	7.99
Pacmania	7.99	7.99
Rick Dangerous	9.99	9.99
Rocket Ranger	4.99	N/A
SDT	4.99	N/A
Sim City	18.99	14.99
Super Wonderboy	9.99	N/A
Strider	9.99	N/A
Silent Service	9.99	9.99
Starwars Trilogy	9.99	9.99
Speedball	4.99	N/A
TV Sports Football	11.99	12.99
Time Machine	9.99	9.99
UMS Data Civil War	3.99	N/A
UMS Data Vietnam	3.99	N/A

UNIT 6 & 7, ACACIA CLOSE, CHERRY COURT WAY IND. EST., STANBRIDGE ROAD, LEIGHTON BUZZARD, BEDS, LU7 8QE  
 (PERSONAL CALLERS WELCOME) TEL: 0525 377974 FAX: 0525 852278

PLEASE CHARGE MY ACCESS/VISA NO..... EXPIRY .....

### ORDER FORM



CUSTOMER NO.....

Please supply me with the following for

Date: .....

Computer.....

Name: .....

Titles

Price


Address:.....

.....

.....

.....

.....Post Code:.....

.....

Tel: .....

Office hours Mon-Fri 9-5pm Sat. 10-4pm

Please make cheques  
 & PO payable to Turbosoft  
 Orders under £5 please add  
 50p per item. Over £5 p&p FREE  
 in UK. Elsewhere please add  
 £1.50 per item.

N.B. Please state clearly  
 mode of computer & also  
 cassette or disc when ordering

# JOIN OUR CLUB TODAY



## Subscribe at the same time – and Save £2!

Here's YOUR chance to become a member of the most exclusive club in computing – and save money too!

If you become a subscriber to *Let's Compute!* by using the form below, you can also join the Club for just £3 (saving £2).

As soon as we've registered your name we'll send you a giant package of gifts to help you make the most of your computer.

In addition to your own Gold Membership Card you'll also receive lots of software on an action-packed disc or tape (don't forget to state which kind you require), PLUS ● notepad, ruler, pencil and rubber ● stickers ● stylish hat and badge ● an incredible £200 worth of money-saving vouchers! And that's not all! As a club member you'll be entitled to take part in exclusive competitions and special events with super prizes.

Make sure YOU don't miss out. Fill in the form below and send it today!



*This is the BBC version – other versions will vary*

*(Should you prefer to buy Let's Compute! from your newsagent each month, you can still join the Club by paying the normal joining fee of £5. You can do this by filling in the appropriate part of the form below.)*

**YES PLEASE!**  
Tick as required

- 3101 Send me the next 12 issues of *Let's Compute* for the special introductory price of £12 (including postage and packing).
- 3102 I'd also like to become a founder member of the *Let's Compute!* Club for the special price of £3 (instead of the regular £5) – so please send me the bumper Club pack with my first issue.
- 3103 I'll order *Let's Compute!* from my newsagent, but I'd still like to join the Club and receive my bumper member's pack for £5.

I wish to pay by:

Cheque payable to Database Publications

Credit card No: \_\_\_\_\_ Exp. date \_\_\_\_\_

Name \_\_\_\_\_

Signed \_\_\_\_\_

Address \_\_\_\_\_

Post code \_\_\_\_\_ Age \_\_\_\_\_

Daytime phone number in case of queries \_\_\_\_\_

**TO: Database Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB**  
No stamp need if posted in UK

**PHONE ORDERS: 051-357 1275**

- Please send my software in this format
- 3050 Compact/Archi/Elk (3.5" disc)
  - 3051 BBC/Elk (5.25" 40 T)
  - 3052 BBC/Elk (5.25" 80 T)
  - 3053 BBC/Elk (tape)
  - 3055 Amiga (disc)
  - 3056 CPC (disc)
  - 3057 CPC (tape)
  - 3060 Spectrum (tape)
  - 3061 Spectrum (disc)
  - 3062 C64/128 (disc)
  - 3063 C64/128 (tape)
  - 3054 ST (disc)
  - 3058 PC (5.25")
  - 3059 PC (3.5")

LC12

# SOFTWARE CITY

Unit 4, B.D.C, 21 Temple Street, Wolverhampton WV2 4AN. Tel: 0902 25304

## BBC/ELECTRON FULL PRICE

	CASS	DISC 5.25	DISC 3.5
ARCADE SOCCER.....	BB/EL	6.99	8.99
BALISTIX.....	BB	6.99	8.99
BARBARIAN 2.....	BB/EL	6.99	8.99
BLAST.....	BB/EL	6.99	8.99
BRIAN CLOUGH.....	BB/EL	6.99	7.99
COLOSSUS BRIDGE 4.....	BB/EL	8.99	9.99
COLOSSUS CHESS 4.....	BB/EL	6.99	9.99
E-TYPE.....	BB/EL	6.99	9.99
ELITE.....	BB/EL	8.99	9.99
EXILE.....	BB	8.99	9.99
FOOTBALL DIRECTOR.....	BB	6.99	8.99
FOOTBALL MANAGER.....	BB/EL	2.99	N/A
HOLED OUT.....	BB/EL	8.99	9.99
HOLED OUT EXTRA VOL 1.....	BB/EL	6.99	8.99
HOLED OUT EXTRA VOL 2.....	BB/EL	6.99	8.99
IMPACT.....	BB/EL	2.99	N/A
KLAX.....	BB	6.99	9.99
LAST NINJA 2.....	BB/EL	6.99	8.99
LICENCE TO KILL.....	BB	8.99	9.99
MINI OFFICE 2.....	BB	9.99	N/A
MINI OFFICE 2 (40 TRACK).....	BB	N/A	11.99
MINI OFFICE 2 (80 TRACK).....	BB	N/A	11.99
MONOPOLY.....	BB	8.99	9.99
NEVRYON.....	BB	N/A	9.99
PERPLEXITY.....	BB/EL	6.99	8.99
PIPEMANIA.....	BB/EL	6.99	9.99
PREDATOR.....	BB	6.99	8.99
QUESTION OF SPORT.....	BB/EL	8.99	9.99
REPTON/INFINITY.....	BB/EL	8.99	9.99
RICOCHET.....	BB/EL	6.99	8.99
SCRABBLE.....	BB	8.99	9.99
STAR WARS.....	BB/EL	6.99	8.99
TRIVIAL PURSUIT-GENUS.....	BB	9.99	13.99
U.I.M.....	BB	N/A	13.99
WHITE MAGIC 1 OR 2.....	BB/EL	6.99	8.99

## BBC/ELECTRON BUDGET

3-D DOTTY.....	BB/EL	1.99	KRAKOUT.....	BB	2.99
3-D SNOOKER.....	BB/EL	2.99	LAST NINJA.....	NEW BB/EL	2.99
AIRWOLF.....	BB	1.99	LEAGUE CHALLENGE.....	BB/EL	2.99
ANACHY ZONE.....	BB/EL	1.99	LIFE OF REPTON.....	BB/EL	2.99
ARKANOID.....	BB	2.99	MINI OFFICE.....	EL	2.99
BARBARIAN.....	BB	2.99	MR.WIZ.....	BB/EL	2.99
BUG EYES 2.....	BB/EL	2.99	PAPERBOY.....	BB/EL	2.99
CAMELOT.....	BB/EL	2.99	PRO BOXING SIM.....	BB/EL	2.99
CITADEL.....	BB/EL	2.99	PRO GOLF.....	BB/EL	2.99
COMMANDO.....	BB	2.99	RAVENS KULL.....	BB/EL	2.99
CRAZEE RIDER.....	BB/EL	2.99	REPTON 1 OR 2.....	BB/EL	2.99
CREEPLY CAVE.....	BB/EL	1.99	REPTON 3.....	NEW BB/EL	2.99
DARTS.....	BB/EL	1.99	REPTON THRU TIME.....	BB/EL	2.99
DEATHSTAR.....	BB/EL	2.99	REVS 4 ADD ON TRACKS.....	BB	2.99
DOMINOES.....	BB/EL	2.99	SHANGHAI WARRIOR.....	BB/EL	1.99
FOOTBALL MANAGER.....	BB/EL	2.99	SMASH AND GRAB.....	BB/EL	1.99
FRAK.....	BB/EL	1.99	SOCCER BOSS.....	BB/EL	1.99
FRUIT MACHINE SIM.....	BB/EL	2.99	SPELL BINDER.....	BB/EL	2.99
GALAFORCE.....	BB/EL	2.99	SPITFIRE 40.....	BB/EL	2.99
GOLF.....	BB/EL	1.99	SPOOKSVILLE.....	BB/EL	2.99
GRAHAM GOOCH.....	EL	1.99	SPY CAT.....	BB/EL	2.99
GREEN BERET.....	BB	2.99	STEVE DAVIS SNOOKER.....	BB/EL	1.99
GRID IRON 2.....	BB/EL	2.99	STORM CYCLE.....	BB/EL	1.99
GUN FIGHTER.....	BB/EL	1.99	STRIP POKER.....	BB	2.99
HI Q QUIZ.....	BB/EL	2.99	STRYKERS RUN.....	BB/EL	2.99
HOB GOBLIN.....	BB/EL	2.99	SUMMER OLYMPIAD.....	BB/EL	2.99
HOWZAT TRIPLE PACK.....	BB/EL	1.99	TETRIS.....	BB/EL	2.99
HYPERSPORTS.....	BB	2.99	THRUST.....	BB/EL	2.99
JOE BLADE.....	BB/EL	1.99	TRAPPER.....	BB/EL	1.99
JOE BLADE 2.....	BB	1.99	TURF FORM.....	BB/EL	2.99
KARATE COMBAT.....	BB/EL	2.99	YIE AR KUNG FU.....	BB/EL	2.99

## UTILITIES

5 1/4 UNBRANDED DISCS.....	35 EACH	5 1/4 50 PIECE DISC BOX.....	6.99
.....	3.25 /10	5 1/4 100 PIECE DISC BOX.....	7.99
.....	7.99 /25	3 1/2 40 PIECE DISC BOX.....	6.99
3 1/2 UNBRANDED DISCS.....	69 EACH	3 1/2 80 PIECE DISC BOX.....	7.99
.....	5.99 /10	MOUSE MAT 80mm.....	2.99
.....	13.99 /25		

## COMPILATIONS

<b>PLAY IT AGAIN SAM 14</b> SUPERSIDE SOCCER, PREDATOR, STARPORT & BALLISTIX BB/EL CASS 6.99, BB 5.25 DISC 8.99, BB 3.5 DISC 9.99	<b>PLAY IT AGAIN SAM 13</b> BARBARIAN 2, PERCY PENGUIN, HYPERBALL & PANDEMONIUM BB/EL CASS 6.99, BB 5.25 DISC 8.99, BB 3.5 DISC 9.99	<b>PLAY IT AGAIN SAM 12</b> LAST NINJA, BY FAIR MEANS OR FOUL, SKIRMISH & BLAGGER. BB/EL CASS 6.99, BB 5.25 DISC 8.99, BB 3.5 DISC 9.99	<b>PLAY IT AGAIN SAM 11</b> BARBARIAN, PIPELINE, BARON & MONSTERS. BB/EL CASS 6.99, BB 5.25 DISC 8.99, BB 3.5 DISC 9.99
---	--	---	---

## SPECTRUM

<b>BUDGET GAMES</b>	3.99	Games-Winter Edition.....	3.99
2 Player Super League.....	2.99	Gary Lineker's Superstar Soccer.....	2.99
4 x 4 Off Road Racing.....	2.99	Cauntlet 1 or 2.....	2.99
3-D Pinball.....	2.99	Rambo.....	NEW 2.99
720.....	2.99	Rampage.....	2.99
1942.....	2.99	Rastan.....	2.99
1943.....	2.99	Real Ghostbusters.....	NEW 2.99
Academy.....	2.99	Renegade 1 or 3.....	2.99
Ace 1.....	1.99	Roadblasters.....	2.99
Ace 1 and 2.....	2.99	Rock Star.....	2.99
Airwolf.....	2.99	Rolling Thunder.....	2.99
American Football.....	2.99	Ruff and Ready.....	2.99
Antiraid.....	NEW 2.99	Rugby Boss.....	1.99
Arcade Fruit Machine.....	2.99	Rugby Manager.....	2.99
Atom Ant.....	NEW 2.99	Run the Gauntlet.....	2.99
Barbarian.....	2.99	Saboteur 1 or 2.....	1.99
Barbarian 2.....	NEW 3.99	Salamander.....	NEW 2.99
Batman.....	2.99	Scoby Doo.....	1.99
Batman the Caped Crusader.....	NEW 2.99	Skate Crazy.....	2.99
Battleships.....	1.99	Skate or Die.....	NEW 2.99
Blasteroids.....	2.99	Skate or Die (+3 Disc).....	NEW 6.99
Blinky's Scary School.....	2.99	Skooldaze.....	1.99
Bombjack.....	2.99	Snooker Management.....	2.99
Boulderdash 1 or 2 or 4.....	2.99	Snooker Manager.....	2.99
The Boxer.....	2.99	Soccer 7.....	2.99
Boxing Manager.....	2.99	Soccer Boss.....	1.99
British Super League.....	2.99	Soccer Director.....	2.99
Buggy Boy.....	2.99	Soccer Q.....	2.99
California Games.....	NEW 3.99	Soccer Star.....	2.99
Cauldron 1 or 2.....	2.99	Space Harrier.....	2.99
Championship Golf.....	2.99	Spaghetti Western.....	2.99
Chuck Yeager Flight Trainer.....	2.99	Spindizzy.....	2.99
Chuck Yeager (+3 Disc).....	6.99	Spy Hunter.....	2.99
Chuckie Egg 1 or 2.....	3.99	Spy v Spy 1 or 2.....	2.99
Classic Punter.....	2.99	Star Wars.....	2.99
Classic Trainer.....	2.99	Street Fighter.....	2.99
Commando.....	2.99	Striker.....	2.99
County Cricket (D&H).....	2.99	Strip Poker 2.....	2.99
Crazy Cars.....	2.99	Summer Games.....	2.99
Cricket Captain (Hi-Tech).....	2.99	Supercycle.....	2.99
Cyberoid.....	2.99	Super Nudge 2000.....	1.99
Daley Thompson's Decathlon.....	2.99	Super Trux.....	2.99
Daley Thompson's Olympic Challenge.....	2.99	Super Stock Cars.....	2.99
Daley Thompson's Supertest.....	2.99	Super Tank Sim.....	2.99
Dan Dare.....	1.99	Target Renegade.....	NEW 2.99
Dan Dare 2.....	2.99	Tetris.....	2.99
Dizzy Dice.....	1.99	Theatre Europe.....	2.99
The Double.....	2.99	Thundercats.....	2.99
Dragons Lair.....	2.99	Tiger Road.....	NEW 3.99
Empire Strikes Back.....	NEW 2.99	Top Gun.....	2.99
Enduro Racer.....	2.99	Trap Door 1 or 2.....	1.99
Escape from Singes Castle.....	2.99	Treasure Island Dizzy.....	2.99
FA Cup.....	1.99	U.S. Basketball.....	2.99
Fantasy World Dizzy.....	2.99	Vindicator.....	2.99
Fast Food.....	2.99	WEC Le Mans.....	2.99
Fist 2.....	2.99	Wembley Greyhounds.....	2.99
First Past the Post.....	2.99	Wheeler.....	1.99
Footballer.....	2.99	Winter Games.....	2.99
Football Champions.....	2.99	Wizball.....	2.99
Football Director.....	NEW 2.99	The Wombles.....	NEW 2.99
Football Manager.....	2.99	Wonderboy.....	2.99
Footballer of the Year.....	2.99	World Class Leaderboard.....	2.99
Formula One Grand Prix.....	1.99	World Games.....	2.99
Frank Bruno.....	2.99	World Series Baseball.....	2.99
Frankenstein Jr.....	2.99	World Soccer.....	2.99
Fruit Machine Sim 2.....	2.99	Yes Prime Minister.....	NEW 2.99
Full Throttle.....	1.99	Yie Ar Kung Fu.....	2.99
G.B. Air Rally.....	NEW 2.99	Yogi Bears Great Escape.....	2.99
		Zybox.....	2.99

## CBM 64

<b>BUDGET GAMES</b>	2.99	Frank Bruno.....	2.99
2 Player Super League Soccer.....	2.99	Fruit Machine Sim 1 or 2.....	2.99
3-D Pinball.....	2.99	G.B. Air Rally.....	NEW 2.99
4 x 4 Road Race.....	2.99	Games Winter Edition.....	NEW 3.99
1942.....	2.99	Gary Lineker's Hotshots.....	2.99
1943.....	2.99	Cauntlet 1 or 2.....	2.99
720.....	2.99	Ghostbusters.....	1.99
Ace.....	1.99	Ghosts and Goblins.....	2.99
Ace 1 and 2.....	2.99	Graham Gooch.....	1.99
Advanced Pinball.....	2.99	Green Beret.....	2.99
Airwolf.....	2.99	Grid Iron 2.....	2.99
Arcade Trivia Quiz.....	NEW 2.99	Gryzor.....	NEW 2.99
Atom Ant.....	NEW 2.99	Guardian Angels.....	NEW 2.99
Bangkok Knights.....	2.99	Hardball.....	2.99
Barbarian.....	2.99	Hong Kong Phooey.....	NEW 2.99
Barbarian 2.....	NEW 3.99	Howard the Duck.....	NEW 2.99
Batman the Caped Crusader.....	NEW 2.99	Hypersports.....	2.99
Big Foot.....	NEW 2.99	I.K.+.....	2.99
Blasteroids.....	2.99	Ice Hockey.....	2.99
Blinky's Scary School.....	2.99	Impossible Mission 2.....	2.99
The Boxer.....	NEW 2.99	Indiana Jones Temple of Doom.....	2.99
British Superleague.....	2.99	International Manager.....	2.99
Bombjack 1 or 2.....	2.99	International Soccer.....	2.99
Boulderdash 1 or 2 or 4.....	2.99	Ikar Warriors.....	2.99
Boxing Manager.....	2.99	Jack the Nipper 1 or 2.....	2.99
Buggy Boy.....	2.99	Jaws.....	NEW 2.99
California Games.....	NEW 3.99	Kentucky Racing.....	NEW 2.99
Cauldron 1 or 2.....	2.99	Kickstart 2.....	1.99
Championship Golf.....	NEW PRICE 2.99	Knight Games.....	2.99
Chuck Yeager.....	NEW 2.99	Last Ninja.....	2.99
Chuckie Egg 1 or 2.....	3.99	League Challenge.....	2.99
Classic Punter.....	2.99	Little Puff.....	2.99
Classic Trainer.....	2.99	Macadam Bumper (Pinball).....	2.99
Combat School.....	2.99	Matchday 2.....	2.99
Commando.....	2.99	Mike Reid's Pop Quiz.....	2.99
Crazy Cars.....	2.99	Monty on the Run.....	2.99
Cricket Captain.....	2.99	Motorcycle 500.....	NEW 2.99
Cup Football.....	NEW 2.99	Nemesis.....	2.99
Cyberoid.....	2.99	Olle and Lisa 3.....	2.99
Daley Thompson's Decathlon.....	2.99	On the Bench.....	2.99
Daley Thompson's Olympic Challenge.....	2.99	Operation Wolf.....	NEW 2.99
Daley Thompson's Supertest.....	2.99	Outrun.....	NEW 3.99
Delta.....	NEW 3.99	Overlander.....	2.99
Dizzy Dice.....	1.99	Paperboy.....	2.99
The Double.....	2.99	Pitstop 2.....	2.99
Dragons Lair.....	2.99	Prison Riot.....	NEW 2.99
Eliminator.....	NEW 2.99	Pro Boxing Sim.....	2.99
Empire Strikes Back.....	NEW 2.99	Pro Tennis Sim.....	2.99
Escape from Singes Castle.....	2.99	Pub Games.....	2.99
FA Cup.....	1.99	Quades (CBM 64 only).....	NEW 3.99
Fantasy World Dizzy.....	2.99	R-Type.....	NEW 2.99
Fast Food.....	2.99	Rambo.....	2.99
Ferrari Formula One.....	NEW 2.99	Rampage.....	2.99
Fire Lord.....	2.99	Ranarama.....	NEW 2.99
First Past the Post.....	2.99	Rastan.....	NEW 2.99
The Footballer.....	2.99	Real Ghostbusters.....	NEW 2.99
Football Champions.....	2.99	Renegade.....	2.99
Football Manager.....	2.99		



## The convenient SINGLE SOURCE for EDUCATIONAL SOFTWARE

- \* All popular educational programs at publishers prices or below including Mirrorsoft, 4Mation, Sherston, E.S.M., Bourne, Chalksoft, Kosmos, Database Fun School, etc.
- \* Wide range of formats: Not only BBC/A3000/ Electron but also Spectrum +2/+3, Amstrad, Nimbus, Commodore 64/Amiga, Atari ST, IBM-PC and others!
- \* Vast stocks: 30,000 programs available for immediate delivery.
- \* Unconditional guarantee: problems rectified by expert staff - telephone helpline also available.

**THE EDUCATIONAL SOFTWARE DIRECTORY**  
describes and prices hundreds of programs

Write or phone for a free copy

### RICKITT EDUCATIONAL MEDIA

FREEPOST • Ilton • Ilminster • Somerset TA19 9HS •  
Telephone 0460 57152 • Fax 0460 53176

Please state the age of your children and make of your computer

# It's OUT

## HOW A COMPUTER WORKS

Part 4

Last month we looked into the CPU - the brain of your computer.

But what use is a brain if it cannot pass messages to the outside world? So your computer needs a way of getting information out.

To do this it uses output devices. And there are lots of them. The most common ones are TV screens and printers.

But there are lots of others.

Robots, Midi interfaces and speech units are all output devices. Like the rest of your computer, they are all worked by numbers.

It's those zeros and ones we've seen before that make them work.

Look at a letter on your screen. Or a letter printed on a dot matrix printer.

You can clearly see that each letter is made up from dots. On the screen it may be out of a square that measures eight dots across and eight down.

Imagine each row of dots in the letter being controlled by a memory location in your computer. There are many thousand of these in every computer.

Suppose the top row of dots in a letter is joined to a location where the number 16 has been stored. That's 00010000 in binary.

When that's sent to the screen a dot lights up. It's near the middle of the top row of a letter so it could be the point of the letter A.

Most printers work the same way. Even this page of *Let's Compute!* is made up of

## NEXT MONTH: We look

It's official!  
READING and  
SPELLING  
will both feature in  
NATIONAL  
CURRICULUM  
ASSESSMENT  
for all 7 year olds.

Give your child a head start with our best selling "Read-Right-Away" series. Specially designed by a team of Teachers, Psychologists and Professional Programmers, these games are used daily in thousands of schools, and are now available for all these machines:  
Amstrad 464/6128 Atari ST Amiga  
Archimedes/A3000  
BBC/Master/Compact/Electron  
Commodore 64  
Spectrum 48K/128K Spectrum +3

**READING PACK 1**  
(2 games)  
Age 5-8  
Disc: £11.95  
Cassette: £7.95

Special Offer!  
Both Reading Packs  
(4 games) for only:  
£11.95 (Cassette)!  
£19.95 (Disc)!

**READING PACK 2**  
(2 games)  
Age 8-9  
Disc: £11.95  
Cassette: £7.95



Software, Freepost, Swansea, SA2 9ZZ  
Tel.: (0792) 204519 Fax: (0792) 298283

## Mijas Software

The New Issue of  
'A Book on C'  
by Berry and  
Meekings  
£11 inclusive

### Small C System £69 (inclusive of VAT p&p)

Use the Mijas Small C System on the BBC B or MASTER series computers for games, educational and industrial software. Small C programs run up to 12 times faster than in BASIC. Your code is highly portable and can be recompiled to run on the ARCHIMEDES or R140 using the Acorn ANSI C compiler (not supplied) and on many other machines. You can also use the power of the ARCHIMEDES for the rapid development and test of BBC B or MASTER programs. Manuals and post sales support included.

This Small C System produces stand-alone programs with up to 40K of code in ROM and/or MAIN memory. Libraries, extendable by the user, provide memory allocation, multi-mode graphics, file handling, i/o formatting, string handling, and system calls. Full assembler interface.

The system includes the V3.0 Small C compiler & Libraries\*, Optimiser, Assembler, Linker, Source-Level Debug, and SHELL. SOURCE CODE is supplied for the compiler and all libraries. Using the MAKE facility and editable makefiles, C code is automatically compiled to assembler source, assembled and then linked with the minimum necessary library code.

Available for the MASTER series Computers, BBC B+ or B with sideways ram, and ARCHIMEDES. Software supplied on 80T double sided 5.25" or 3.5" ADFS or DFS disk. The ADFS disk contains the SHELL source code. The system is also available for other hardware configurations, including systems for the Mitsubishi MELPS processors, please write for details.

### Laser Typesetting Program £23 inclusive

Low cost DTP for any BBC B, MASTER or ARCHIMEDES. Requires an HP Deskjet or Laserjet printer or emulation. Use for letters, booklets, forms and manuals with rules and shading, full multi-font justification, in single or multi-column. Fast printing using the printer's internal fonts. ADFS or DFS disk with rom image, £23 inclusive of VAT, p&p. Eprom (avoids the need for sideways ram on BBC B) £7 extra.

Please state your computer system when ordering from:-

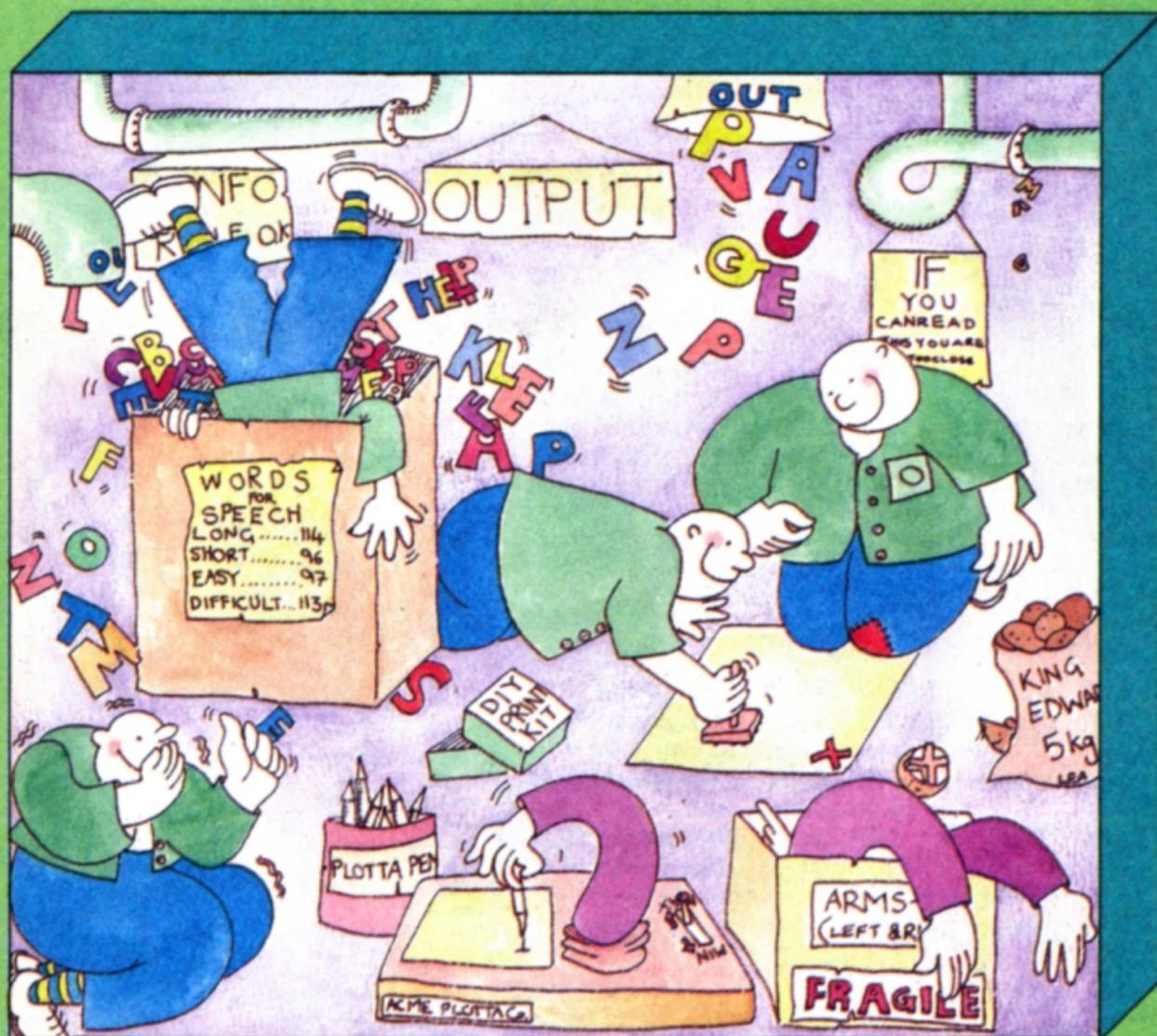
**MIJAS SOFTWARE, Winchester Road, Micheldever,  
Winchester, Hants SO21 3DG. Tel: 0962 89 352.**

Official orders, ACCESS and VISA welcome

\*Includes original Small C code supplied at the cost of distribution

# OUTPUT

# time



## BINARY BITS

We asked last month if you could think how to write 16 in binary. The answer is 10000.

That's 1 Sixteen + 0 Eights + 0 Fours + 0 Twos + 0 Units. Now you've got sixteens you can count to 31. Try it.

And then all you have to do is bring in Thirty-twos. Next come the sixty-fours and so it carries on: 128, 256, 512, 1024...

We also said that it's easier to add in binary than in decimal. Why?

To add any numbers in decimal you need to know 100 facts. That's  $0+0=0$ ,  $5+7=12$ ,  $7+5=12$ ,  $4+2=7$  and so on.

They may look easy now, but when you started adding you had 100 different ones to learn.

But learning to count in binary would have been much easier. You'd only have had four things to learn:

$0+0=0$   
 $0+1=1$   
 $1+0=1$   
 $1+1=10$

And you do sums in a very similar way to decimal. The only difference is that you carry if the answer is bigger than one.

So, because a computer works in binary, it only has to be able to do a few simple things to be able to work out any sum you give it.

dots. But there are so many that you can't make them out without a magnifying glass.

Some output devices don't work by letting you see things. For instance, a computer can control a musical instrument. The instrument is then the output device.

But, if a computer works with numbers, how can it control a musical instrument? Let's think about how loud the instrument sounds.

Like everything else, the volume is controlled by numbers.

Some computers have only eight possible volumes. If a sound was produced going from quietest to loudest you'd hear the

eight steps. But if the computer has lots of steps - say 1024 - you won't notice them.

It's like when you have a lot of dots making up a letter on paper. It appears smooth.

Other features of the instrument can be controlled in the same way. By numbers.

There are also output devices that store information. They keep it in a form ready to be fed back in to your computer. Examples are disc drives and tape recorders.

These are called storage devices. They can input and output information to and from your computer.

● We'll look at them next month.

at how a computer STORES all those facts and figures



# PRICE SLASHES!

SOFTWARE  
Bargains

+ Mercury Games

## BBC & ELECTRON

TITLE	BBC or Electron tape	BBC disc	CPCT disc
Acornsoft Hits 1 (BBC only)	1.95	8.95	10.50
Acornsoft Hits 2 (BBC only)	1.95	8.95	3.95
A Question of Sport	8.95	10.50	14.95
Arcade Soccer	9.95	12.95	-
Colossus 4 Chess (40T)	7.95	11.95	11.95
Colossus 4 Bridge (40T)	7.95	11.95	11.95
E-Type	9.95	14.95	-
Elite	8.95	10.50	15.95
Exile	8.95	10.50	15.95
Hostages	7.95	9.95	11.95
Holed Out	12.95	14.95	-
Klax (BBC only)	7.95	11.95	-
Last Ninja 2	7.95	9.95	11.95
Master Break (Due Dec '90)	7.95	9.95	11.95
Perplexity	7.95	9.95	11.95
Pipemania	7.95	11.95	11.95
Predator	6.95	8.95	10.50
Repton Infinity	8.95	10.50	15.95
Superior Soccer	7.95	9.95	11.95
Sim City	9.95	11.95	15.95
Sporting Triangles	7.95	9.95	-
Tank Attack	8.95	11.95	-
Ricochet	6.95	8.95	10.50
Play It Again Sam Compilations 1 to 10 (each):	6.95	8.95	10.50
Play It Again Sam Compilations 11 to 14 (each):	7.95	9.95	11.95
Superior Col 1(BBC only)	6.95	8.95	10.50
Superior Col 2(BBC only)	6.95	8.95	10.50
Superior Col 3(Elc only)	6.95	-	-

Call or write to ask for a full catalogue stating which computer you have - it's FREE!

## JOYSTICKS

For the BBC, B+, Master 128 & Electron Plus 1

<b>Delta 3B Twins</b>	<b>£19.95</b>
2 analogue, light spring action, wired to one plug	
<b>Delta 3B Single</b>	<b>£13.95</b>
Analogue, light spring action joystick. Can be used as either left or right-handed.	
<b>Delta Cat (For Archimedes)</b>	<b>£26.95</b>
Or mouse eliminator. Light spring action. Will operate mouse-driven software such as Zarch.	

## 9 PIN JOYSTICKS FOR ATARI & AMIGA

Competition Pro Extra	£15.95
Competition Pro 5000 Black	£15.95
Competition Pro 5000 Clear	£16.95
Cruiser (state Black, Blue or multicoloured)	£8.95
Cruiser Clear	£10.95
Quickshot II Turbo	£11.95
Speeding with autofire	£11.95
Superpro Auto	£13.95
Tac 5	£12.95

(90 day warranty on joysticks)

Software for the BBC Micro, Electron, Master Compact, Archimedes, IBM compatibles and 16 bit machines!



fun school 2

BBC/Electron tape	SRP £9.95	Offer price £7.95
BBC 5.25" disc	SRP £12.95	Offer price £9.95
Archimedes disc	SRP £19.95	Offer price £15.95
Atari ST	SRP £19.95	Offer price £15.95
Amiga	SRP £19.95	Offer price £15.95

(All prices are per age range)

fun school 3

BBC/Electron tape	SRP £12.99	Offer price £9.95
BBC 5.25" disc	SRP £16.95	Offer price £13.95

(Due for release November/Dec 1990)

Archimedes disc	SRP £24.95	Offer price £19.95
-----------------	------------	--------------------

(Possible release January 1991)

Atari ST	SRP £24.95	Offer price £19.95
Amiga	SRP £24.95	Offer price £19.95

(All prices are per age range: advance orders taken)

## AMIGA

Amos The Games	
Creator	£34.95
Amiga Mouse	£29.95
Kind Words V2	£39.95
Protext	£79.95
Dust covers:	
Amiga100	£9.95
Amiga 500	£3.95

## ATARI ST

Atari ST	
Mouse	£29.95
Disk Doctor	£15.95
1st Word	
Plus	£59.95
Habamerge	£29.95
K Graph III	£39.95
Logistrix	£89.95

## ARCHIMEDES

TITLE	SRP	SALE
1st Word Plus (V2)	91.94	79.95
8bit Sound Smp. + Midi	224.25	169.95
8bit Sound Smp Mono	155.25	124.95
Alien Invasion	14.95	11.95
All in Boxing	14.95	11.95
Amazing Ollie (4+ years)	16.04	14.95
Ancestry	79.95	69.95
Apocalypse	29.95	29.95
ARC-COMM	33.35	29.95
Arcade 3 Compilation	14.95	11.95
Arcade Soccer	14.95	14.95
Armadeus	79.95	69.95
Armadeus Sound Samp. Board	149.95	139.95
Artisan 2	59.95	49.95
Avon (Educ.)	19.95	17.95
Battle tanks	14.95	11.95
Brix	17.95	14.95
Bug Hunter	17.95	15.95
Bumper Disc 1 (Educ)	19.95	15.95
Bumper Disc 2 (Educ)	19.95	15.95
Chocks Away	24.95	24.95
Coffee (9-15 years)	32.14	29.95
Conqueror	24.95	19.95
COPS	19.95	15.95
Corruption	29.95	19.95
Drop Ship	19.95	19.95
Dust Cover A.3000 K'bd	5.95	3.95
E-Type	19.95	19.95
Euclid (RISC-OS)	70.00	59.95
Family Favourites	19.95	15.95
Fireball 2	24.95	19.95
Fish	29.95	19.95
Flight Path	32.14	29.95
Giant Killer (Educ.)	17.50	14.95
Guild of Thieves	29.95	19.95
Hearwith The Clues	24.95	19.95
Holed Out	19.95	19.95
Hold Out Designer	19.95	19.95
Hostages	19.95	15.95
Ibix The Viking	19.95	15.95
Impression 2	194.35	164.95
Impression Junior	103.44	89.95
Inertia	19.95	15.95
Knowledge Organiser	59.95	49.95
Last Days of Doom/Hezarin	19.95	15.95
Let's Spell at Home (4-9 yrs)	24.95	19.95
Let's Spell at the Shops	24.95	19.95
Mad Professor Mariarti	19.95	15.95
Maddingly Hall	14.95	11.95
Man At Arms	19.95	19.95
Manchester Utd	24.99	19.95
Maths Pack 1 (5-7yrs)	11.95	9.95
Micro Drive	19.95	15.95
Missile Control	14.95	11.95
Nevryon	19.95	19.95
Ollie Octopus Skechpad	16.04	14.95
Orion	14.95	11.95
Ovation	113.85	99.95
Pipemania	24.99	19.95
PON	17.95	15.50
Rhapsody in Blue	49.95	39.95
Redshift	17.95	14.95
Render Bender	79.95	69.95
' ' Animated Discs	14.95	11.95
Repton 3	19.95	15.95
Rotor	24.99	19.95
Spellbook (4-9yrs)	24.95	19.95
Sporting Triangles	24.99	19.95
Superior Golf	19.95	15.95
Talisman	14.95	11.95
Tempest	129.95	109.95
The Olympics	19.95	19.95
The Pawn	29.95	19.95
The Real McCoy	29.95	29.95
The Wimp Game	19.95	19.95
Things...with Numbers	24.95	19.95
Things to do with Words	24.95	19.95
Trivial Pursuit	29.99	24.95
U.I.M.	29.95	29.95
Word Up Word Down	17.95	14.95
Zarch	19.95	15.95

And much more! - Ask for our catalogue!

# FREE!

Full catalogues now available for BBC, Master Compact, Electron, Archimedes and IBM compatible computers.

Please state which machine you have. Great discounts guaranteed!  
DETAILS OF ALL NEW RELEASES FOR CHRISTMAS!

## PRINTERS

Full specifications are available on request

Panasonic KX-P1081	9 pin dot matrix	£159.95
Panasonic KX-P1180	9 pin dot matrix	£169.95
Panasonic KX-P1124	24 pin dot matrix	£259.95
Seikosha SP-2000	9 pin dot matrix	£179.95
Seikosha SL-92	24 pin dot matrix	£269.95

Prices include VAT, printer cable (please state which computer you have) and courier despatch



To order: Simply write your name and address on a plain sheet of paper, together with the items you would like. Please state which format and computer you require them for. ● Please add 95p P&P (Europe £2.50, Outside Europe £4.50). ● All prices include VAT. ● Goods despatched within 48 hours (subject to availability).

SOFTWARE  
Bargains

Dept. LCCO, C/o Northwood House,  
North Street, Leeds LS7 2AA

24-hour HOTLINE: 0532-436300

Make cheques payable to SOFTWARE BARGAINS

# PRIZE WINNERS

## WIN A COMMODORE AMIGA

Wow! We never thought so many words could be made from the letters of Commodore Amiga. There were hundreds of entries - many with over 750 words.

With 1,121 words the winner is 12 year old Andrew Hatch from Waterloo in Lancashire.

Congratulations to him and everyone else who tried so hard.

## SPOT THE DIFFERENCE

We had hundreds of entries to Mike Goldberg's challenge in October. But only five people spotted all 19 differences between the pictures.

The first correct one pulled from the pile was from Caroline MacDonald (8), Fort Willian. She will receive the superb hand-painted jigsaw made by Mike.

The other four correct entries were from Paul Clement (12), Donemana; Michael Heading (13), Belfast; Mark Argent (14), St. Albens and Nicola Rae (10), BFPO. They will each receive a small hand-made gift from Mike's collection.

This month's contests are on Page 9, 28 and 37

## BONANZA CONTEST WINNERS

The Bonanza Competition in the October issue of *Let's Compute* had us fighting our way through the entries. However, here are the first correct 185 entries pulled from the sack. If your name is below you'll shortly be receiving a goody from US Gold or Ocean:

Andrew Nelson (6), Tetbury  
Kevin O'Neill (15), Bantry  
Mark Davis (11), Halstead  
David J Holt, Epsom  
Jonathan Craig (17), Limavady  
Robert Agnew (11), Walthamstow  
David Dolliver (10), Stanley  
Kevin Anderson (11), Kernoway  
Steven Mosley (12), Harrogate  
Ryan Baldwin (10), Luton  
Alex Waddell (10), Tilehurst  
Emma Conlon (6), Rothwell Haigh  
John Westcott (12), Romsey  
Matthew Townsend (11), Thornhill  
Rebecca Hughes (8), Wootton  
Bassetlan Baile (11), Newbridge  
Laurence Newman (11), Tibbermore  
Sarah Pye (9), St Helens  
Paul Dodds (12), Great Lumley  
Gregory Broome (12), Minsbridge  
Matthew James (15), Leavy  
Georgina Giraldi (14), Charlton Kings  
Alexander Dillon (9), Congleton  
Simon Green (14), Deddington  
James Harrison (12), Hemel Hempstead  
Andy Jenkins (12), Longlevens  
Matthew Lacey (9), Locking  
Steven Stewart (10), Lossiemouth  
Jayesh Panchmatia (13), Loughborough  
Simon Manwood (12), Richmond  
Andrew Hall (11), Worsley  
Matthew Lowden (11), Macclesfield  
Francis Chin (11), Marshalswick  
Jamie Damerell (13), Locksheath  
Paul Harvey (13), Stanford-le-Hope  
Paul Maggs (13), Shirehampton  
Andrew Tierney (8), Haling Park

Liane Llewellyn (9), Odsal  
Neil Davis (12), Fareham  
James Brand (15), Harrogate  
S. Methuen (12), Kendon  
James Jagger (12), Welton  
Alistair Brown (10), Randlay  
Bill Yip (12), Ashton-u-Lyne  
Casey Jonkmans (12), St Martins  
Gareth Spencer (12), Ashton-in-Makerfield  
Owen Williams (12), Castle Hedingham  
Keith Docherty (13), Houston  
Robert MacAndrew (12), Aberdeen  
Mark Batten (10), Stoke Bishop  
Damian Breeze (9), Shrewsbury  
Jonathan Linsdell (9), Yarm  
Sarah Nolan (13), St Ippolyts  
Gavin Willingham (6), Hayling Island  
Heetan Patel (11), Holbrooks  
Martin Dean (13), Nantwich  
Tom Telford (10), Upchurch  
Stuart Cliff (10), Tividale  
M. Quarterman (11), Sawtry  
Richard N. Bowns (9), Rotherham  
Jonathan Wood (12), North Shields  
Christopher Kay (12), Raths Station  
Alistair Keith (13), Cockton Hill  
Graham Lochrie (12), Stonehaven  
Rishi Coupland (13), Southampton  
Philip Thorn (11), Goring-by-Sea  
Sarah Brannon (8), Aldridge  
Martin A. Rolfe (8), Castle Camps  
Stuart Cartwright (10), Thornhill  
James Cocksedge (10), Staines  
Alastair Muir, Ballymena  
Richard Brooks (14) Barrow on Soar  
Mark Smith (14), Ipswich  
Debbie Llewellyn (9), Goodwick

Kate Shotton (8), Westerhope  
Shaun McManas (4), Rochester  
Jami O'Donnell (10), West Winch  
Michael Wynne (9), Reading  
Kevin Kilroy (11), Liverpool  
Michael Bowerman (11), Reading  
Lucy Ann (13), Leigh Park  
Jonathan Rothery (12), Whitehaven  
Colin Bromley (10), Oakley  
Malcolm Shepherd (11), North Balanchulish  
Michael Heading (13), Belfast  
Nigel Jones (13), Winsford  
Carl Bookless (9), Darlington  
David Wise (12), Stoke Gifford  
Ross Thomson (13), Newton Mearns  
Warren Phillips (8), Colchester  
Christopher R Jones (13), Llanelli  
Michael Hein (11), Pwllheli  
John Rumball (54), Wigston  
Darren Whiteley (15), Dalton  
Catherine Outram (13), Romany  
Ben Horsfield (12), Holberrow Green  
Helen Tweddle (9), Kendal  
Martin Watson (15), Hereford  
Benjamin Phillips (10), Corby  
Ben Owen (11), Sutton  
Chris Heath (9), Reepham  
R. Hitt (12), Walsall  
Martyn Cosh (9), Paisley  
Tom Daga (11), Menai Bridge  
Luke Goodrich (11), Totnes  
Mark Campbell (9), Harbourne  
Paul James (9), Kenilworth  
Robert Field (9), Loughborough  
Aled Davies (8), Pontypriid  
S. A. Mitchell (15), Wincanton  
Wayne Pretl (14), Ashton-u-Lyne

Scott Simpson, Stonehaven  
David Pendleton (10), Cardiff  
Alan Parker (14), Northfield  
Dale Minney (12), Beckenham  
Jonathan Rawle (11), Kidderminster  
Philip Hetherington (7), Gwynedd  
Andrew Hawthorn (11), Cambridge  
H. Knott (13), Lewes  
Andrew Wingate (12), Brighton  
Paul Taberham (10), Wollaton  
Kevin Hinchcliffe (10), Barnsley  
Michael Dillon (15), Market Weighton  
Steven Bell (14), East Calder  
Katie Penny (10), Pagehill  
Dalwinder Dhanjal (14), Normanton  
William But (12), Fallowfield  
John Tootell (11), Fareham  
Peter Gillan (10), St Ives  
Emma Prosser (9), Ashley  
Stuart Lane (11), Pocklington  
Susan R. Sharron (12), Boscombe  
Paul McKernan (10), Lossiemouth  
Gavriel Gavrielides (12), London  
Ashley Green (14), Solihull  
Peter Beaumont (9), New Barnet  
Andrew Hodgson (8), Redditch  
Robert Frost (41), Felixstowe  
Carl Newman (13), Reydon  
Christopher Wright (14), Waterhoupe  
Mark Argent (14), St Albans  
Gordon McNab (12), New Ollerton  
Jamie Ross (9), Crathole  
Fancis Oumamar (13), Cambridge  
Peter Matejschuk (11), Abingdon  
Helen Campbell (7), Simshill  
Hannah White (6), Tongue  
John Hurlford (12), Wyke  
Craig Wilkinson (9), Chester-le-Street

Mark Sternett (9), Humbleton  
John Wake (15), Courteenhalloan Dyer, Carmarthen  
Joanne Limb (12), Knowle  
Paul Sampson (11), Riverdale  
Jeremy Hyams (11), Prestwich  
Noel Keane (13), Tralee  
Stewart Mulligan (13), Calderstone  
John Jordan (11), Shropshire  
Hemant Khatana (10), Stonnall  
Neil Hamilton (9), Little Chalfont  
Richard Baldwin (13), Bromhall  
Ian Collette (12), Sholing  
L. Best (8), Maghull  
P. Collins (14), Portland  
Sean Boyle (10), Craigavon  
Luke Farnham (12), Pinks Moor  
Nathan Phillips (9), Selly Park  
Martin Capodici (10), Cheshunt  
Mark Howdle (8), Nottingham  
Vicki Forsman (13), Millom  
Mark Williamson (8), Tadley  
Hamish McFadyen (14), Exeter  
Peter Owen (10), Ludlow  
Matthew Bouman (9), Repton  
Christopher Lang (12), Swansea  
James Roxby (14), Warrington  
Jodi Scattergood (9), Clifton  
Chris Wood (14), Broxbourne  
Christopher Spicer (10), Wrawby  
Paul Ciemmett (12), Strabane  
Paul Nelson Clark (13), Horsham  
Iain Spence (10), Cramlington  
R. Worthington (11), Bradeley  
Philip Coxley (13), West Bromwich  
RNIB, Worcester  
Sarah Louise Peart (11), Rotherham

## CREATIVE SOFTWARE FOR EDUCATION

AMIGA, Atari ST, PCs RRP £24.99  
Spectrum versions RRP £11.99 (c) £14.99 (d)



**HENRIETTA'S BOOK OF SPELLS** is a powerful program to improve spelling and language skills. It can even be used to help learn a foreign language. Probably the most comprehensive and challenging software of its type ever produced. And it's great fun to use!



"... the screens and animations are beautifully drawn ... children simply loved playing ..."  
PC TODAY August 90

"... give 'em something to laugh about and they'll forget it's homework."  
CRASH July 90

# HENRIETTA'S BOOK OF SPELLS

**FUN with WORDS**

FOR 7-14 YEAR OLDS



Telephone enquiries to 0411 357 1659

**RELEASE DATES**  
HOORAY for HENRIETTA  
IBM PC & Spectrum available now  
AMIGA and ST from 31 October  
HENRIETTA'S BOOK OF SPELLS  
IBM PC & Spectrum from 31 October  
ST version from mid November



## FUN MATHS

FOR 5-12 YEAR OLDS

# HOORAY for HENRIETTA

## HOORAY for HENRIETTA

helps you add, subtract, multiply and divide quickly and accurately.

It's fun and easy to use and has been carefully structured in line with the National Curriculum.

"... HOORAY for HENRIETTA achieves a perfect balance of learning and having fun."  
CRASH July 90

"... here's an educational program for kiddies to get their brains into gear."  
WHAT PERSONAL COMPUTER? July 90

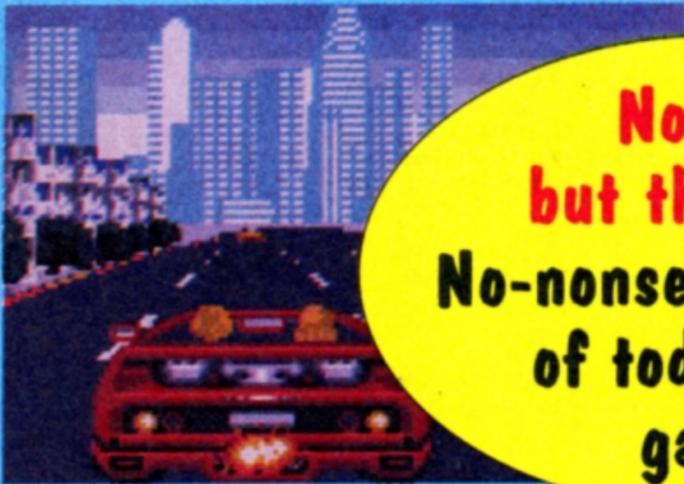
"... very good picture/problem course ..."  
New Computer Express April 90



# NEXT MONTH

**Snakes Alive!**  
A game to keep  
you on your toes

**ON YER BIKE!**  
Use your computer to check  
your performance

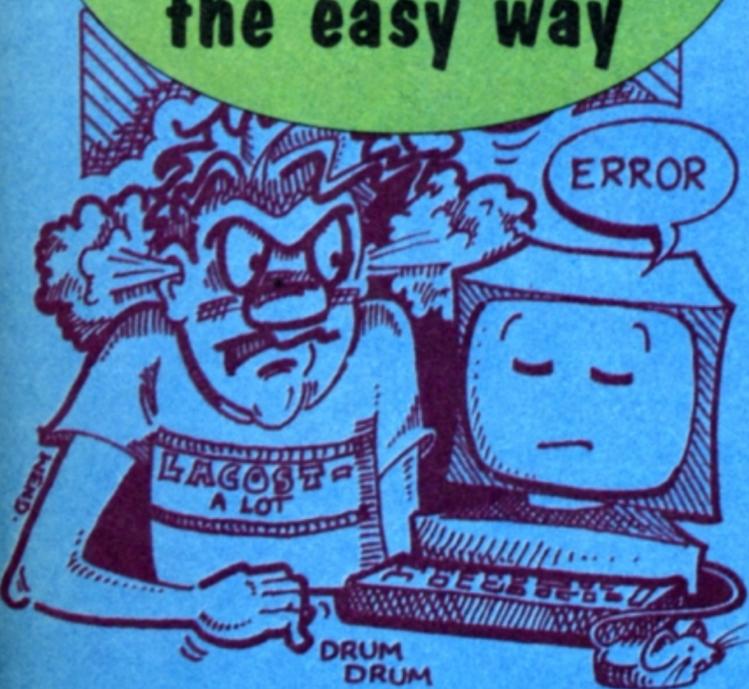


**Nothing  
but the truth!**  
No-nonsense reviews  
of today's top  
games

Build a  
foot-operated  
joystick

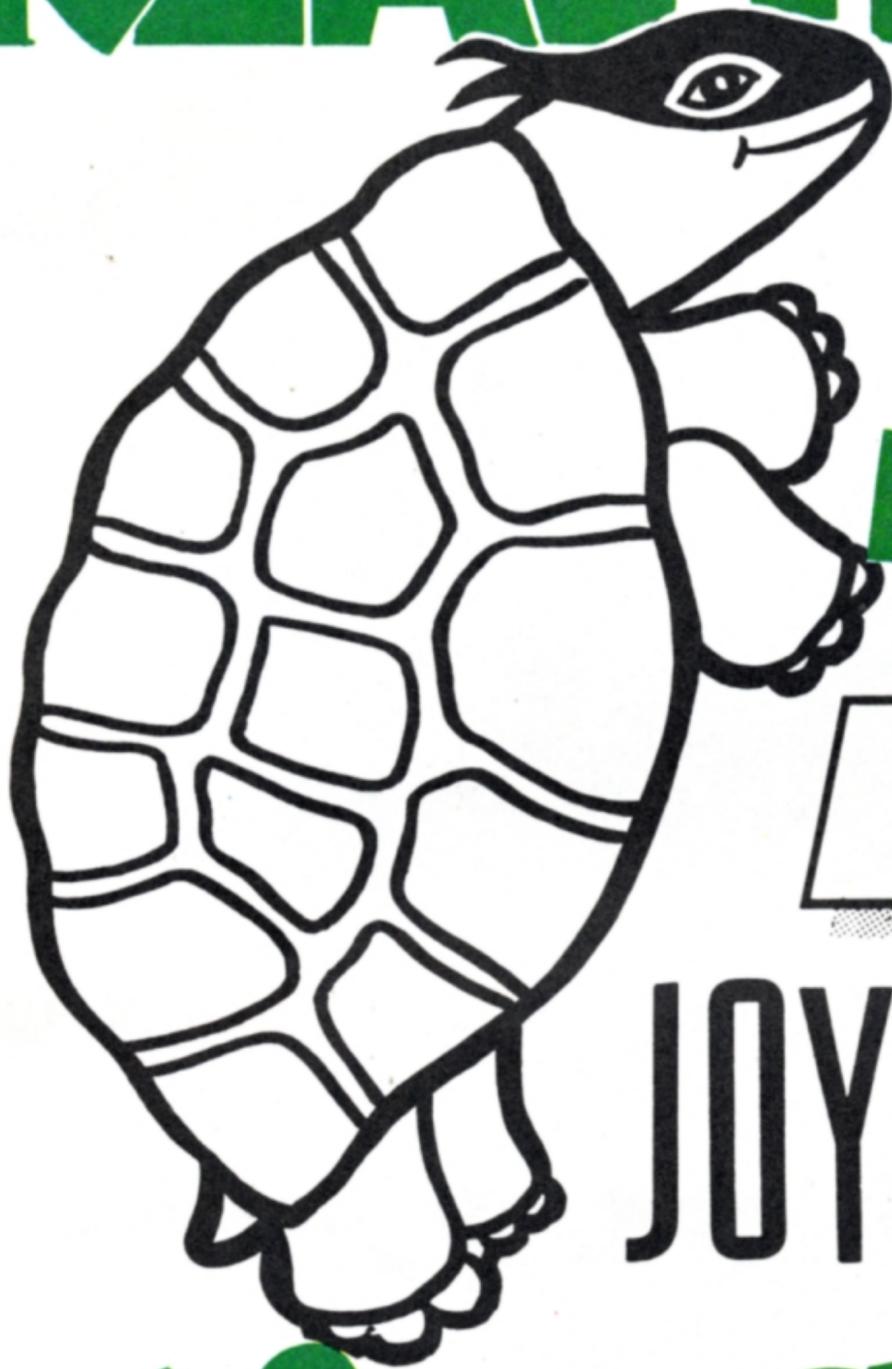
**Beat  
the bugs!**  
Error-free typing  
the easy way

**WIN!**  
We've printers and loads of  
other prizes to give away



**DON'T MISS A THING!** Take out a subscription: Page 47 Get it from your newsagent

# REAL HEROES



only play  
with

**ORIGINAL**

**EUROMAX**

**JOYSTICKS**

**The  
TOUGH ONES**



WIN - WIN - WIN - OVER £300 WORTH OF JOYSTICKS TO GIVE AWAY

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Post Code \_\_\_\_\_

How Many Microswitches  
give 8 way Directional Control

4  8  16

Which Euromax Stick has been  
Europe's Best Seller for 8 Years

Pro 9000  Arcade  Flashfire

Tie Break: Name Your Favourite Retailer  
and in no More Than 12 Words say why he is Best.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Why? \_\_\_\_\_

Please tick if you require further information on the Joystick Range

Closing Date 31st Dec 1990

**EUROMAX FREEPOST BRIDLINGTON**

**N. HUMBERSIDE YO16 4BR Tel: 0262 602541**

# MICROTEC

## ENTERTAINMENT

PRESENTS

*In conjunction with Mutation Software*

DOUBLE  
PACK  
£12.99

FOR  
THE  
AMIGA



B y P o s t B y P h o n e

Please rush me a copy of Bug-Bash/Nucleus  
I enclose a cheque/postal order for £12.99  
plus £1.00 post and packaging

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_

POSTCODE \_\_\_\_\_

To order by Access or Visa

RING

071 - 281 9022

Also available from your local computer store

MICROTEC ENTERTAINMENT, 61 STROUD GREEN ROAD, LONDON N4 3EG.