No 11 June 1991

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the nuclear mystery

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Logo with the turtles

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program errors

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BADGE PASSING MADE EASY!

PARENTS & TEACHERS!
Turn to Page 26

BBC A3000 / ARCHIMEDES / BBC A3000 / ARCHIMEDES / BBC A3000 / ARCHIMEDES

Chocks Away Extra Missions

CHOCKS AWAY

- ***This new updated Mark II Chocks Away with supersmooth animation really is flight simulation the way you've always wanted it. It has everything for the beginner and the expert:***

- Beautiful 256 colour graphics and 'nerve shattering' digitised sound effects
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- **Revolutionary 2 Player Option** using split screen display. This allows 2 players to each fly their own planes simultaneously in practice, dogfights, or missions
- Full joystick, dual joysticks, mouse and keyboard control options
- **Amazing "Black Box Flight Recorder"** included so that you can record your own flights and then save & replay them. 90 minutes of totally absorbing pre-recorded training flights are included with the game
- Internal/External views of your plane can be selected from front/rear/left/right
- Powerful 30mm canon capable of very rapid fire and long range destruction
- Easy to read instrument panel and simple controls
- 3 very varied immense maps to explore - approximately 18000km^2 in total
- 20 fascinating and varied missions of increasing complexity are included with a promotion system from Cadet right through to Marshal of the RAF
- Superb range of targets/enemies including bombers, triplanes, fighters, tanks, control towers, anti-aircraft guns, head quarters and patrol boats

Chocks Away Mark I Version was awarded **GAME OF THE YEAR 1990** by **Acorn User, A&B Computing (now Archimedes World), RISC User & Micronet**

"Graphics in the game are superb, smooth and with plenty of ground detail... this is a really enthralling flight simulator with plenty of variation and features to ensure longevity." **RISC User, Dec '90**

"Chocks Away is a delightful game." **Archive, Jan '91**

"Chocks Away is a brilliant game." **BBC Acorn User Dec '90**

"... It's a really great game, Playability 10. Value 10." **The Micro User, Jan '91**

"**(Chocks Away Mark II Version)**... The increased speed obviously makes the game more responsive and fun to play, well and truly overtaking Interdicter II as the best Archimedes plane game." **New Computer Express, Feb '91**

CHOCKS AWAY EXTRA MISSIONS

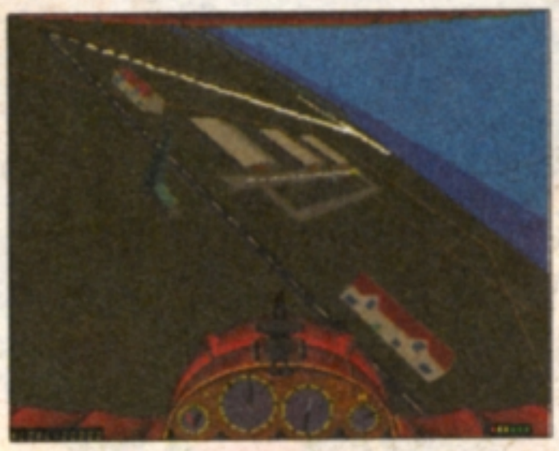
This consists of a new manual and a disc containing an additional 26 missions (6 of which are reconnaissance missions). It is loosely based on the original Chocks Away and features an extensive range of extra features and improvements. To run it, you will require the MkII version of the original Chocks Away. Extra features include:

- 16 new & detailed maps based over land and sea.
- 20 enemy planes and 20 enemy targets are included in each mission. Over 1000 extra targets and planes have been carefully defined.
- Considerably improved action on all missions with plenty of targets to shoot at and plenty shooting at you.
- You can view the action from any of the enemy planes or targets and your own control tower at any time even while still controlling your own plane or watching a saved flight. There is a selection of tracking cameras (with adjustable zoom lenses!) around the playing arena. In addition a phantom plane can also be selected to follow the action on any or your black box flight recordings.
- Improved enemy pilots capable of performing loops, rolls, stall turns etc. All enemy planes are carefully modelled using the same equations controlling your own plane. This ensures both an accurate and fair simulation.
- More enemy planes and targets to shoot including: Three Engine Fighters, Enormous Cargo Planes, Airships, Barrage Balloons, Gun Boats, Oil Tankers, Trains etc.
- Six reconnaissance missions where you are required to take photos of various installations with your new on board camera.
- Improved graphics over the 16 maps including Complex Cities, Houses, Railways, Roads, Rivers, Bridges, Lampposts, Railway Stations, Oil rigs, Piers, Beaches, etc. to mention but a few. In total over 100 different graphics have been defined.
- Serial Port Link Up option so that you can link up 2 BBC A3000 or Archimedes computers and 2 pilots can fly simultaneously in full screen mode.
- Extensive enemy flak guns and improved enemy plane guns help make the new missions both more interesting and challenging to say the least!
- Improved digitised sound effects plus, of course, all the extensive options which are available with the original Chocks Away.

WIN a superb.....
"Radio-Controlled Biplane"

Successful completion of all 6 Reconnaissance missions will allow you to enter this competition

TALLY HO GINGER!



ARCHIMEDES & BBC A3000
All versions are compatible with the BBC A3000 and 310 & 400 Series

CHOCKS AWAY	(Mark II Version with 1 or {split screen} 2 player options)	£24.95
CHOCKS AWAY EXTRA MISSIONS	(With 2 player Serial link option)	£19.95
CHOCKS AWAY COMPENDIUM	(Chocks Away & the Extra Missions)	£39.95
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Managing Editor Derek Meakin
Publisher Peter Glover
Features Editor Peter Davidson
Creative Editor Mark Nolan
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REGULARS

Noticeboard

Adventuring omissions

Firstly I would like to say how brilliant *Let's Compute!* is.

In the April issue the adventure poses a problem for the average CPC user.

I found that you need to add the words THEN LET before the D$ in lines 2030 to 2035. Also, in line 35, you need to put THEN before the GOSUB.

– Matthew Tsang (11)
Huddersfield

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.

Computerised love letters

I buy every issue of *Let's Compute!* The first one I got was last November.

I think it's very brill because it helps me learn more about computers. There are a couple of things I would like to see in future issues:

- Could you design a program that will make a computerised diary? I would like to input what I did, the date and the time.
- Is it possible to write a program that will write love letters?

– Caesar Mensahjhr
Queenstown, South Africa

You can use the Database program that we started building in November for your diary.

Just put the dates and anything else you want on the cards.

In February we gave you a program to print out valentine verses. Just change the words in the DATA lines and you've got a program to also write your love letters.

Fascinating fun

I have only just started reading your mag. The first one I read was the February issue.

I was absolutely fascinated that at last I had found a magazine which gives you programs to type in, a thing I had been looking for previously.

I especially like your Golden Crown adventure. I have solved it and I hope that *Let's Compute!* will continue for centuries.

– George Shiel (11), Exeter, Devon

Don't cut it up

First of all, may I say how brilliant your magazine is. It makes a change from just sitting reading the games reviews in other mags. With *Let's Compute!* I can use my computer for some programming instead of just playing games.

The only problem is having to cut it up to enter the contests. I think you should have a special page with nothing on the back for competition entries and projects that involve cutting things out.

– Jamie Toulson(12), St Leonards on Sea, East Sussex

To save you chopping up *Let's Compute!* you can send your entries on paper. Just make sure you give us all the detail asked for on the form.

The cut out projects are usually quite easy to draw. You could trace them first.

board

Protect programs

I know a way of protecting programs on the C64. At the start of the program have this line:

```
5 POKE 792,188:POKE 788,52
```

It stops people being able to use the Run/Stop and Restore keys together. To change it back to normal put this in your program:

```
POKE 792,71:POKE 788,49
```

– Peter Armann (11), Leicester

Stop the cheats!

My sister and I have discovered a cheat for the Nim game you showed readers in your April edition.

During the game, when you take sticks, always make sure you leave an even number. For example, if 67 sticks are left you could take 27 to leave 40.

The trick comes when when three sticks are left. Take 1.5 and the computer will then take one and lose.

– Richard and Emma Wesley (9 and 12), Fleet, Hants.

Well spotted. But we didn't expect anyone to break the sticks in half. Maybe we should have used steel rods!

You can stop people cheating by adding this line to the program:

```
55 IF ABS(M-INT(M))>.001 THEN PRINT"DON'T CHEAT!":GOTO 50
```

Pay more VAT

In the February issue of *Let's Compute!* the Program Doctor gave a short listing to work out the exact price of something with VAT. I typed it in, ran it and it worked.

I showed it my mum and she said the program worked it out using 15 per cent. But the very important people have changed the percentage to 17½.

Please could you tell me how to change the 15 per cent to 17½.

– Bob Bailey (10), Stoke-on-Trent

To put 17½ in a computer program you use 17.5. In our VAT program you just need to change the 15 on line 10 to 17.5.

In case anyone missed it we've printed the whole program again here – with the new VAT rate in it. It will work on all home computers but readers with Stos should use V#, P# and T# in place of V, P and T.

```
10 LET V=17.5
20 PRINT
30 INPUT "WHAT IS THE EX. VAT PRICE";P
40 LET T=P*(1+V/100)
45 LET T=INT(T*100+0.5)/100
50 PRINT
60 PRINT "IT WILL COST ";T;" WITH VAT"
70 GOTO 20
```

Here's Helpful Harry drawn by Sam Willmott (10), London.

Wonderful wordsquare

In this grid are 21 words connected with computers. But they are hidden. Have a bash at trying to find them.

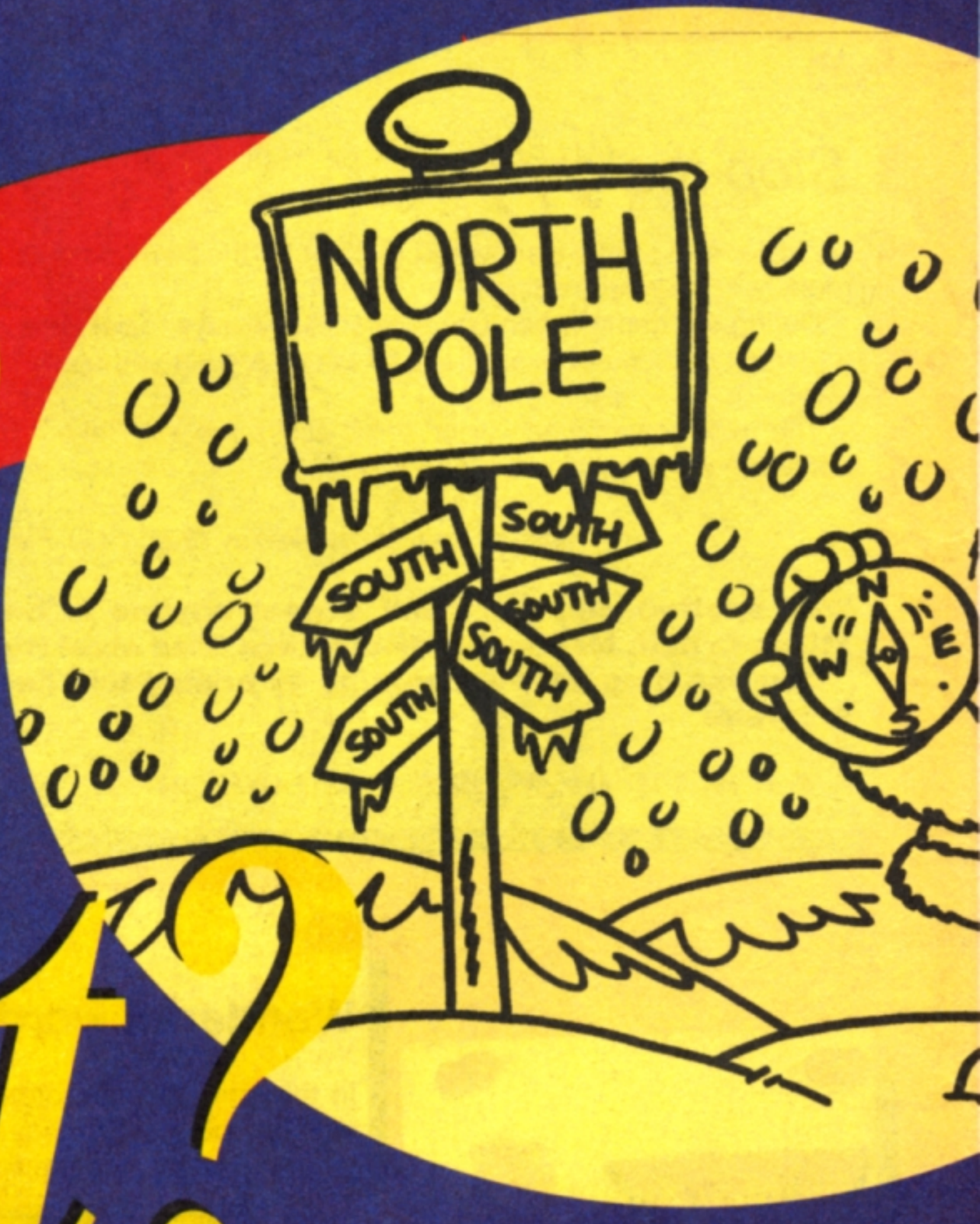
L	A	R	C	H	I	M	E	D	E	S
O	E	S	H	O	O	T	E	M	U	P
G	E	T	C	K	E	Y	S	J	F	A
O	E	H	S	P	E	C	T	R	U	M
I	C	B	B	C	B	E	Y	A	G	S
F	T	N	I	H	O	I	A	M	P	T
E	R	O	M	A	J	M	P	S	R	R
D	O	G	G	P	T	I	P	S	I	A
A	N	I	M	O	U	S	E	U	N	D
T	M	E	M	O	R	Y	R	M	T	V
A	D	C	O	M	M	O	D	O	R	E

The words to look for are:

MEMORY	LETSCOMPUTE	MOUSE
DATA	SPECTRUM	PRINT
ARCHIMEDES	BBC	HINT
SHOOTEMUP	ELECTRON	KEYS
ROM	LOGO	ST
RAM	PC	AMSTRAD
TIPS	AMIGA	COMMODORE

– Matthew O'Brian (13), Stoke

Which Way Next?



Marching orders

If you know someone who is learning the difference between left and right you can change this program to help them. Here's what to do:

- **Remove lines 100, 110, 130, 140, 280, 290 and 300.**
- **Change lines 20 and 270 to read:**

```
20 LET N=2
270 DATA "L",-4,0,"R",4,0
```

The person using your program just needs to answer L or R when asked which way?

TRY THIS!

Use this program as the basis for your own super direction tester. Here are some ideas for some extra features you could include:

- Put some exciting sounds in the program.
- Use the graphic capabilities of your computer to create a super display.
- Add colour
- Include a time limit. So the test is to answer as many question as you can in, say, a minute. You could have a timer displayed on the screen as well.

Here's a program to point you in the right direction

Think you know the points of the compass? Now's your chance to prove it!

This program prints a + and a * on your computer screen. You have to say what direction you take to go from the + to the *.

In case you find the four points – N, E, S, W – too easy the program lets you choose 8 or 16 instead. If you go for 16 you'll have to give answers like SSW, ENE and WNW.

Note that all your answers should be in capital letters. Don't use any full stops and don't use full words like NORTH. Examples of how you should answer are N, E, SE, NW, SSE and WSW.

When you get one wrong you're told what you should have typed. Make sure you learn by your mistakes.

Your score is shown all the time. This means you can always see how well you're doing.

So use this program to find out if you really know your bearings. Keep trying until you never get one wrong!

```
  10 MODE 6
  20 INPUT "HOW MANY POINTS (4,8 OR 16)
";N
  30 DIM D$(16):DIM X(16):DIM Y(16)
  40 LET XS=18:LET YS=9:LET S=0:LET T=0
  50 DEF FNR(Z)=RND(Z)
  60 FOR I=1 TO N
  70 READ D$(I),X(I),Y(I)
  80 NEXT I
  90 CLS:LET T=T+1:PRINT:PRINT:PRINT"TH
E LET'S COMPUTE DIRECTION TEST"
 100 LET X=XS-2:LET Y=YS-2:LET P$="\ I
/":GOSUB 250
 110 LET X=XS-1:LET Y=YS-1:LET P$="\I/"
:GOSUB 250
 120 LET X=XS-2:LET Y=YS:LET P$="--+--"
:GOSUB 250
 130 LET X=XS-1:LET Y=YS+1:LET P$="/I\"
:GOSUB 250
 140 LET X=XS-2:LET Y=YS+2:LET P$="/ I
\":GOSUB 250
 150 LET R=FNR(N):LET X=XS+X(R):LET Y=Y
S+Y(R):LET P$="*":GOSUB 250
 160 LET X=0:LET Y=YS+8:LET P$="WHAT DI
RECTION IS * FROM +":GOSUB 250
 170 INPUT C$
 180 IF C$=D$(R) THEN PRINT:PRINT "RIGH
T":LET S=S+1
 190 IF C$<>D$(R) THEN PRINT:PRINT "WRO
NG. IT IS ";D$(R)
 200 PRINT:PRINT"YOU HAVE ";S;" OUT OF
";T
 210 PRINT:PRINT "PRESS SPACE"
 220 REPEAT UNTIL GET=32
 230 GOTO 90
 240 END
 250 PRINT TAB(X,Y);P$;
 260 RETURN
 270 DATA "N",0,-4,"W",-4,0,"E",4,0,"S"
,0,4
 280 DATA "NW",-4,-4,"NE",4,-4,"SW",-4,
4,"SE",4,4
 290 DATA "NNW",-2,-4,"NNE",2,-4,"WNW",
-5,-1,"ENE",5,-1,"WSW",-5,1,"ESE",5,1
 300 DATA "SSW",-2,4,"SSE",2,4
```

IS YOUR COMPUTER HERE?

BBC/Archimedes/Electron

The program works as shown

Spectrum

Change the following lines:

```
  10 CLS
  30 DIM D$(16,3):DIM X(16):DIM Y(16):D
IM C$(3)
  50 DEF FNR(Z)=INT(RND*Z)+1
 220 LET A$=INKEY$:IF A$<>" " THEN GOTO
 220
 250 PRINT AT Y,X;P$
```

Commodore 64/128

Change the following lines:

```
  10 PRINT CHR$(147);
  50 DEF FNR(Z)=INT(RND(0)*Z)+1
 220 GET A$:IF A$<>" " THEN GOTO 220
 250 POKE 211,X:POKE 214,Y:SYS 58732:PR
INT P$
```

Amiga/PC(GW-Basic)

Change the following lines:

```
  10 CLS
  50 DEF FNR(Z)=INT(RND*Z)+1
 220 A$=INKEY$:IF A$<>" " THEN GOTO 220
 250 LOCATE Y+1,X+1:PRINT P$
```

Amstrad CPC

Change the following lines:

```
  10 CLS
  50 DEF FNR(Z)=INT(RND*Z)+1
 220 A$=INKEY$:IF A$<>" " THEN GOTO 220
 250 LOCATE X,Y:PRINT P$
```

Zoom Round-up

The *Let's Compute!* expert takes a break from Basic and looks at the top games

The Famous

New from Enigma Variations comes The Famous Five. It's based on the characters in the series of books by Enid Blyton.

The game is subtitled Five on a Treasure Island and it follows the plot of the book.

Famous Five is a text adventure game. But some versions also feature pretty good pictures.

The idea is to solve the mystery of the treasure island. It'll take a few long sessions on your computer to

The Winning Team

Recently Domark have been producing a number of compilations for various home computers. **The Winning Team** is the latest.

On it are five games. They have all been released before and originally came from the arcades.

First comes **Klax**, a puzzle game. The arcade version paid out cash if you were good enough. Of course that bit isn't on the home version!

• All you have to do is build up lines of blocks that have the same colour. When the line is three or more in length it disappears.

The blocks come down from the front to the back of an elevator. On each level you have a task to carry out before moving to the next.

For example, you could have to to get a certain number of lines or points. On some levels the lines have to be made diagonally or horizontally. Klax is a great addictive game.

Next comes **APB**, which is based on a police chase. You must drive your car to capture litter-bugs and speeders.

It has a selection of great cartoon sequences. The graphics are small, but work well. I enjoyed the game a lot – though it can get boring after a while.

The strangely named **Escape from the Planet of the Robot Monsters** is the third program. It's a one or two-player game.

You have to escape through many levels rescuing hostages as you go. The sound is superb and so are the graphics.

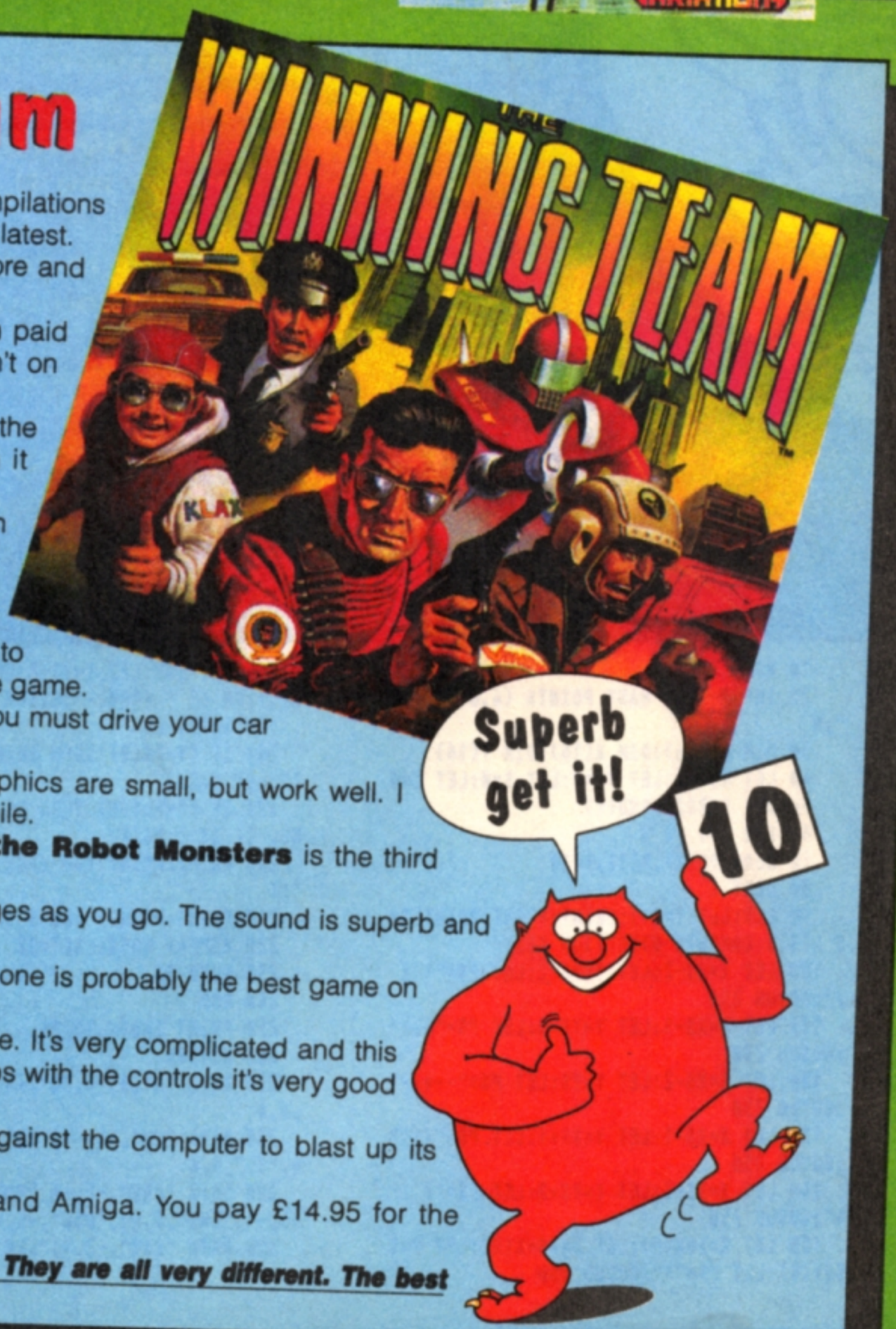
The characters are a little too small though. Even so, this one is probably the best game on the compilation.

The next one, **Cyberball**, is a 21st century football game. It's very complicated and this could put you off. But if you spend some time coming to grips with the controls it's very good fun.

Finally, **Vindicators** is simply a tank battle. You play against the computer to blast up its tanks. All good fun it is too.

The Winning Team costs £29.95 for the PC, Atari ST and Amiga. You pay £14.95 for the Spectrum, CPC and C64 versions.

What's best about this compilation is the range of games. They are all very different. The best compilation I've seen so far this year.



Five

win through.

It's styled in the way of your standard run-of-the-mill text adventure but with a slight difference. The Famous Five consists of more than one person, so you can keep control of what the others are doing and you can swap between the various characters.

This is an enjoyable break from blasting and bashing.

It'll take a long time to finish, so it's worth the money.

You can get Famous Five for the Atari ST and Amiga for £19.95. The Spectrum, CPC and C64 versions cost £9.95.

This is one of the better adventures around. But if you don't like the Famous Five you won't like this.

Rom's Recruits

Do you think YOU could review games? Each month Rom is looking for one new reviewer to help him out.

Let us know if you have a new game for your computer which you would like to write about.

All you have to do is write your review and send us a copy.

Here are a few things to remember when you write:

- **Tell us the proper name of the game and software house who supply it.**
- **Say what computer you reviewed it on.**
- **Let us know how much it cost.**
- **Send a photograph of yourself as well as your name, age and address.**
- **Give us your mark for the game out of 10.**

Send your reviews to: Rom's Round-up, Let's Compute! Europa House, Adlington Park, Macclesfield SK10 4NP.

The Monster Pack

The Monster Pack is the first compilation Psygnosis have ever done. They usually concentrate on high quality original games.

But now they have bundled three together, Shadow of the Beast, Infestation and Nitro.

Beast was a famous game when it first came out. It set new standards in animation and graphics.

The Atari ST version was not as impressive as the Amiga one. But it's still good. Both show off the graphics power of the computer. It can become boring after a while though.

If you're an Amiga owner without Beast it's worth looking at the pack just for that. And it's a great way to annoy Spectrum-owning friends!

Infestation is different. It has very good 3D graphics and the gameplay is far better than Beast.

Your mission is to travel to a base to find an alien's eggs. When they are all destroyed you must blow up the whole world.

It's rather hard to play, but is addictive and well thought out.

Nitro is different again. This time you drive a car around a course. It's simple enough but makes you come back for more.

The graphics are bright and colourful too. This is my favourite game of the lot.

The Monster Pack is only available on the Atari ST and Amiga and costs £34.95.

It's quite a good compilation. But it's a bit expensive for just three games.

Shadow of the Beast – great graphics

Blowpipe

Blowpipe is the latest game from Eclipse. It's for the Archimedes and comes on two discs.

When you start you get a boring screen telling you who wrote the program. Music plays and it's just like one of those PD demos with words moving around.

Then you get the choice of using either keys or joysticks. You can choose your own keys if you want. That's a good idea, because the keys they give you aren't very good.

It's a sideways-scrolling game. The basic idea is shoot everything that you see.

You also have to collect credits as you go. These can be used to do the shopping between each level.

You can buy things like lasers and rockets. The cheapest is *power up* for 500 credits and the dearest are *fireballs* for 10,000.

The graphics are quite good. But your own ship could have been better.

It's very like Nevryon to play, but the graphics aren't as good. There's lots of music though.

At each stage of the game a different tune plays. I've heard them all. Most of them are quite good but some are bad.

The loud stereo music and the good graphics give it the feel of a game on an Amiga.

It's easy to play but your lasers aren't always strong enough to kill. You can always buy more powerful things if you get enough credits

Blowpipe costs £19.95 from Elipse. It's only for the Archimedes.

If you like blasting games where you need to think a bit it's worth looking at this one.

This review is by Colin Davidson (10) from Stockport

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(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 £6. You can do this by filling in the appropriate part of the form below.)

YES PLEASE! *Tick as required*

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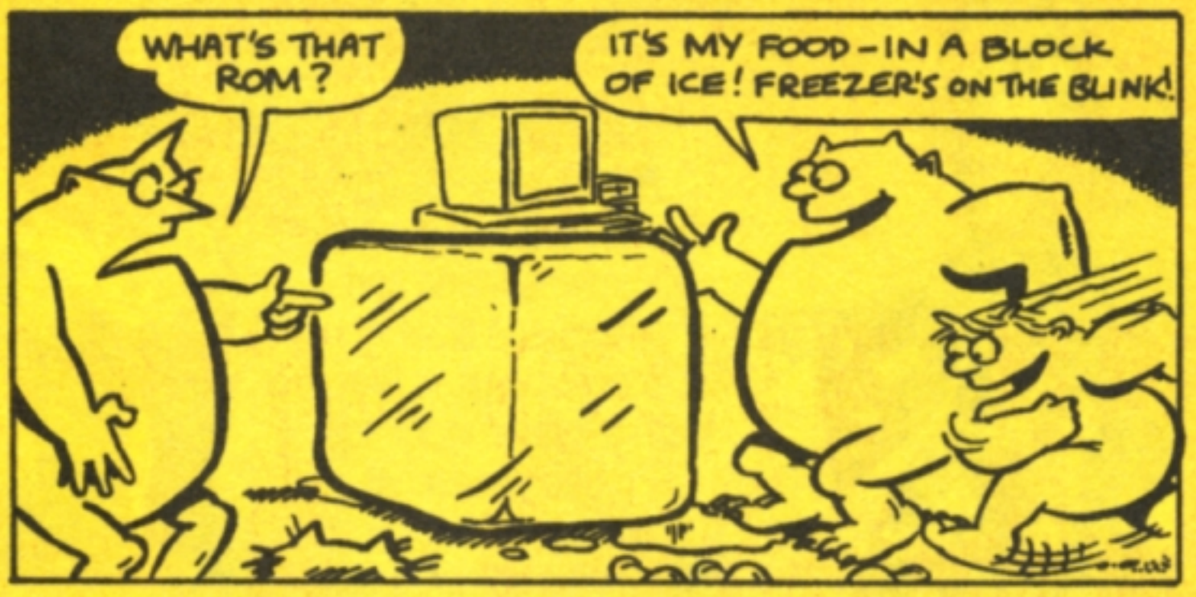
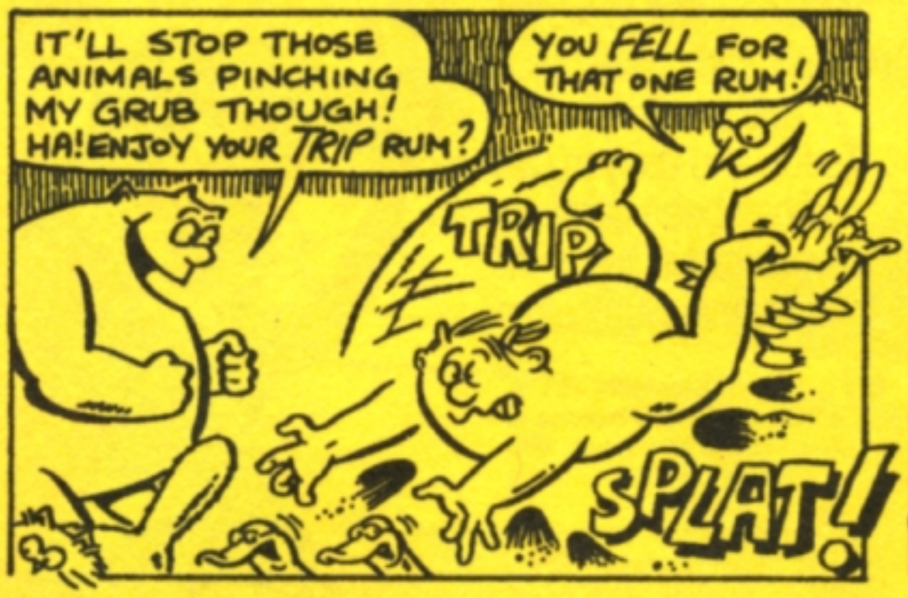
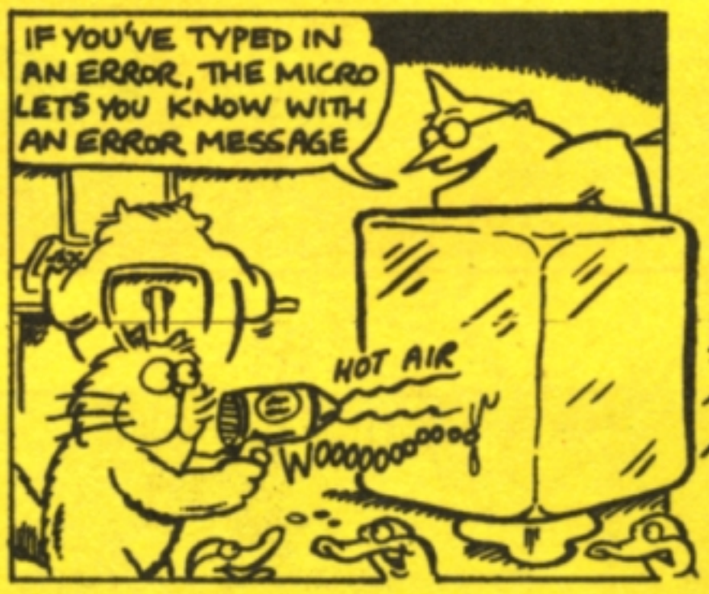
LC6

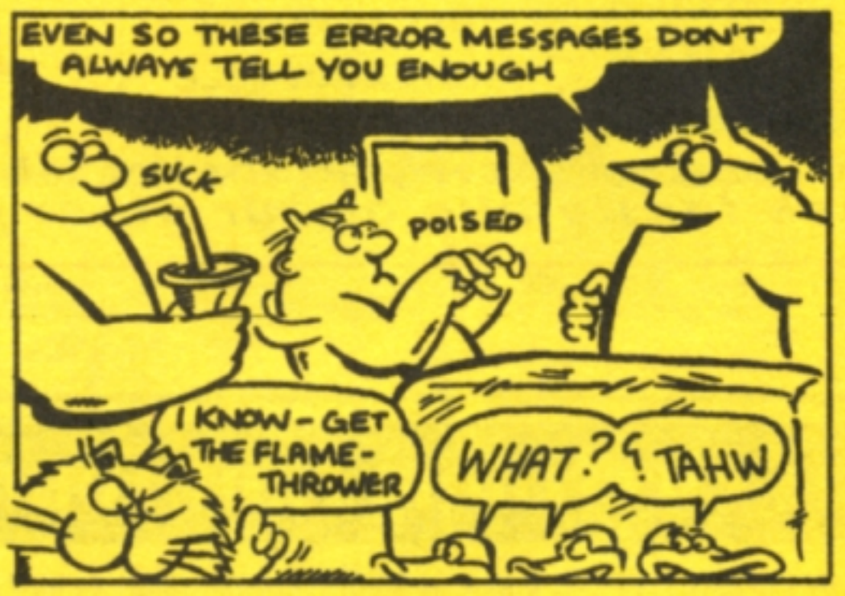
ROM & RAM

? The fun way of learining Basic









BUT THERE'S A TRAP! SOME BASICS DON'T HAVE THE No such variable MESSAGE

MUNCH

KMM-EXTRA STRONG MINTS

CHEW

IF YOU USE A VARIABLE THE MICRO HASN'T A VALUE FOR. SAY, A NUMERIC VARIABLE X-

Example:

10 LET XX=5
20 PRINT X+5

LET'S ALL HAVE ONE

MUNCH

SLURP

-IT WILL PLACE ZERO IN X AND NOT GIVE YOU AN ERROR MESSAGE

NOW, BREATHE ON THE ICE!

HOT MINTY BREATH

HERRRRRRRRRR

WITH STRING VARIABLES THE VARIABLE IS NULL, THAT IS X$=""

AARK

HERRRR

THAT'S IT RUM!

WHA..?

HEY-SLIM! ROM! LOOK AT YOUR ICE BLOCK

WATCH OUT!

YOU HORRORS!

PULL

HA, LOOKS LIKE RUM WASN'T ALONE FALLING INTO A TRAP!

AAAARRRRRRRRRRHHH!

MEGA CRUNCH

ROMMEAL BIKKIES

SLURP

PETS HOME BARS

SWEE

LOB

CATERING TIN BEANS

ACME TRAP DOOR

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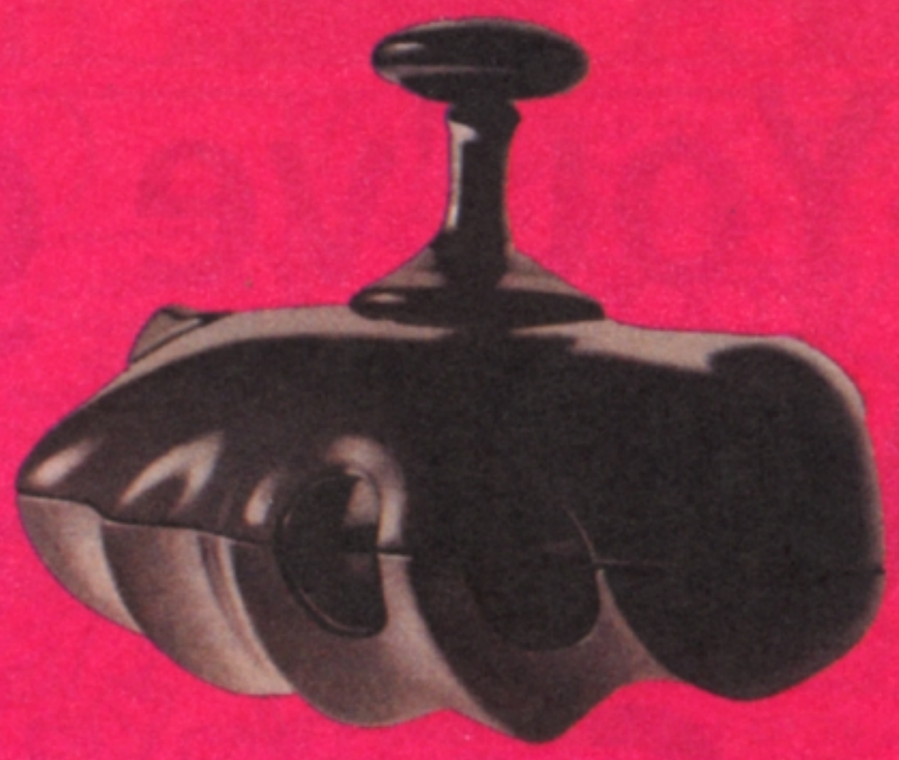

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Gamma ray
Sting ray
Manta ray

What's a manta?

The manta ray is a huge fish. It's shaped like a blanket and can be as big as 20 feet across. It has an unpleasant sting, so watch out if you see one!

ENTRY FORM

Name .....

Adress .....

.....

.....

.....

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

The ray that isn't a fish is the ..... ray.

My computer* is (please tick):

- ☐ Atari ST
- ☐ Amiga CPC
- ☐ C64/128
- ☐ Spectrum

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PROGRAM·DOCTOR

I'M GOING CAMPING IN FRANCE, SO I NEED TO LEARN THE LANGUAGE.

I WANT A PROGRAM TO GIVE ME THE FOREIGN WORD WHEN I TYPE THE ENGLISH ONE

RIGHT! LET'S PUT THE WORDS INTO YOUR COMPUTER. FIRST IT NEEDS TO KNOW HOW MANY. WE'LL READ THE NUMBER FROM DATA - LIKE THIS:

10 READ N
1000 DATA 5

HOW CAN I HELP? I DON'T SPEAK FRENCH

IT'LL SAVE ME USING THIS DICTIONARY AS I PRACTISE THE WORDS

WE'LL JUST PUT FIVE IN FOR NOW, ADD MORE WHEN YOU GET HOME.

WE MAKE ROOM FOR THEM BY DIMENSIONING ARRAYS. THEN WE READ THEM FROM DATA LIKE THIS:

SO HOW DO I FIND MY FOREIGN WORD?

MORE QUESTIONS

QUESTIONING

CHATTER CHATTER

```
20 DIM E$(N): DIM F$(N)
30 FOR I = 1 TO N
40 READ E$(I), F$(I)
50 NEXT I
1010 DATA "TENT", "TENTE"
1020 DATA "ROPE", "CORDE"
1030 DATA "KNOT", "NOEUD"
1040 DATA "CAMP", "CAMP"
1050 DATA "SCOUT", "ECLAIREUR"
```

WHERE DO I PUT THE WORDS?

FIRST YOU NEED TO TELL YOUR COMPUTER WHAT THE ENGLISH WORD IS

60 INPUT W$

THEN START AT THE FIRST ONE IN THE LIST AND CHECK EACH ONE UNTIL IT MATCHES

WHAT IF THE WORD I TYPE IN ISN'T IN THE LIST?

WELL, TRY IT AND SEE WHAT HAPPENS

YOU CAN RUN IT NOW!

```
70 LET C = 1
80 IF W$ = E$(C) THEN GOTO 100
90 LET C = C + 1: GOTO 80
100 PRINT "THE FRENCH FOR "; E$(C); " IS "; F$(C)
```

SQUIDGE!

WE'LL ADD MORE LINES TO COPE WITH THAT NEXT MONTH

NOTE: *Speccy users replace line 20 with:* `20 DIM E$(N,10):DIM F$(N,10):DIM W$(10)`

Carry things

Adve

So far we've invented an adventure full of things waiting to be picked up. But what use are they if you can't take and carry them?

The first thing we need to do is get the computer to understand the names of the objects. You do this by adding them to the word list.

Add Lines 5060 to 5490 to your program. Words 11 and 12 give some words which mean TAKE and DROP. You could think of some more to add yourself. But there's a small snag!

You can see that some objects are easy to deal with. The laser rifle becomes word 50 – LASE and RIFE. Remember we are only using the first four letters of each word.

But the gas bomb and gas mask are a problem. If the player types TAKE GAS MASK or TAKE GAS BOMB the word numbers would be the same. The program would not know which object to deal with.

One way round this that we'll use for now is to leave out the word GAS. Now TAKE MASK or TAKE BOMB give different word numbers.

This shows that you have to think very carefully before you start. When you design your adventures look at just what players will try to type.

There will be the same problems with the buttons and lights. But as we can't carry these they will never be in the same room at once so we don't have to worry so much. We'll look at a better way of getting round the problem in a future issue of *Let's Compute!*

Now we need to give the program instructions on how to deal with the word combinations that might be typed. We call these conditions and actions.

If a condition is true then the program will carry out the listed actions. Type in Lines 6399 to 7000. This is the DATA.

Now type in Lines 1150 to 1220. These read the actions and conditions into their own arrays.

They come in pairs. Look at Line 6400. If words 12 and 50 are typed in the program will do action A, try to take object 01 – the laser rifle.

Like the room connection codes we must make sure that all our numbers have two digits. Remember, that's so we can scan through the list easily.

At the moment you can take one of three actions – A, B or C. As you can see in Lines 6400 to 6490, each is followed by a number.

The actions that are there so far are:

Ann – Try to take object nn
Bnn – Try to drop object nn
C – List all the objects carried.

Each list of conditions and actions ends with a #.

Look through the table of conditions and actions and work out which words do what. You can see that the player will not be able to take the alien, the cable, the buttons or the lights.

Now we have to check to see if any of the words match the combinations in the condition table. Type in Lines 2999 to 3100.

They step through the condition table to see if the first word matches. If it doesn't the program goes to the next set of conditions. If the first word matches, it checks the second.

Look at Line 6460. There you'll find is the condition/action code for INVENTORY. That's the word which means *What am I carrying?* This is word 99. But we don't need another word so we follow it with 00. The program takes this to mean any word. You will find the inventory command very useful later on.

In future issues of *Let's Compute!* we'll be checking other things. For instance we'll look at what room we're in and whether we have a certain object.

At the moment we are only interested in matching the words. Now the program has both words matched it can go to the actions routine.

Type in Lines 3499 to 3590. These carry out the actions. They look at the first letter and use that at Line 3520 to GOSUB to that letter's routine.

So letter A causes a GOSUB to 3610, B to 3630 and C to 3650. You can see that it's very easy to add more letters with different actions to this system.

If you try to take an object the program checks two things. It makes sure it is there and that you aren't already carrying it. Then it lets you take it.

DROPping first checks to see that you have the object. Room -1 is used for the inventory so carried objects have OBJROOM set to -1.

The program keeps track of where it is in the action with the variable *P*. At the moment this is not important because there is only one action in each set of codes.

Soon we will have several actions. The taking and dropping routines make sure they move this pointer along past the object numbers ready for the next action. Action C doesn't move the pointer because it has no numbers after it.

You will see the variable *DIS* in these routines. This tells the display routine how much to show. For example, the inventory list can be quite long so DIS is set to 2.

This means the list will be displayed but not the room description.Type in Line 1065 to initialise DIS and Lines 2015 and 2196 to put it into the display routine.

Finally, add Line 40. This puts the conditions/actions into the main program. Now you can move around the spaceship taking and dropping the objects we have listed in the condition/action table.

Alter your own adventure so you, too, can take and pick up objects. Your adventure is now really taking shape.

Next time we'll add more complicated conditions and some more actions. Then we will be able to push buttons and fix the cable.

s round your

PART 4

nture!

Here's how to pick things up as you move round the maze

Answer to last month's challenge

Did you stop your computer printing *You can see* when the room is empty? There are lots of ways it can be done.

Here are two. Use one of the sets of line changes below to cure the problem.

The first method stops your computer printing anything at all if nothing is in the room. The second still prints *You can see* but follows it with the words *nothing useful.*

Both ways use what programmers call a flag. We've called ours *ZZ.* That way it's not likely to have the same name as anything else in the program.

It's set to zero first then changed to one if an object is found in the room. Then the program can print what's needed depending on whether *ZZ* is zero or 1.

Method 1: Doesn't print anything

```
 2050 LET ZZ=0
 2070 IF ZZ=1 AND OBJROOM(X)=ROOM THEN P
RINTTAB(14);OBJECT$(X)
 2075 IF ZZ=0 AND OBJROOM(X)=ROOM THEN P
RINT "You can see: ";OBJECT$(X):LET ZZ=1
```

Method 2: Prints "You can see : nothing useful"

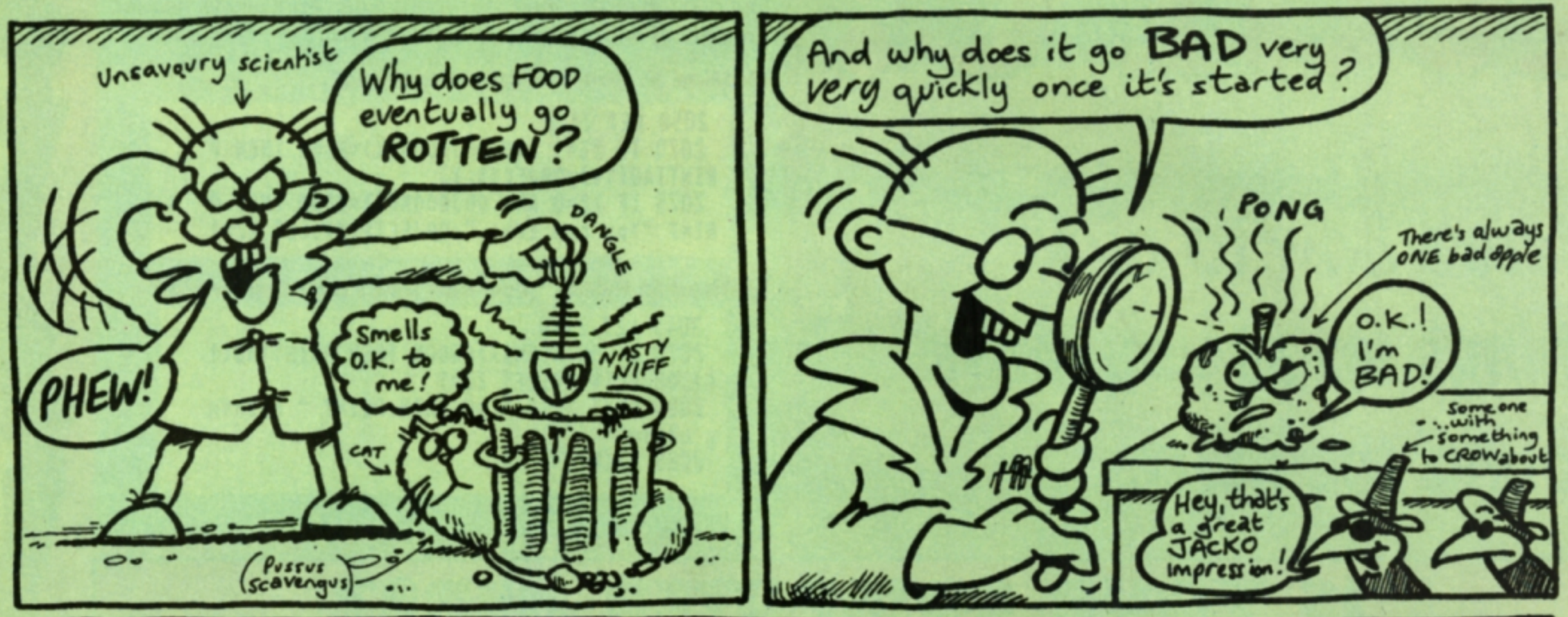
```
 2045 LET ZZ=0
 2070 IF OBJROOM(X)=ROOM THEN PRINTTAB(1
4);OBJECT$(X):LET ZZ=1
 2080 NEXT X:IF ZZ=0 THEN PRINT " nothin
g useful"
 2085 PRINT
```

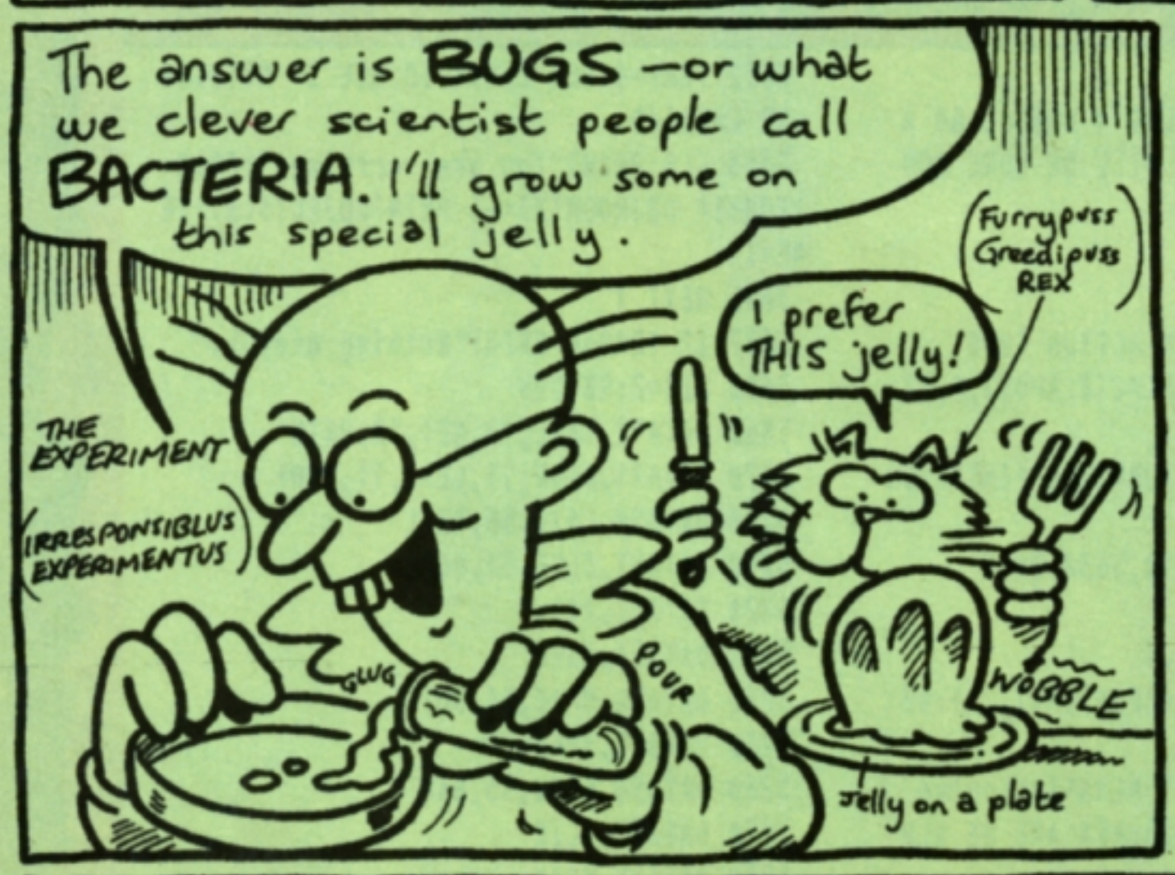
IS YOUR COMPUTER HERE?

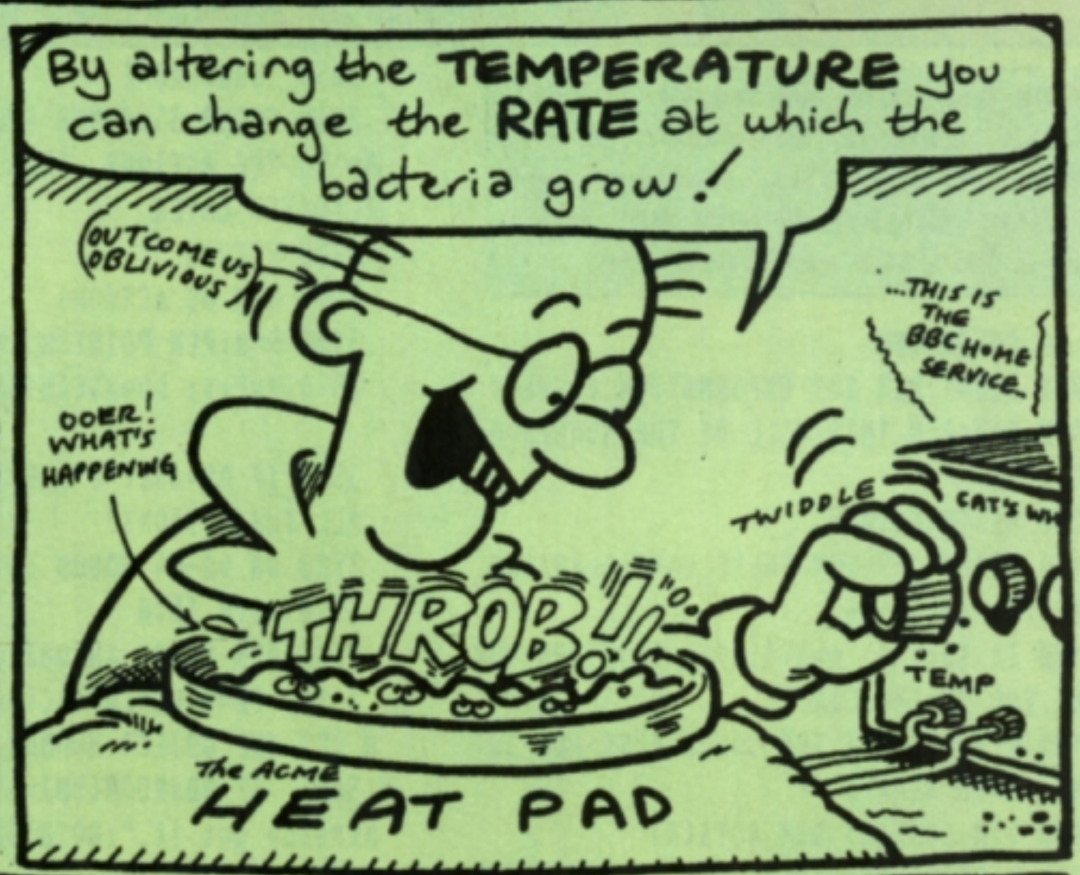
This program works on a BBC, Archimedes, Electron, CPC, Atari ST(Stos), Amiga and PC(GW-Basic). It will not work on a C64/128 or Spectrum.

```
  40 GOSUB3000
 1065 DIS=1:REM SET INFORMATION DISPLAY
 1150 A=0:REM THIS WILL BE THE NUMBER OF
 ACTIONS
 1160 RESTORE6400
 1170 READX$,X$:REM THESE VARIABLES ARE
JUST FOR COUNTING
 1180 IF X$<>"X" A=A+1:GOTO 1170:REM NOT
 THE END OF THE LIST?
 1190 REM NOW PUT THE CONDITIONS AND ACT
IONS  INTO ARRAYS
 1200 DIM CON$(A):DIM ACT$(A)
 1210 RESTORE 6400:REM BACK TO THE START
 OF THE LIST
 1220 FOR X=1 TO A:READ CON$(X),ACT$(X):
NEXT
 2015 ON DIS GOTO 2020,2191
 2196 DIS=1:REM RESET DISPLAY TO NORMAL
 2999 REM CONDITIONS/ACTIONS
 3000  APOS=0:REM WHERE WE ARE IN THE CO
NDITION/ACTION TABLE
 3015  WRDFLAG=0:REMTHIS WILL TELL US T
HAT WORDS MATCHED
 3020 APOS=APOS+1:IF APOS=A+1 RETURN:REM
 HAVE WE BEEN THROUGH THE LIST?
 3030  IF VAL (LEFT$(CON$(APOS),2))<>W(1
) GOTO 3020:REM DOES THE FIRST WORD MATC
H
 3040  IF VAL (MID$(CON$(APOS),3,2))<>W(
2) AND VAL (MID$(CON$(APOS),3,2))>0 GOTO
 3020:REM DOES THE SECOND WORD MATCH OR
IS THE CONDITION 0
 3050  WRDFLAG=1
 3060 GOSUB 3500:REM FOUND A MATCH, GO A
ND DO THE ACTIONS. THIS WILL BE MORE COM
PLICATED LATER.
 3100 RETURN
 3499 REM DO ACTIONS
 3500 P=0:REM POINTER IN ACTION CODE
 3510 P=P+1: DO=ASC(MID$(ACT$(APOS),P,P)
)
 3515 IF DO=ASC("#") RETURN:REM FINISHED
 ALL THE ACTIONS?
 3520 ON DO-64 GOSUB 3610,3630,3650
 3590 GOTO 3510
 3609 REM CARRY AN OBJECT
 3610  OB=VAL(MID$(ACT$(APOS),P+1,2)):RE
M GET THE OBJECT NUMBER
 3613  IF OBJROOM(OB)=-1 MESS1$="You've
already got it.":GOTO3625:REM ARE WE ALR
EADY CARRYING IT
 3615  IF OBJROOM(OB)<>ROOM MESS1$="It i
sn't here.":GOTO3625:REM NOT IN THIS ROO
M
 3620  OBJROOM(OB)=-1:MESS1$="You take i
t.":REM MOVE THE OBJECT TO THE INVENTORY
 3625 P=P+2:DIS=1:RETURN:REM MOVE THE PO
INTER TO THE NEXT ACTION
 3629 REM DROP AN OBJECT
 3630  OB=VAL(MID$(ACT$(APOS),P+1,2)):RE
M GET THE OBJECT NUMBER
 3635  IF OBJROOM(OB)>-1 MESS1$="You hav
en't got it.":GOTO3645:REM ARE WE CARRYI
NG IT
 3640  OBJROOM(OB)=ROOM:MESS1$="You drop
 it.":P=P+2:RETURN:REM MOVE THE OBJECT T
O THE CURRENT ROOM
 3645 P=P+2:DIS=1:RETURN:REM MOVE THE PO
INTER TO THE NEXT ACTION
 3649 REM INVENTORY
 3650 TEMP=0:REM CHECK TO SEE IF NOTHING
 IS CARRIED
 3653 CLS:PRINT"You are carrying:":FORX=
1TO0:IF OBJROOM(X)=-1 PRINTOBJECT$(X):TE
MP=1
 3655 NEXT X
 3657 IF TEMP=0 PRINT"Nothing useful."
 3660 DIS=2:RETURN
 5060 DATA12,TAKE,12,GET,12,BRIN
 5070 DATA11,DROP,11,LEAV,11,DUMP
 5200 DATA50,LAZE,50,RIFL
 5210 DATA51,SLEE,51,BOMB
 5220 DATA52,RED
 5230 DATA53,GREE
 5240 DATA54,SPAC,54,SUIT
 5250 DATA55,SPAN
 5260 DATA56,CROW,56,BAR
 5270 DATA57,ALIE
 5280 DATA58,MASK
 5290 DATA59,CABL
 5310 DATA61,LIGH
 5320 DATA62,BUTT
 5490 DATA99,INVE
 6399 REM CONDITIONS AND ACTIONS IN HERE
 6400 DATA1250#,A01#
 6410 DATA1251#,A02#
 6420 DATA1254#,A05#
 6430 DATA1255#,A06#
 6440 DATA1256#,A07#
 6450 DATA1258#,A12#
 6460 DATA9900#,C#
 6465 DATA1150#,B01#
 6470 DATA1151#,B02#
 6475 DATA1154#,B05#
 6480 DATA1155#,B06#
 6485 DATA1156#,B07#
 6490 DATA1158#,B12#
 7000 DATAX,X
```

The Safe


Unsavoury scientist
Why does FOOD eventually go ROTTEN?
DANGLE
Smells O.K. to me!
NASTY NIFF
PHEW!
CAT
(Pussus scavengus)
And why does it go BAD very very quickly once it's started?
PONG
There's always ONE bad apple
O.K.! I'm BAD!
Someone ...with something to CROW about
Hey, that's a great JACKO impression!

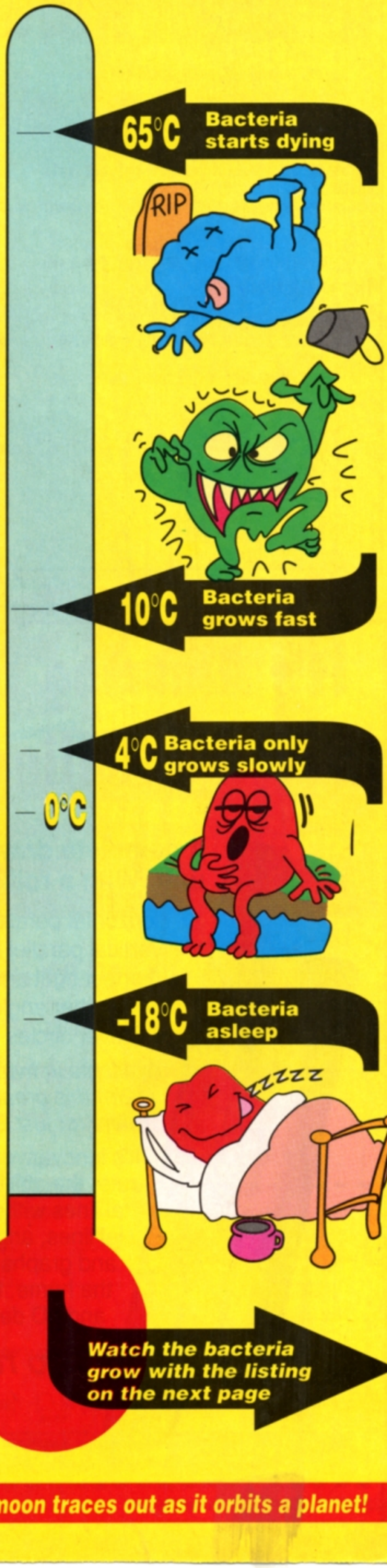

The answer is BUGS — or what we clever scientist people call BACTERIA. I'll grow some on this special jelly.
(Furrypuss Greedipuss REX)
I prefer THIS jelly!
THE EXPERIMENT
(IRRESPONSIBLUS EXPERIMENTUS)
GLUG
POUR
WOBBLE
Jelly on a plate


By altering the TEMPERATURE you can change the RATE at which the bacteria grow!
(OUTCOME US OBLIVIOUS)
...THIS IS THE BBC HOME SERVICE...
OOER! WHAT'S HAPPENING
TWIDDLE
CAT'S WH
THROB!!
TEMP
The ACME HEAT PAD

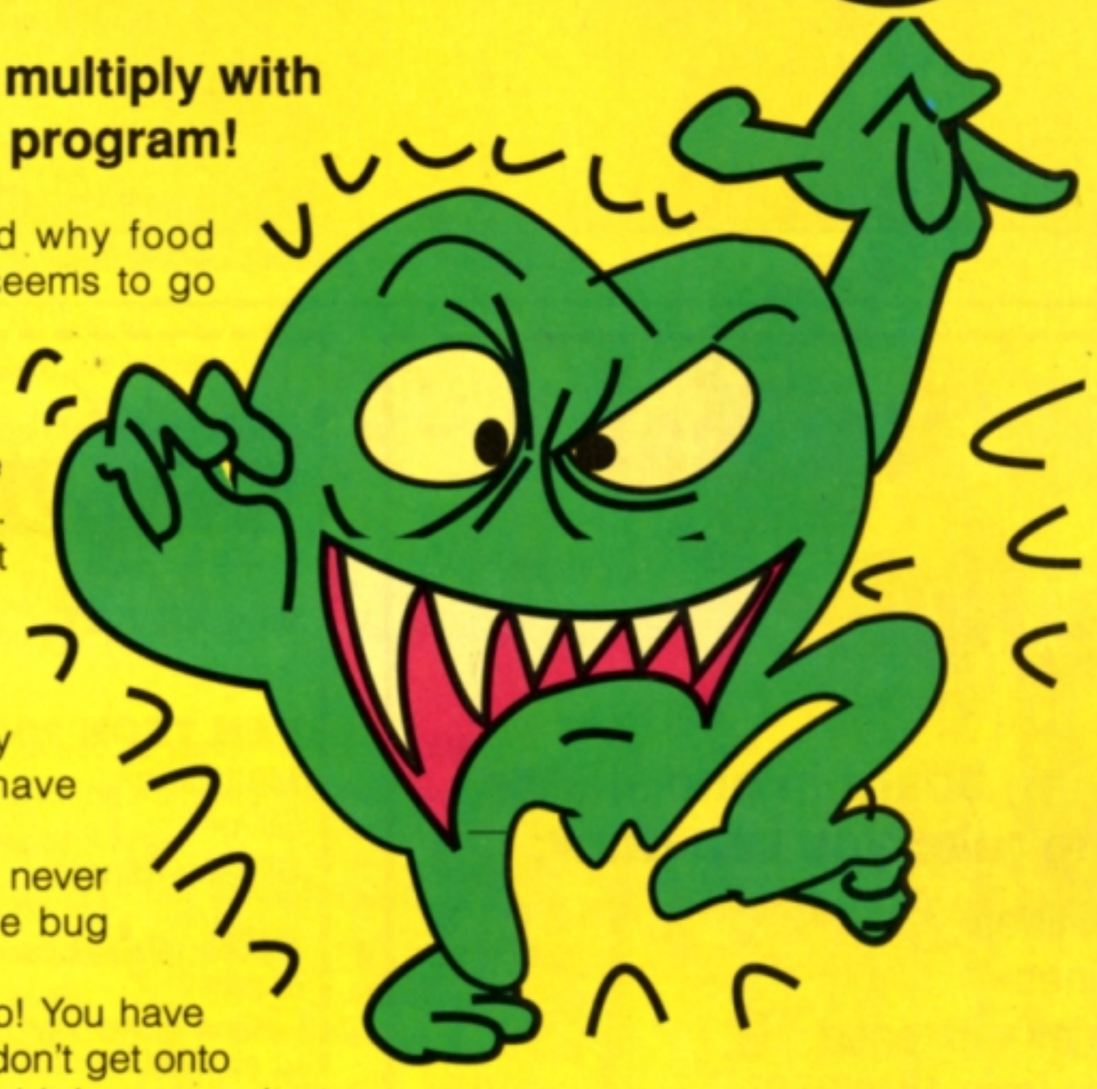

But use a computer model..... as it can be a LOT more risky in real life !!!!!!
Nastius Bacillus
SHOCKUS SYSTEMUS
SILLY BACILLI
Fleecus Quickus
BLOOARR!
GLUB
SPUIDGE!
PULSATE!
I bet he wishes they'd stop BUGGING him!
perhaps they grow on him!

Scientist

BUGS



Watch the beasties multiply with the Safe Scientist's program!



Have you ever wondered why food goes rotten? And why it seems to go bad very quickly once it's started?

The answer is bugs or – to give them a more scientific name – bacteria. This month we're looking at how they grow.

Scientists watch colonies of bacteria growing on a specially prepared jelly. You may have tried that at school.

It is difficult though! You never know what extra nasty little bug has got onto your jelly.

There are health risks too! You have to take care that the bugs don't get onto you as well as the jelly. And it is a very slow, tricky process. You need lots of trays of jelly kept at different temperatures.

Your computer is an ideal tool to do these experiments for you. It takes away the risk and speeds things up.

Type the program in, SAVE it and RUN it. Your investigations can now begin!

You will first be asked to enter a temperature. Type one in and watch the colony grow from just a single bug. Soon 100 little beasties will be shown on the screen. The action will then freeze. The time it has taken will be shown at the top of the display.

You'll notice that the colony grew slowly at first. Then you'll have seen an explosion of growth. I'll leave you to work out why that should be.

If the bacteria grew fast, think about a couple of ways we use to slow it down on food. For example, food keeps fresh longer when it's stored in a fridge.

In this program you only alter one factor – the temperature. Try to find out the temperature at which bacteria grow fastest.

This can be done by plain trial and error. But a good scientist will work in an ordered way to get to the answer.

The heart of the program is Line 170. This works out how long it should be before the next bacterium is created. Try altering it to get different effects.

Watch the bacteria grow with the listing on the next page

***NEXT MONTH** we reach for the skies to see the strange patterns that a moon traces out as it orbits a planet!*

The Safe Scientist

```
  10 REM BACTERIA GROWTH
  20 REM THE SAFE SCIENTIST
  30 REM LET'S COMPUTE!
  40 DEF FNR(N)=RND(N)
  50 MODE1:VDU23;8202;0;0;0;0;:LET W=39
:LET H=30
  60 PRINT"What temperature (0 - 100)";
  70 INPUT TP
  80 IF TP>100 OR TP<0 THEN GOTO 60
  90 CLS
 100 PRINT"TEMP      TIME      BACTERIA"
 110 GOSUB 270:LET BT=T
 120 FOR N=1 TO 100
 130 GOSUB 270:LET C=3:LET Y=1:LET X=1:
GOSUB 250:PRINT "";TP
 140 LET X=9:GOSUB 250:PRINT "";(T-BT)/
100
 150 LET X=21:GOSUB 250:PRINT "";N
 160 LET C=FNR(3):LET X=FNR(W):LET Y=FN
R(H-3)+3:GOSUB 250:PRINT "*"
 170 LET D=(1.1^ABS(37-TP))/N*50
 180 GOSUB 270:LET NT=T
 190 GOSUB 270:IF T<NT+D THEN GOTO 190
 200 NEXT N
 210 LET X=12:LET Y=12:GOSUB 250:PRINT
"PRESS SPACE"
 220 A$=GET$
 230 IF A$<>" " THEN GOTO 220
 240 RUN
 250 COLOUR C:PRINT TAB(X,Y);
 260 RETURN
 270 LET T=TIME
 280 RETURN
```

IS YOUR COMPUTER HERE?

BBC/Electron/Archimedes

The program works as shown.

Spectrum

Change these lines:

```
 40 DEF FNR(N)=INT(RND*N)+1
 50 CLS::LET W=31:LET H=20
220 LET A$=INKEY$
250 INK C:PRINT AT Y,X;
270 LET T=(256*PEEK 23673+PEEK 23672)*2
```

Amiga

Change these lines:

```
 40 DEF FNR(N)=INT(RND*N)+1
 50 CLS:LET W=39:LET H=20
220 LET A$=INKEY$
250 COLOR C:LOCATE Y+1,X+1
270 LET T=TIMER*100
```

Atari ST (Stos)

Change these lines:

```
 40 DEF FNR(N)=INT(RND*N)+1
 50 MODE1:KEY OFF:CURS OFF:HIDE:LET W=
39:LET H=30
220 LET A$=INKEY$
250 INK C:LOCATE X,Y
270 LET T=TIMER
```

PC (GW-Basic)

Change these lines:

```
 40 DEF FNR(N)=INT(RND*N)+1
 50 CLS:LET W=39:LET H=22
220 LET A$=INKEY$
250 COLOR C:LOCATE Y+1,X+1
270 LET T=TIMER*100
```

Commodore 64/128

Change these lines:

```
 40 POKE 53280,0:POKE 53281,0:DEF FNR(
N)=INT(RND(0)*N)+1
 50 PRINT CHR$(147);:LET W=39:LET H=20
 90 PRINT CHR$(147);
220 GET A$
250 PRINT CHR$(C+152):POKE 211,X:POKE
214,Y:SYS 58732
270 LET T=TIMER
```

Amstrad CPC

Change these lines:

```
 40 DEF FNR(N)=INT(RND*N)+1
 50 CLS:LET W=39:LET H=30
220 LET A$=INKEY$
250 PEN C:LOCATE X+1,Y+1
270 LET T=TIME/3
```

micro puzzles

CROSSWORD

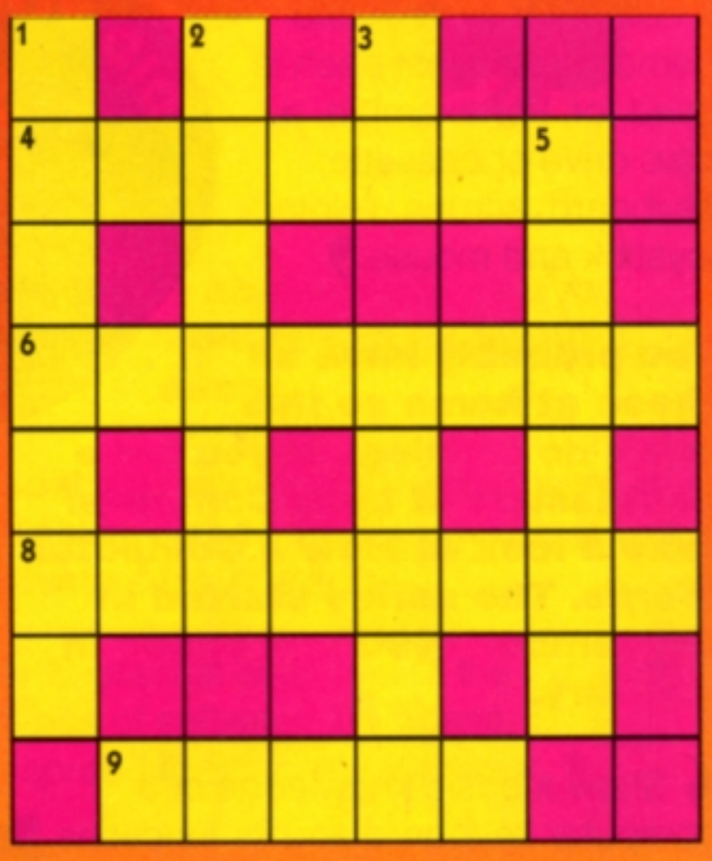
CLUES

Across

4. A whole number and a type of variable. (7)
6. Three sided? It figures! (8)
8. Not positive – in fact the opposite. (8)
9. Untrue Basic instruction. (5)

Down

1. Leaning to reveal a program? (7)
2. The type of variable to tie you up? (6)
3. Abbreviations, for example. (2)
5. Experience again. (6)
7. Broken up stone makes music. (5)



WORDSQUARE

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

Can you find the hidden words listed below?:

MODE
MICRO
WIDTH
COLOUR
ELECTRON
BBC
ARCHIMEDES
MASTER
PRINT
HIMEM
LOMEM
REPEAT
UNTIL

How many Basic keywords can you fit into a 10 x 10 grid? Send your wordsquare – together with clues and solution – to *Let's Compute!*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

ANAGRAMS

An anagram is where you make a new word up by shuffling the letters of the old one. So PIN can become NIP by swapping the order of the letters.

Similarly, STEP becomes PETS and HEAT becomes HATE.

Can you find the following anagrams?

TOAST .....A weasel-like animal.
BEAR .....In the nude.
TIME.....Send out signals.
SPARE .....Some fruit.
PINCER .....A royal person.
REWARD .....An artist?
LIVED.....A evil character.
STAIN.....A good character.
STREAM.....A BBC Micro.

Some of the Basic instructions have anagrams.

For example MODE gives DOME and OPT gives TOP.

Can you find any more computer words with meaningful anagrams?

Multi-anagrams

Sometimes a word can give you many anagrams:

TOP,POT,OPT
STOP, POTS, OPTS, POST, SPOT
TEAM, MATE, MEAT, TAME
PEARS, SPARE, SPEAR, REAPS, ...

How many multi-anagrams can you find? Here are some to get you started:

EVIL, EDIT, READ, LOOP

CHALLENGE!

Can you write a simple program to test if two words really are anagrams? If you can send it to *Let's Compute!*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

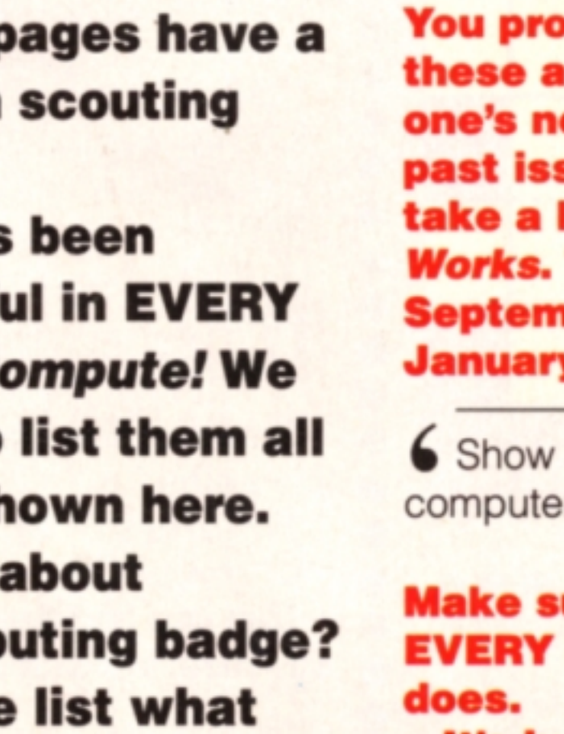
scOuTIN

Here's help with the Computin

Many readers of *Let's Compute!* are already well on the way to getting Cub, Scout, Brownie or Guide computer badges. Lots of things we have written about in these pages have a practical use in scouting and guiding.

In fact, there's been something useful in EVERY issue of *Let's Compute!* We haven't room to list them all but a few are shown here. How do you go about winning a computing badge?

Alongsinde we list what you have to do for the Cub computing badge. Most of the tasks are also required for the Scout Information Technology badge and the Brownie and Guide computing badges. Under each task we give some tips and describe how *Let's Compute!* can help you.



❛ Know the various parts of a computer system and demonstrate what each is used for. For example, a disc drive or cassette, keyboard, screen, printer, joystick and mouse. ❜

You probably have all these at home so this one's no problem. If you have past issues of *Let's Compute!* take a look at *How a Computer Works*. The series started in September 1990 and ended in January.

❛ Show a basic knowledge of a computer keyboard and its functions. ❜

Make sure you know what EVERY key on your keyboard does.

It's just a matter of practice and experimentation.

❛ Find a particular program from magnetic storage and load it into the computer. ❜

Can you load a game from disc or tape?

That's all you have to do!

But why not go one better? Type in and SAVE a few programs from *Let's Compute!*

Then you can demomstrate to your examiner that you can LOAD any program he chooses.

We explained how to type in, SAVE, LOAD and RUN in the

DID YOU SEE?
LET'S COMPUTE!
Sept 1990:
League Chart
Use it for Cub or Scout games.

January issue. We'll be repeating it soon.

❛ Write and save a short program to perform one of the following operations:

★ Print out multiplication tables
★ Calculate on which day of the week you were born
★ Add together numbers which you input from the keyboard
★ Make the computer prompt responses from questions
★ Make the computer respond *Good*

DID YOU SEE?
LET'S COMPUTE!
Oct 1990: Tina's Test
Change the questions and you've got a scouting test!

NG

ng badges

morning or *Good afternoon* as appropriate ❜

If you've been following the antics of Rom and Ram you're well on your way to this one. But to help you more, next month we'll print some hints and tips for each of the listed programs.

No, we won't write the program for you! That's your job. We will point you in the right direction though.

❛ Describe at least five uses a computer can be put to in everyday life. ❜

Computers can be found everywhere. Just keep a lookout for them.

When you see one ask the person using it what it's being used for.

Tell them that you need to know for your cub badge.Write and let us know the uses you discover. We'll print the best in a future issue of *Let's Compute!*

And there will be a prize for the most unusual.

❛ Make a list of programs you have used recently and be prepared to talk about them with your examiner. ❜

If you've got a computer at home you must use programs. Even if they're only games. Think about what you're going to say about each.

Try and choose different sorts of programs. That way it's easier not to end up saying the same about each.

❛ Explain at least one of the following types of software: Database, spreadsheet, wordprocessor. ❜

If you've been reading *Let's Compute!* since last November you'll know that month by month we've been building a database. If you've tried that – you'll find it's easier to talk about!

The November issue also explained what a database is.

DID YOU SEE?
LET'S COMPUTE!
Nov 1990: Crack the Code Great for communications exercises!

DID YOU SEE?
LET'S COMPUTE!
Dec 1990: Good Health A program that can easily be changed for outdoor life.

DID YOU SEE?
LET'S COMPUTE!
Jan: Fund raising Loads of ideas for your pack money-making events.

NEXT MONTH

Programming tips to help you pass your computing badge

PARENTS & TEACHERS

Computing should be fun. The aim of *Let's Compute!* is to make sure that youngsters get as much pleasure as they can from their computers – while they learn at the same time.

Programming is part of the National Curriculum, and the simple games and other programs in *Let's Compute!* are an ideal starting point for learning what computing is all about.

Once the programs are typed in they can easily be modified by the youngsters themselves.

They should be encouraged to add colour and sound, change the graphics, add a high score table and adapt the game in many other ways so that it reflects their own ideas and their own personality.

Investigation is another important element of the National Curriculum. Most of our pages are designed with this in mind and point children in the right direction to discover things for themselves.

Below we explain what some of the articles are about and give ideas of further investigations that children should be encouraged to do for themselves.

ADVENTURES .. Page 19

Nothing is more satisfying than writing your own big program and seeing others enjoy using it. The Create an Adventure series shows children the easy way to write a complete adventure.

Apart from the fun and programming aspects of this article, it offers educational openings in several subjects. For example, by changing the map to a real place it can be used in Geography. Altering the words to a foreign language can make this program a great teaching aid for languages.

ROM AND RAM .. Page 11

Rom and his nephew Rum are trying to learn about computers and Ram is teaching him. By following their exploits children can learn along with Rom.

This month the trio are looking at a common error people make as they type in programs – mis-typing the name of a variable. This is the first of a whole host of errors they'll be looking at over the next few months.

One thing we ask readers to remember is that when a computer tells them a certain line number is wrong it could really mean that a completely different line has been typed incorrectly. The error message appears when your computer stops because it can't go any further.

Keep reading Rom and Ram and you'll discover simple ways of finding where the errors really are.

GAMES GANG .. Page 30

This one's mainly for fun! But there are hidden educational points behind the article.

Most children play games. Many of the modern ones need puzzle solving skills. That in itself is a great exercise that will help in maths and other subjests.

But nothing is more frustrating than being stuck and finding you can't go any further. This is where the Games Gang can help.

With hints, tips and even bits of program they let children get more from their leisure time on a computer.

Children should be encouraged to write to *Let's Compute!* and tell us what they've discovered about games. Letter writing is an important skill for any child to learn.

SAFE SCIENTIST .. Page 24

The Safe Scientist lets children use their computer to simulate experiments which in real life are too difficult, dangerous or expensive.

This month the program is about a really tricky and risky experiment. It's a simulation of growing bacteria.

Living things – including bacteria – are mentioned in several places of the National Curriculum. Three attainment targets are devoted entirely to this subject. Also, the observations discovered from this program form one of the fundamental concepts of science.

The program lets children explore the subject. That, itself, is another National Curriculum attainment target. Children should be encouraged to keep a table of results and draw graphs.

Like many of the Safe Scientist's programs, this one is what Information Technology teachers call a computer model. This means that a real situation has been copied onto the computer.

This introduces us to another area of the National Curriculum. It's called Information Technology Capability. That load of jargon really means being able to use a computer sensibly.

One of the things children should be able to do is use a computer model to make predictions. The bacteria program lets them do just that.

SCOUTING .. Page 24

Many children are striving to get Cub, Scout, Brownie or Guide badges. And *Let's Compute!* can help with several of them.

On Pages 24 and 25 we give some references that show where *Let's Compute!* can help with with the various badges. But, of course, it's most help with the computing badges.

If children just follow the exploits of Rom and Ram they'll soon be well on the way to passing their badge. Typing in *Let's Compute!* programs and looking at how they work is also a great help.

But we intend to do more! This month we go through the various tasks of one of the badges. We give hints and tips on what to do for each. The tasks for all the badges are similar so, although we've covered the Cub one, Brownies, Guides and Scouts can also benefit from this feature.

LOGO LOWDOWN .. Page 35

Many teachers prefer the Logo language to Basic. And our Logo Lowdown turtles aim to make it fun.

Children should try the programs given and see what happens. Then they should try to change them to do something slightly different. The graphics of Logo show the effect of the change as soon as the program is run.

It's easy to learn enough Logo to draw some interesting shapes. And by combining our series with a little trial and error children will soon be creating amazing displays for themselves.

PROGRAM DOCTOR .. Page 17

Each month Doc deals with some of the most common mistakes that people make – either in the program structure itself or in the ideas behind what a program does.

This month a Cub pays a visit to the Doc. The Cub is going camping in France so Doc shows him how to write a simple program to help him improve his French.

It's only a short program and, at this stage, has lots of faults. Doc will be curing some of them over the next few months. Children can quickly type in the short listing. They should SAVE it so they can add to it the following month.

Discuss with them what's wrong as it stands. Here are some points they should spot:

- You get an error message if you enter a word that isn't in the DATA lines.
- When you RUN the program a prompt – usually a question mark – appears on the screen. There are no instructions what to do when this happens. For example, the computer could print: *What word do you wnat to translate?*
- The program ends after each go. This means you have to keep on typing RUN. Instead, it could ask whether you want another go.

The Doc will be looking at these and other points over the next few months. In the meantime children should be encouraged to try to improve the program themselves

SNAP .. Page 41

This is a version of that old favourite, Snap. It's a two-player game and each has to try to be first off the mark when two matching words appear on the screen.

The idea and program come from Heetan Patel, a 12 year old reader. It's quite short to type in but great fun to play. Once it's up and running children should be encouraged to enhance it themselves.

There are many ways this can be done. Simply adding more words is the first obvious change. But why not use foreign words instead? It's a great way to revise your French.

More ideas for modifications are given in the article. If your child can write a program you think others would like to see make sure he or she sends it to us.

Children love to see their own work – or even just their name – in print. And every *Let's Compute!* reader has that chance.

For children only just starting to program there are still lots of opportunities for them to get their name into *Let's Compute!* Encourage them to write to the Noticeboard, Rom's Roundup, Games Gang or High Score Challenge.

PETE'S PROJECT .. Page 32

In this series of articles computing and practical skills come together. This month the project is to make a storage container for nuclear material.

It may sound rather dangerous. But in fact it's just a fun twist to an old mathematical puzzle. You can simply make it from nine pieces of paper.

However it's better to encourage children to use their imagination and build a model like the one we show in the cartoons that accompany the article.

There's a short computer program to check that the material is safe. Modifications are also given so that it can be converted to cope with Magic Squares – a very interesting mathematical concept.

As well as being fun and a great mental exercise, the puzzle could be used as an introduction to a project on nuclear power. It also has uses in maths classes.


EDUCATION SECRETARY GETS TOUGH OVER FALLING SCHOOL STANDARDS

Bad spelling to cost pupils exam marks

By IAN MACGREGOR Education Correspondent

CHILDREN must lose marks for bad spelling in all their GCSE exam subjects, the Government ruled yesterday.

Until now pupils have not

Even in English, some boards have not tested candidates specifically on spelling in GCSEs or the old O-levels.

Mr Clarke criticised Government advisers who said it would

There is likely to be hostility to Mr Clarke's plans from the boards when they meet later this month.

John Edmondson, secretary to the Joint Council for the

such as history, science or economics.

"Communication is achieved by more than the written word nowadays, diminishing the importance of spelling."

But Education Minister Tim Eggar criticised his comments

Passing an exam . . . applying for a job . . . whatever you want to do in life you need to be able to SPELL!

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

Yet most homes have what could be the ideal means of teaching spelling – the computer.

Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new software package that not only makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like – or take on the computer in a high-speed challenge!

And this one package is ideal for everyone – with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

It includes five different tests, each making use of more than 5,000 words – so much variety that you'll never get bored.

- **5 DIFFERENT TESTS**
- **OVER 5,000 WORDS**
- **FOR AGES 5 TO 15**

FIVE ways to improve your spelling

In a Flash: *Read the word as it flashes on the screen, then type it in. For practice runs, the word is left on the screen as it is typed.*

Rocket: *Hidden words have to be discovered in this hi-tech version of the old favourite Hangman. If they are guessed correctly the rocket will blast-off. Fail and all that's left is a load of scrap.*

Lunar Buggy: *Type fast for fun. The aim is to key in the word as it's pulled across the screen by the buggy. It has to be completed before the letters drop down a crater.*

All Mixed Up: *Jumbled letters have to be sorted out to find the scrambled word. To help beginners – and anyone else who is stuck – clues can be obtained at the press of a key.*

Conveyor Belt: *Words pass by on the screen and have to be remembered. Then they must be typed in – spelt correctly. This is a challenging test of both spelling and memory.*

All the programs have several options for extra flexibility – like a timer with on/off option to add that extra challenge.

In addition to using the 5,000 words provided, parents – or children – can create their own word lists for using with SPELL! This makes the package ideal for practising those hard-to-learn words, or for "Learn these spellings" homework.

SPELL! only costs £8.95. It is now available on disc and tape for six of the most popular home computers and can be ordered on the form below.

Please send me a *SPELL!* package for my computer
(Tick as appropriate)

Name .....

Signed .....

Address .....

..... Post code .....

Daytime phone number in case of queries .....

I wish to pay by:

☐ Cheque or postal order payable to Database Publications

☐ Credit card No: Exp. date /

☐ Compact/Archi/Elk (3.5" disc) 3612 ☐ BBC/Elk (5.25" 40 T) 3610 ☐ BBC/Elk (5.25" 80 T) 3611 ☐ BBC/Elk (tape) 3617 ☐ Amiga (disc) 3614 ☐ ST (disc) 3613 ☐ PC (3.5") 3616 ☐ PC (5.25") 3615

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

PHONE ORDERS: 051-357 1275

Your chance to WIN a super Technic Buggy and controller from Lego Dacta

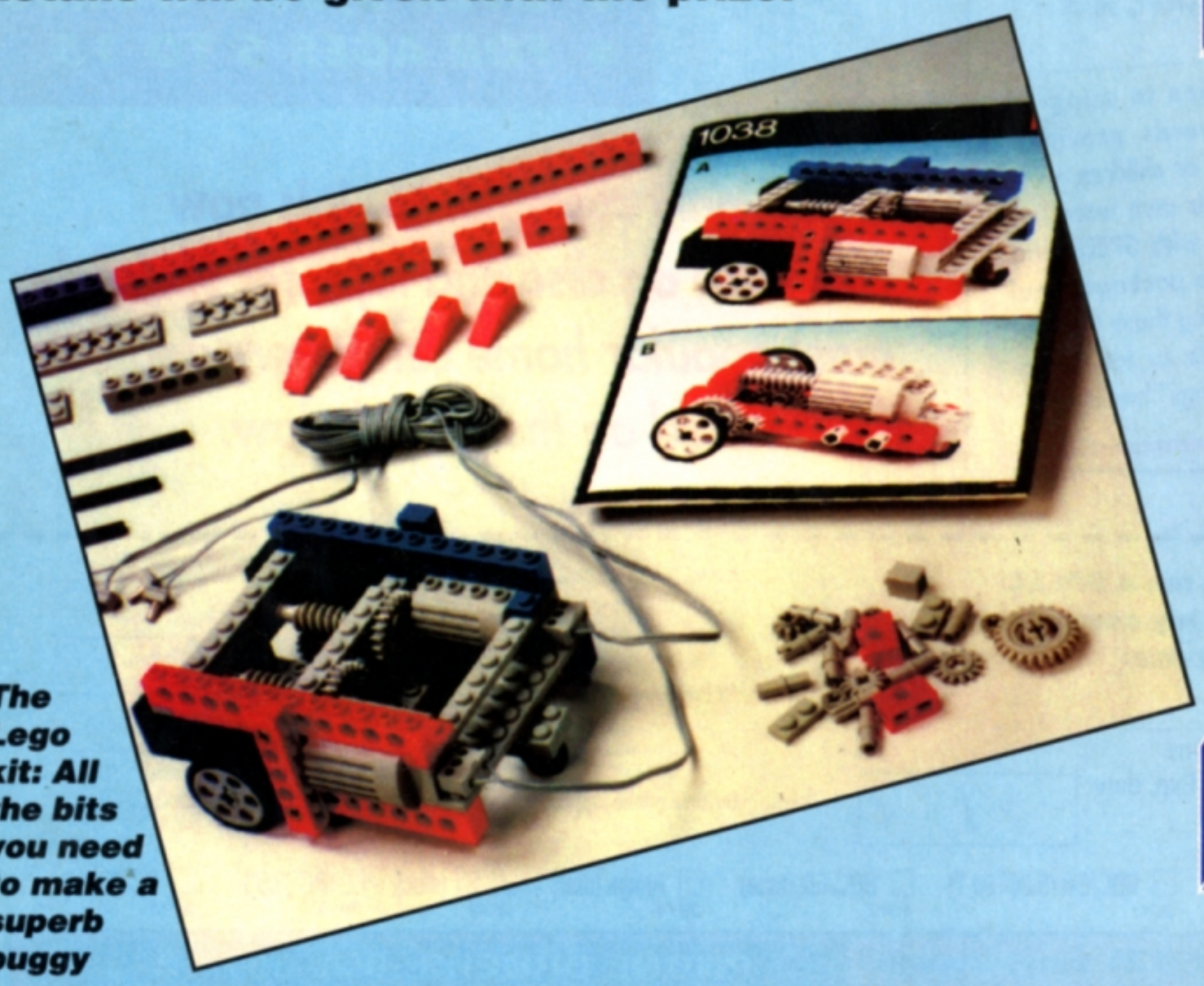
Ever wanted to make a model but been short of kit? This superb 156 piece Lego set could be yours for free!

Let's Compute! **has teamed up with Lego Dacta to offer a prize that everyone will want. It's a great piece of kit and comes from their vast range of equipment that's geared up to science and technology.**

You could be the lucky winner of a buggy – complete with all the gears and motors you need for hours of fun. And you get a controller that lets you manoeuvre the buggy any way you like.

The kit we're offering is a standalone model. It works without connecting it to your computer so it doesn't matter what sort of micro you've got.

But the buggy can be computer controlled. You'll need a few extra bits for this – all the details will be given with the prize.



The Lego kit: All the bits you need to make a superb buggy

Build a Lego Lego day

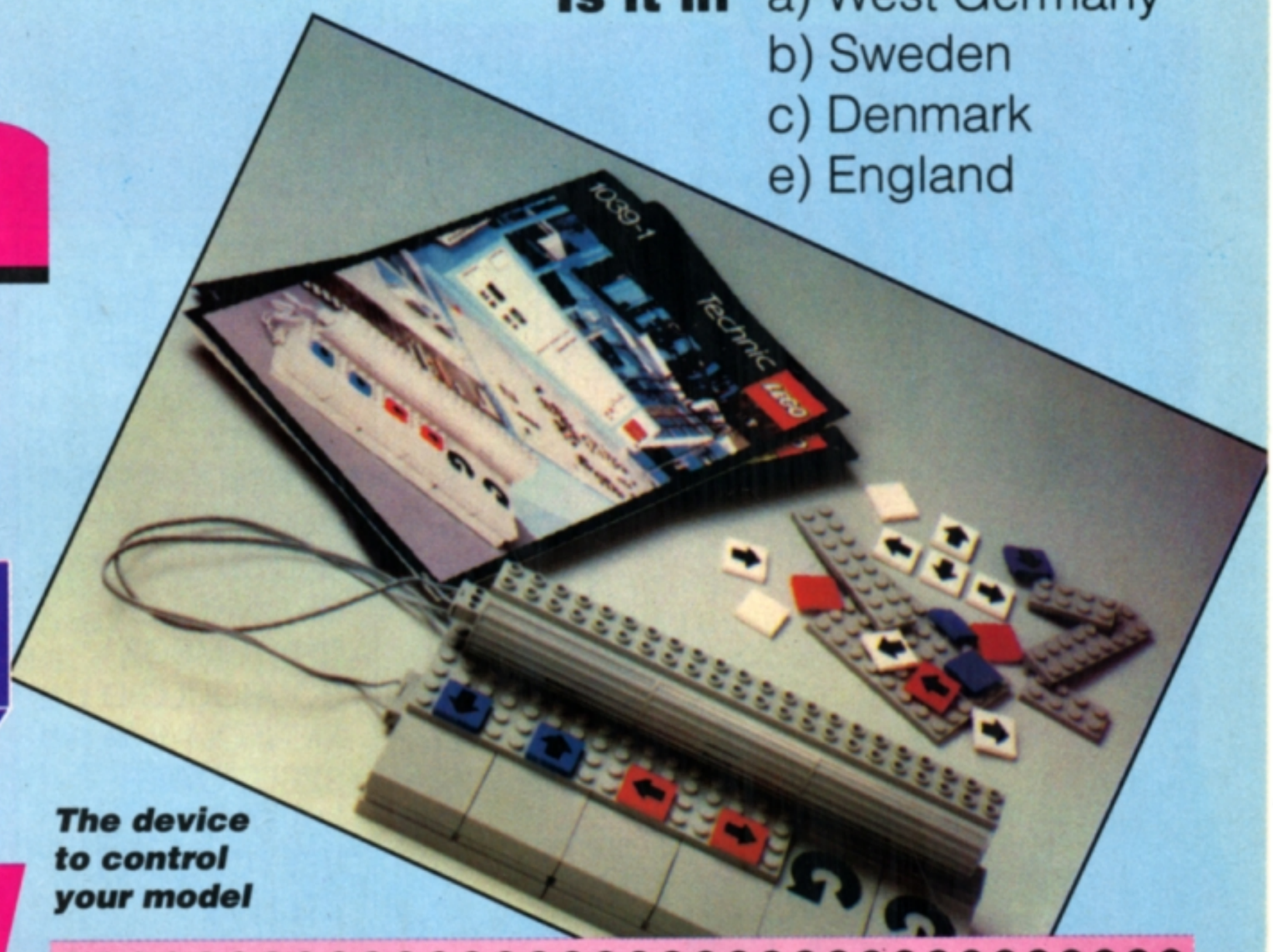
What you have to do

Below is a question about Lego. Just fill in the answer on the form below. Now tell us, in less than 10 words, why you would like to win this great kit. Post the entry form to reach us by June 30. The prize will go to the lucky reader who gives us the best reason for wanting it, together with the correct answer.

Here's the question:

Where is Legoland?

Is it in
a) West Germany
b) Sweden
c) Denmark
e) England



The device to control your model

ENTRY FORM

Name .....

Adress.....

.....

.....

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

I would like to win the Lego kit because .....

.....

.....

.....

Answer: Legoland is in .....

Now send your entry form to: Lego Contest, *Let's Compute!* Europa House, Adlington Park, Macclesfield SK10 4NP.

The Games Gang

A fistful of fisticuffs

Feeling angry or depressed? Well, if you're tempted to take out all that frustration on a game why not get yourself a copy of Virgin Games' Fists of Fury compilation?

It features four reasonable beat-'em-ups. There's a cute game called Dynamite Dux and three rather more serious offerings – Shinobi, The Ninja Warriors and Double Dragon II.

All four got pretty good reviews first time around. You can get Fists of Fury for the Spectrum, Amstrad CPC, C64, Atari ST and Amiga.

Pam's Passwords

Michael Scott (13) from Leeds has completed **Ballarena** on his Archimedes and here are the passwords:

Level	Password
1	PUNKANDJUMP
2	MONTPELLIER
3	SEASEXSUN
4	VL86V0/0
5	MOUNTAINEERS
6	GRENOUILLE
7	BLUEBEDILOMAR
8	BRAINKILLER
9	RHYTHMBOX
10	BOUBOULOID
11	MENFOU
12	32BITPOWER
13	MARTINI
14	SEEYOUSOON
15.	ETERNA

Martin Dean (13) from Nantwich has sent us various passwords. Here are the ones for the first 10 levels of the Electron version of **Qwak**:

Level	Password
1	-
2	PURPLE
3	PLEASE
4	OFFICE
5	SOOTIE
6	DANGER
7	ARROWS
8	FORGOT
9	LONELY
10	PEOPLE

Going into Exile

Attention all arcade adventure fans, Audiogenic are about to release **Exile** on most 8 and 16-bit formats. So get saving.

It's been designed by Peter Irwin and Jeremy Smith. They're the lads who programmed that timeless C64 budget classic, Thrust.

And – if you're old enough to remember Thrust and liked it – you'll love this. You play the hero – a spaceman whose mission is to jet around a huge alien planet.

There's a vast network of underground tunnels for you to explore. You can search out lots of useful objects. Plus there's a bunch of imprisoned colonists to rescue.

You'll have plenty of shooting, object dodging and puzzle solving along the way. Gravity is simulated really well – you'll bounce off terrain, fall and collide in totally realistic ways. If you see it, grab it.

Helpful Harry

Geoffrey Swan from Ruislip has been zapping again. This time on the CPC version of Myth.

If Nidhogg on the Norse level is getting you down retrace your steps and kill a few more monsters.

When you next see Nidhogg he should have a hole in his neck. Throw a dagger into the hole and he is no more. Ouch!

Scrolls of fun

Fans of Magnetic Scrolls' latest adventure blockbuster – Wonderland – will be pleased to hear that a compilation pack of three of the company's other adventures has just hit the shelves.

Fish, Corruption and Guild of Thieves have been updated with the windows control system that made its debut in Wonderland. There are also more graphics and animation.

The Magnetic Scrolls Compilation Pack is available for the PC, Amiga and Atari ST.

FLYING TONIGHT

Amiga and PC flight simulator fans are in for a treat. **Birds of Prey** from Electronic Arts will be one of the best flight experiences ever.

It should be winging its way into the shops later on this summer.

Programmed by Argonaut Software – who brought you Starglider and Starglider 2 – it's been in development for four years.

It gives a choice of 40 different planes with loads of different weapons to choose from.

There are air bases, enemy forces, cities and towns to explore and a mega number of missions.

If you're feeling adventurous you can take an X-15 for a test flight. Then you'll whizz through the skies braving G forces at speeds of Mach 5.

Watch out for more news from Electronic Arts around August.

If you've any hints, pokes or cheats you'd like us to print send them to:

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

CHARLIE'S CHEATS!

Here's a tip for the Amiga and Atari ST versions of **Monty Python**. Type SEMPRINI on the high scores table to restart on the level on which you died.

Scott Dyson (13) from Leeds has been battling with **Gremlins 2** on his Amiga. But by entering SINATRA into the high scores table he got infinite lives.

Warren Howes, who comes from Orpington, has some help for Atari ST and Amiga players of **Treasure Island Dizzy**.

Type ICANFLY on the title screen – no spaces – and the screen will flash. When you fire you'll be able to fly around the game.

Though this doesn't necessarily help, it is good fun. It you repeat the trick a second time your flying days will be over.

Isaac Griffiths (12) from Tadley has a cheat for the Spectrum and CPC versions of **Chase HQ**. When you press Escape to redefine the keys type in SHOCKED.

You'll find that pressing 1 will restart the game, 2 will take you to the next level and 3 will whisk you to the last screen.

Attention all C64 players of **Midnight Resistance**, David Yu from Wimbledon has some useful advice. Type in SIAMESE on the title screen and you'll get infinite lives.

He also says that if you're stuck on **Robocop** type SUEDEHEAD on the first level title screen. The second level will then load for you.

If you want to get to the finale type DISAPPOINTED on the second level title screen.

Amiga players of Robocop can get an infinite shield by pausing the game. Then type BEST KEPT SECRET. Thanks to Chris Whale (14) from Newthorpe and Christopher Haynes from Felbridge for that one.

No.5

Safe

Here's a project that can be as easy or as hard as you want to make it. It's a model of a container to store uranium.

Radioactive materials like uranium are very dangerous. They have to be stored in lead containers.

Our picture shows one of these. It holds nine canisters of uranium.

The numbers on the canisters show the strength of the uranium inside. The whole lot is safe if all the rows, columns and diagonals add up to less than 30.

At the moment one column, two rows and one of the diagonals are likely to explode at any time. Can you rearrange them so they are safe?

Make a model so you can move the numbers around. It can be as simple as nine numbers on pieces of paper. Or you can use a cardboard box and tubes to make a more realistic model.

It's up to you how much effort and imagination you put into the project. All that's important is that you end up with the nine numbers shown below and they are able to be moved around.

The problem now is that each time you move a number you have to check that the new rows, columns and diagonals add up to less than 30. Don't worry. Pete has come up with an easy way.

The computer program on the left works it all out for you. The panel on the right explains how to use it.

See if you can arrange the canisters into a safe order. In case you have problems, the answer will be in next month's issue of *Let's Compute!*

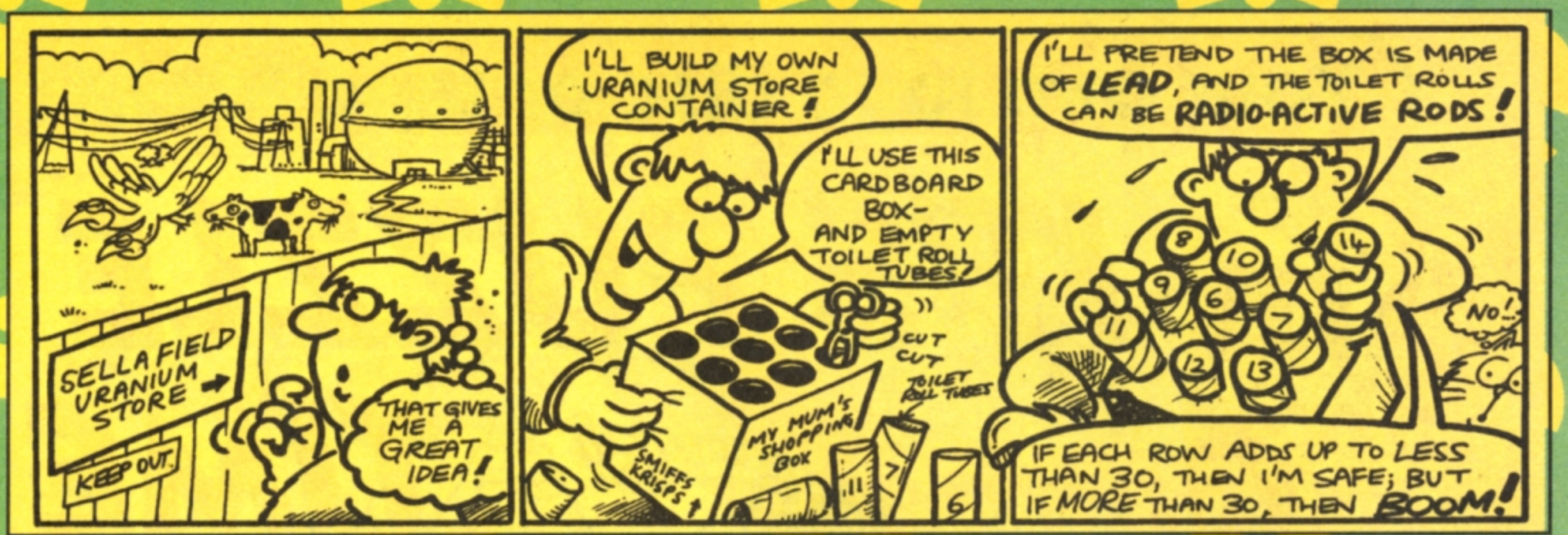
8	10	14
9	6	7
11	12	13

```
  10 LET RT=0:LET CT=0:LET DT=0:LET LR
=0:LET RL=0
  20 DIM U(3,3)
  30 REM INPUT STRENGTHS
  40 PRINT:PRINT"TYPE IN THE STRENGTHS
":PRINT
  50 FOR R=1 TO 3
  60 FOR C=1 TO 3
  70 PRINT "ROW ";R;"  COLUMN ";C
  80 INPUT U(R,C):PRINT
  90 NEXT C
 100 NEXT R
 110 REM CHECK ROWS
 120 FOR R=1 TO 3
 130 IF U(R,1)+U(R,2)+U(R,3)>30 THEN L
ET RT=RT+1
 140 NEXT R
 150 REM CHECK COLUMNS
 160 FOR C=1 TO 3
 170 IF U(1,C)+U(2,C)+U(3,C)>30 THEN L
ET CT=CT+1
 180 NEXT C
 190 REM CHECK DIAGONALS
 200 FOR D=1 TO 3
 210 LET LR=LR+U(D,D)
 220 LET RL=RL+U(D,4-D)
 230 NEXT D
 240 IF LR>30 THEN LET DT=DT+1
 250 IF RL>30 THEN LET DT=DT+1
 260 REM PRINT RESULTS
 270 IF RT=0 AND CT=0 AND DT=0 THEN GO
TO 330
 280 PRINT "IT EXPLODED BECAUSE:"
 290 IF RT>0 THEN PRINT RT;" OF THE RO
WS ARE TOO BIG"
 300 IF CT>0 THEN PRINT CT;" OF THE CO
LUMNS ARE TOO BIG"
 310 IF DT>0 THEN PRINT DT;" OF THE DI
AGONALS ARE TOO BIG"
 320 PRINT:GOTO 340
 330 PRINT"WELL DONE"
 340 PRINT:PRINT "ANOTHER GO (Y/N)"
 350 INPUT A$
 360 IF A$="Y" THEN RUN
 370 IF A$<>"N" THEN GOTO 340
```

This program works on all home computers

Possible program projects

- At present it prints *1 ROWS ARE TOO BIG, 2 ROWS ARE TOO BIG* and so on. Stop it printing the S after ROW if there is only one.
- Make it tell you exactly which rows and columns don't add up to 30 or less.
- Put in some graphics. For example you could add an explosion routine in place of Line 280.



Try in

Can you keep the uranium safe in Pete's nuclear puzzle?

numbers

USING YOUR COMPUTER

This program will tell you if your uranium pile is safe. Type it in, SAVE it and RUN it.

Then type in the numbers one at a time. Your computer will tell you which row and column the number will be put into.

If your canisters are safe a *Well done* message will be printed. But if any sets of numbers add up to more than 30 you'll be told how many are over the limit.

MAGIC MODIFICATIONS

You can use the program to check what maths experts call magic squares. One is shown below.

They're called magic because all the rows and columns add up to the same. In this case, 15. To use your program to check it, change every >30 in the program to <>15. You'll find them in Lines 130, 170, 240 and 250.

8	1	6
3	5	7
4	9	2

You also need to change the message that's printed if it isn't right. Change the words ARE TOO BIG in Lines 290, 300 and 310 to ARE WRONG. This is because the program now checks for smaller as well as bigger.

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 28 – 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

IT'S PUZZLE TIME

Wow! We've had loads of letters saying how much you enjoyed Tessa Turtle's puzzle last month.

Some of you haven't got Logo but still tried it. For those who didn't manage to fit the pieces together the answer is below.

Because you liked it so much we asked Tessa to design another. Remember, she's an expert at fitting shapes together. That's why she's called Tessa.

It's short for Tesselation. A fancy word maths experts use when they make a pattern from shapes.

The idea of this month's puzzle is to fit the four small shapes into the big one. Try it yourself! Cut out the small ones and see if you can arrange them within the large one.

Again Tessa gave the puzzle to Tubby. He went straight to his computer. He's got a Logo program that gives the answer. It's up there on the right.

If you can't solve Tessa's puzzle, just use Tubby's program. But you'll first need to run the Logo Language. This is available for most makes of home computer.

(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.)*

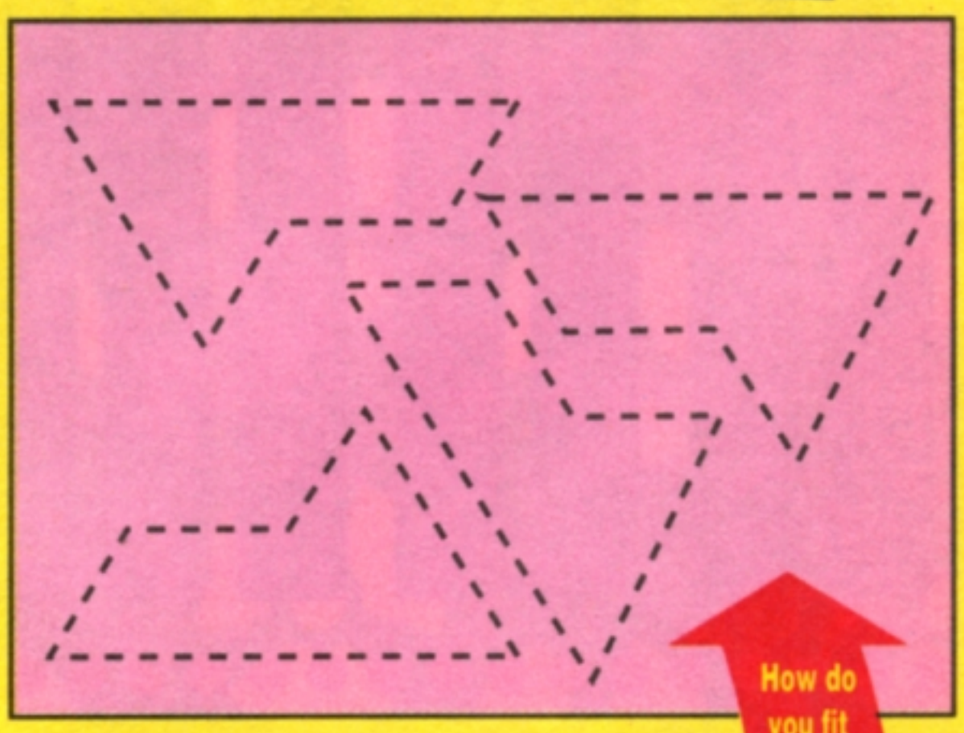
Just type in Tubby's program. You can then discover the answer to the puzzle by entering:

```
SHAPE 100
```

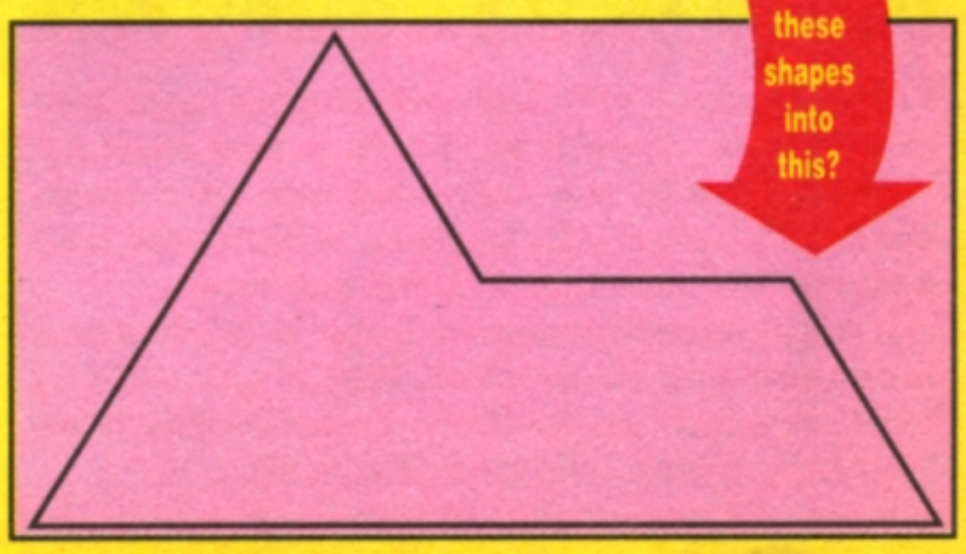
The answer to last month's puzzle

Tubby's program

```
TO SHAPE :D
S1 :D
FD :D * 3 RT 90
S1 :D
RT 120 FD :D
S2 :D
END
   TO S1 :D
RT 30 FD :D
RT 60 FD :D
LT 60 FD :D
RT 120 FD :D * 2
RT 120 FD :D * 3
END
   TO S2 :D
FD :D * 3
RT 120 FD :D * 2
RT 120 FD :D
RT 180 FD :D * 3
END
```



How do you fit these shapes into this?



Can you draw an interesting, pattern or shape 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.

ORDER FORM

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

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

Name.....

Address.....

.....

.....

Post code.....

Age.....

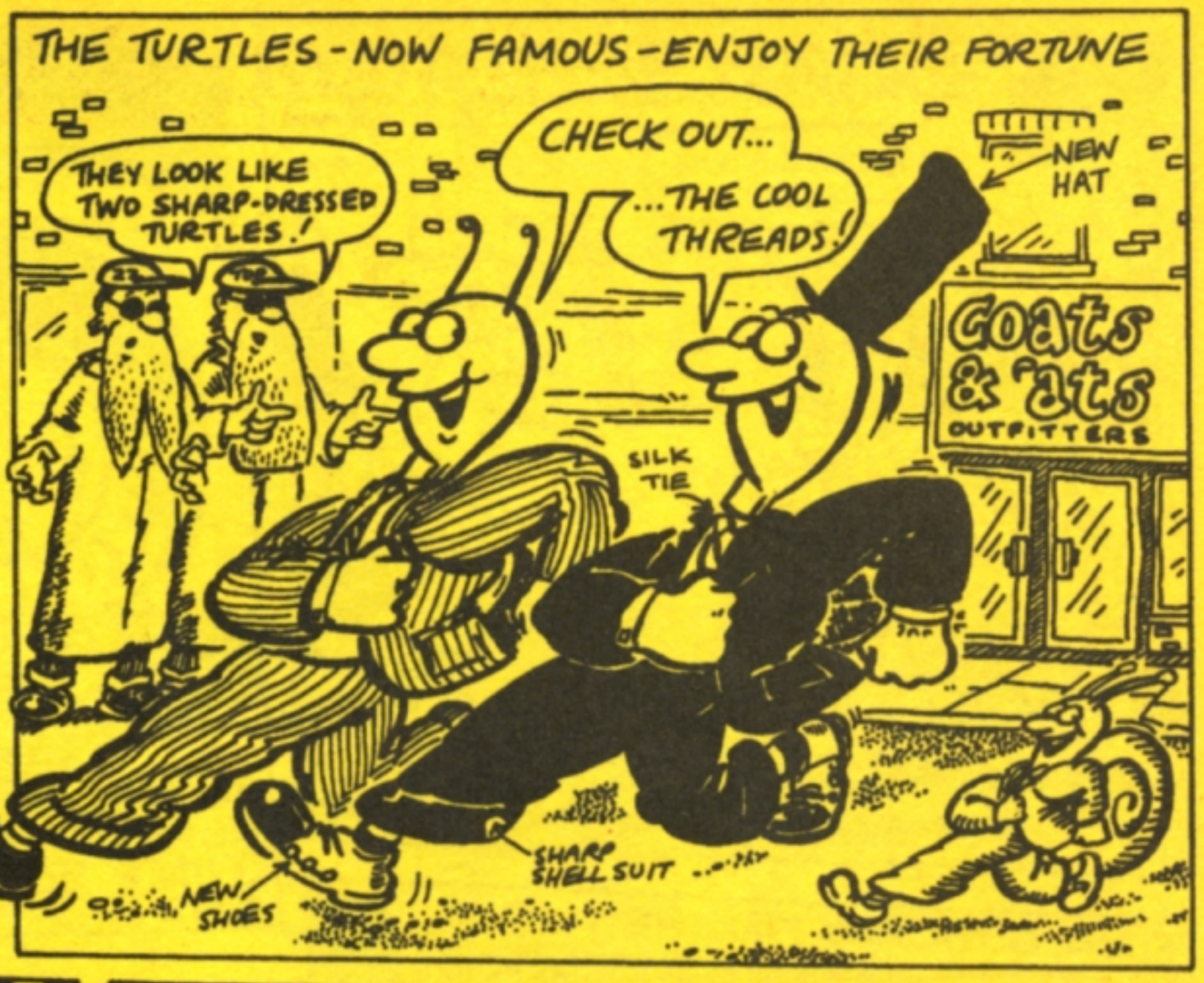
Please send it on:

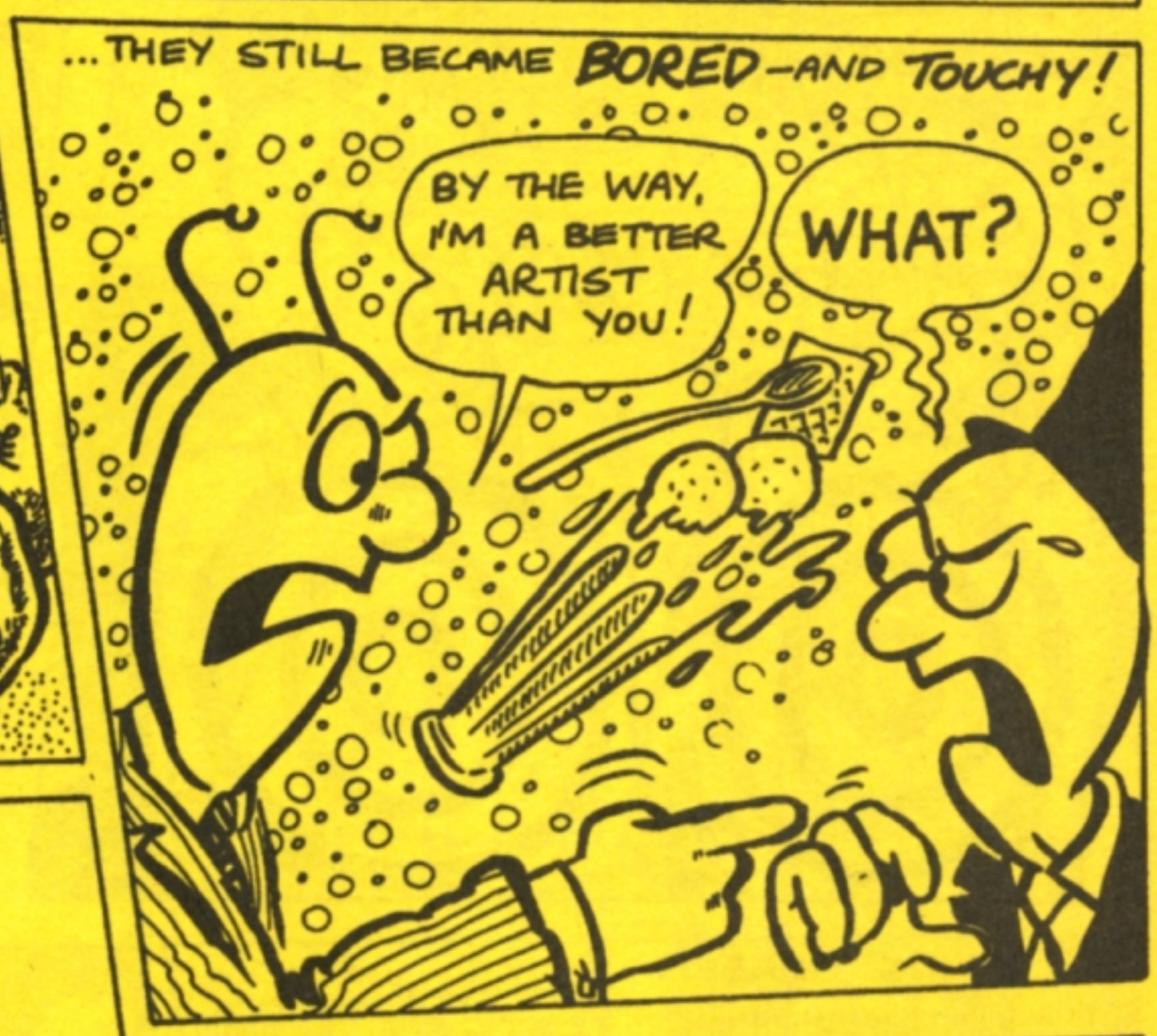
- ☐ 5.25in 40T disc
- ☐ 5.25in 80T disc
- ☐ 3.5in disc
- ☐ Cassette

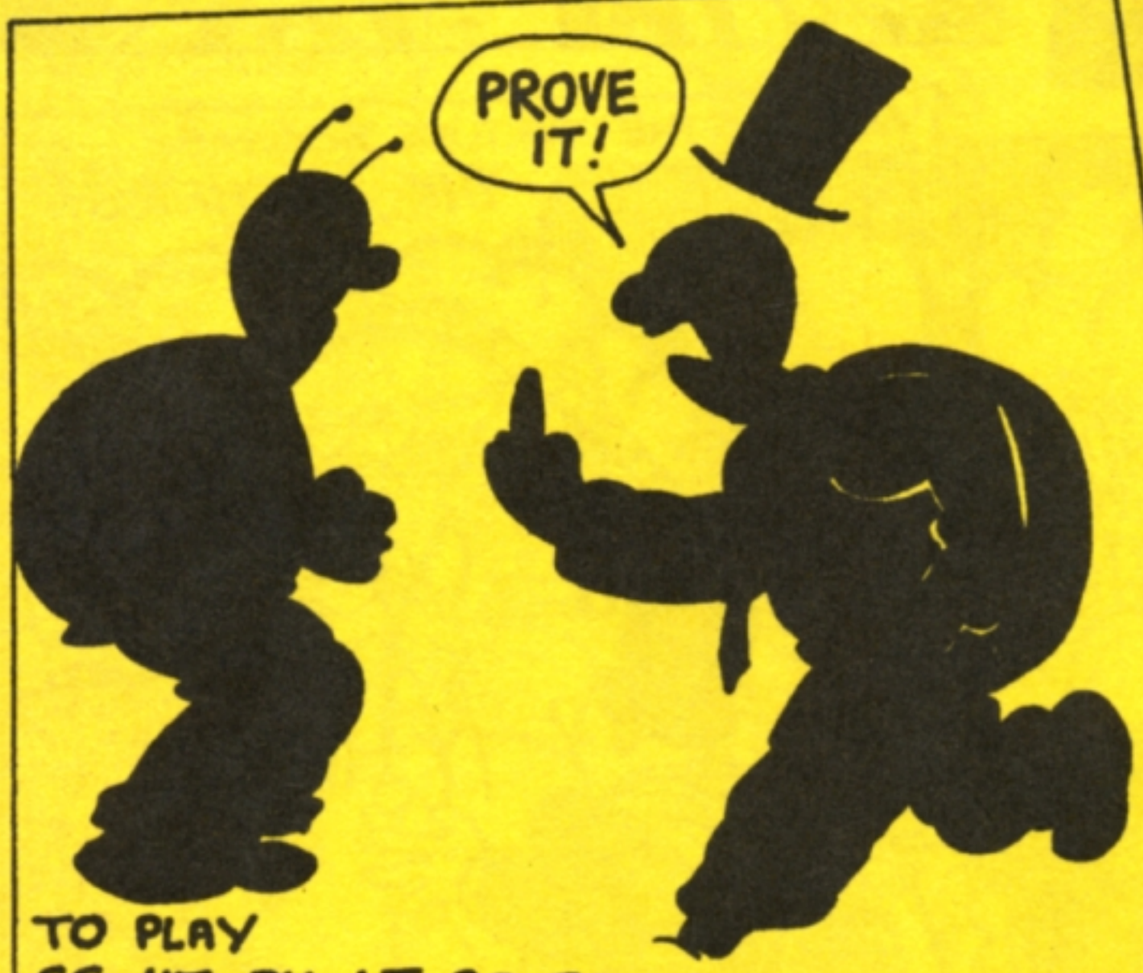
SEND TO:

Logo Offer,
Let's Compute!
Europa House
Adlington Park
Macclesfield
SK10 4NP

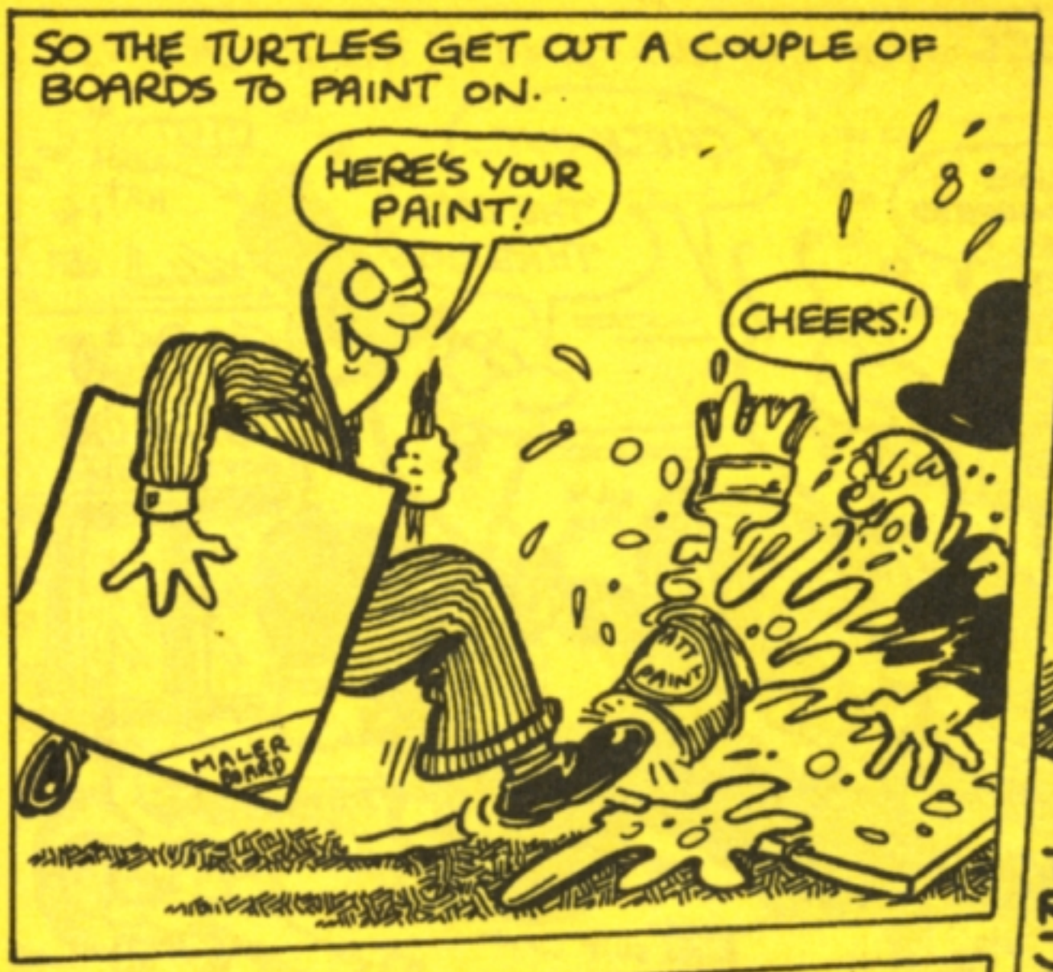
LOGO LOWDOWN

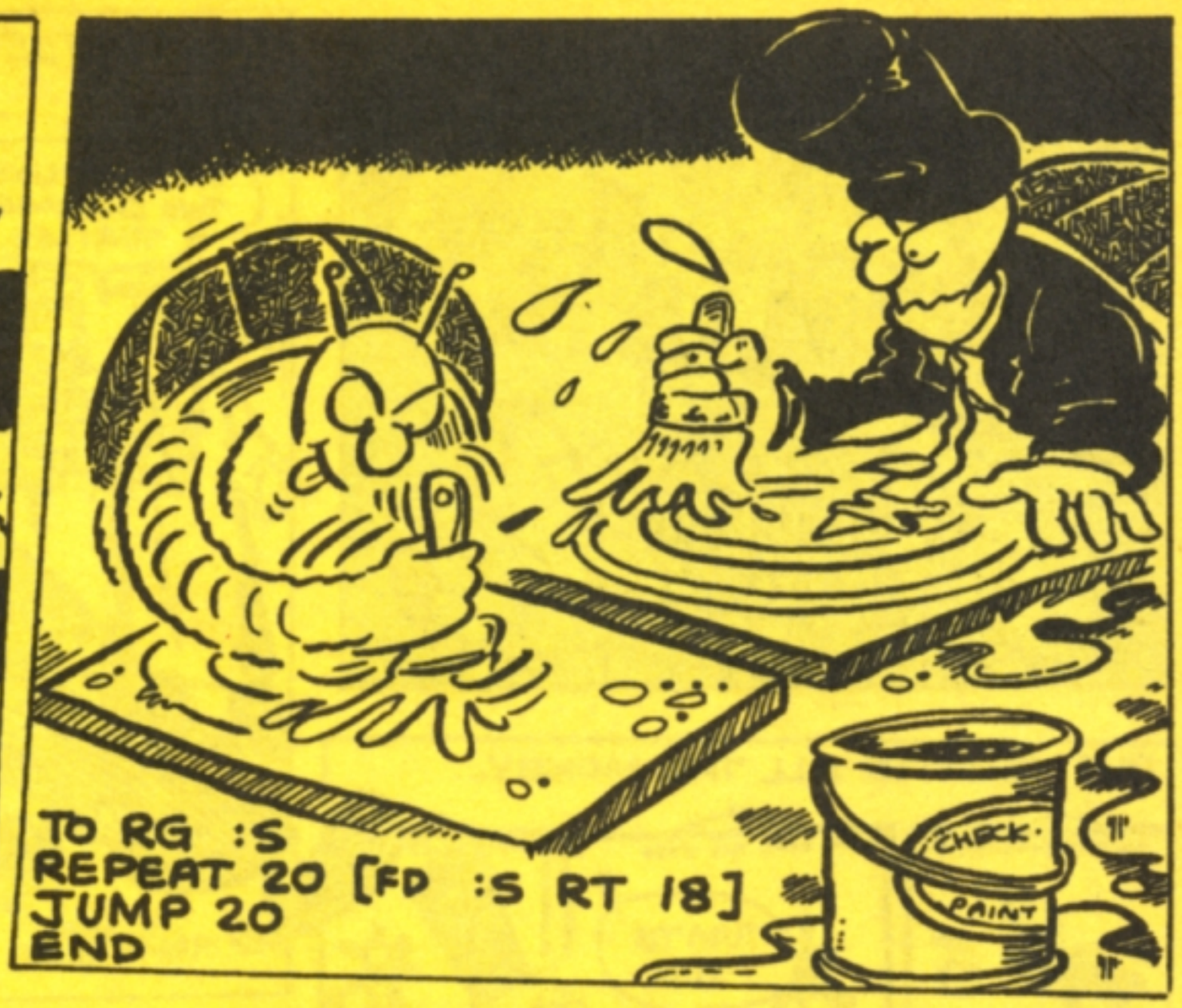


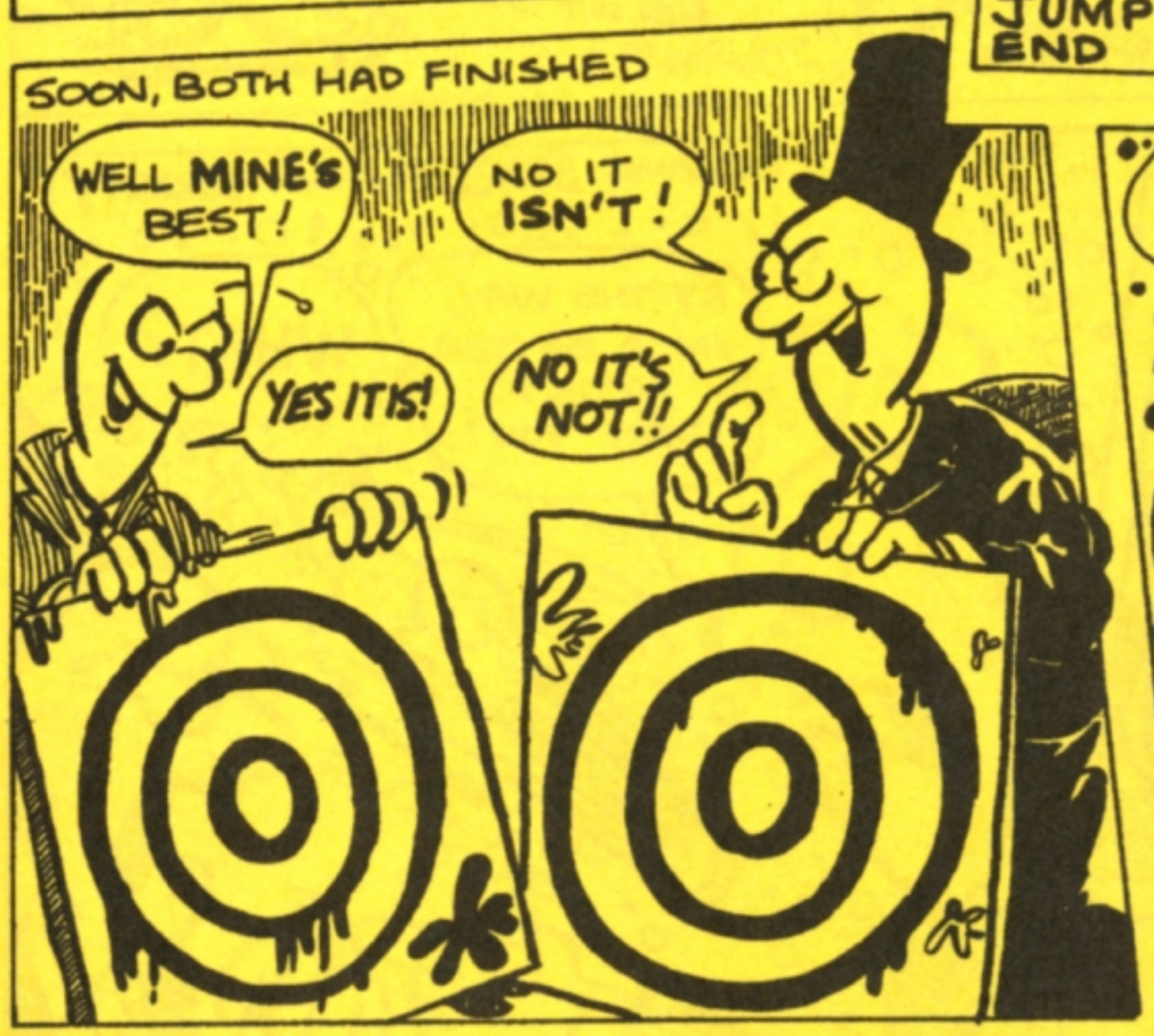




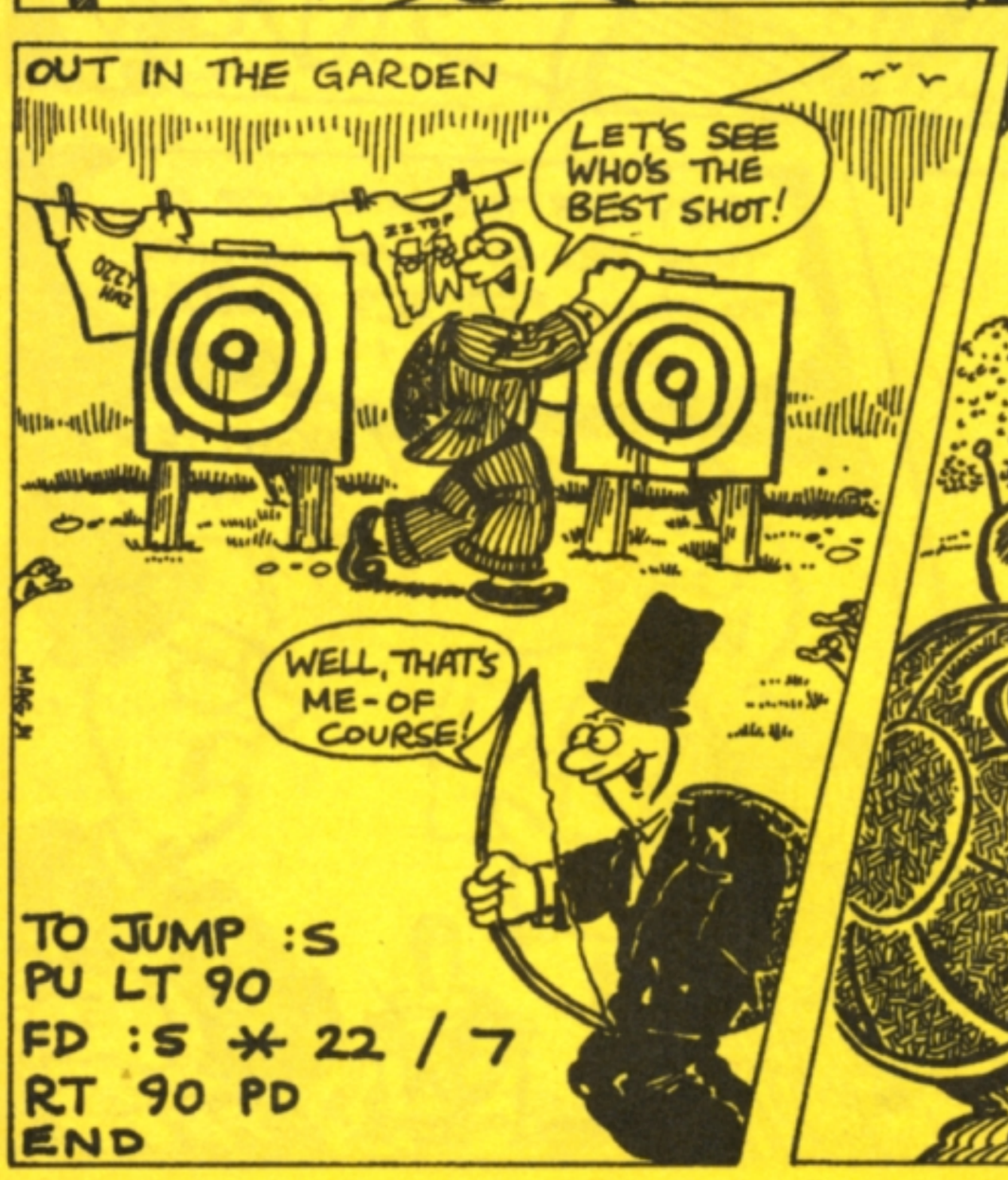

```
TO PLAY
CS HT PU LT 90 FD 64 RT 90 PD
MAKE "S 20
REPEAT 3 [RG :S MAKE "S :S + 20]
PU HOME PD
REPEAT 3 [THROW]
END
```

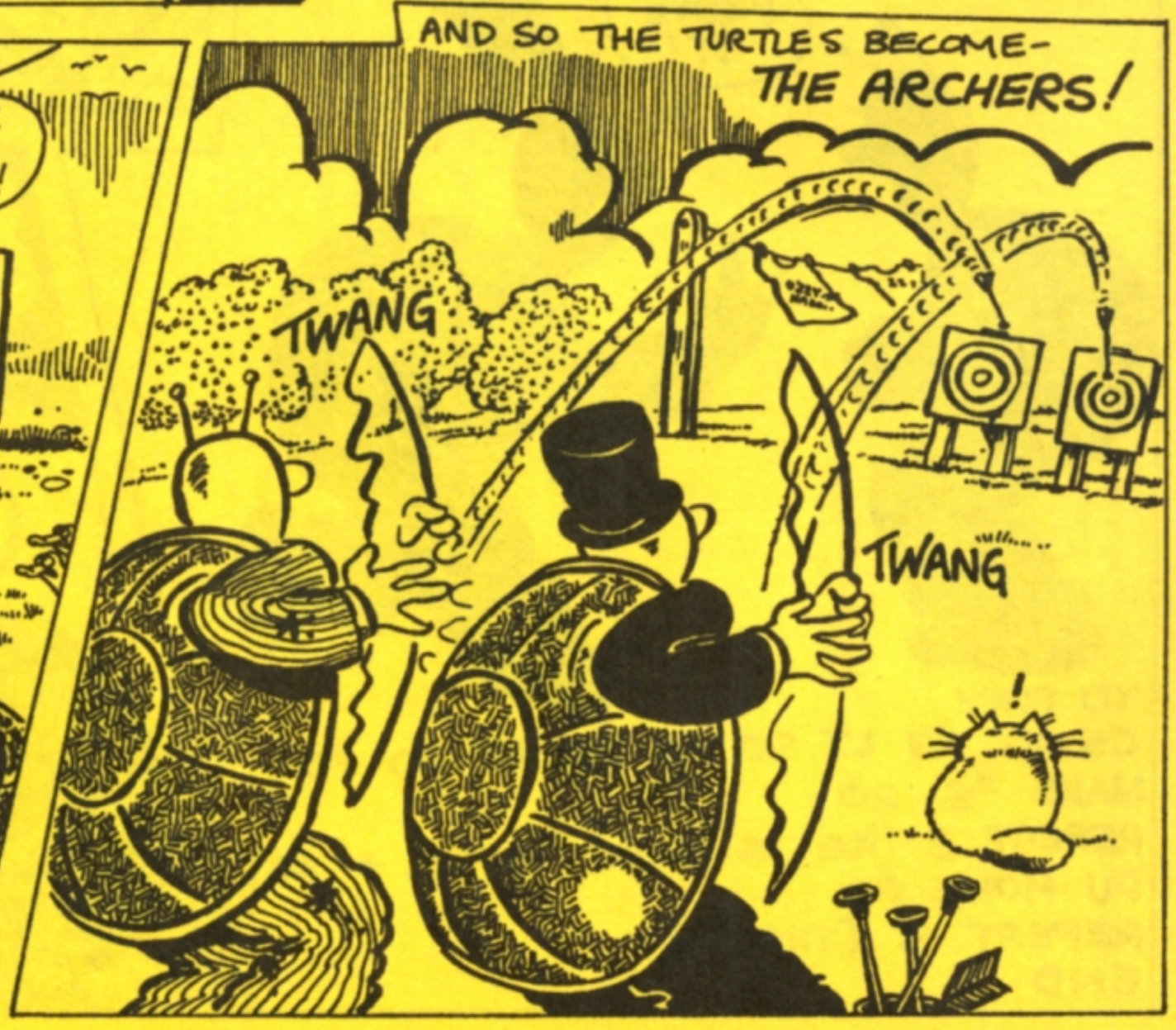

SO THE TURTLES GET OUT A COUPLE OF BOARDS TO PAINT ON.
HERE'S YOUR PAINT!
CHEERS!
PAINT
MALER BORD

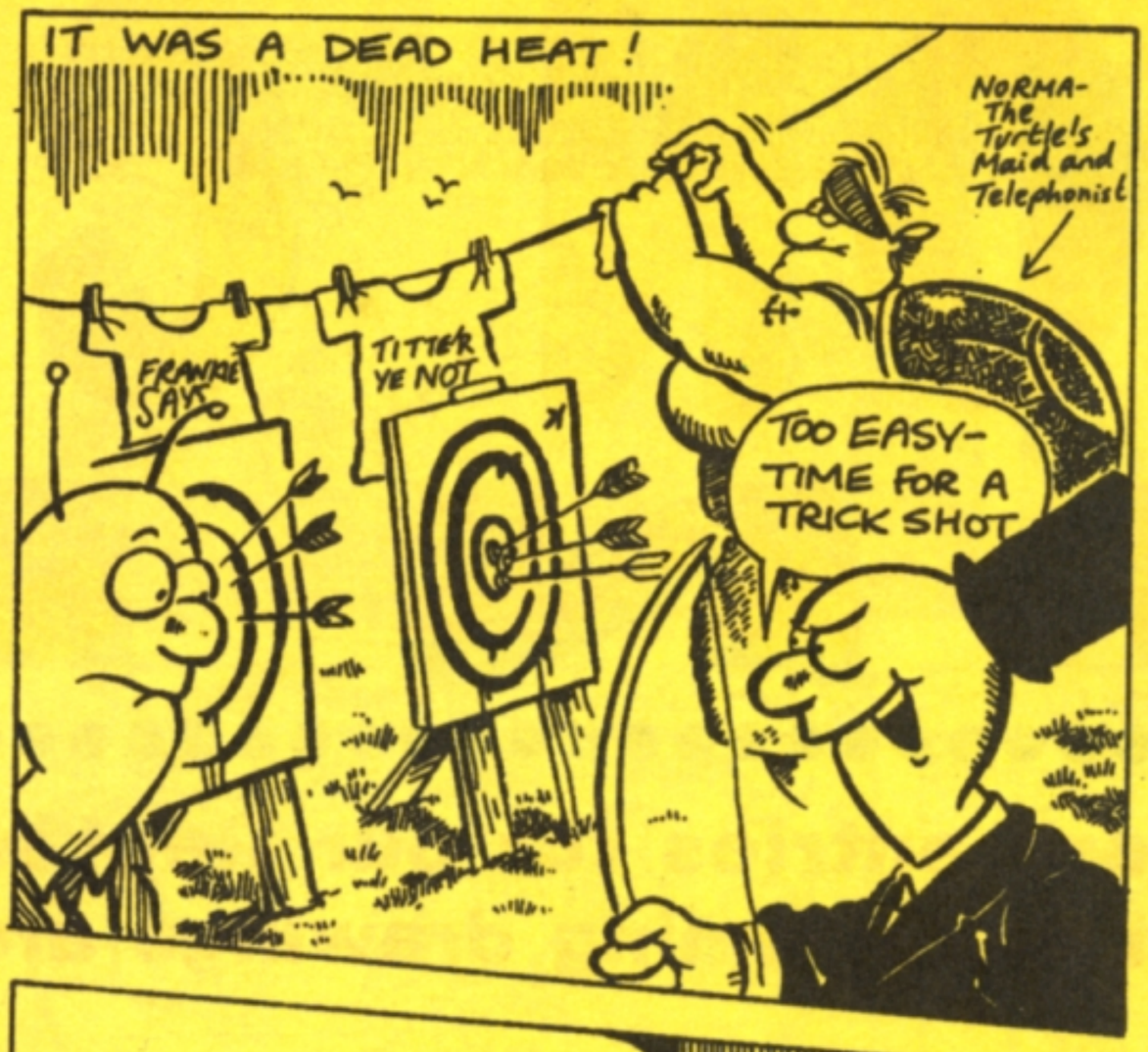

TO RG :S
REPEAT 20 [FD :S RT 18]
JUMP 20
END
CHECK
PAINT


SOON, BOTH HAD FINISHED
WELL MINE'S BEST!
NO IT ISN'T!
YES IT IS!
NO IT'S NOT!!


LOOK, I'VE GOT AN IDEA - THESE LOOK LIKE TARGETS
AND I'VE GOT SOME BOWS AND ARROWS!


OUT IN THE GARDEN
LET'S SEE WHO'S THE BEST SHOT!
WELL, THAT'S ME - OF COURSE!
TO JUMP :S
PU LT 90
FD :S * 22 / 7
RT 90 PD
END


AND SO THE TURTLES BECOME-
THE ARCHERS!
TWANG
TWANG



TURTLE PROFILE

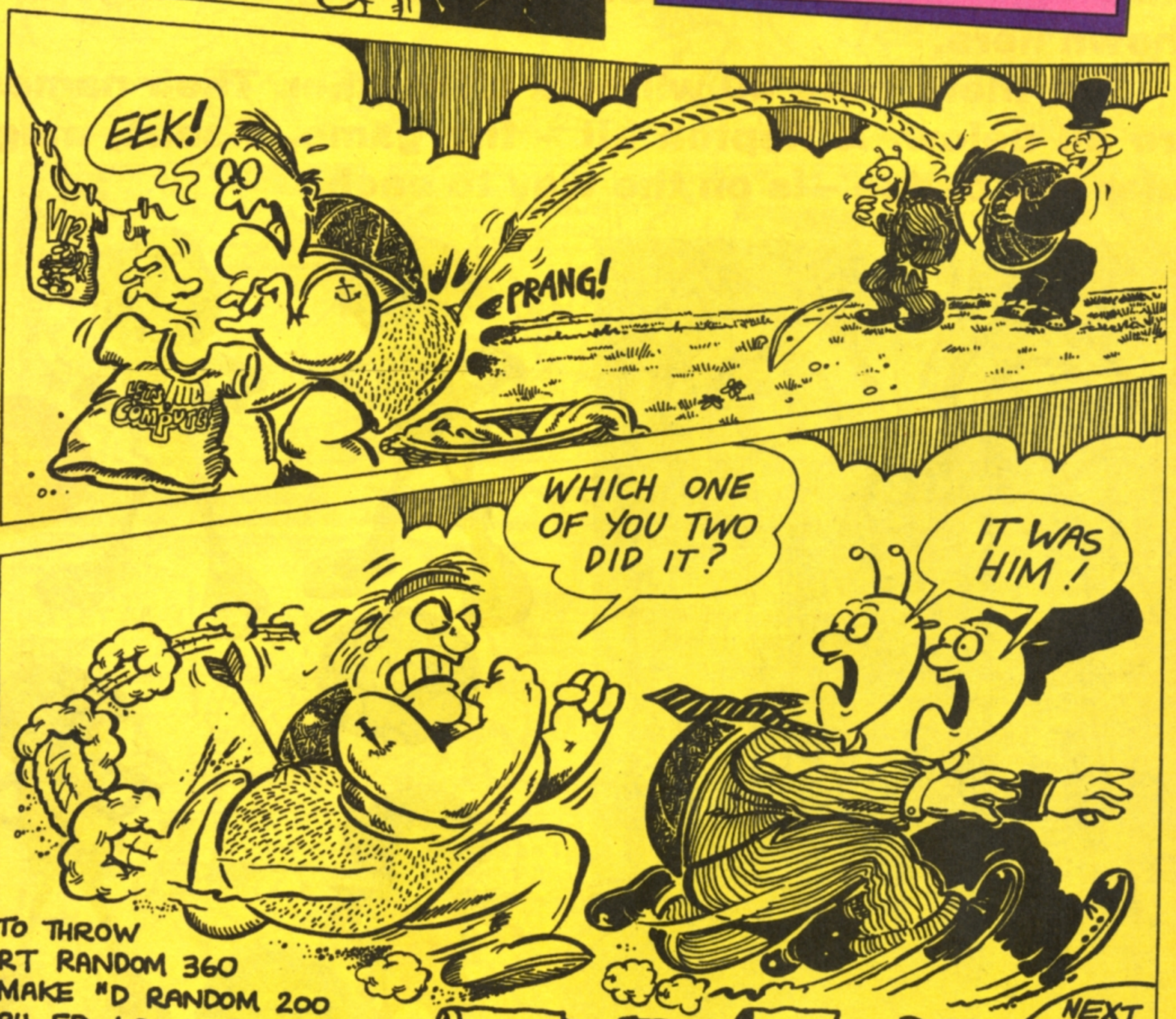
TELEPHONIST TURTLE

FACTS

HEIGHT: ENORMOUS
EYES: BULGING
HAIR: RAT'S NEST
CLOTHES: ILL-FITTING
LIKES: TELLING TURTLES OFF, ARGUING

DISLIKES: PHONE-CALLERS PEOPLE, TURTLES
FAVOURITE FOOD: TREBLE HELPINGS OF ANYTHING
HOBBIES: FIGHTING

TELEPHONIST SAYS:-
"GRR, GROWL, CLEAR OFF!"




```
TO THROW
RT RANDOM 360
MAKE "D RANDOM 200
PU FD 40 + :D
PD FD 10 PU HOME
IF (:D < 20) [PR "BULL!]
END
```

Note: Enter ALL 4 listings before typing:

PLAY

A "BULL" = 50 POINTS
THE NEXT RING 20 AND
THE OUTER RING 10 POINTS

RG MEANS RinG.
S RELATES TO THE SIZE OF THE RINGS.
D IS THE DISTANCE FROM THE CENTRE OF THE TARGET

NEXT MONTH THE TURTLES ARE STUMPED FOR SOMETHING TO DO!

REPTON CH
WINN

We had hundreds of superb entries for our Repton Challenge. Ten of the best prizewinning drawings are shown here.

But there were 40 winners altogether. Their names are all below. A Repton kit – the game, T-shirt, mug, ruler and badge – is on the way to each.

Winners of the Repton Competition are: Michael Jones, aged 25 from Quinton; Gaynor Barrett, aged 12 from Joyford; Jason Ball, aged 9 from Basildon; Nathan Fear, aged 12 from Oakridge; Andrew Withey, aged 10 from Pimlico; Stuart McClure, aged 12 from Tadley; David Fairclough, aged 8 from Droylsden; Gavin Wilkinson, aged 13 from Scunthorpe; Kenneth Mileham, aged 14 from Illingworth; David Stuart, aged 10 from Inverurie; Jonathan Haigh, aged 12 from Livingston; Ceri Griffiths, aged 14 from Carmarthen; Nathan Robinson, aged 13 from Bredon; Richard Cutler, aged 11 from Garforth; Iain Millar, aged 12 from Mossley Hill; James Clark, aged 12 from Shipbourne; James Hughes, aged 9 from Abergele; Linda Runciman, aged 15 from Winsford; Brian Turrell, aged 12 from Petersfield; C Stanbury, aged 10 from Banstead; Riaz Sidat, aged 11 from Nuneaton; Elizabeth Knox, aged 14 from Reigate; Lisa Gonzalez, aged 9 from Bracknell; John Brooks, aged 11 from Kenilworth; Arif Haq, aged 13 from Stanmore; Jonathan Hart, aged 12 from Pinner; Matthew Fox, aged 11 from Redruth; Gemma Dhillon, aged 9 from Aldridge; Miss S Coburn, aged 12 from Holmfirth; Lynsey Fairbairn, aged 15 from Farnborough; Sarah Lucas, aged 7 from Princethorpe; Christopher Hanson, aged 10 from Waltham; Simon Walmesley, aged 14 from Kenilworth; Jamie Evans, aged 11 from Jersey; Simon Wain, aged 13 from Kingsteignton; Carl Smith, aged 15 from Fareham; R Shaw, aged 13 from Dalton; Jennifer Dunn, aged 12 from Stony Stratford; J M Thompson, aged 14 from Kidlington and Hannah, aged 10 from Waltham.

ALLENGE!

IERS

Carl Smith
Hampshire

Hannah
South
Humberside

Chris
Hanson
South
Humberside

Iain Millar
Liverpool

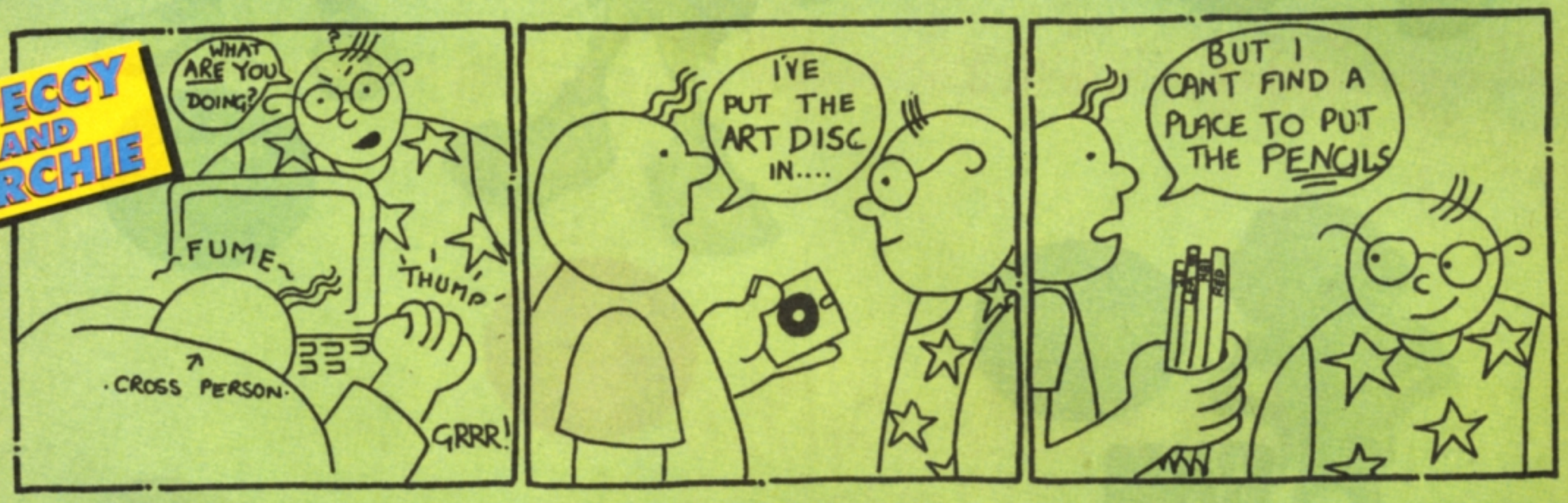
R. Shaw
W. Yorkshire

Gemma
Dhillon
Walsall

KEYBOARD KAPERS

STARCAT

SPECCY AND ARCHIE



The Micro Kid

SNAP!

Heetan Patel presents a super version of a classic game

This program and the description printed here are by Heetan Patel (12) from Coventry. It's a two player game. Both have to try to press a key first when a matching pair of words appears on the screen.

Two words will randomly appear on the screen. If they are the same, one of the players has to quickly press his *fire* key.

The player who is the first to get five snaps wins. If you press fire and the words are not the same you lose a snap. There are six words that flash on the screen. You will see them in Lines 570 to 620. They appear in pairs and are randomly chosen. The words are the kind you often see in Let's Compute! If you want, you can change them into any other words you like.

Here are some changes you can make

- Make snaps happen less often by changing the 5 in Line 170 to, say, 50.
- You can change the words (Lines 570 to 620). You can also add more words if you change E=6 in Line 90. Then put extra DATA lines starting at Line 630.
- You can make the game longer by making people have to get more snaps. This is in Lines 370 and 380. For example, to make the game last for eight snaps, change Line 370 to:

```
370 IF S1>7 THEN GOTO 400
```

- You can add colour and sound

The FIRE keys

Player 1 Player 2

Q P

You can only use them in Caps Lock

IS YOUR COMPUTER HERE?

BBC/Electron/Archimedes

The program works as shown.

Amstrad CPC/ST(STOS)

Change these lines:

```
130 DEF FNR(R)=INT(RND*R)+1
520 LOCATE X+1,Y+1
550 LET K$=INKEY$
```

Spectrum

Change these lines:

```
 90 LET E=6:DIM A$(E,8):LET S1=0:LET S2=0
130 DEF FNR(R)=INT(RND*R)+1
500 IF H$="N" THEN STOP
520 PRINT AT Y,X;
550 LET K$=INKEY$
```

Amiga/PC(GW-Basic)

Change these lines:

```
130 DEF FNR(R)=INT(RND*R)+1
520 LOCATE Y+1,X+1
550 LET K$=INKEY$
```

Commodore 64/128

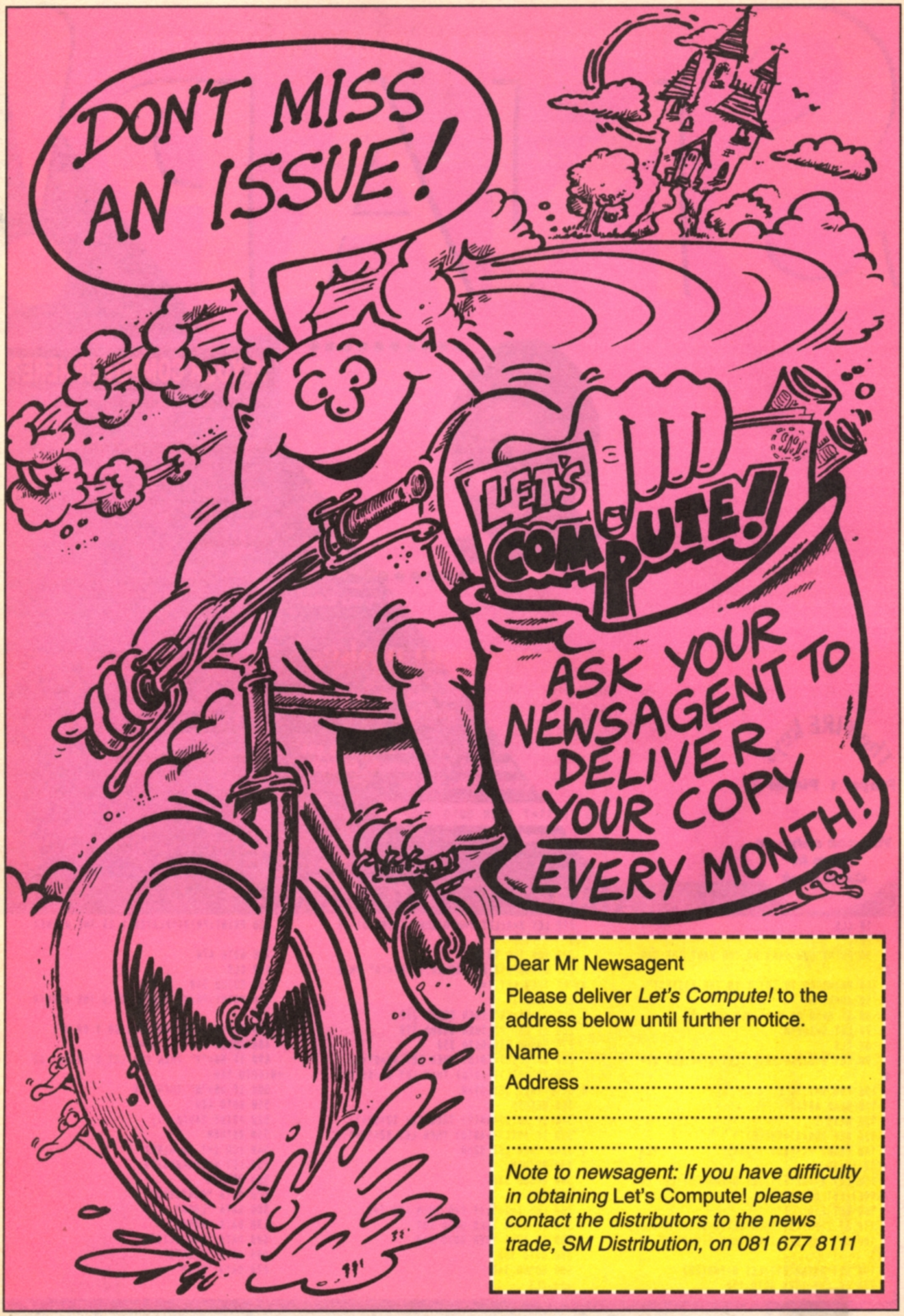
Replace `CLS` with `PRINT CHR$(147);` on Lines `10, 80, 350, 410, 440, and 490.`

Change these lines:

```
130 DEF FNR(R)=INT(RND(0)*R)+1
520 POKE 211,X:POKE 214,Y:SYS 58732
550 GET K$
```

HEETAN'S PROGRAM

```
  10 CLS
  20 LET Z=0
  30 PRINT"HOW FAST DO YOU WANT THE GAM
E"
  40 PRINT"(1 TO 50) 1 IS THE FASTEST"
  50 INPUT M
  60 IF M>50 OR M<1 THEN GOTO 50
  70 LET G=100*M
  80 CLS
  90 LET E=6:DIM A$(E):LET S1=0:LET S2=
0
 100 FOR I=1 TO E
 110 READ A$(I)
 120 NEXT I
 130 DEF FNR(R)=RND(R)
 140 PRINT"PLAYER1 :";S1;"          PLA
YER2 :";S2
 150 LET A=FNR(25):LET B=FNR(20):LET C=
FNR(E):LET D=FNR(E)
 160 LET L=B
 170 IF Z>FNR(5) THEN LET Z=0:LET C=D
 180 LET X=A:LET Y=B:GOSUB 520:PRINT A$
(C)
 190 LET A=FNR(25):LET B=FNR(20)
 200 IF L=B THEN GOTO 190
 210 LET X=A:LET Y=B:GOSUB 520:PRINT A$
(D)
 220 FOR I=1 TO G
 230 GOSUB 550:LET B$=K$:IF B$="Q" OR B
$="P" THEN LET I=G
 240 NEXT I
 250 IF B$="Q" THEN GOSUB 280
 260 IF B$="P" THEN GOSUB 310
 270 GOSUB 550:GOTO 350
 280 IF A$(C)=A$(D) THEN LET S1=S1+1
 290 IF A$(C)<>A$(D) THEN LET S1=S1-1:I
F S1<0 THEN LET S1=0
 300 RETURN
 310 IF A$(C)=A$(D) THEN LET S2=S2+1
 320 IF A$(C)<>A$(D) THEN LET S2=S2-1:I
F S2<0 THEN LET S2=0
 330 RETURN
 340 GOSUB 540
 350 CLS
 360 LET Z=Z+1:IF C=D THEN LET Z=0
 370 IF S1>4 THEN GOTO 400
 380 IF S2>4 THEN GOTO 440
 390 GOTO 130
 400 GOSUB 540
 410 CLS
 420 PRINT:PRINT"PLAYER 1 IS THE WINNER
"
 430 GOTO 470
 440 CLS
 450 GOSUB 540
 460 PRINT:PRINT"PLAYER 2 IS THE WINNER
"
 470 PRINT:PRINT"ANOTHER GO Y OR N"
 480 GOSUB 550:LET H$=K$
 490 IF H$="Y" THEN CLS:LET S1=0:LET S2
=0:GOTO 140
 500 IF H$="N" THEN END
 510 GOTO 480
 520 PRINT TAB(X,Y);
 530 RETURN
 540 FOR I=1 TO G:NEXT I
 550 LET K$=INKEY$(0)
 560 RETURN
 570 DATA "CONTESTS"
 580 DATA "LOGO"
 590 DATA "GAMES"
 600 DATA "PROJECTS"
 610 DATA "CHEATS"
 620 DATA "HELP"
```



Dear Mr Newsagent

Please deliver *Let's Compute!* to the address below until further notice.

Name .....

Address .....

.....

.....

Note to newsagent: If you have difficulty in obtaining Let's Compute! *please contact the distributors to the news trade, SM Distribution, on 081 677 8111*

LETS COMPUTE! PRIZE WINNERS

Dick Tracy Contest

25 copies of Dick Tracy go to: Jamie Smith, aged 11 from Tarbert; Steven Dean, aged 10 from Dorset; Sian Leigh, aged 10 from Cambridge; Lewis Faulkner, aged 12 from Exmouth; Alexander Dillon, aged 10 from Congleton; Paul Gibson, aged 10 from Co. Durham; Sharon Green, aged 19 from Coventry; Ian Massey, aged 29 from Clifton; Ben Smith, aged 10 from Lewisham; Louis Carroll aged 10 from Norwich; Chris Parsons,aged 12 from Bridgwater; Tom Wright, aged 10 from Guiseley; Joseph Allen, aged 11 from Newton Longville; Nicky Holden, aged 8 from Sittingbourne; A Brumwell, aged 9 from Morden; Jon Merchant, aged 9 from Taunton; Katherine Dyer, aged 14 from Beeston; Damien Rowe, aged 13 from Knaresborough; R Moore, aged 8 from Cookridge; Samantha Nunn, aged 14 from Estover; Jonathan Harrington, aged 11 from Waterlooville; Paul Reed, aged 11 from Pallion; Matthew Hipkin, aged 11 from Gaywood;Mark Owen, aged 11 from Morden and Ian Molyneux, aged 12 from Oakham.

The 10 runners-up will all receive a mug or a T-shirt and they are: Karl Naylor, aged 12 from Bramley; Jimmy Fry, aged 9 from Scamshaw; David Bower, aged 13 from Driffield; Mike Brindley, aged 11 from Rainham; Erin Black, aged 6 from Aberdeen; Alex Samson, aged 10 from Cheshunt; Westlee Butler, aged 13 from Forest Gate; C Granger, aged 7 from Moorends; Richard Maclachlan, aged 14 from St. Bees and Iain Scott, aged 11 from Finaghy.

REPTON WINNERS SEE PAGE 38

HIGH SCORE CHALLENGE!

Game	Computer	Score	Name	Age
Alien Swirl	BBC	101,362	Richard Pye	11
BirdBasher	Electron	326,500	Andrew Wingate	13
Boxer	Electron	999,235	James Lawford	11
Bughunter	Archimedes	10,909	Richard Tapley	12
Caesar The Cat	BBC	10,068	John Hayter	11
Captain Comic	PC	73,125	Andrew Oakey	13
City Bomber	BBC	690	Mark McKeown	10
Codename Droid	BBC	203,500	David Dolliver	10
Commando	C64	123,000	A Crothers	14
Conqueror	Archimedes	1,231,280	Christopher Moignard	10
Dare Devil Dennis	Electron	9,650	Nathan A Ward	10
Exile	BBC	115,836	James Burch	14
Fireball	Archimedes	117,000	Michael Bootman	7
Fire Track	BBC	450,700	Christopher Middleton	11
Gauntlett II	ST	134,560	Chichieun Wong	14
Hellfire	PC	3,985	Jessica Harrison	12
Hobgoblin II	BBC	59,850	Timothy Sharp	11
Hobgoblin II	Electron	48,650	Matthew Lee	14

Game	Computer	Score	Name	Age
Hunkback	CPC	72,900	Steven Guy	17
Keyman	BBC	102,000	Alex McLeod	10
Midnight Resistance	C64	1,634,260	David Roper	11
Mr EE	BBC	500,000	Dr GF Gott	49
Nemesis	BBC	8,500	Matthew Jack	8
New Zealand Story	Spectrum	49,578,445	Stuart McClure	12
Nightbreed	ST	Completed	Ben Smith	10
Outrun	ST	10,472,646	Richard Williams	13
Pakman	CPC	8,990	Mike Forbes	11
Rainbow Islands	Amiga	1,374,520	Neil Jordan	12
Repton	BBC	6,851	Robert Carr	10
Skirmish	Archimedes	206,540	Pat W Sheerin	11
Spy vs Spy	C64	9,610	Stevie Bruce	11
Starport	QL	13,100	James Haynard	7
Street Fighter Sim	C64	395,160	David Yu	12
Thrust	BBC	74,850	Alexander Grumbley	12
Turbo Outrun	Amiga	1,000,001	Shafick Khoodabux	11
Vyrus	Amiga	5,000	Fiona Hutchinson	11

Send us YOUR scores NOW!

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

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

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

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

Here's where to go for your computer hardware & software

A-Z County Supplies
23A Lower Mall
Weston Favell Centre
Northampton
Northamptonshire
NN3 4JZ

Bentleys
25 Newcastle Street
Dale Hall
Bursley
Stoke on Trent
Staffs
ST6 3QW

Bits & Bytes Computers Ltd
18 Central Station
Ranelagh Street
Liverpool
Merseyside
L1 1JT

Bits 'N' Bytes Computer Cent.
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THE FINAL FRONT-EAR

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DON'T JUST SIT THERE- GET TO WORK!

DOING WHAT?

ANSWERING TELEPHONE INQUIRIES -AND BE ABUSIVE!

WHY DON'T YOU CLEAR OFF!

YES, THAT'S THE SPIRIT

THROTTLE

AND SO...

WHY CAN'T THEY GET A COMPUTER TO DO THIS?

Hello Hello Hello

HOLD ON! I'M BUSY!

...IN TRUE TELEPHONIST MANNER

CAN I SPEAK TO Mr. FIBBY?

NO! GO AWAY!

I'VE LOST MY TEN PENCE..

SO WHAT!?

YELLING PAGE

THIS GOES ON FOR WEEKS WHEN...

HELLO, CAN I HAVE THE NUMBER FOR THE PLANET TERMAGANT?

WHY?

I'M LOOKING FOR A CAPTAIN DIM BIRK

SLOPPY! IS THAT YOU?

INTER GALACTIC PHONE CHANGE

SCRATCH

YEP! I'M IN A PHONE BOOTH- -NEXT TO ALPHA CENTAURI SPARR SHOP.

CAN YOU LOCK ON A TRANSPORTA BEAM SLOPPY?

AYE CAPTAIN!

10 YEARS SERVICE BAD TEMPER MEDAL

IF YOU'LL JUST GIVE ME YOUR TRI-CO-ORDINATES

WILL DO! THEY'RE..

YOU'VE BEEN CUT OFF DIM.!- AND THAT'S NOT ALL WE'RE GONNA CUT OFF!

SNIP

NO!

OH NO! AND DIM HAS SUCH NICE HAIR! HOLD ON TO YOUR FOLLICLES 'TIL NEXT MONTH!

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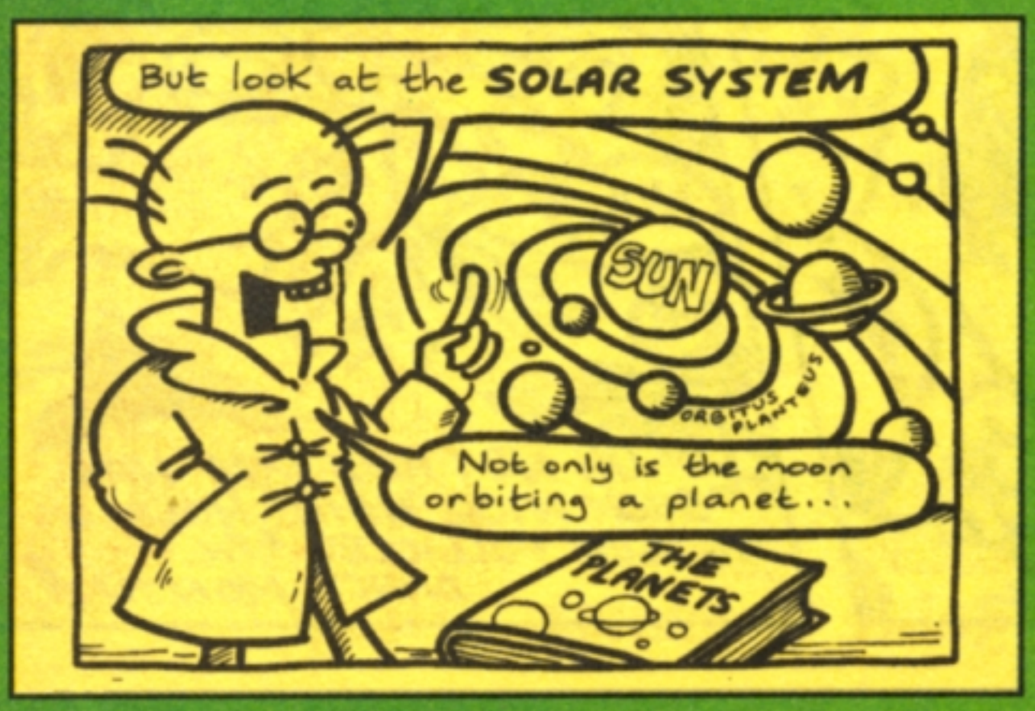

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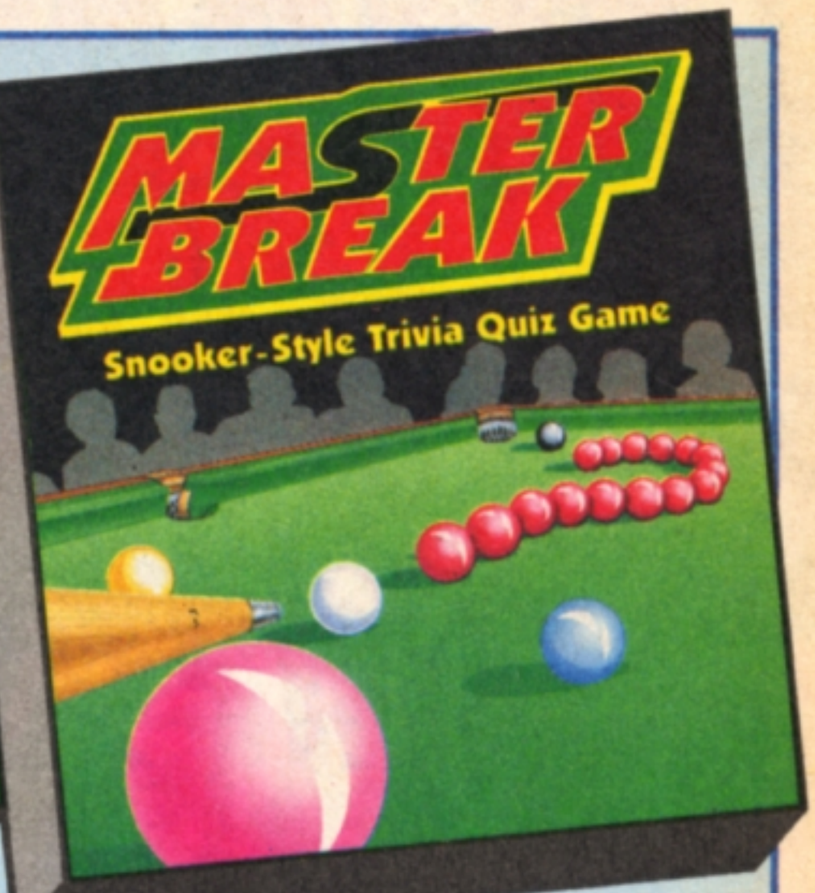

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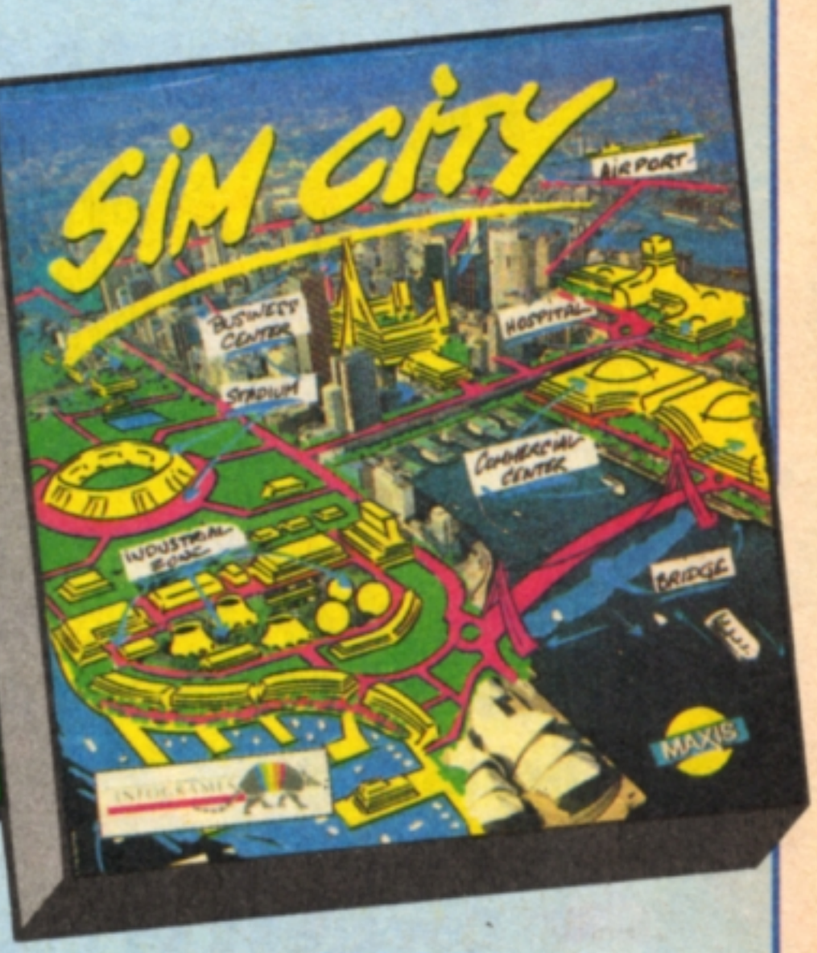

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