

# LET'S

# COMPUTE!

99p

Play an  
amazing  
adventure

**LAND YOUR  
OWN ROCKET**



Write Valentine  
verses the easy  
way

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

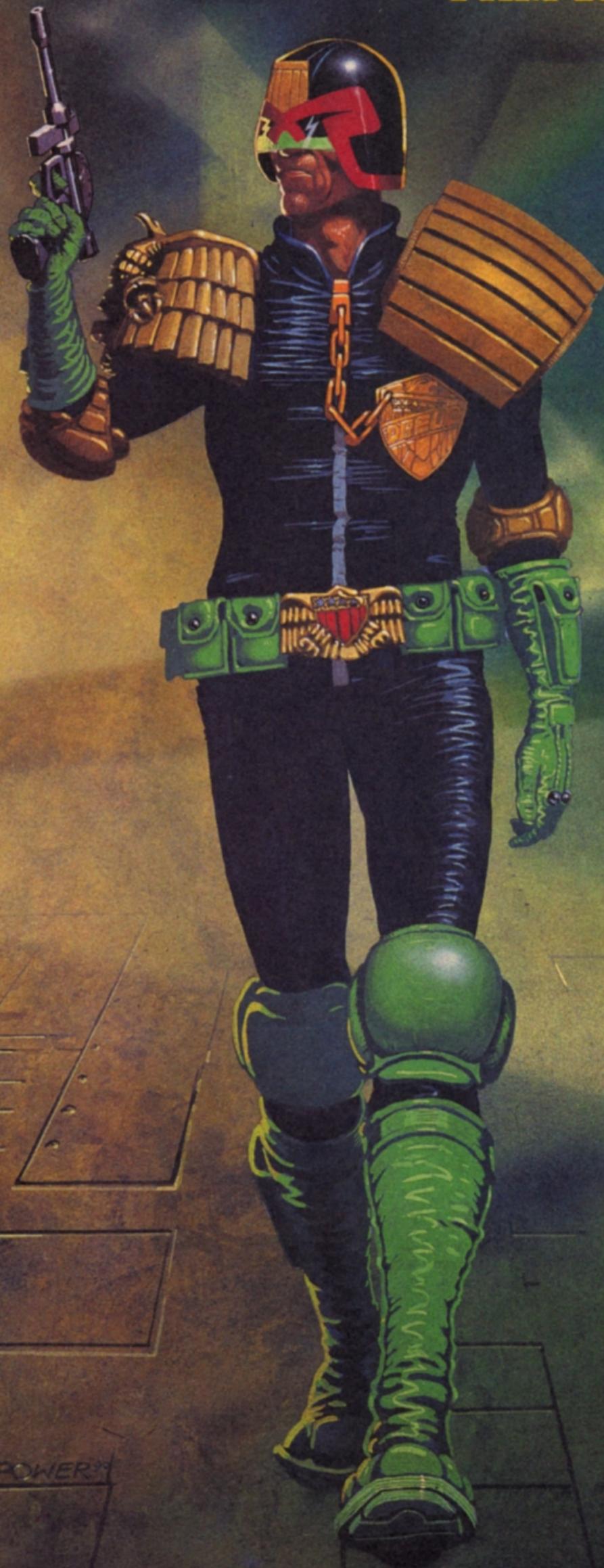
No 7 February 1991  
A Database Publication



## OVER 100 PRIZES TO WIN!

# JUDGE DREDD

I AM THE LAW



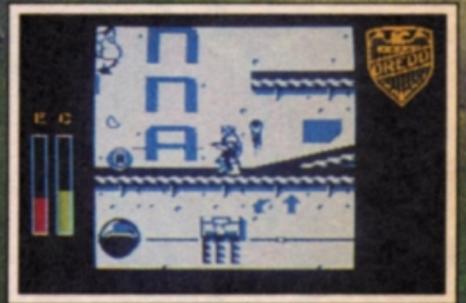
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Send a  
computerised  
Valentine  
message  
**GOTO 31**

Land a rocket  
with the Safe  
Scientist  
**GOTO 28**

**NEW!**  
Start adventuring:  
Find the Golden Crown  
**GOTO 34**

Make  
Money  
**GOTO 39**

How high is  
that tree? Find out  
the easy way  
**GOTO 6**

LOADSA  
PRIZES!  
**GOTO 9,  
17, 33**

Build your  
own Pinball  
Machine  
**GOTO 21**

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## REGULARS

- |                  |                |
|------------------|----------------|
| Rom's Round Up   | <b>GOTO 10</b> |
| Rom and Ram      | <b>GOTO 13</b> |
| The Games Gang   | <b>GOTO 22</b> |
| Program Doctor   | <b>GOTO 27</b> |
| Build a Database | <b>GOTO 37</b> |
| Logo Lowdown     | <b>GOTO 43</b> |
| Final Front Ear  | <b>GOTO 50</b> |

# Notice

I think *Let's Compute!* is brill, especially the January edition because of the Snakes Alive program. I love snake games.

When I had finished the program I fiddled around with Lines 690 to 730. This is the crash routine.

I was trying to put some sound into it when it crashed. I came up with this line:

```
705 SOUND 1,-1,53,1
```

This made me happier because it made the game even more enjoyable on my Electron.

— Simon Candler (14),  
Thetford, Norfolk

**This line will also work on BBC computers. People with other makes could also put a SOUND or BEEP command in at Line 705.**

**The instruction book for your computer should give some you can experiment with.**

**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.**

## AMIGA OWNERS

We've had lots of letters from Amiga owners asking for our listings to be in Amiga Basic rather than Amos. As usual, *Let's Compute!* is doing what YOU want.

Starting with this issue we are printing programs for Amiga Basic. That's the Basic that's on the Extras disc that came with your computer.

Remember that if you have the BBC Emulator you can also use the BBC versions of the programs.

I buy *Let's Compute!* every month and I think it's great. I try the programs, read Rom and Ram and the Noticeboard.

I also look to see what will be in the next issue, but you never tell us when it will be out in the shops. Could you please do that each month?

— Chris Winslow (12), Bedford

**That's a great idea, Chris. From now on the date that you can get the next issue of *Let's Compute!* at newsagents will be pinned to the noticeboard.**

**The March issue goes on sale on February 28. Don't forget to tell your newsagent to save you a copy!**

I thought the Brain Game in December's *Let's Compute!* was great fun. When I played it at first I could only score about five, but I soon got into double figures.

My dad thought it would be a good program to teach my young brother the alphabet. To do that it needed changing so the letters come up in order.

First it should show A alone. Then AB followed by ABC and so on. That way, as my brother learnt one more in the pattern he would be learning the alphabet.

The changes I made to the program were simple. Just add new Lines 5 and 335 and change Line 330, like this:

```
5 LET L=0
330 LET L=L+1:LET X=L:IF L=26 THEN LET L=0
335 RETURN
```

My brother now has a lot of fun with the program. He's already scoring 15 nearly every time, and sometimes more.

— Anthony Lewis, Milton Keynes

# board

Thanks for a great magazine. It's good to have one that's not full of games reviews that I can't afford anyway. Instead it's got loads of things for me to type in, which is helping me to learn.

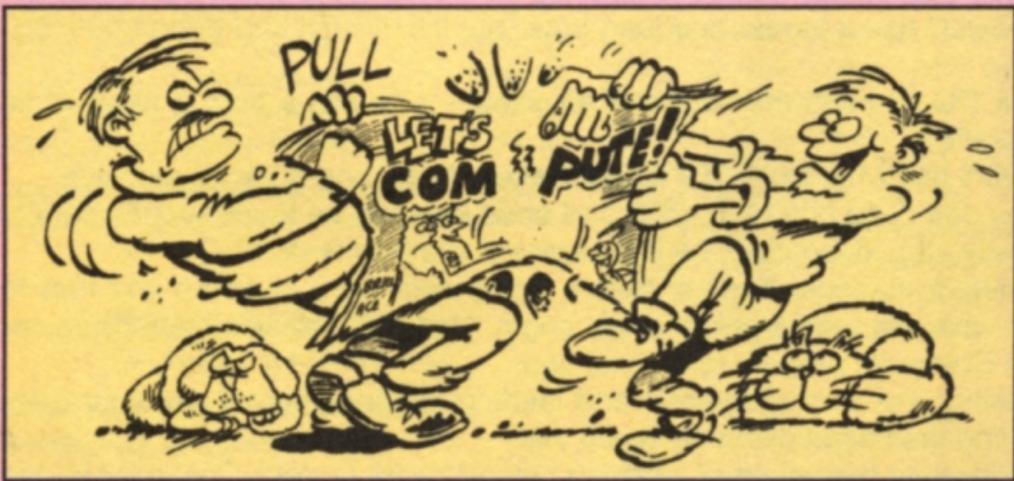
The trouble is that it is now a fight between me and my dad as to who gets at the magazine first!

Having said that could you be careful where you put the competition entry forms? The one for free games for a year was on the other side of the Build your own Database item. That's something I want to keep.

– Chris Walker (9), Winchester, Hants

**If you don't want to cut up your copy of *Let's Compute!* just copy the competition entry form. Either write it out or send a photocopy.**

**But don't cheat! Only send us one entry. If we find more than one form from one person we throw them all away!**



Why is Logo called Turtle Logo?  
Why isn't it Giraffe Logo?

**Logo was invented by a man called Seymour Pappert. Children found it easier than any other language.**

**To make an easy language even easier, Pappert called in the turtles. The most popular reason for him using turtles is that his wife was called Turtle!**

**By the way, you forgot to put your name and address on your letter. Let us know them so we can send you your *Let's Compute!* baseball cap.**

I am pleased with *Let's Compute!* Just one tip: Rom and Ram are for the BBC. Please could you print a comic strip for the Atari ST?

– Mark Bleasdale (10),  
Preston, Lancs

**Rom and Ram started on the BBC but now they've decided to be more adventurous. Starting in April they'll be doing things for ALL home computers.**

**In April, Rom's nephew Rum visits him. He knows even less about computers than Rom. (Is that possible?)**

**All we can say is that there'll be loads of fun. Don't miss it!**

## HIGH SCORES!

Your high scores are still flooding in. There are more than ever on Page 20.

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 *Let's Compute!* just copy it onto a piece of paper.

## RESULTS

**Have YOU won a prize? The contest results are on page. Look out for your name – Page 40.**

# Introducing...



Ever wondered how high that big tree is in your garden – or the chimney on your roof? It's easy to find out – using your computer, a piece of string and a few other odds and ends!

**No.1**

# Let's make a Clinometer

## What you'll need

This issue of *Let's Compute!*

- ☆ A piece of card, about 12cm by 6cm.
- ☆ A tube. The one at the centre of a roll of cling film is ideal. If you can't get one, use the centre of a roll of toilet tissue.
- ☆ Some Sellotape.
- ☆ Some glue for paper.
- ☆ A drawing pin.
- ☆ About 40cm of thin string.
- ☆ A small weight such as an old key or a steel nut.
- ☆ A computer.

How high is your house? It's not very easy to find out using just a tape measure! You COULD use a ladder and long tape. But it's difficult and dangerous. So don't try it!

So how DO you find the height of anything – a house, a tree, a block of flats or even a giraffe?

Surveyors use what's called a **clinometer**. A real one is very expensive.

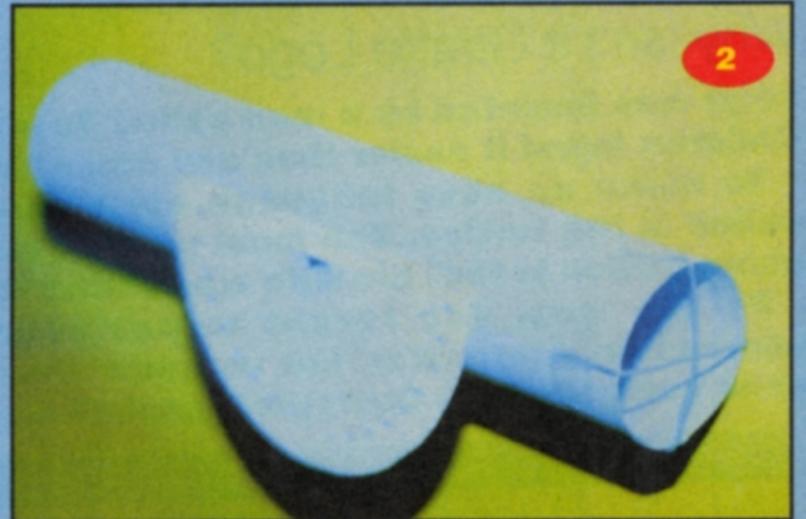
But you can build one from odds and ends that can be found around your home. The step-by-step instructions on this page tell you how to do it.

Clinometers measure angles. Before computers were invented you had to use maths to work out the height from the angle. Now you can use your computer and this *Let's Compute!* program to do it for you.

By making your own clinometer and feeding readings from it into your computer you can find the height of anything you want.

If you discover the height of anything unusual write to *Let's Compute!* and tell us. If you include a photograph of yourself using your clinometer you might even see it pinned to the noticeboard!

Cut out the clinometer scale from Page 8. Then glue it to the card and trim it into the semi-circular shape shown.



Tape the cardboard scale to the tube. Tape two small pieces of string over the end of the tube to form a cross.

## HOW TO USE IT

- 1 Suppose you want to measure the height of a tree. Stand at the foot of the tree and walk away - counting the number of paces.
- 2 Stop when you can see the top of the tree without stretching your neck. Jot down the number of paces you took.
- 3 Look at the top of the tree through your clinometer. Make a note of the reading where the string crosses the scale.
- 4 Take the two readings to your computer and use the program to discover the height of the tree.

*If you want to be more accurate, exactly measure the distance you stand away from the tree rather than just count the paces.*

## USING YOUR COMPUTER

Type the program in, SAVE IT and RUN it. You'll be asked five simple questions. Here's how you should answer them:

### What units?

You'll usually reply Metres or M. But you can use anything you want such as cm, inches or ft. Make sure you measure all the distances in the units you choose.

### How high are your eyes?

Measure from the floor to your eyes and type in the figure.

### How big are your paces?

Tell your computer how far you go with each step. If you measured the distance exactly instead of counting paces, answer 1 to this question.

### How many paces did you take?

Enter the figure you found when you used your clinometer. If you measured rather than pacing out the distance, give the measurement.

*Your computer will then tell you how far away was the object you are measuring. You'll then be asked the final question:*

### What angle did your clinometer give?

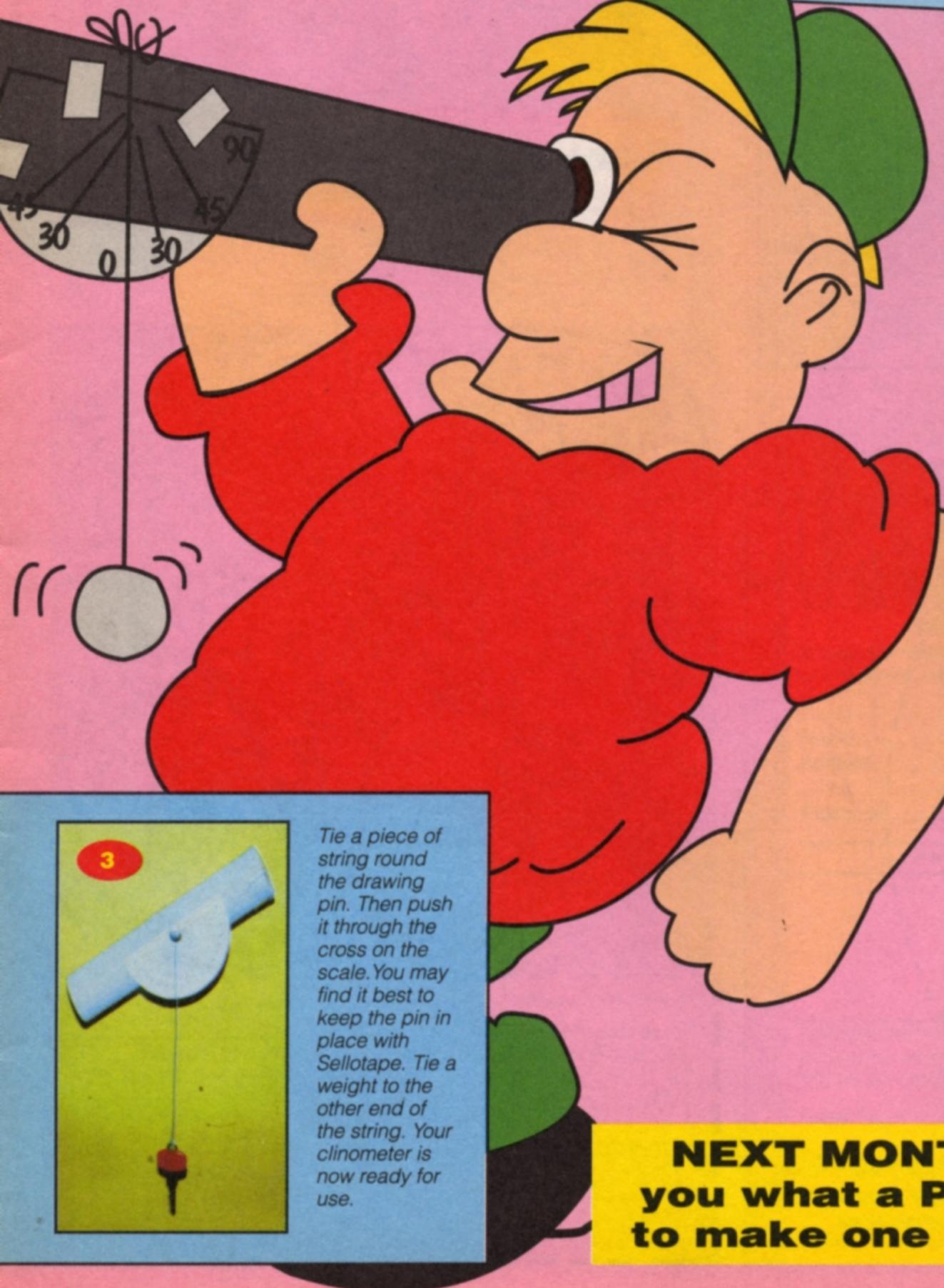
Just enter the reading you got from your clinometer scale.

*You'll be told the height of the object you measured.*

And that's all there is to it!

You'll then be asked if you want another go. You must answer with a capital Y for yes or N for No.

If you answer Y you won't be asked the first three questions again. The answers are the same every time.



```

10 CLS
20 INPUT "WHAT UNITS";US
30 INPUT "HOW HIGH ARE YOUR EYES";H
40 INPUT "HOW BIG ARE YOUR STEPS";B
50 INPUT "HOW MANY PACES DID YOU TAKE";S
60 LET D=S*B
70 PRINT:PRINT
80 PRINT "THE OBJECT WAS ";D;" ";US;" AW
AY"
90 PRINT:PRINT
100 INPUT "WHAT ANGLE DID YOUR CLINOMETER
GIVE";A
110 LET R=INT(100*(H+D*TAN(3.14159/180*A)
)+.5)/100
120 PRINT "IT IS ";R;" ";US;" HIGH"
130 PRINT:PRINT
140 INPUT "DO YOU WANT ANOTHER GO (Y/N)";
QS
150 IF QS="Y" THEN GOTO 50
160 IF QS<>"N" THEN GOTO 140
    
```



## IS THIS YOUR COMPUTER?

**Electron/BBC/Archimedes/  
Spectrum/PC(GW-Basic)**

*The program works as shown.*

**Commodore 64/128**

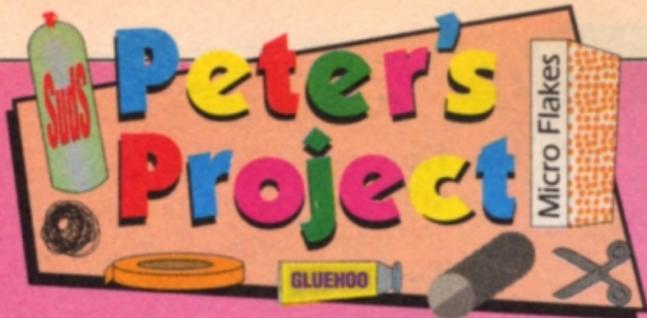
*Change Line 10 to:*

```
10 PRINT CHR$(147);
```

**ST(Stos)**

Put # after the variables H, B, D, S, B and R. So, for example, H becomes H#.

**NEXT MONTH: Pete will tell you what a Pedometer is, how to make one and how to use it.**



## THE MATHS!

Using the program on the previous page saves you knowing how to work out distances from angles. But in case you're wondering what happens in Line 110 here's a brief explanation.

In the diagram:

$$\text{TAN } A = \frac{H}{D}$$

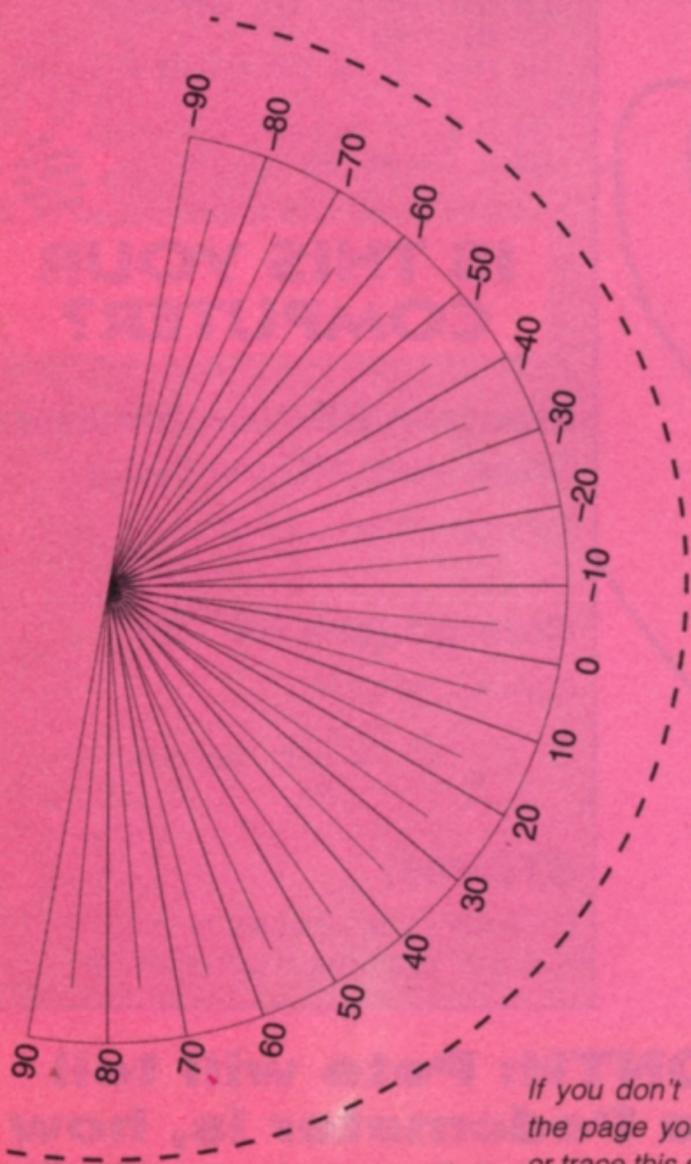
So:

$$H = D \text{ TAN } A$$

The Height H is worked out from this formula. The height of your eyes is then added because, unless you lay on the ground, that's how far above the ground the clinometer was held.

When you work out angles you probably use Degrees. But most computers use Radians. That's why Line 110 multiplies the angle A by  $\pi$  (3.14159) and divides it by 180.

*Final note:* The INT and +0.5 are there to round off the numbers. This means that you'll get an answer like 4.57 rather than 4.568237. The Program Doctor explains the method on Page 27.



If you don't want to cut the page you can copy or trace this scale

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- New Computer Express, Issue 107.

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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, COMAG, on 0895 444 055.

Your chance to WIN some of the latest software from Atlantis

# CALLING ALL SPECTRUM, C64 & CPC OWNERS

Is your computer a C64, Spectrum or CPC? If it is, then Atlantis Software are offering you the chance to win two of their latest games.

SuperKid and Skatin' USA are both packed with action. Let's Compute! has 75 pairs waiting to be won.

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



The Mayor of New York needs help! Gang warfare is everywhere. Ordinary people are scared to walk the streets.

Someone is needed to protect them. That someone is Tom Essex. He drinks a special liquid which makes him fly. He finds he's got super strength.

You must guide Tom as he leaps from tall buildings, rescues young girls and helps old ladies home. But watch the Crimewave Overload meter. If it gets too low SuperKid will lose one of his lives. This game is bang-bang action at its best.

## HOW TO WIN

All you have to do is answer four general knowledge questions about America. If you don't know the answers yourself don't give up! Just look them up in an encyclopaedia.

### The Questions

1. What ship took the Pilgrim Fathers to America?

- a The Marigold
- b The Mayflower
- c The Swallow

2. What did New York used to be called?

- a New Amsterdam
- b New England
- c New Leeds

3. Which musical about warring gangs is set in New York?

- a West Side Story
- b Love Story
- c Evita

4. What greets newcomers to New York harbour?

- a Liberty Bell
- b Mount Rushmore
- c Statue of Liberty

Now fill in the entry form and make sure that it arrives at Let's Compute! before February 28, 1991.



You're still playing the part of Tom Essex. But this time you wake up one morning to find all your special powers have gone.

It is still up to you to keep the streets safe.

So you pick up your multi-fire, fast-load catapult. Then you take your trusty skateboard from the garage and continue your fight.

You skate among the gangs, firing your catapult. Or you can ride straight into them. That kills them but also lowers your energy level.

To keep going you musn't forget to eat plenty. There are hamburgers and fruit to give you energy.

Skating over bananas gives you greater speed too.

This time keep your eye on the dollar bills. When they are all lit you can head for the exit.

Then you can fight your way through

## ENTRY FORM

Name.....

Answers:

Address.....

1 .....2 .....3 .....4 .....

.....

My computer is a (please tick):

.....

CPC  C64  Spectrum

.....

Send your completed form to:

Post Code.....Age.....

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

Watch out for all the winners' names in Let's Compute!



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

# Sim City

Last year Amiga and ST versions Sim City scooped up awards. Now Superior Software presents the BBC version for £14.95 on disc and £12.95 on tape.

You must build manage and maintain a city of your own. The Sim City screen is divided into two: the map display, and a group of icons of houses, roads and so on you must use to build your city.

You start with £20,000, a cluster of houses, a factory and some shops. But as the you grow, the plain squares that you positioned on the map begin to develop: Houses, factories and shops appear as your decisions change the village to a town to a city.

Try to make sure that each section

# Stun Runner

Domark have grabbed the rights to Stun Runner from the arcade game of the same name. They have spent several months converting it for home computers.

Now it's out – and it has been well worth the wait. It's excellent!

The theme is a sort of 22nd century bobsleigh run. You wizz along huge tunnels, shoot down the other competitors and beat the clock to come first.

The graphics on the arcade version were big and colourful.

Lots of changes had to be made for the computer version.

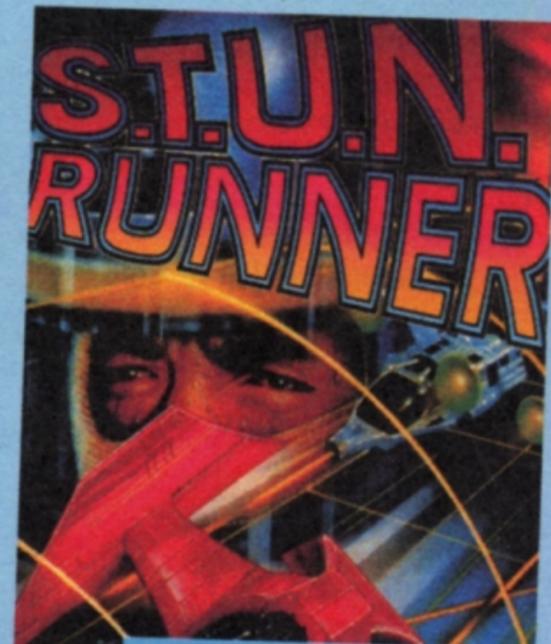
If you compare it to the original the sound isn't as good and the scrolling is jerky.

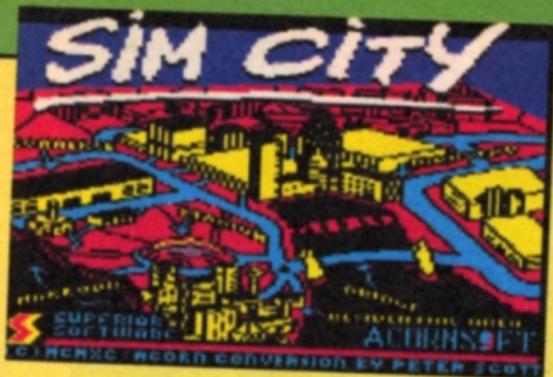
But the comparison is unfair – it's still a great game on home computers.

Whizzing down the tunnels gives a superb sensation of speed. It's a game with a simple concept and it becomes very addictive.

You can get it for the Atari ST, Amiga, C64, Spectrum and CPC. It costs £19.99 for the first two and £14.99 or £9.99 for the others depending whether you want disc or tape.

*A super game! My only minor niggle is that the shape of the track doesn't vary much. But you can't have everything.*





is balanced and you'll master the game. But as more people want to live in your city, there will be more crime, and you'll need to hire a police force and now is also a good time to find some firemen.

There are many many problems to overcome: how are your people to travel to work, where should you build that power station and are parks and trees a waste of space?

As in the real world, no one likes paying taxes so you'll have to make sure that you can afford to have what you want in your city. The Budget screen will tell you how you are managing.

The Evaluation Screen warns of



problems such as a bad storm, shows how popular you are and what your city dwellers want.

*Sim City is a totally engrossing game you'll be playing for many months.*

## Quattro Arcade

Codemasters have a long tradition of budget software. Now they've released four of their old games in one pack.

The first is Pro Powerboat Sim. It puts you at the helm of a powerboat.

You can play on your own, but it's much more fun against a friend. The graphics are colourful, but small. Overall, it's quite good.

Next is Nitro Boost. It's another simulator but features cars instead of boats. It's good fun and enjoyable, but not the greatest game on earth. The third challenge is SAS Combat. The idea is simple: Shoot everything that moves.

The graphics are not very easy to get to grips with. The main screen is at a strange angle that's really

confusing. This one is definitely my least favourite of the four.

Finally there's Pub Trivia. It's a question and answer game, but the number of questions is limited. Still, it's a welcome change from the other games.

Quattro Arcade costs £12.95, and you can get it for the Atari ST and Amiga.

*This compilation is cheap. But I still wouldn't recommend it as the best way to spend your money.*



Average!



## Wrath of the Demon

Readysoft's games are well known for their superb graphics and sound. For example, Space Ace looks just like a cartoon film.

But, in the past, their games have often been very difficult and boring to play. Now Wrath of the Demon is all set to change this. It has great sound and gameplay as well as super pictures.

The plot is nothing new. The king has ordered you to save his kingdom from Evil. In return a very pretty princess is waiting for you.

Fortunately the game is better than the plot. It has lots and lots of levels. They'll keep you busy for days if not weeks.

Wrath of the Demon is available now for the Amiga and PC. And Atari ST and C64 versions are due out soon. All cost £34.95.

*Even though the price is rather high, it's a game well worth checking out.*



Great but expensive!



TEENAGE MUTANT HERO

# TURTLES

WORLD TOUR



electric crayon

DELUXE



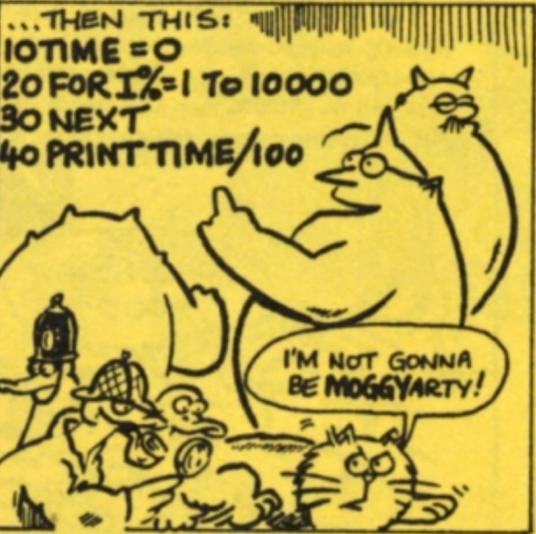
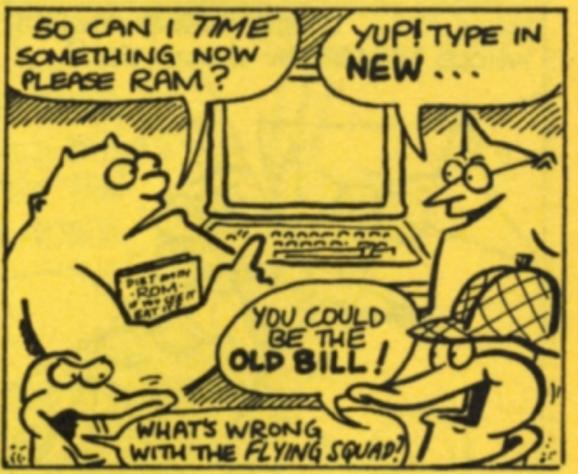
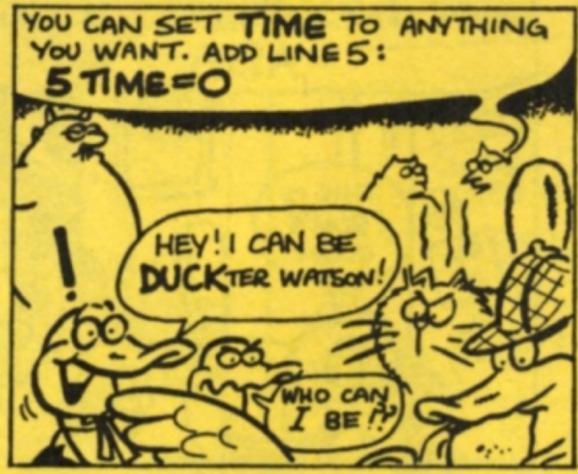
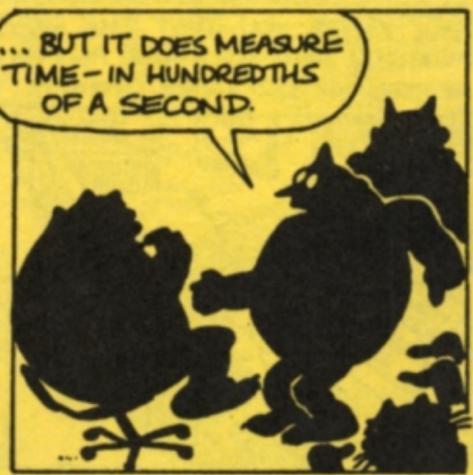
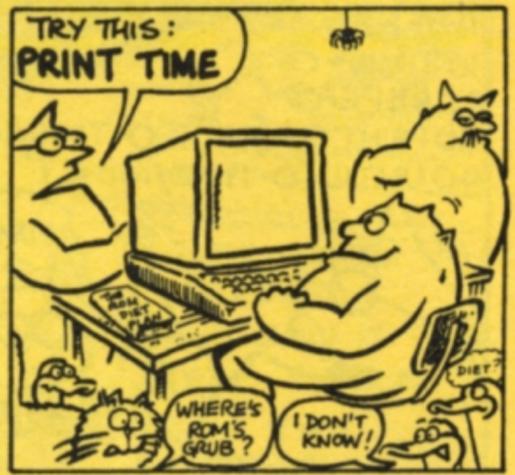
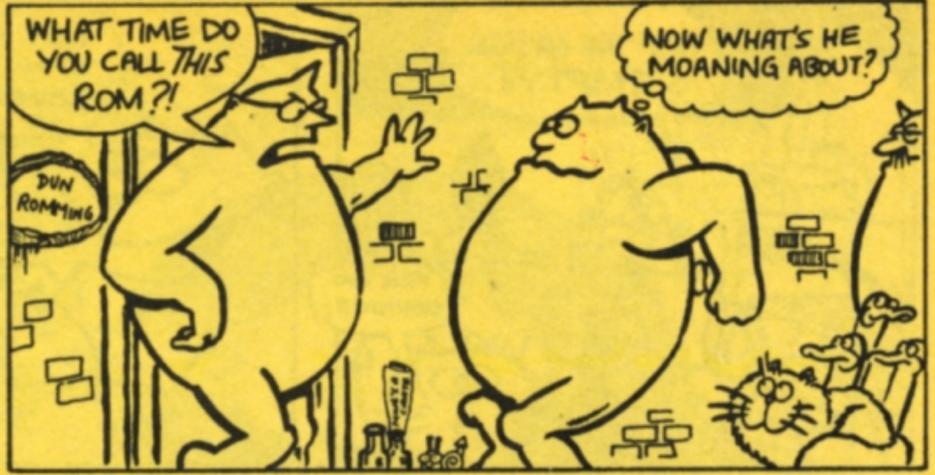
Available on Amiga, St, Pc, @ £19.99 C64  
and Amstrad @ Disk £14.99 Casettee £9.99

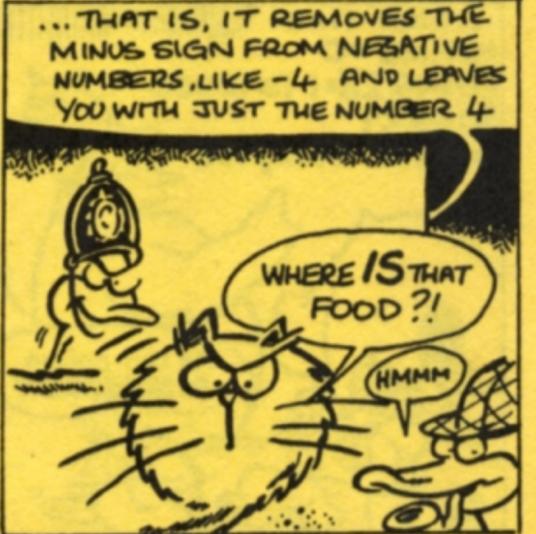
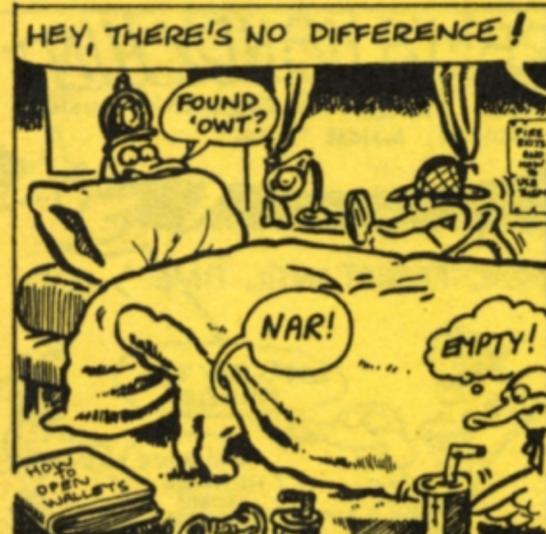
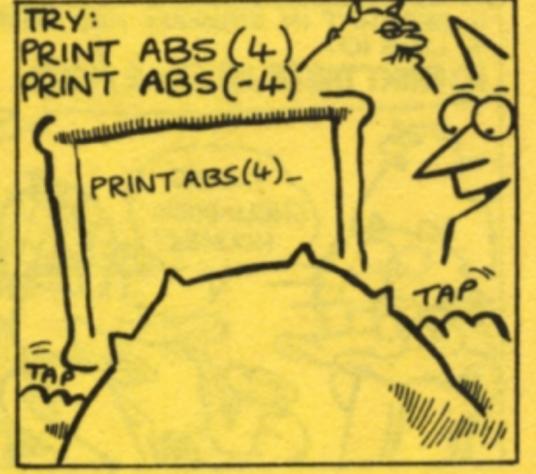
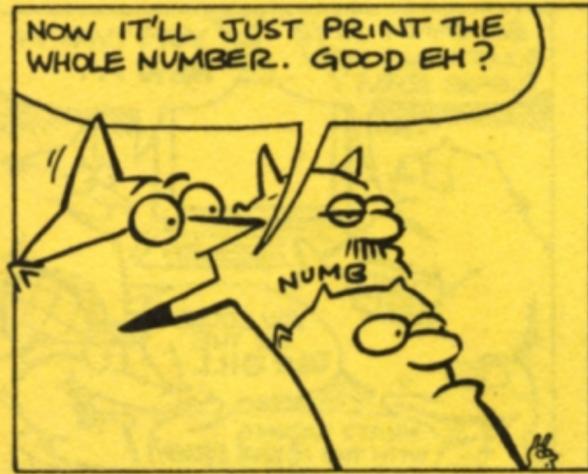
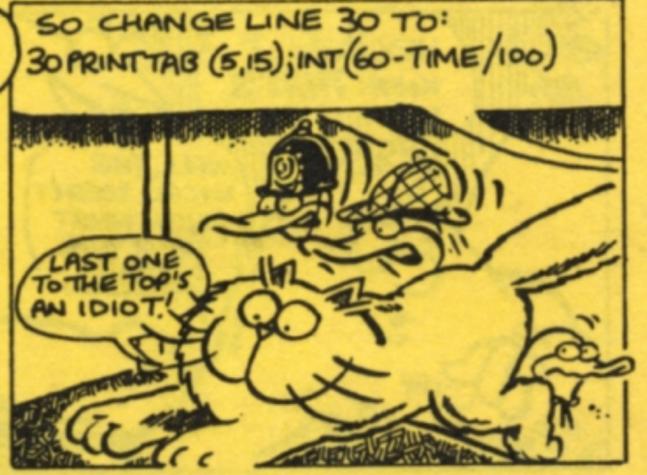
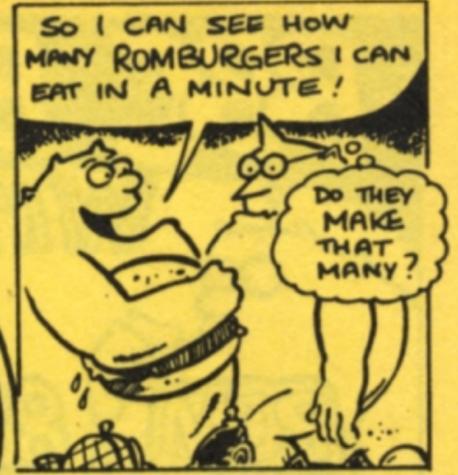
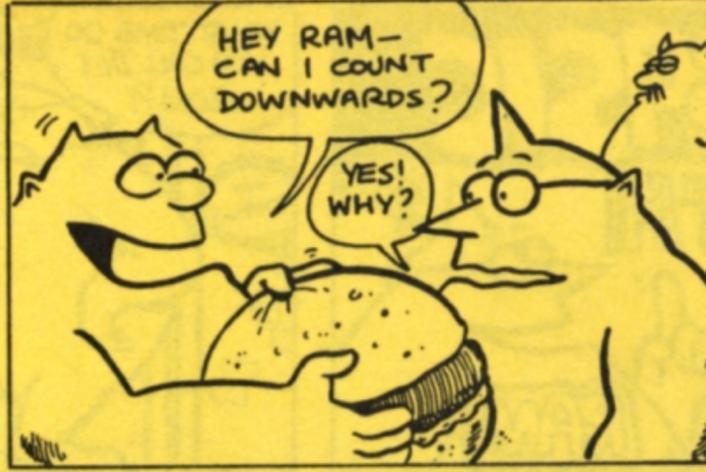
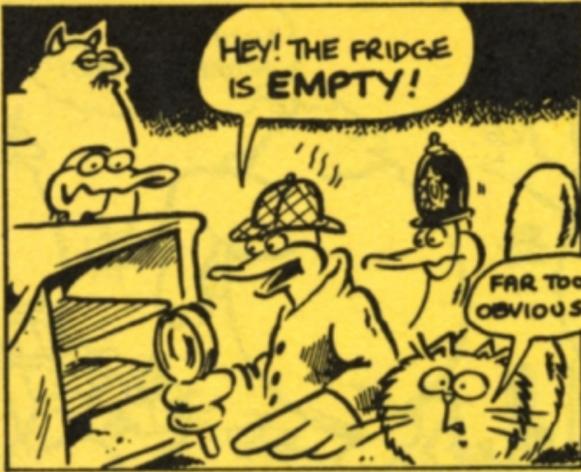
- Computer colouring book
- 30 Hero Turtle pictures to colour
- Learn as you colour with educational descriptions of each stop on the Turtles' "world tour"
- Easy to use Children's controls
- Colour each picture again and again
- Print Option on Amiga PC and C64

Merit Software

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# BBC BASIC WITH ROM & RAM





RIGHT ROM - LET'S MAKE A LITTLE CHALLENGE FOR YOU - READY?

OOH!

HAVE YOU NOTICED SOMETHING?

WHAT?

TYPE NEW. THEN TYPE IN THE FOLLOWING LINES →

ROM'S UNCLE REM! HE HASN'T MOVED A LOT HAS HE?

THAT'S TRUE!

```
10CLS
20A$=CHR$(RND(26)+64)
30PRINTAB(9.9)A$
40TIME=0
```

DON'T RUN IT YET!

LET'S TAKE A CLOSER LOOK AT HIM!

ADD THE REST:

```
50 REPEAT
60 G$ = GET$
70 UNTIL G$ = A$
80 sec% = TIME
90 PRINT "YOU TOOK "; sec% / 100; " SECONDS"
100 REPEAT UNTIL GET = 32 : GOTO 10
```

AHA!

NOW YOU'VE A "DETECT-A-KEY" PROGRAM

YOU CAN EAT NOW ROM

INFLATE A .REM.

IT'S AN INFLATEABLE REM!!!

...AND ALL THE FOOD'S INSIDE IT!

GET ME A PIN!

INFLATE A .REM.

PROD.

TIME FOR FOOD!

CHOCXY BIKKIES

PIG PACK Mega CRISPS EXTRA FAT

GUM GUM

MUNCHER

LARD

STICKY GUM

BOOM

NEXT MONTH: DATA! DATA! READ ALL ABOUT IT!

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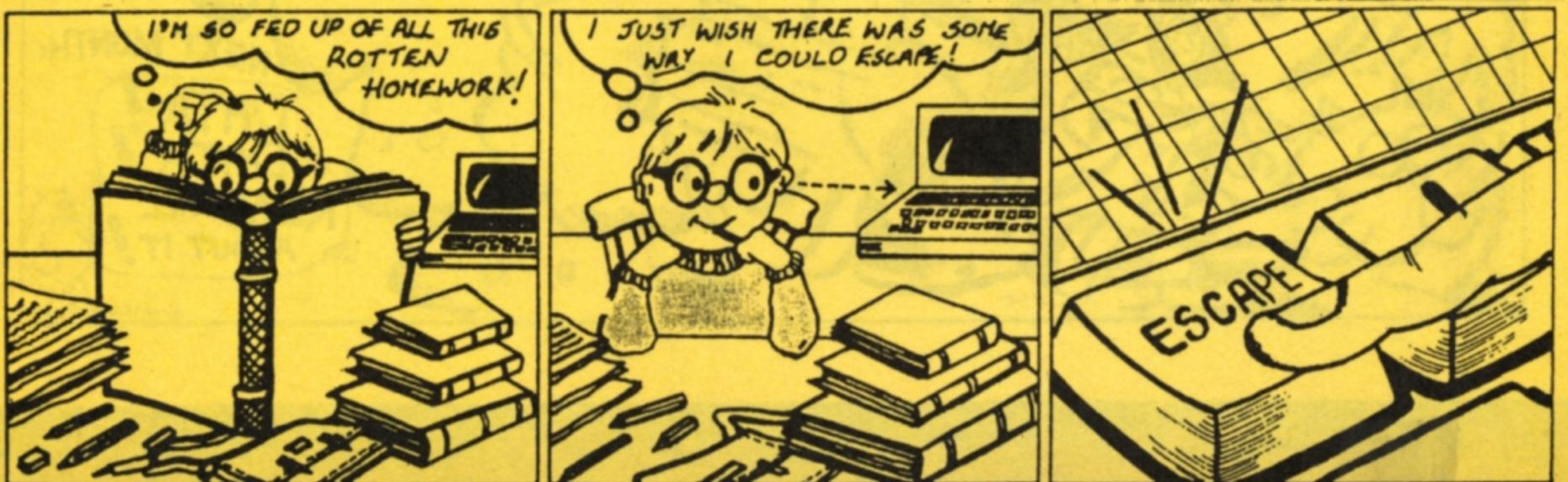
# KEYBOARD KAPERS



## ★STARCAT★



## The Micro Kid





# ARE YOU

**A** We've over £1,000 worth of joysticks waiting to be won!

# CHAMP?

Are you having trouble getting high scores? A good joystick will help you do much better. So this month we're giving away 30 of the very best you can find!

Active and *Let's Compute!* have teamed up to give all readers who have a PC, Amiga, Atari ST or C64 a chance to win a super new Champ joystick.

These are very special American joysticks and a must for all games players. So fill in the entry form and send it to us now.

## THE PRIZES

**For Amiga, Atari ST, PC and C64 owners**

Here is something really different in joysticks! Have you ever wanted REAL controls for a flight simulator? This is your chance to get somewhere near. It's called a Yoke control. It's got a realistic throttle and fire buttons on each Yoke arm. You can use it to do a full 60 degree turn. To save you really taking off there are thumb screws to attach it to the table.

They're worth £49.99 each. We've got TWENTY of them - just looking for good homes!



**For PC owners**

If you play games on a PC you may have had trouble finding the right kind of joystick. Our prizes include two types that are ideal for a PC:

● There are FIVE PCJS 606 joysticks. At £19.99 each these are for the really enthusiastic games player. They center themselves and have a host of options including two groups of fire buttons and auto fire.

● There are FIVE PCJS 909A joysticks. They let you adjust the up/down and left/right movements. There's also an auto-fire button and the stick neatly centres itself when you let go. They cost £14.99 each.

● PLUS each PC joystick comes with a gamecard worth £19.99. So all the winners have to do with their prize is plug in the board, add the joystick and get zapping!



### WHAT YOU HAVE TO DO

To win one of these superb joysticks all you have to do is answer these three questions:

- When is Valentine's Day?
  - 14 February
  - 29 February
  - 1 March
- If the last Leap Year was in 1988 when will the next one be?
  - 1991
  - 1992
  - 1993
- Which game doesn't concern flying?
  - Chocks Away
  - Bomber
  - Wheels of Fire

Now fill in the entry form and make sure that it reaches us at *Let's Compute!* before February 28, 1991.

### ENTRY FORM

Name.....

Address.....

.....  
.....

Post Code.....Age.....

Answers:

1.....2.....3.....

My computer is a (please tick):

PC  C64   
Amiga  Atari ST

Send your completed form to:  
Joystick Contest, Let's Compute!  
Europa House, Adlington Park,  
Macclesfield SK10 4NP.

Watch out for all the winners' names in *Let's Compute!*

# IT'S A GADGET GET HOT

## FOR ALL COMPUTERS

This gadget works with any computer that uses a nine-pin joystick plug. Using the modifications in the text it can also be used on a BBC Model B, Master and Electron with Plus One.

# BE YOUR

Ever wanted your own pinball machine? Real ones are very expensive! So let's look at how we can make one cheaply - using a computer to keep the score and ring the bells.

Up to now Gadget Shop projects have been quick and simple. The pinball machine is very easy to make - but it will take you a bit longer than usual.

Also, in making gadgets so far, you've been told exactly what to make. This month's project is what we call open ended.

This means that I'll give you lots of ideas. You can use as many or as few in YOUR pinball machine as you like.

**So let's get on and build it!**

*Build your own  
super game with a  
little advice from  
Gadget Shop boss  
Mike Cook*

## MAKING THE MACHINE

The table is made out of a sheet of wood. Hardboard will do - shiny side up. But remember that nails hold better in solid wood.

Look round your DIY shop. You'll probably find some small panels of plywood or even kitchen cupboard doors that will do well.

Surround your table with a small strip of wood to keep the ball in play. A bent strip of thick cardboard provides the semi circular ball guide at the top.

The base board should be tipped up at the top end to provide a slope. But make sure that it is not too steep.

Try rolling the ball down the board: It should roll slowly but firmly.

Foil strips are used to detect where the ball is on the board. The panel on the right gives more details of how these should be fixed.

They should come to the edge of the board if you are using crocodile clips. They can go anywhere if you are using bolts.

There may be areas on the board where you don't want to detect the ball crossing the strips. Just put some tape over them, as shown.

Next you can add a ball launcher, flip-

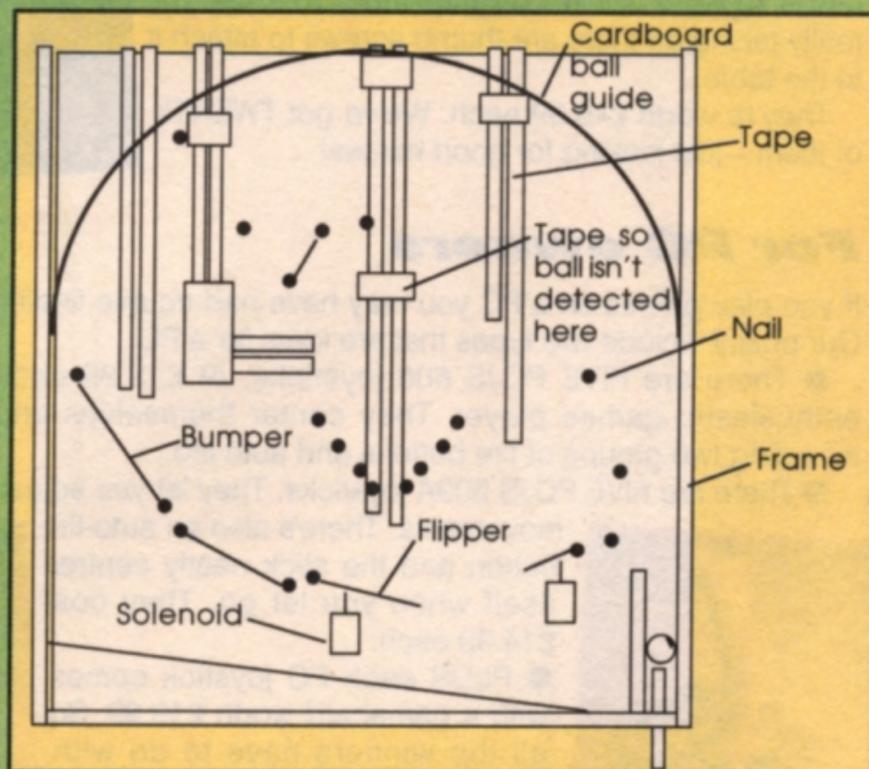
pers, bumpers and nails. The panels opposite show how to make the various bits and pieces.

The best bet is not to add them all at once. Fire a few balls and look where they go. Then put in a nail or bumper to intercept the path.

Check again with this feature added. See where you want to put the next one. In this way you won't get large areas of the table that the ball never visits.

A completed pinball machine is shown below. You don't need to follow the layout exactly. It is meant to be a guide to creating your own.

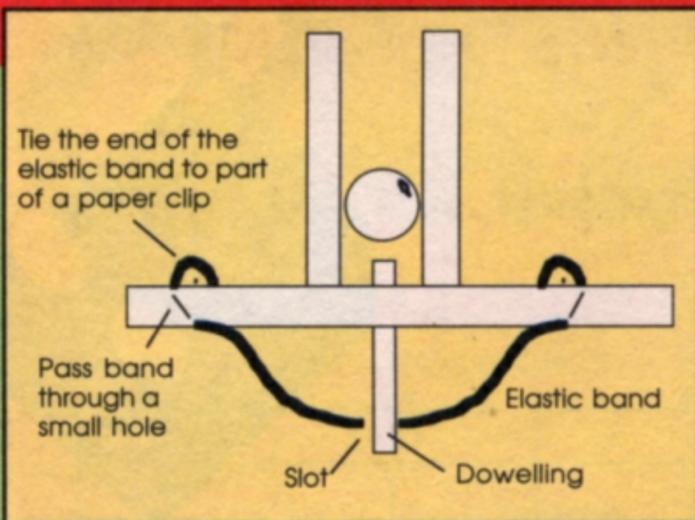
But don't be tempted to put too much on the board. Often the simpler designs work the best.



Simple type of pinball machine

IN THE SHOP SOON: **AUTO MONEY BOX**

# OWN PINBALL WIZARD



How to make the ball launcher

## BUILDING THE BALL LAUNCHER

To make the ball launcher you need a small piece of dowelling with a slot cut in the end.

This should be fitted through a hole in the main frame of the pinball machine.

Use an elastic band as shown to provide the power to drive the ball.

## DETECTING THE BALL

To computerise the game we have to detect when a ball is at various parts of the board. Then we can use this information to produce sound effects and increase our score.

The key to detecting a ball is to use self adhesive aluminium foil. This is laid in strips across the board.

When the metal ball rolls over two adjoining strips it will act like a switch. This sends a signal to your computer.

Remember the ball makes contact only with a very small part of the board. So the gap between the foil strips must be closer than about 1 mm.

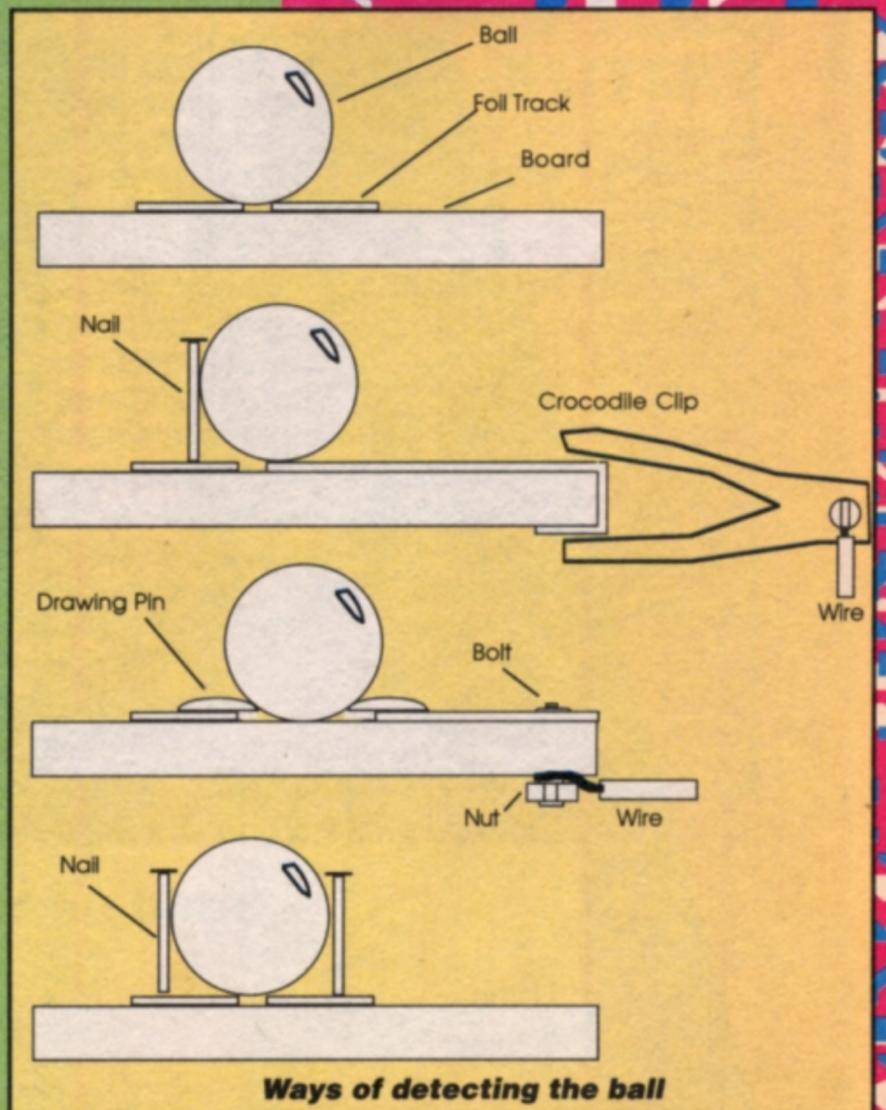
There are other ways we can make sure that the ball makes contact with both strips at once. The diagrams on the right show some.

We can use a nail, drawing pins or a pair of nails. All these will alter the path of the ball.

The diagram also shows two ways of making a connection to the foil strips. One is by using of a small nut and bolt. The other by using a crocodile clip.

Either will work well. But the nut and bolt is much stronger. Unfortunately it's more difficult to fit as you need to drill a hole. On the other hand the crocodile clip is quick and simple. But it will probably work loose and tear the foil if roughly handled.

The best bet is to use clips to start with. Then use the bolts when you want to make the connection permanent.



Ways of detecting the ball

```

10 PROC_MCIN IT
20 MODE 7
30 PRINT"Pin Ball Wizard"
40 PRINT" By Mike Cook"
50 PRINTTAB(0,14)"Score"
60 SCORE=0
70 REPEAT
80 CALL PMON
90 AX=?870
100 IF (AX AND 1)=0 THEN SOUND 1,-15,3
0,1:SCORE = SCORE + 1:GOTO 180
110 IF (AX AND 2)=0 THEN SOUND 1,-15,4
0,1:SCORE = SCORE + 2:GOTO 180
120 IF (AX AND 4)=0 THEN SOUND 1,-15,5
0,1:SCORE = SCORE + 3:GOTO 180
130 IF (AX AND 8)=0 THEN SOUND 1,-15,6
0,1:SCORE = SCORE + 5:GOTO 180
140 IF (AX AND 16)=0 THEN SOUND 1,-15,
70,1:SCORE = SCORE + 6:GOTO 180
150 IF (AX AND 32)=0 THEN SOUND 1,-15,
80,1:SCORE = SCORE + 4:GOTO 180
160 IF (AX AND 64)=0 THEN SOUND 1,-15,
90,1:SCORE = SCORE + 7:GOTO 180
170 IF (AX AND 128)=0 THEN SOUND 1,-15
,100,1:SCORE = SCORE + 8
180 PRINT TAB(0,15);SCORE
190 UNTIL FALSE
200 DEF PROC_MCINIT
210 DIM CODE% 20
220 FOR AX=0 TO 3 STEP 3
230 PX=CODE%
240 [
250 OPT AX
260 .PMON
270 LDA &FE60
280 CMP #&FF
290 BEQ PMON
300 STA &70
310 RTS
320 ]
330 NEXT
340 ENDPROC
    
```

This program is for BBC computers. Software for other machines is supplied when you order your packs

Turn to next page >>>>

# HIGH SCORE CHALLENGE



LET'S  
COMPUTE!



Game	Computer	Score	Name	Age	Game	Computer	Score	Name	Age
Aquatac	Master Compact	1,415	Jonathan English	8	Kick Off II	Amiga	1,776,011	Darren Leahy	14
Batman	CPC	3,720	Samantha Methuen	12	Killer Gorilla	BBC	65,500	James Greenstreet	13
Bear a Grudge	Spectrum	10,483	Alan Whysall	14	The Mine	Electron	19,340	James Hollis	14
Bird Basher	BBC	56,000	Simon Marwood	12	Missile Control	Archimedes	42,095	John Edwards	13
Bombjack	CPC	139,610	Clair Brooks	14	Mr EE	BBC	118,250	James Greenstreet	13
Bombjack	ST	95,860	Graham Orr	12	Mr Wiz	Electron	47,110	Royston Palin	10
Bubble Bobble	C64	400,100	Andrew Whittaker	10	Nevryon	Archimedes	122,880	Nicholas Bennet	12
BugHunter	Archimedes	3,444	Vicky Hammerstein	13	New Zealand Story	Amiga	120,570	Mark Lloyd	5
Buggy Boy	C64	83,940	Stuart Morris	12	Nightmare Maze	Master Compact	4,100	Jonatham Rawle	11
Chocks Away	Archimedes	1,439	Gregg Bailes	13	Oink!	C64	36,845	Alex Teugels	9
Chuckie Egg	BBC	2,067,153	Steven Owen	16	PacMania	Archimedes	1,244,280	Alastair Chapman	11
Codename:Droid	BBC	157,000	James Greenstreet	12	Paperboy	Electron	24,150	James Brand	15
Commando	BBC	204,700	Gavin Stevenson	12	Pipemania	Spectrum	71,010	Rachel Morgan	10
Dan Dare III	ST	62,000	James Laidlaw	13	Rainbow Islands	ST	1,627,050	Craig Watkins	10
Double Dragon	ST	110,250	James Laidlaw	13	Ranarama	CPC	619,300	Ross Younger	12
Double Dragon II	Amiga	234,350	Richard Irons	13	Ricochet	Electron	101,8%	Peter Blake	13
E-Type	Archimedes	907,776	Bobby Hill	8	Robocop II	ST	72,056	Fredric Duncan	13
Fire and Forget	ST	5,095,372	James Hayward	7	SeaWolf	BBC	20,880	Matthew Watts	13
Freddy Hardest	CPC	17,000	Steven Esdale	12	Snake	BBC	536	Heetan Patel	11
Gauntlet II	Spectrum	91,420	Paul Maggs	13	Space Pilot	BBC	21,100	Paul Tarling	8
Harrier Attack	CPC	69,250	Samantha Methuen	12	Spitfore	CPC	20,052	James Netton	10
Hobgoblin	Electron	46,500	Richard Ash	15	Star Wars	C64	993,711	Nathan Phillips	-
Hopper	Electron	20,706	Andrew Frayn	10	Web War	BBC	1,025,492	Chris Winslow	12
Key Man	BBC	146,850	Malcolm Watts	13	Wizball	CPC	560,870	Ross Younger	12

Send us YOUR scores NOW!

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

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

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

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

## LINKING IT TO YOUR COMPUTER

Finally you need to attach the foil sensors to the computer connector board.

How to do this was described in Issue 1 of *Let's Compute!* See the order form for details.

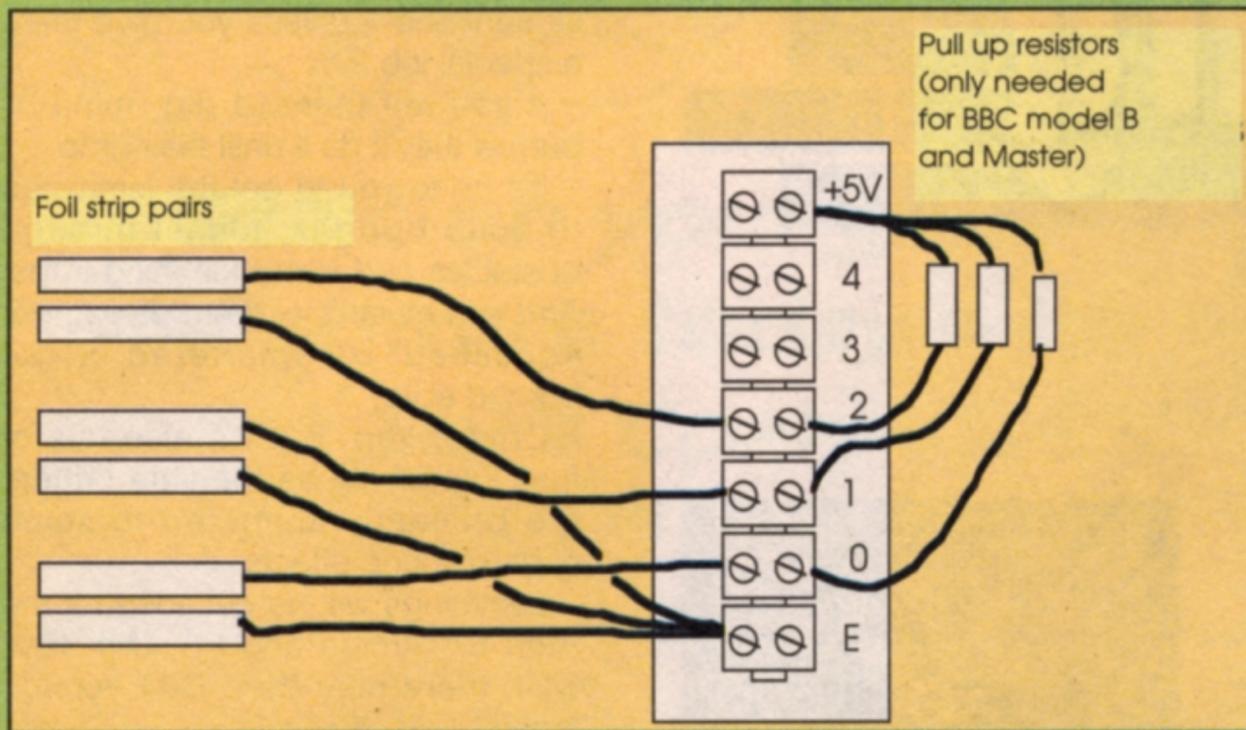
Note that the BBC model B, Master and Archimedes need a pull up resistor from the foil to the 5 volts connector. The Master Compact and all other makes of home computers don't need this.

I have shown only three strips in the diagram. But all computers are capable of at least five ball detectors and those needing the

resistors can have up to eight. The program printed on the previous page is for BBC machines. (For other computers see the order form on the right.) It contains a little bit of machine code. This is needed because the ball moves quite quickly over the foil strips and Basic could miss it.

But we can use Basic to sort out which contact was made and what to do about it.

The program just gives a simple sound each time a contact is made. It's up to you to expand it and make your own, unique pinball machine.



Joining foil strips to the connector board

## Bumpin' an' flippin'

A bumper is simply a rubber band stretched between two nails, as shown on the right.

Flippers are more tricky to make. Take a small piece of wood and drill a small hole in one end. This is to take a nail as the pivot.

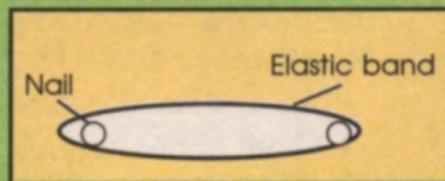
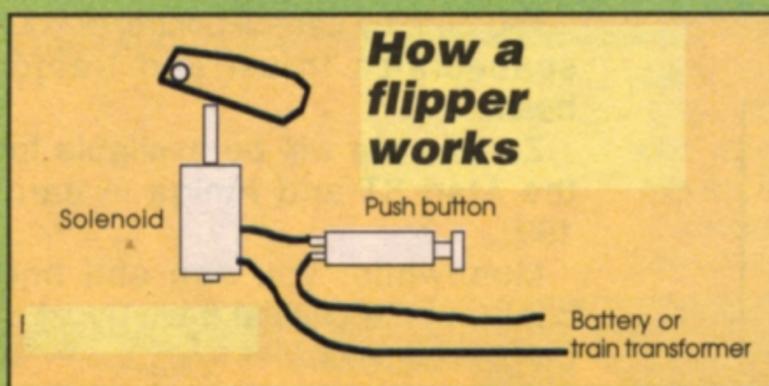
Then put a rubber band round the wood. To move it you just flick it with your fingers.

It is possible to control the flipper without touching it. But it costs more. You need to use a solenoid.

This is an electromagnet with a metal core through the middle. This gets pulled in when current is passed through the magnet.

We can use the end of the core to push the flipper. You will also need a 12 volt power supply to drive it.

This can be obtained from a transformer for a train set.



A simple bumper

A "push to make" switch completes the setup. These come ready soldered up with screw connectors if you order them from the Gadget Shop kit.

You can incorporate just one or as many flippers as you like into your own machine.

**Let's Compute!**

**NEXT MONTH**

A Labyrinth usually has walls. But not the Gadget Shop one. Build the *Let's Compute!* maze without walls.

### ORDER FORM

#### Gadget Pack 7 – Pin ball Construction Set

- 7a) 16mm ball bearing, 50m reel of aluminium foil, 16 nuts and bolts (6BA size), 2 crocodile clips ..... £8.75
- 7b) 12 volt solenoid and push button ..... £11.50

The software for your computer is supplied free with orders. Please remember to state what type of computer you have in the space below.

#### 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. Instructions will be supplied with all orders of pack... £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 Games Gang

## Lemmings are Go!

Have you played *Beast*, *Beast II* or any other Psygnosis game? Then you should have a good idea of the kind of product they produce: Amazing graphics and lots of great gameplay.

**Lemmings** doesn't have either. But it's still their most playable game yet.

It's cute, silly and very simple. All you've got to do is save a whole troop of suicidal lemmings. Do this by guiding them away from death traps and leading them carefully through a perilous landscape to a safe exit.

Unfortunately lemmings are stupid. All they can do is walk in a straight line – unless you give them a special job.

If you tell them to dig, mine or burrow they'll do it until they drop.

It's up to you to get the lemmings to build bridges, tunnel through obstacles and avoid lemming-traps. And you mustn't let them drown, get squashed, be splattered or get burned alive.

Crazy? Yep. But it's also lots of fun! Especially as the little critters are brilliantly animated to some superb sound effects.

*Lemmings* will be out soon for the Atari ST, Amiga and PC. If it does well, there may be a C64 version too.

## Thrust Again

*Thrust* is one of the C64, BBC and Electron golden oldies. It was inspired by the old coin-op *Gravitar* and written by Jeremy Smith.

Its simple but effective graphics are combined with addictive gameplay. This still has countless games players glued to their screens.

Now Hewson are going to release **Zarathrusta**. It's a 16-bit update on the original force-defying classic.

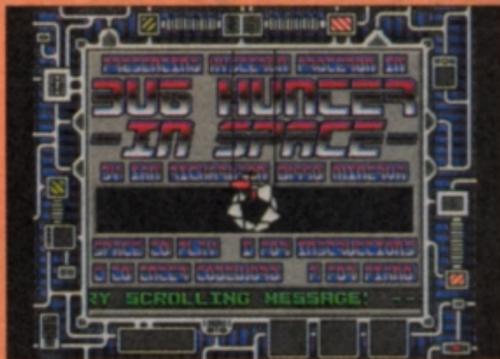
The aim is to collect essential Klystron pods. This is part of the unending battle against the evil Empire.

You do it by careful control of your spacecraft's thrust and tractor beam.

*Zarathrusta* will be available for the Atari ST and Amiga in early 1991.

Meanwhile, you can still find copies of the original 8-bit *Thrust* in bargain buckets.

## Pam's Passwords



Robert Shaw aged 12 from Dalton has been swotting bugs on his Archimedes. Anyone needing a helping hand with **Bughunter** should try:

98 acorn avenue  
23 castle road  
42 ford street  
14 brumley estate

Commodore 64 **ProBoxing** players can now move on a little quicker thanks to the passwords courtesy of Eric Jayarajah from London:

Party  
Talon  
Sword  
Lucky  
Union

# CHARLIE'S CHEATS!

Want to top up your energy while playing the ST version of **Shadow of the Beast**? Hold down the left Shift, Enter and the zero on the numeric keypad. Release Enter and zero, then press F5.

On the other hand if you're a bit stuck in the CPC version of **Batman the Movie** here's help. Simply hold down the keys E, D, 2, 0 and 9 to skip a level.

**Defender** has had many lookalikes over the years. The latest is for the Archimedes: Orion. It's still claiming victims but Matthew Bloch (11) from Headington has a solution.

While the instructions are playing – or when you are on the high-score table – press L, U, C and the spacebar all together. Then let go.

Magically a message will appear asking you which level you want to jump to. Make sure that you choose a level between one and nine.

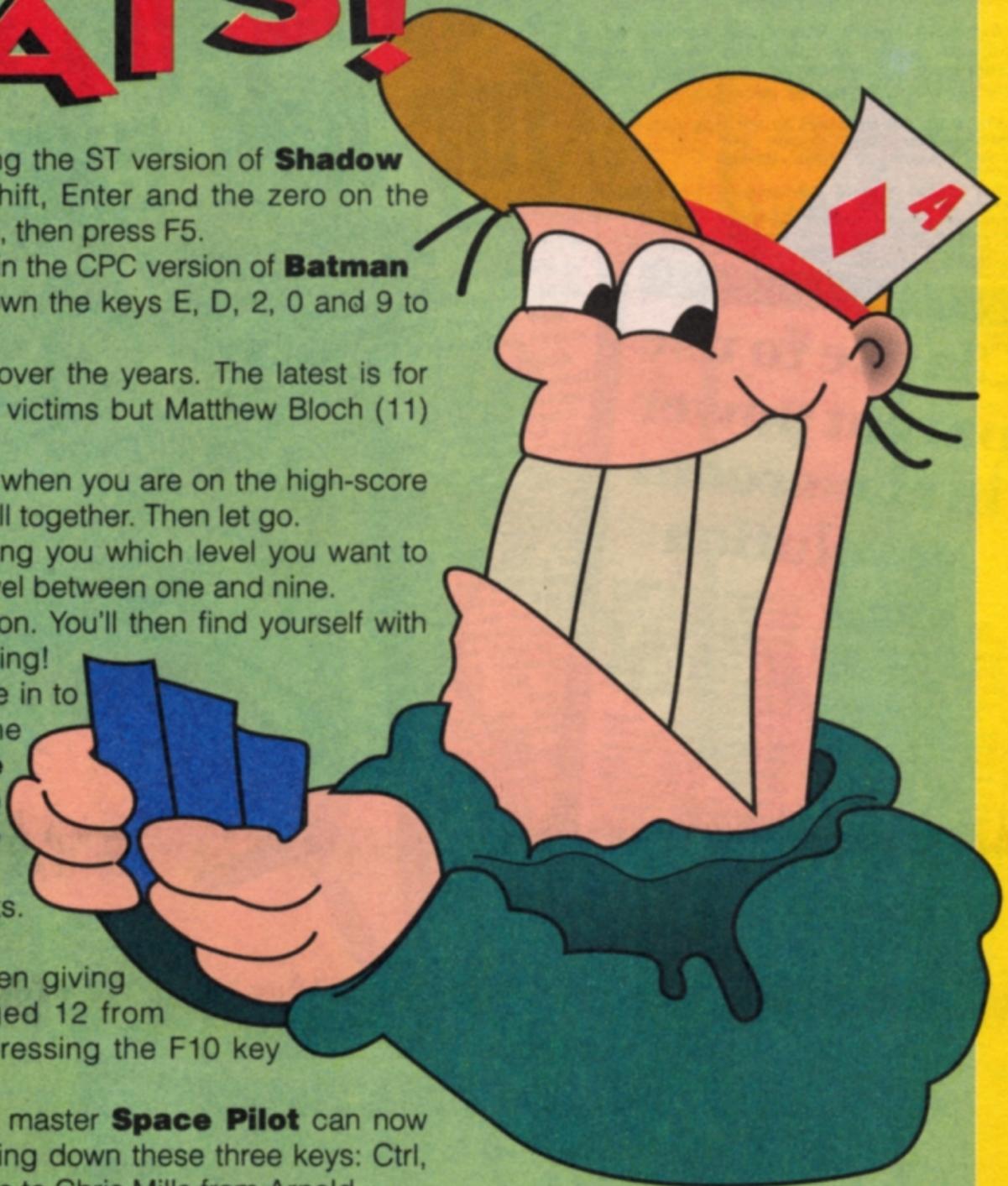
You enter the numbers as 05 and so on. You'll then find yourself with 10 lives and 10 smart bombs. Good hunting!

Ronald Hill aged 13 from Solihull wrote in to tell us how to get everlasting life in the Amiga version of **Shadow of the Beast II**. When the game starts walk to the right. You'll come across some soldiers.

Press A to ask, then type in Ten pints. You'll then be immortal.

If **Predator** on the Atari ST has been giving you problems then Eric Jayarajah aged 12 from London offers some help. By simply pressing the F10 key you'll get an infinite number of lives.

BBC owners who have been trying to master **Space Pilot** can now move onto the next level by simply holding down these three keys: Ctrl, Caps and Escape. Our thanks for this one to Chris Mills from Arnold.



## A Heroic Deal

There's big news from Gremlin! They've got the licence to convert the popular MB board game **HeroQuest**.

It's a role-playing game for beginners. But without pages and pages of boring rules

There's no news yet about exactly how Gremlin plan to approach the computer conversion.

No doubt you'll be able to play all of the original's heroic characters.

You should be able to battle against terrible dangers and the forces of the dark. Gremlin are planning an Easter release.

COLLECTION TIMES

9.00 AM

5.00 PM

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.**

## Adventure on a Budget

A whole bunch of classic Infocom adventures have recently been re-released for the Atari ST, Amiga and PC. They're all at a budget price of £9.99.

If you're an adventure fan and you've never experienced **Hitchhiker's Guide To The Galaxy**, **Wishbringer** or **Zork**, now's your chance to invest.

# Clarke spells it out

PUPILS will lose marks for spelling in all GCSE exams from summer, Education Secretary Kenneth Clarke ruled yesterday.

Sixteen-year-olds who make spelling mistakes in subjects such as history, biology, physics, geography, as well as English, could have per cent of their marks deducted.

The move was prompted by criticism from employers and parents that many pupils left school unable to spell simple words.

But it has angered examination boards and teachers, who say it is unfair to penalise children for poor spelling in tests designed to examine other skills such as knowing about the Battle of Hastings.

By Education Correspondent

Guildford, Surrey

## Pupils will lose marks for bad exam spelling

Alison Brace, Education Correspondent

PUPILS will lose marks in all exams for spelling errors in a new crackdown on slipshod standards in schools.

And teachers have been told to go back to school themselves if they cannot spell.

Education Secretary Kenneth Clarke has ordered examiners to mark down papers by up to five per cent for bad spelling.

It could mean the difference between pass and fail for youngsters.

Ministers were shocked last year when GCSE examiners said bad spelling was ignored in all but English papers. A host of errors have since resulted in a dramatic slump in pupils' ability to spell.

Among words most misspelt are: missal-miscellaneous; matically; ensiatic (sic); amitter (ur) and imideate (late).

Yesterday Mr Clarke demanded immediate action, ordering examiners to do nothing until next year.

"Everyone in the world of education must take serious steps to raise standards. Spelling is essential and communication must be properly understood. It is properly subjects."

Pupils will not be penalised for the action, but the head of the National Association of Teachers, said staff who could not spell should be on a special

## Clarke to use parent power in classroom revolution

Barry Huggill, Education Correspondent

THE Government is preparing to launch a massive drive to involve parents in the classroom.

Kenneth Clarke, the Education Secretary, believes he has won the battle with his professional advisers and the examination boards over the importance of spelling. He is convinced that his announcement on Friday that spelling should be taken into account in the marking of GCSE papers will meet with widespread approval. Now he hopes to capitalise on this with a new 'parent power' campaign.

Millions of leaflets will next month be distributed to primary schools for pupils to take home. They will explain the national curriculum and tell parents that they have a crucial role to play in their children's education.

Next month's leaflet to all primary school parents will be followed up in the summer with an explanatory pamphlet for the parents of seven year olds. Despite their belief in 'the basics', Ministers have ruled out legislation to force teachers to teach spelling.

But Ministers are worried that parents do not fully understand the extent of the shake-up taking place in schools. They admit that the technical language of the national curriculum and the regular tests soon to be introduced in schools is jargon-ridden and baffling to many parents and teachers.

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## HELP CHILDREN READ AT HOME, SAY MINISTERS

# Parents taught a lesson

PARENTS must help reverse the decline in children's reading standards, education Ministers warned last night.

The lesson was spelled out as teachers prepared this year to carry out the first round of new reading tests for seven-year-olds.

By LIZ LIGHTFOOT, Education Correspondent

schools which ask parents to go through books with their children in the classroom.

"Teachers have found pupils improve when they read with their parents at home or school," said Mr Clarke.

Too many schools do not involve parents at all, he said. It is essential that parents play an active part in their children's education, he added.

Mr Clarke said that the new reading tests would be carried out in schools and at home. He said that the new tests would be carried out in schools and at home.

reading' systems - where children are taught not to sound out words but are expected to pick up reading by looking at story books. No school should use this 'odd' method alone, he said.

This newspaper investigated the method and found that in Croydon, South London, schools had thrown out their books and refused to sound out words and

read. Now expert Dr Joyce Morris has compiled a checklist.

She suggests they ask questions like:

● How do you ensure children make a successful start?

● What is your main approach?

● What importance do you attach to phonic methods (emphasis on sounds)?

● Are children taught how the 26 alphabet letters represent the 44 speech sounds?

Meanwhile, The Mail on Sunday praised yesterday for its attention to the slump in reading standards.

sloppy spelling tolerated by exam boards in an article based on research by teacher Mrs Jenny Chew.

On Friday Kenneth Clarke announced the results of an inquiry and ordered examiners to deduct up to five per cent of marks in all subjects for poor spelling.

Last night Mrs Chew called the decision "wonderful news and common sense".

Following our article the then Education Secretary John MacGregor ordered exam boards to take more note of spelling when awarding marks.

## 5pc of marks to be cut for poor spelling

Stephen Bates, Education Editor

PUPILS will lose up to 5 per cent of their marks in GCSE examinations next summer if they spell incorrectly, according to guidelines put forward yesterday by Kenneth Clarke, the Education Secretary.

The minister rejected as inadequate proposals by the School Examinations and Assessment Council, the regulatory body, to tighten spelling standards. He said more must be done to ensure that spelling is taken into

requently to weaken candidates' ability to communicate their knowledge or understanding. He added that computer spell-checkers should not be allowed in examination rooms. "I am concerned at the decline in the standard of spelling amongst young people and I am anxious that everyone in the world of education should take serious steps to improve those standards. We must make certain that spelling is properly tested at all levels and in all subjects."

Jack Straw, Labour's education spokesman, said the announcement was "a further admission of years of government

## Bad spelling to cost pupils exam marks

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 plan from the boards when they meet later this month.

John Edmundson, secretary of the Joint Council for the

such as history, science or economics.

"Communication is achieved by more than the written word nowadays, direct communication



Daily Express  
Opinion  
Spelling it out  
It is amazing that anyone would oppose the idea of docking marks for bad spelling in exams. Almost as a matter of fact that examiners have been doing this for years. But which is why Education Secretary Kenneth Clarke has ordered examiners to mark down papers by up to five per cent for bad spelling.

Mounting alarm among parents about the appalling standards of spelling among Britain's schoolchildren has finally erupted. Now Government ministers and teachers have joined parents and employers in stressing the vital importance of spelling throughout the National Curriculum.

Parents themselves are being told THEY have a crucial role to play. Education experts want to mobilise 'parent power' - to put mums and dads in the front line of the attack on poor spelling.

Many of them will find they have a powerful ally. For today, 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.

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



**How SPELL! meets teachers' requirements**

The programs will test over 5,000 words, split into the categories which cause the most problems when learning to spell. These are:

- **Vowel sounds.** Stressing the differences between a, i, o and u and how the combinations of oo and ai change the sound of words.
- **Consonant Blending.** Covering the changes caused when two or more consonants are put together in a word
- **Prefixes and Suffixes.** Showing how changes at the beginning and end of words can alter the meaning as well as the spelling.
- **Word Families.** Assessing how different words come from the same base word but then change in spelling and pronunciation.
- **Irregular spelling.** Covering the many peculiarities of the English language, such as receipt, thorough, bough and thieves.

The words are graded for children between the ages of 5 and 15 and are based on National Curriculum required reading books as well as Ginn Reading 360 - the most commonly used reading scheme in the UK - and the 123 and Away reading scheme.

SPELL! is unique. It harnesses the power of the home computer and uses it in novel ways, showing that spelling can gain a child top marks at school . . . and that practising it can be lots of fun as well.

SPELL! lets children learn at their own pace. They can take as long as they like - or take on the computer in a high-speed challenge!

And this one package covers the whole of their time at school - 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 they'll never get bored.

The programs are:

**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.

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.

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

**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.**



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# THE PROGRAM DOCTOR

*Are you troubled by long strings of numbers after a decimal point? Our medic shows how to get rid of them.*

The program printed below recently fell on Doc's table. It's a simple VAT calculator. It works out how much things cost once VAT is added to the price.

Type it in and try it. Check that if you enter £100 the price with VAT is £115.

Now try £69. You'll get an answer of £79.35. Nothing wrong with that.

But now try finding out how much something priced at £41.5 will cost with VAT. The program will tell you it's £47.4375. Now that doesn't look right!

You only want two figures after the decimal point.

How do you lose the others? Try running the program again, but this time with this extra line:

```
45 LET T=INT(T)
```

Again use £41.25 as a test. The computer says the answer is £47. Now ALL the numbers after the decimal point in the answer have gone!

So how do you keep just two of them? Simple! Multiply the answer by 100 before removing everything after the point.

Once they've gone, divide what's left by 100. You'll be left with two figures after the point. Here's what happens to 47.4375:

The original number .....	47.4375
Multiply by 100.....	4743.75
Remove numbers after the point .....	4743
Divide by 100 .....	47.43

```
10 LET V=15
20 PRINT
30 INPUT "WHAT IS THE EX. VAT PRICE";P
40 LET T=P*(1+V/100)
50 PRINT
60 PRINT "IT WILL COST ";T;" WITH VAT"
70 GOTO 20
```

**ST(Stos)/Amiga(Amos):**  
Use V#,P# and T# in place of V,P and T.

This program works on all home micros

Here's a neat way of rounding off money – like £14.56821 – to a much tidier £14.57.

And not only money. Look at Peter's project in this issue. He does exactly the same to round off distances.

You can use it for any numbers: Scores, weights, areas.

It's a useful little routine to put in ANY of your programs.

Try it in the program. The new Line 45 to do this is:

```
45 LET T= INT(T*100)/100
```

But 47.43 is still not quite right! £47.4375 is nearer to £47.44. What you've done is known by programmers as truncating the number.

We really wanted to round it off. One more step is needed.

After multiplying by 100 just add 0.5. Following the steps you get:

The original number.....	47.4375
Multiply by 100.....	4743.75
Add 0.5 .....	4744.25
Remove numbers after the point .....	4744
Divide by 100 .....	47.44

So type in this new Line 45:

```
45 LET T= INT(T*100+0.5)/100
```

You'll find all your answers now look much better. You'll never get more than two numbers after the decimal point. And what if you want to have three decimal places instead of two?

Just use 1000 in place of 100 in all the above examples. So you can round off to any number of decimal places in a similar way.

Use Doc's method in your own programs to tidy up the printout.

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!

# MAY THE FORCE BE WITH YOU

This month we are hoping to make a soft landing in the world of forces. The program here is all about making a safe descent in a rocket.

You need to land it on various planets and moons in the solar system. The force of gravity is different on them all.

When you run the program you are first shown the rocket landing on the surface of the Earth. You're told what force was needed to achieve the gentle touchdown.

You must then try to land the same rocket on a different heavenly object. You'll be told the gravity and must type in the force needed.

If you do not use enough force, your spacecraft will hammer into the ground at high speed. On the other hand, if you use too

much force you will run out of fuel before landing. This too will cause a crash.

A successful flight engineer will get the rocket burn correct. A safe, soft landing will result.

If you get it wrong, you'll be told what force you should have used.

The program is easy to alter. You could add more real objects from our solar system.

Or you could let your imagination run riot and invent your own planets.

Do remember that science should be fun! Use the program with a friend. You can often take on new ideas more quickly if you can share your thoughts with someone else.

● Next month we'll look at living things. You be challenged to struggle to maintain the balance in a nature park.

```

10 MODE 0
20 LET W=80:LET H=30:LET Z=9:REM Z IS
THE NUMBER OF PLANETS IN DATA
30 LET X=RND(-TIME)
40 LET RS="  /\ /__\I  IIooII__I//
\\"
50 LET ES=""
60 LET ES=ES+" EARTH":IF LEN(ES)<=W T
HEN GOTO 60
70 LET ES=LEFTS(ES,W)
80 LET D=0
90 LET X=0:LET Y=H-2:GOSUB 580:PRINT
ES
100 LET F=RND(91)+9
110 LET X=0:LET Y=0:GOSUB 580:LET BS=""
To land this rocket on earth a force of "
120 LET BS=BS+STR$(F)+" is needed. Her
e goes!":GOSUB 600
130 GOSUB 410:REM lander routine
140 LET T=TIME:REPEAT UNTIL TIME>T +20
0
150 GOSUB 550:REM clear landed rocket
160 RESTORE
170 LET S=RND(2)
180 FOR I=1 TO S:READ AS,G:NEXT I:LET P
S=""
190 LET PS=PS+" "+AS:IF LEN(PS)<=W THE
N GOTO 190
200 LET PS=LEFTS(PS,W)
210 LET X=0:LET Y=H-2:GOSUB 580:PRINT
PS
220 LET Y=5:GOSUB 580:LET BS="Your ta
sk is to land on "+AS+"."
230 LET BS=BS+" The gravity is "+STR$(
G)+" times that on earth.":GOSUB 600
240 LET Y=10:GOSUB 580:INPUT "Landing
force";L
250 IF L=F*G THEN LET D=0
260 IF L>F*G THEN LET D=-1
270 IF L<F*G THEN LET D=1
280 GOSUB 410
290 LET X=0:LET Y=12:GOSUB 580
300 IF D=0 THEN PRINT "A perfect landi
ng":GOTO 370
310 IF D=-1 THEN LET BS="Too much powe
r. You ran out of fuel.":GOSUB 600
320 IF D=-1 THEN LET BS="Your engines
cut before you landed. You crashed!"
330 IF D=1 THEN LET BS="Not enough for

```

# The Safe Scientist goes space-hopping

## IS THIS YOUR COMPUTER?

### Electron/BBC/Archimedes

This program works as shown

### PC (Using GW-Basic)

Delete Lines 430 and 460.

Change or add the following lines:

```
10 CLS
20 LET W=80:LET H=22:LET Z=9
30 RANDOMIZE TIMER
100 LET F=INT(RND*10+1)*10
140 LET T=TIMER:WHILE T+1>TIMER:WEND
170 LET S=INT(RND*Z+1)
380 WHILE INKEY$="":WEND
450 SOUND 500-N*10,3
590 LOCATE Y+1,X+1:RETURN
```

### ST (Using Stos)

Delete Lines 430 and 460.

Change or add the following lines:

```
10 MODE 1:KEY OFF:HIDE ON
20 LET W=80:LET H=22:LET Z=9
30 LET X=RND(TIMER)
100 LET F=RND(90)+10
140 LET T=TIMER:WHILE T+20>TIMER:WEND
170 LET S=RND(Z-1)+1
380 WHILE INKEY$="":WEND
450 VOLUME 15:PLAY 1,96-(N*2),2:VOLUME
590 LOCATE X+1,Y+1:RETURN
```

### Commodore 64/128

Use capital letters, delete Line 450.

Change or add the following lines:

```
10 PRINT CHR$(147);
20 LET W=38:LET H=25:LET Z=9
30 LET X=RND(-TI)
100 LET F=INT(RND(0)*10+1)*10
140 LET TI="000000"
145 IF TI<100 THEN GOTO 145
170 LET S=INT(RND(0)*Z+1)
190 PRINT CHR$(147);:GOTO 80
380 GET AS:IF AS="" THEN GOTO 380
430 LET TIS="000000"
460 IF YO <=0 THEN IF TI<50 THEN GOTO 460
590 POKE 211,X:POKE 214,Y:SYS 58732:RE
TURN
```

### Amiga (Amiga Basic)

Delete Lines 430 and 460.

Change or add the following lines:

```
10 CLS
20 LET W=80:LET H=22:LET Z=9
30 RANDOMIZE TIMER
100 LET F=INT(RND*10+1)*10
140 LET T=TIMER:WHILE T+2>TIMER:WEND
170 LET S=INT(RND*Z+1)
380 WHILE INKEY$="":WEND
450 SOUND 4000-(N*100),1,100,0
590 LOCATE Y+1,X+1:RETURN
```

### Amstrad CPC

Change or add the following lines:

```
10 MODE 2
20 LET W=80:LET H=25:LET Z=9
30 RANDOMIZE TIME
100 LET F=INT(RND*10+1)*10
140 LET T=TIME:WHILE T+1>TIME:WEND
170 LET S=INT(RND*Z+1)
380 WHILE INKEY$="":WEND
430 LET T=TIME
450 SOUND 1,33+N*24,20,15
460 WHILE T+60>TIME:WEND
590 LOCATE X+1,Y+1:RETURN
```

### Spectrum

Delete Lines 430 and 460.

Use J in place of YO in all cases.

Change or add the following lines:

```
10 CLS
20 LET W=32:LET H=22:LET Z=9
30 RANDOMIZE
70 LET ES=ES ( TO W)
100 LET F=INT(RND*10+1)*10
140 PAUSE 100
170 LET S=INT(RND*Z+1)
200 LET PS=PS ( TO W)
360 GOSUB 580:PRINT AS((Y-J)*4+1 TO 4): NE
XT Y:NEXT J
380 PAUSE 0
400 STOP
450 BEEP 0.2,-N
520 LET AS=R$((YO+6)*4 TO ):LET SL=J+6:LE
T J=0
530 LET X=W-7:FOR L=0 TO SL:LET Y=J+L:GOS
UB 580:PRINT AS(1+(L*4) TO 4):NEXT L
590 PRINT AT Y,X;:RETURN
630 IF BS(S)<>" " THEN LET S=S-1:GOTO 630
640 LET AS=BS(S):LET BS=BS(S+1 TO
```

```
ce. You crashed heavily."
340 GOSUB 600:PRINT:LET BS="The correc
t force was "+STR$(F*G):GOSUB 600
350 LET AS=" \ / '#\< \**#\*":LET X=
W-7:FOR YO=H-9 TO H-5:FOR Y=YO TO YO+3
360 GOSUB 580:PRINT MID$(AS,(Y-YO)*4+1
,4):NEXT Y:NEXT YO
370 LET X=W/2-9:LET Y=H-2:GOSUB 580:PR
INT " PRESS SPACE ";
380 A=GET
390 CLS:GOTO 80
400 END
410 REM lander routine
420 FOR N=0 TO 31+D
430 LET T=TIME
440 LET YO=N+H-41:GOSUB 490
450 SOUND 1,-15,200-N*5,1
460 REPEAT:UNTIL TIME>T+1
470 NEXT N
480 RETURN
490 REM print rocket
500 IF YO>=0 THEN LET AS=R$:LET SL=6:G
OTO 530
510 IF YO<-5 THEN RETURN
520 LET AS=RIGHT$(R$,(YO+6)*4):LET SL=
YO+6:LET YO=0
530 LET X=W-7:FOR L=0 TO SL:LET Y=YO+1
+L:GOSUB 580:PRINT MID$(AS,1+(L*4),4)
540 NEXT L:RETURN
550 REM clear landed rockets
560 LET X=W-7:FOR Y=H-8 TO H-3:GOSUB 5
80:PRINT " ":NEXT Y
570 RETURN
580 REM tab
590 PRINT TAB(X,Y);:RETURN
600 REM word wrap
610 IF LEN(BS)<=W-12 THEN PRINT BS:RET
URN
620 LET S=W-11
630 IF MID$(BS,S,1)<>" " THEN LET S=S-
1:GOTO 630
640 LET AS=LEFT$(BS,S-1):LET BS=MID$(B
S,S+1)
650 PRINT AS:GOTO 600
660 DATA "venus",0.8,"mercury",0.4,"th
e moon",0.2,"mars",0.7
670 DATA "jupiter",12,"saturn",10,"ura
nus",5,"neptune",3
680 DATA "pluto",0.5
```

This program works on all home micros

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## USING YOUR OWN WORDS

The words are in the program in lines following a REM that explains what they are. Like this:

```
5000 REM NEXT VERB
5010 DATA "TAKE","SEE","SEND","BRING"
5020 DATA "X"
```

You can put as many words as you like in the lines like Line 5010 in the above example. If you want to put more than will fit on one line put another data line between that one and the next. For example:

```
5015 DATA "GIVE","SMELL","SHOUT","PUSH"
```

Make sure you leave all the lines that say:

```
DATA "X"
```

There's only one point to watch. The words in Line 590 rhyme with those in Line 930. Lines 720 and 1050 also rhyme.

Look at them. See how the first word in Line 590 rhymes with the first in Line 930, the second rhymes with the second and so on.

Again, you can use your own words. Use as many or as few as you want. But make sure corresponding ones rhyme.

## IS THIS YOUR COMPUTER?

### Spectrum

Change or add the following Lines:

```
10 RANDOMIZE
20 DEF FNR(N)=INT(RND*N+1)
320 LET BS="A":IF AS(LEN(AS))="S" THEN
LET BS="THE"
410 IF AS(1)<>" " THEN PRINT " "
440 PAUSE 0
```

### Amiga (Amiga Basic)

Change or add the following Lines:

```
10 RANDOMIZE TIMER
20 DEF FNR(N)=INT(RND*N+1)
440 IF INKEYS="" THEN GOTO 440
```

### ST (Stos)

Change or add the following Lines:

```
10 LET X=RND(TIMER)
20 DEF FNR(N)=RND(N-1)+1
440 IF INKEYS="" THEN GOTO 440
```

### C64/128 Use capital letters

Change or add the following Lines:

```
20 DEF FNR(N)=INT(RND(0)*N+1)
440 GET AS:IF AS="" THEN GOTO 440
```

### PC (GW Basic)

Change or add the following Lines:

```
10 RANDOMIZE TIMER
20 DEF FNR(N)=INT(RND*N+1)
440 IF INKEYS="" THEN GOTO 440
```

### Amstrad CPC

Change or add the following Lines:

```
10 RANDOMIZE TIME
20 DEF FNR(N)=INT(RND*N+1)
440 IF INKEYS="" THEN GOTO 440
```

**“ Your  
computer’s  
a poet  
– and  
doesn’t  
know it! ”**

# Valentine verses

Are you ever stuck for words? It can be quite a problem when you want to send a message to your Valentine.

But not any more! Here’s a program that will write poetry for you.

Type it in, SAVE it and RUN it. You’ll be surprised at the rhyming poems that your computer can come out with.

You can teach it even more. Just alter the DATA lines in the program. The panel at the bottom of the page tells you how to do it.

You never need to be stuck for words again. We’ve set the program up for Valentine’s Day. But with a change of words it can provide you with poems for just about any occasion.

Easter, birthdays, weddings and Christmas – they are all just as easy.

If your computer writes any great poems let us see them!

**Say something  
sweet using  
Mike Goldberg’s  
poetry maker**

```

10 LET X=RND(-TIME)
20 DEF FNR(N)=RND(N)
30 REM line 1
40 FOR I = 1 TO 2
50 PRINT "I ";
60 RESTORE:GOSUB 470
70 PRINT AS;" YOUR ";
80 GOSUB 470
90 PRINT AS;
100 IF I=1 THEN PRINT ". ";
110 IF I=2 THEN LET R1=R:PRINT
120 NEXT I
130 REM line 2
140 LET RN=FNR(2):IF RN=1 THEN PRINT "
I'D ";
150 IF RN=2 THEN PRINT "I ";
160 GOSUB 470
170 PRINT AS;" TO ";
180 GOSUB 470
190 PRINT AS;" YOU ";
200 GOSUB 470
210 LET R2=R:PRINT AS
220 REM line 3
230 GOSUB 470
240 PRINT AS;" ";
250 GOSUB 470
260 PRINT AS;" "; "WE ";
270 GOSUB 470
280 PRINT AS;" ";
290 GOSUB 470
300 PRINT AS;" ";
310 READ W:LET R=R1:GOSUB 480
320 LET BS="A":IF RIGHTS(AS,1)="S" THE
N LET BS="THE"
330 PRINT BS;" ";AS
340 REM line 4
350 GOSUB 470
360 PRINT AS;" ";
370 LET B=FNR(3):IF B=1 THEN PRINT "I"
;
380 IF B=2 THEN PRINT "YOU";
390 IF B=3 THEN PRINT "WE";

400 GOSUB 470
410 IF LEFT$(AS,1)<>"I" THEN PRINT " "
;
420 PRINT AS;" ";
430 READ W:LET R=R2:GOSUB 480:PRINT AS
440 Z=GET
450 PRINT:GOTO 30
460 REM select word
470 READ W:LET R=FNR(W)
480 FOR N=1 TO W+1:READ W$:IF N=R THEN
LET AS=W$
490 NEXT N
500 IF W$<>"X" THEN PRINT:PRINT "ERROR
IN DATA STATEMENT":STOP
510 RETURN
520 REM first line
530 REM verb
540 DATA 7
550 DATA "LIKE","LOVE","ENJOY","COVET"
,"LONG FOR","DESIRE","RELISH"
560 DATA "X"
570 REM noun rhyme1
580 DATA 7
590 DATA "FACE","TEETH","EYES","LIPS",
"HAIR","SMILE","HANDS"
600 DATA "X"
610 REM second line
620 REM first verb
630 DATA 4
640 DATA "HOPE","LOVE","LIKE","WANT"
650 DATA "X"
660 REM second verb
670 DATA 4
680 DATA "TAKE","SEE","SEND","BRING"
690 DATA "X"
700 REM rhyme2
710 DATA 7
720 DATA "DANCING","EATING","WALKING",
"FLYING","WISHING","SKATING","SAILING"
730 DATA "X"
740 REM third line
750 REM conjunction

760 DATA 3
770 DATA "BUT","AND","SO"
780 DATA "X"
790 REM prep
800 DATA 5
810 DATA "WHEN","AS","THEN","SHOULD",
"IF"
820 DATA "X"
830 REM verb
840 DATA 6
850 DATA "SIT","KISS","EMBRACE","LINGE
R","WANDER","WALK"
860 DATA "X"
870 REM location
880 DATA 6
890 DATA "UPON","BEHIND","ABOVE","BENE
ATH","AROUND","BEYOND"
900 DATA "X"
910 REM matching noun rhyme 1
920 DATA 7
930 DATA "CASE","HEATH","RISE","DIPS",
"CHAIR","STILE","LANDS"
940 DATA "X"
950 REM fourth line
960 DATA 6
970 DATA "IT'S THEN","I KNOW","PERHAPS
","WITH LUCK","OH DARLING","MY SWEET"
980 DATA "X"
990 REM next bit
1000 DATA 5
1010 DATA "'LL END UP","CAN'T STOP","SH
ALL BE","'LL JOIN IN","'LL FEEL LIKE"
1020 DATA "X"
1030 REM MATCHING RHYME 2
1040 DATA 7
1050 DATA "ROMANCING","MEETING","TALKIN
G","SIGHING","KISSING","DATING","WAILING"
"
1060 DATA "X"

```



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**PLUS** **25** Runners up prizes of exclusive Domark pen keyrings

## WHAT YOU HAVE TO DO

To win one of these superb prizes answer TRUE or FALSE to the questions on the right. They're all about the Domark game STUN Runner and you'll find the answers in the panel on the below.

Then, imagine you are inventing a computer game. What would you call it?

The 33 winners will be people with all four answers right and the best title for a game.

We'll also write a game that fits the overall best title. It will be printed in a future issue of *Let's Compute!* So you could see your OWN game come to life.

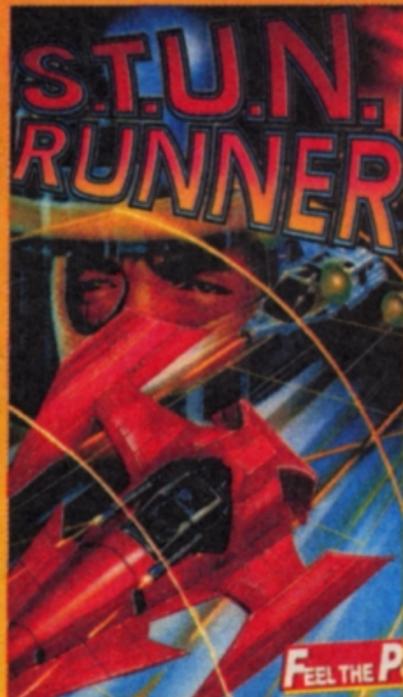
**STUN Runner has escaped from the arcades! Domark have released it for the Atari ST, Amiga, CPC, C64 and Spectrum.**

**Travel to the future and to a time of the ultimate challenge. You pilot the Spread Tunnel Underground Network ship. You are a STUN Runner.**

It's like being on a bobsleigh run. The tunnels you must travel through twist and turn. You must make sure that you follow the outside curve or you'll lose speed.

If you do you'll fall victim to obstacles and enemy craft. Luckily you armed yourself with lasers before setting out.

But you'll need a nerve of steel, a firm hand and loads of stamina to become a true STUN Runner.



## THE QUESTIONS

- STUN Runner is an arcade game as well as a computer game.**
- STUN stands for Super Tunnel Underground Network.**
- STUN Runner is set in the future.**
- STUN Runners are pilots of spaceships.**

Now fill in TRUE or FALSE in the spaces on the entry form. Write down the name you would give to a game and remember to fill in your name and address.

Send the complete form to *Let's Compute!* to arrive no later than February 28. The 33 correct entries with the best titles for games will each receive one of the prizes.

### S.T.U.N. Runner Contest

Name ..... Answers:  
 Address ..... 1 .....  
 ..... 2 .....  
 ..... 3 .....  
 Postcode ..... 4 .....  
 Age ..... I would call it .....

**Now send this to: S.T.U.N. Runner Contest, Let's Compute! Europa House, Adlington Park, Macclesfield SK10 4NP.**

# A COMPLETE adventure for

```

10 REM The Golden Crown
20 REM A Mini Adventure
30 REM By Julia Battle
40 REM (c) Let's Compute!
50 CLS
60 GOSUB 690
70 PRINT "Welcome to Karnia..."
80 LET B$="Your task is to find the king's golden crown and return it to him."
90 GOSUB 860
100 LET B$="Please type in UPPER case."
110 PRINT:GOSUB 860:PRINT
120 INPUT "What is your name";N$
130 PRINT:LET B$="You are in "+R$(P+1)+"."
140 IF P=11 AND F(1)=0 THEN LET B$=M$(1):GOSUB 860
150 IF P=4 THEN LET B$="A "+L$(I)+" safe is here.":GOSUB 860
160 FOR I=1 TO 13
170 IF L(I)=P THEN LET B$="A "+O$(I)+" is here.":GOSUB 860
180 IF L(I)=16 THEN LET B$="You have a "+O$(I)+"."
190 NEXT I
200 INPUT "What now";C$
210 IF C$="" THEN GOTO 190
220 LET C$=LEFT$(C$,3)
230 LET I=INT(INSTR(V$,C$)/3)
240 IF I=0 THEN PRINT "Eh?":GOTO 190
250 LET C$=MID$(V$,1+I*3,3)
260 ON I GOSUB 620,620,620,620,550,530,510,470,410,380,340,310
270 IF F=0 THEN GOTO 120
280 IF P<>6 OR L(13)<>16 THEN END
290 LET B$="The king takes the crown.."
300 GOSUB 860
310 LET B$="You are knighted - arise Sir "+N$:GOSUB 860
320 END
330 IF P<>4 OR L(6)<>16 THEN PRINT "Eh?":RETURN
340 LET L$(13)="n open ":LET L(13)=4
350 RETURN
360 IF P<>1 OR L(10)<>16 THEN PRINT "Ok":RETURN
370 LET B$="A hidden door slides open."
380 GOSUB 860
390 LET E$(2)="WESSOU EAS"
400 RETURN
410 IF L(10)=16 THEN LET B$=M$(10):GOSUB 860:RETURN
420 LET B$="Seems ordinary...":GOSUB 860
430 RETURN
440 IF P=6 THEN LET B$=M$(9):GOSUB 860
450 LET F=1:RETURN
460 IF L(7)<>16 THEN LET B$=M$(9):GOSUB 860
470 LET F=1:RETURN
480 IF P=8 THEN LET L(3)=32
490 IF P=9 THEN LET L(4)=32
500 RETURN
510 IF P<>11 OR F(2)<>1 OR L(11)<>16 THEN LET B$=M$(7):GOSUB 860:RETURN
520 PRINT:LET B$=M$(3):GOSUB 860:LET B$=M$(4):GOSUB 860
530 LET L(12)=16:LET L(11)=32:LET F(1)=1
540 RETURN
550 IF L(9)=16 THEN PRINT "Ok":LET F(3)=1:RETURN
560 PRINT "Eh?":RETURN
570 IF L(11)=16 AND P=12 THEN PRINT "Ok":LET F(2)=1:RETURN
580 LET B$=M$(6):GOSUB 860:RETURN
590 IF P=3 AND L(12)<>16 THEN LET B$=M$(2):GOSUB 860:RETURN
600 IF P=9 AND L(4)=9 THEN LET B$=M$(2):GOSUB 860:RETURN
610 FOR I=6 TO 13
620 IF L(I)=P THEN LET L(I)=16
630 NEXT I
640 IF P=3 THEN LET L(12)=32:LET B$=M$(8):GOSUB 860
650 RETURN
660 LET D=INSTR(E$(P+1),C$)
670 IF D<1 OR D>10 THEN LET B$="Can't go that way.":GOSUB 860:RETURN
680 IF P<>8 OR I<>1 THEN GOTO 660
690 IF F(3)=0 THEN LET B$=M$(2):GOSUB 860:RETURN
700 LET P=P+4*(I=1)-4*(I=3)+(I=4)-(I=2)
710 IF P=6 AND L(13)=16 THEN LET F=1
720 RETURN
730 REM initialise
740 LET W=39
750 DIM R$(16):DIM E$(16):DIM O$(13):DIM L(13):DIM M$(10):DIM F(10)
760 LET V$="***NOREASSOUWESTAKFILWEATHRKILEXASHAUNL"
770 LET L$(16)="locked "
780 FOR I=0 TO 15
790 READ R$(I+1),E$(I+1)
800 NEXT I
810 FOR I=1 TO 13
820 READ O$(I),L(I)
830 NEXT I
840 FOR I=1 TO 10
850 READ A$:LET M$(I)=A$+"!"
860 NEXT I
870 LET P=6:LET F=0
880 LET F(1)=0:LET F(2)=0:LET F(3)=0
890 RETURN
900 REM word wrap
910 IF LEN(B$)<=W THEN PRINT B$:RETURN
920 LET S=W+1
930 IF MID$(B$,S,1)<>" " THEN LET S=S-1:GOTO 910
940 LET A$=LEFT$(B$,S-1):LET B$=MID$(B$,S,S+1)
950 PRINT A$:GOTO 910
960 DATA "a secret room","EAS","the cellar","EASSOU"
970 DATA "the armoury","WES","a shop","SOU"
980 DATA "the main hall","EASSOU","the kitchen","WESNORSOU"
990 DATA "the King's palace","EASSOU","the main street","NORSOUWES"
1000 DATA "the castle entrance","NOREASOU","the castle grounds","NORWES"
1010 DATA "the forest","NORSOU EAS","an elf's cottage","NORSOUWES"
1020 DATA "a shallow stream","NOREAS","thick bushes","NOREASWES"
1030 DATA "the forest","NOREASWES","a small shed","WESNOR"
1040 DATA "shopkeeper",3,"King",6,"castle guard",8,"giant troll",9
1050 DATA "small elf",11,"silver key",0,"long dagger",2,"red identity pass",3
1060 DATA "cloak",3,"battered scroll",9,"large bucket",15,"bag of gold",32
1070 DATA "crown",32
1080 DATA "It's on fire","He won't let you","The fire is out"
1090 DATA "The elf gives you a bag of gold","It gets swept away","What with"
1100 DATA "That won't do any good","He takes your bag of gold"
1110 DATA "He stabs you with a knife .. you're dead","It says SHAZAM"

```

## Changing the program

You can easily alter the Golden Crown program yourself. But you must keep the same number of locations and objects.

They must also be similar. For instance, in Line 1010 you could change *long dagger* to sword. But you shouldn't change it to gun in case you end up stabbing someone with a gun!

Most of the words are in DATA lines near the end of the program. Replace them with your own words.

There's also text in the PRINT statements in the program. These can be changed too!

## IS THIS YOUR COMPUTER?

**C64/128** Use capital letters  
Change or add the following lines:

```

50 PRINT CHR$(147)
190 LET C$="":INPUT "What now";C$
215 LET I=0
220 LET I=I+1:IF C$=MID$(V$,1+I*3,LEN(C$)) THEN GOTO 240
225 IF I<12 THEN GOTO 220
620 LET D=7
622 IF C$=MID$(E$(P+1),D,3) THEN GOTO 630
624 LET D=D-3:IF D>0 THEN GOTO 622

```

## Spectrum

Change or add the following lines:

```

210 LET C$=C$(TO 3)
215 LET I=0
220 LET I=I+1:IF C$=V$(1+I*3 TO LEN(C$)+I*3) THEN GOTO 240
225 IF I<12 THEN GOTO 220
230 PRINT "Eh?":GOTO 190
240 LET C$=V$(1+I*3 TO 3+I*3)
250 GOSUB J(I)
270 IF P<>6 OR L(13)<>16 THEN STOP
300 STOP
620 LET D=7
622 IF C$=E$(P+1,D TO D+2) THEN GOTO 630
624 LET D=D-3:IF D>0 THEN GOTO 622
660 LET P=P-4*(I=1)+4*(I=3)-(I=4)+(I=2)
700 LET W=32
710 DIM R$(16,20):DIM E$(16,9):DIM O$(13,18):DIM L(13):DIM M$(10,40):DIM F(10)
845 DIM J(12):FOR I=1 TO 12:READ J(I):NEXT I
862 LET S=1
864 IF B$(S)<>" " OR B$(S+1)<>" " THEN GOTO 868
866 IF S<LEN(B$)-1 THEN LET B$=B$(TO S)+B$(S+2 TO):GOTO 864
868 LET S=S+1:IF S<LEN(B$) THEN GOTO 864
890 IF B$(S)<>" " THEN LET S=S-1:GOTO 890
900 LET A$=B$(TO S-1):LET B$=B$(S+1 TO)
1080 DATA 620,620,620,620,550,530,510,470,410,380,340,310

```

you to type in and play!

# The Golden CROWN

*Start on your great  
adventure today with  
the Let's Compute!  
mini-fantasy*

The Golden Crown is only a short program. But it will set you off on the road of computer adventures.

It's a complete game in itself. But you can also use it as part of your own much bigger one.

If you're good at adventures you'll find it quite easy but still fun. If you're new to adventuring you'll find it a real brain-teaser.

The game takes place in the far-away land of Karnia. There are just 16 separate locations.

When the adventure begins the King's crown has been stolen. Your task is to recover it and return it to him.

If you succeed he will knight you and great wealth will be yours.

Type in the game, SAVE it and RUN it. Now you are ready to

start exploring Karnia. All you have to do is answer the questions your computer asks you.

The answers you give should be the directions you wish to go, NORTH, SOUTH, EAST or WEST. Or a verb to describe what you want to do, like TAKE, EXAMINE or KILL.

Spell the word in full. Don't use N for North as you would in some other adventures.

This adventure is based on what's called a chaining puzzle. The panel change according to where the panels go tells you what it does.

How long will it take you to find the crown? We'll give a few hints next month in case you've had any problems.

## HOW AN ADVENTURE GAME WORKS

The Golden Crown is what's called a Chaining puzzle. You have one main problem to solve – to find the golden crown.

But to do this you have to carry out several steps in the right order.

We won't give the game away. But here's an example from another computer adventure:

You're thirsty and you want a drink from a well. But the water level is so far down you can't reach it!

**So what do you do?**

First you have to dig for gold dust in the nearby mountains. Then take it to a town and sell it for money.

Use the money to buy a rope and bucket. Tie them together and lower the bucket down the well to fetch the water.

Now you can have a drink.

*And after all that you'll probably feel like one too!*

What you have had to solve is a series, or chain, of linked puzzles. These must be solved in the correct order.

Working backwards, here's the problems you faced:

- You needed a bucket to get the water
- You needed a rope to lower it down the well
- You needed money to buy them both
- You needed to sell something to get the money.

## STARTING NEXT MONTH

Let's Compute! is going to show you how to create your OWN adventure. You'll be able to draw your own map, think up your own puzzles and use your own characters – such as members of your family or your friends. It will be YOUR adventure game.

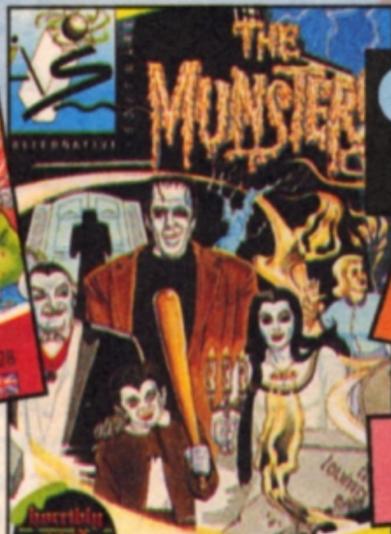
It starts next month. You'll find out how easy it is to make a good adventure. And you'll soon start writing your own.

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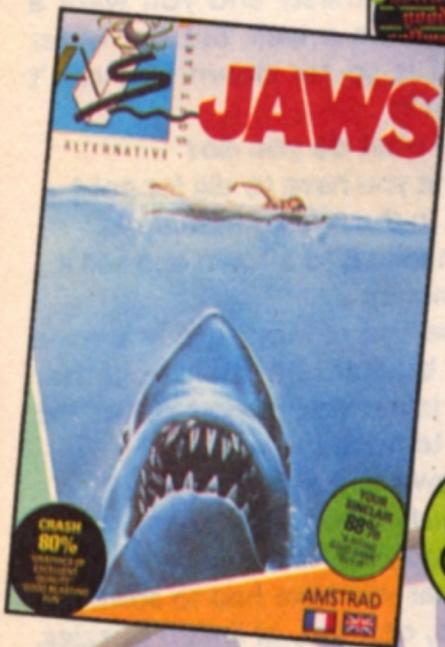
ALSO AVAILABLE ON MSX



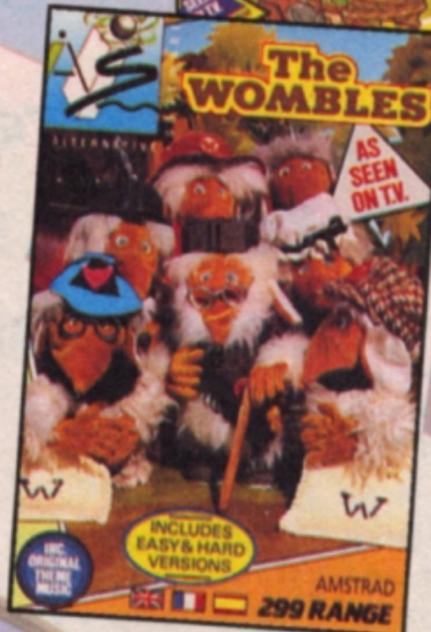
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# Part 5

# SEARCH THE CARDS

*Roland Waddilove adds a powerful search routine to the Let's Compute! database*

If you've been typing in the *Let's Compute!* database for the last four months you now have a program that lets you type in and store cards.

*But how can you quickly search for those important facts you've saved?*

No matter how big or small a database is – or how much information is held in it – it is useless if we can't get the facts from it.

For example, suppose you use your database to keep a list of all the LP records you have bought. It can also hold the names of the tracks that are on them.

One day you might want to know which albums you have by New Kids On The Block. Or which one contains your favourite track.

It would be nice to be able to type in the name of the track and make the computer tell you the name of the album.

That's better than digging out every record and reading through all the writing on the back of each sleeve!

You also want a faster way than looking at every card in a card index.

## **HOW? IT'S QUITE EASY!**

All we need to do is to add a search subroutine to our *Let's Compute!* database.

The option is already there on the menu. If you have tried to choose it the program will have stopped with an error report. That's because the subroutine hasn't yet been typed into the program.

Now it's time to do it. The extra lines are shown on the right.

Once you've added this new section, using it is a piece of cake.

First, make sure you have some cards in your database. Either type them in or

load some that you saved before.

Now choose the search option from the menu. You'll be asked to type in a word to search for.

But don't press the Return or Enter key without typing anything. If you do every card in your database will be displayed in turn.

This is one way of seeing the cards. But if you have a lot it might take you a long time to find the one you want!

To use the search facility type in one or two words that you know are on the card you want to find.

Make sure you use capitals or lower case letters exactly as you did when you wrote the card. Now press Return.

The first card that contains the words you entered will be printed on the screen.

You can search for more cards by pressing N for next card. Or press M to go back to the main menu screen.

**More lines to add to your program. They'll let you sort your cards into alphabetical order.**

**NEXT MONTH**

## 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)

```

3000 REM ===== Search for card =====
3010 PRINT "Search for a card"
3020 PRINT "-----"
3030 PRINT
3040 PRINT "Type in a word to search for,
or"
3050 PRINT "press Return to show all the
cards."
3060 PRINT
3070 INPUT "Search for";S$
3080 X=1
3090 IF CS(X)="*" THEN 3230
3100 F=0
3110 FOR Y=0 TO 4
3120 IF INSTR(CS(X+Y),S$)>0 THEN F=1
3130 NEXT Y
3140 IF F=0 THEN GOTO 3230
3150 CLS
3160 PRINT
3170 FOR Y=0 TO 4
3180 PRINT CS(X+Y)
3190 NEXT Y
3200 PRINT
3210 INPUT "Next card or Menu (N or M)";K$
3220 IF K$="M" OR K$="m" THEN X=250
3230 X=X+5
3240 IF X<255 THEN GOTO 3090
3250 RETURN
    
```

*This program works on all home micros*

## IS THIS YOUR COMPUTER?

**Electron/Archimedes/  
BBC/Amstrad/CPC/  
ST(stos)/Amiga(AMOS)/  
PC (GW-Basic)**

*The listing works as shown*

### C64/128

*Change or add the following lines:*

```

3120 FOR Z=1 TO LEN(CS(X+Y))
3122 IF MIDS(CS(X+Y),Z,LEN(S$))=S$ THEN
N F=1
3130 NEXT Z
3150 PRINT CHR$(147);
    
```

### Spectrum

*Change or add the following lines:*

```

3090 IF CS(X) =BS THEN GO TO 3230
3095 IF S$="" THEN GO TO 3150
3105 IF LEN (S$)>32 THEN LET S$=S$( TO
32)
3115 FOR I=1 TO 33-LEN (S$)
3120 IF S$=CS(X+Y,I TO I+LEN (S$)-1) T
HEN LET F=1
3125 NEXT I
    
```

Pendown is already a favourite writing tool in schools across the country. Now it has been completely redesigned to take full advantage of all the facilities that make the Archimedes (A3000) so popular. It features a powerful dictionary, thesaurus and spell checker, along with a friendly user-interface that can be reconfigured to make as much sense to a six-year-old as it does to an adult. Special fonts, simplified layouts and on-screen help make it perfect for the very young, whilst powerful word-processing features mean it is equally at home with students working on 'A' Level projects.

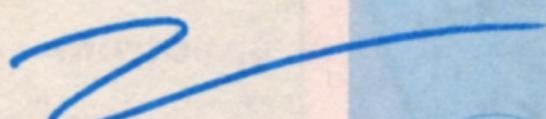
make

Words

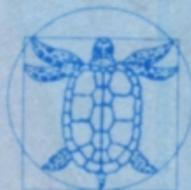
Longman Logotron has a wealth of experience in producing educational software, and also produces the National Curriculum standard Logotron Logo, Numerator – a revolutionary maths package, and Hyperbook software and texts, all of which are available for the Acorn Archimedes. For a brochure and full details of all Longman Logotron's educational software, write – stating whether your interest is primary or secondary education – to the address below.

make  
Sense

Archimedes  
PenDown



Longman Logotron  
Dales Brewery  
Gwydir Street  
Cambridge CB1 2LJ  
Tel: 0223 323656  
Fax: 0223 460208



LONGMAN  
LOGOTRON

```

10 PRINT:INPUT"HOW MANY";M
20 LET S=0
30 DIM PS(M):DIM G(M)
40 GOSUB 90:PRINT:PRINT "PRESS 1, 2 OR 3":GOSUB
160
50 IF K<1 OR K>3 THEN GOTO 40
60 ON K GOSUB 200,360,450
70 GOTO 40
80 REM MENU
90 CLS
100 PRINT:PRINT"1 .. TYPE IN ANOTHER"
110 PRINT:PRINT"2 .. SEE THE ONES THERE"
120 PRINT:PRINT"3 .. FIND THE WINNER"
130 RETURN
140 REM WAIT TILL KEY PRESSED
150 PRINT:PRINT"PRESS ANY KEY"
160 REPEAT:LET K$=INKEY$(0):UNTIL K$<>" "
170 LET K=ASC(K$)-48
180 RETURN
190 REM ENTER A NAME
200 IF S=M THEN PRINT:PRINT "NO MORE
ROOM":RETURN
210 PRINT:INPUT "NAME";N$
220 PRINT:INPUT "GUESS";G
230 LET F=0:FOR I=1 TO S
240 IF G=G(I) THEN PRINT:PRINT "SOMEONE HAS
ALREADY GOT THAT":LET F=1
250 NEXT I
260 IF F=1 THEN GOTO 220
270 LET S=S+1:LET C=1
280 IF S=1 THEN LET PS(1)=N$:LET G(1)=G:RETURN
290 IF G<G(C) THEN LET C=C+1:GOTO 290
300 FOR I=S TO C+1 STEP -1
310 LET PS(I)=PS(I-1):LET G(I)=G(I-1)
320 NEXT I
330 LET PS(C)=N$:LET G(C)=G
340 RETURN
350 REM PRINT THE NAMES
360 PRINT:IF S=0 THEN PRINT "NO NAMES
ENTERED":GOTO 410
370 FOR I=1 TO S
380 PRINT I;" ";PS(I);" ";G(I)
390 IF ABS(I/5-INT(I/5))<.01 THEN GOSUB
150:PRINT
400 NEXT I
410 PRINT:PRINT"ROOM FOR ";M-S;" MORE"
420 GOSUB 150
430 RETURN
440 REM FIND WINNER
450 LET W=75
460 LET D=10000:LET Y=0:PRINT
470 FOR I=1 TO S
480 IF ABS(G(I)-W)=0 THEN LET Y=I
490 IF ABS(G(I)-W)<D THEN LET X=I:LET
D=ABS(G(I)-W)
500 NEXT I
510 IF Y=0 THEN PRINT "THE WINNER IS
";PS(X):GOSUB 150:RETURN
520 PRINT "IT'S A DRAW BETWEEN ";PS(X);" AND
";PS(Y)
530 GOSUB 150:RETURN

```

### IS THIS YOUR COMPUTER?

#### Electron/BBC/Archimedes

*The program works as shown*

#### CPC/PC/ST(Stos)/ Amiga(Amiga Basic)

*Change the following line:*

```
160 LET K$=INKEYS:WHILE K$="" :LET K$=INKEYS:WEND
```

#### Spectrum

*Change or add the following lines:*

```

30 DIM PS(M,16):DIM G(M):DIM NS(16)
60 IF K=1 THEN GOSUB 200
61 IF K=2 THEN GOSUB 360
62 IF K=3 THEN GOSUB 450
160 LET K$=INKEYS:WHILE K$="" :LET K$=INKEYS:WEND
170 LET K=CODE(K$)-48

```

#### Commodore 64/128

*Change or add the following lines:*

```

90 PRINT CHR$(147);
160 GET K$:IF K$="" THEN GOTO 160

```

# LET'S MAKE MONEY

Part 3



## GUESS THE WEIGHT OF THE CAKE

**Use your computer to help with traditional fund-raising events**

Guess the weight of the cake! How many sweets in the jar? What does this man weigh? How many coins in the pile?

These, and lots of other guessing games, are used to make money at school fairs. They are all organised in a similar way.

Let's look at guessing the weight of a cake. The idea is simple.

Someone bakes a cake and weighs it exactly. At the fair people pay, say, 10p to say how much they think it weighs.

At the end of the fair, the closest guess wins the cake.

So where does a computer come into this?

It can keep a record of all the names and guesses. The program here shows how it can be done.

Type it in, SAVE it and RUN it.

First you'll be asked *How Many?*

It wants you to say how many people you are going to let have a go. The figure you can enter depends on what type of computer you're using.

Most will work with numbers even as big as 1000.

You don't need to answer the question exactly – any number that's more than the

most you expect will do.

To see how the program works type in 100. Next, a menu with three choices will be shown. You're ready to start entering names and guesses.

Choose *TYPE IN ANOTHER* from the list. You'll then be asked two questions. Answer the first with a friend's name and the other with an imaginary guess. Use a number between 50 and 100 for your test.

Do the same several times until you've got a few names and guesses in your computer. Then try *SEE THE ONES THERE* from the menu. This will show you the list so far.

Finally, try *FIND THE WINNER* to see who is winning. You can then go back and use the first choice and put in a few more names and guesses. See if the winner is still the same person.

Why use a computer?

With this program you can see who is winning at any time. So if someone has a go and finds they aren't in the lead they may want to have another try.

Someone who is winning may come back later to see if they are still winning. If they aren't, they may have another go.

All of which brings in more money!

- 1 .. TYPE IN ANOTHER
- 2 .. SEE THE ONES THERE
- 3 .. FIND THE WINNER

*The menu*

### SET THE WEIGHT

The actual weight of the cake is set in line 440:

```
440 LET W=75
```

Change the 75 to the weight of YOUR cake.

*Take care that anyone who is going to enter the contest doesn't see the listing once it's changed!*

### WHAT ELSE YOU CAN DO

You can easily change the program to make it do different things. For example, you can make it print a ticket for everyone as they make their guess.

You can make it print messages depending how good the guess is. If someone got a "miles away" message they may want to try for a "very warm".

The program is a frame you can build on as you like. Put bright graphics around the menu. Alter some of the features.

The idea is to end up with your own unique fund-raiser.



# PRIZE WINNERS

## FREE GAMES FOR A WHOLE YEAR!

Wow! In the December issue we offered you the chance to win free games for a year. We were snowed under with entries. Below are the eight lucky winners. They've each been adopted by a software house and will receive loads of games during 1991:

### Electronic Arts - PC games

Daniel Gregory (13), from Stalybridge

### US Gold - Atari ST games

Chris Williams (10), from Sandbach

### Superior Software - BBC games

Ben Bazzard (10), from Monmouth.

### Virgin Mastertronic - Commodore 64 games

David Plank (11), from Edinburgh

### The Fourth Dimension - Archimedes games

Susan Frost (9), from Middlesbrough

### Mirrorsoft - Commodore Amiga games

Jason Allen (14), from London

### Zeppelin Games - Spectrum games

Kenny Forbes (8), from York

### CodeMasters - CPC games

Katie Darlow (8), from Westfield

## HOORAY FOR HENRIETTA

The December issue also gave Atari ST, Amiga, PC and Spectrum owners the chance to win a copy of **BOTH Hooray for Henrietta and Henrietta's Books of Spells**. The first 25 lucky winners to be pulled from the sack are:

Louise Duckett, Folkestone; Graham Parker, Woodthorpe; Oliver Barry, Wednesford; Russell Weightman, Feltham; Rachel Bradley, Nottingham; Nathan Phillips, Birmingham; Robert Stuart, Feltham; Marc Page, Kenton; Tom Wheatcroft, Wallingord; Melchi Sedec, London; Adam Kendal, Latimer; Richard Earnshaw, Chesterton; Hannah White, Sutherland; Kenny Sturgeon, Liverpool; Ellen Gee, Farleigh Hungerford; Rebecca Yong, Ascot; C Andrews, Chingford; Jonathan Linsdell, Yarm; Martin Elliot, Bradford; Iain Spence, Cramlington; Jason Ball, Basildon; Peter Sims, Salisbury; JK Dyer, Beeston; R Johnson, Benton; Joel Caines, Chesterfield.

## BUG BASHING: ALL THE WINNERS!

The Bug Bash/Nucleus competition in the December issue of *Let's Compute!* offered Amiga owners the chance to win a copy of this double game. Did you win? Check below in the names and towns of the lucky winners:

Christopher Austin, St Helens; Louise Duckett, Lyminck; Deborah Hall, Whitchurch; Rob Green, Market Drayton; Chris Walker, Winchester; Clare Wheatcroft, Wallingford; Peter Sims, Winterslow; Oliver Barry, Wednesford; Vicky Parker, Woodthorpe; Stuart Weightman, Feltham; Matt Smith, Ipswich; Daniel Gallagher, Bradford; Ioan Dyer, Carmathen; Benjamin Bradley, Nottingham; Ram Pillai, London; Alison Evans, Shirehampton; Michelle Pinnegar, Hornchurch; Ben Shirley, Waterlooville; Karl Burman, Gt Yarmouth; Lucy Jones, Sale; Aman Charra, Wyken; Ian Baines, Speke; JH Brand, Harrogate; J Stuart, Maybole; Christopher Pottle, Colchester; Simon Green, Banbury; Sarah Hamilton, Walton-on-Thames; Andrew McClure, Barassie; James Bland, Thorpe Marriot; James Duncan, Sidcup; Jacqui Asher, Exeter; Ritish Shah, London; L Rose, Marston Green; Scott Cowley, Bournemouth; Pooja Harijan, Desford; Glynnis Swinburne, Hounslow; J Enwood, Watford; Paul Young, St Albans; J Griffin, Bassett; K Bowman, Worcester Park; Ian Moore, Cookridge; James Harrion, Hemel Hempstead; Philip Allum, Swindon; David Raybould, Haxby; Colin Kirby, Waterlooville; Gregory Minns, Wolsingham; James Wheeler, Ongar; James Wilson, Oxford; David Connolly, Southend-on-Sea; Emma Jackson, Shoeburgness; Jennifer Macdonald, Helensburgh; James Stuart, Feltham; James Lovell, Hindhead; Michael Capp, Huntingdon; Jason Ball, Basildon; Euan Laing, Stonehaven; Francis Oumamar, Cambridge; Matthew Gavarys,

Reading; Stephen Hill, Weston; Darren Leahy, Belfast; David Balfour, Bridgend; Richard Kennedy, Dublin; SJ O'Toole, St Austell; Claire Kennard, Southampton; AR Ward, Coventry; Sharon Green, Coventry; Louise Munday, Fulwood; Shaun Shiels, Plymouth; Christopher Foster, Blackpool; AJ Reilly, Dundee; H Knott, Lewes; Paul Housley, Parkgate; Chris Large, Hazel Grove; Owen Williams, Halstead; Jennifer Irwin, Camberley; Chris Irwin, Camberley; Alexander Dillon, Congleton; S England, Hayes; Kevin Sapwell, West Croydon; EJ Pearce, Hayes; Joann Carlidge, HARRISEAHEAD; Laurence Cload, Crowthorne; Christopher Atkinson, Burnley; Andrew Came, Grantham; Andrew Haylett, Newtownards; JA Steadman, Retford; Chris Winn, Taunton; Jerome Dowding, Sidcup; A Dalli, London; Julie Seager, Hythe; Jeremy Henderson, Belfast; Daniel Gibson, Jesmond; Jessica Geoghan, Brighton; Martin Levett, Kenilworth; Andrew Little, St Albans; LF Gapper, Elgin; R Hinitt, Walsall; Robert Frost, Felixstowe; Joe Veil, Hayfield; David Holt, Epsom; Daniel Davenport, Littleover; K Naylor, Leeds; J Muir, Glasgow; Jeffrey Foster, Fromley; Stuart Ross, Craithole; Matthew Ball, Malvern; Jamie Duffy, Ilchester; Prasanth Chandra, Old Colwyn; David Oakes, Hazel Grove; Jack Smith, Upper Clapton; SD Holt, Epsom; Jenna Welch, Wadebridge; E Morgan, Crossair; Vicky Hammerstein, Modbury; P Shaw, Worrall; Howard Young, Frinton on Sea; Ben Howard, St Agnes; Paul Keen, Doncaster; Michael Wynne, Reading; Ben Owen, Sutton; GT Evans, Fleet; Michael Warren, Thatcham; Anthony Stephinson, Chester-le-street; James Jagger, Welton; Michael Jones, West Quinton, Coai Tong Man, Hornsey; Mark Dunham, Heswall; Daniel Ruby, Kidderminster; Kate Bowman, Worcester; Alex Waddell, Reading; AR Wright, Carlisle.

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# 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**

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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:

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### 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.

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- F29 Retaliator ..... £24.95

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E&UE - Advertised prices and specifications may change - please return the coupon for the latest information

Your own logo disc or tape for £1!

# NOW IT'S THE IMPOSSIBLE SQUARE...

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.....

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Please send it on:

- 5.25in 40T disc
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SEND TO:

Logo Offer,  
Let's Compute!  
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SK10 5NY

Tech Turtle is still annoyed at Tricky Turtle's triangle. Remember last month? Tricky asked Tech to do the impossible!

But Tricky hasn't finished! He's worked out another trick using his computer and the Logo language.

This time he's drawn a square for Tech to make. The program he used is shown on the right.

The picture shows Tech on a building site having problems with the design. Maths experts call it the impossible square. And you can easily draw one using Tricky's program.

You 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.)

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

SAVE "NOTPOS

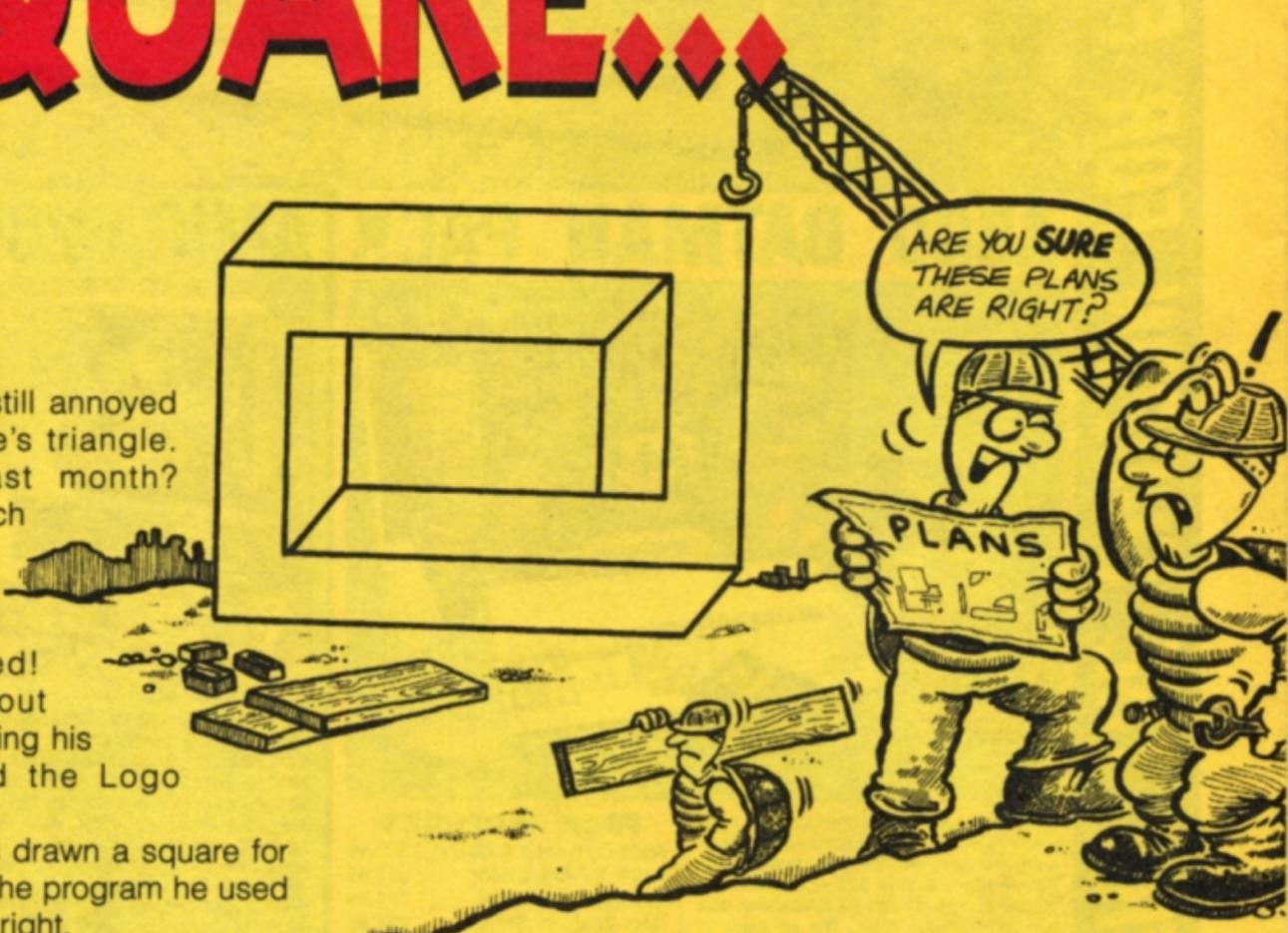
Now the program is in your computer. You can see Tricky's square by typing:

IMPOS 80

To draw squares of different sizes just change the 80 to another number. There's a prize if you can make this one out of wood!

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.

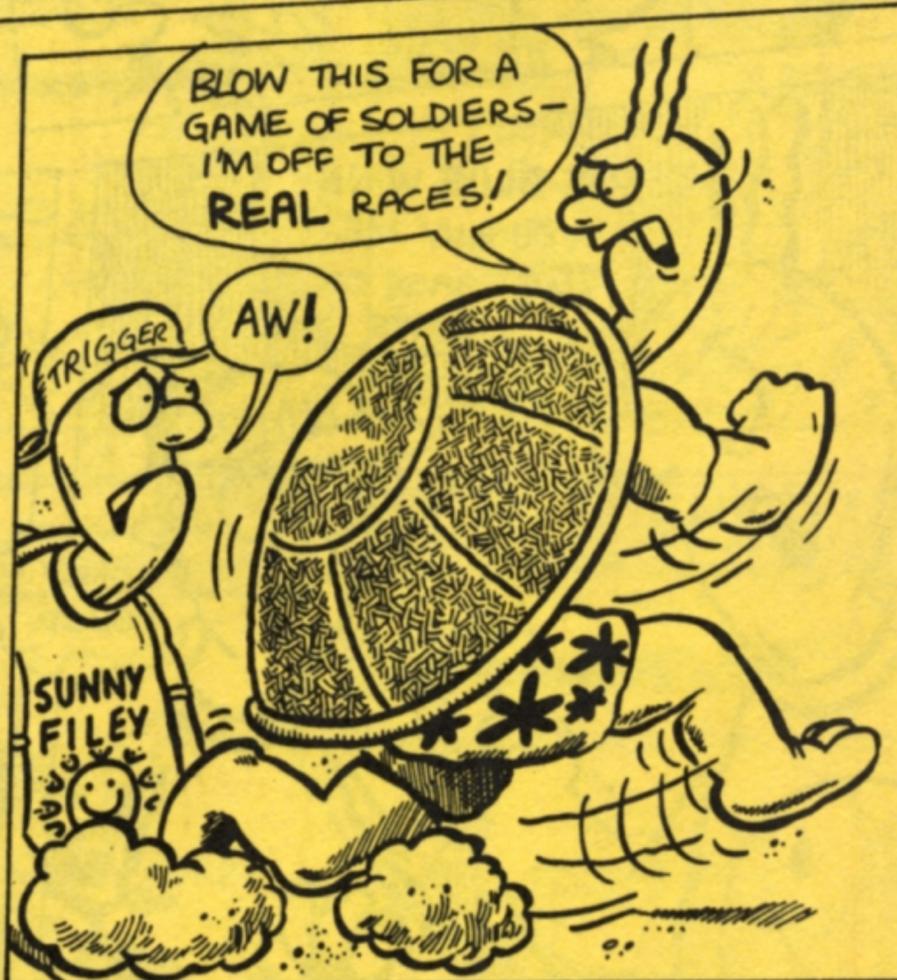
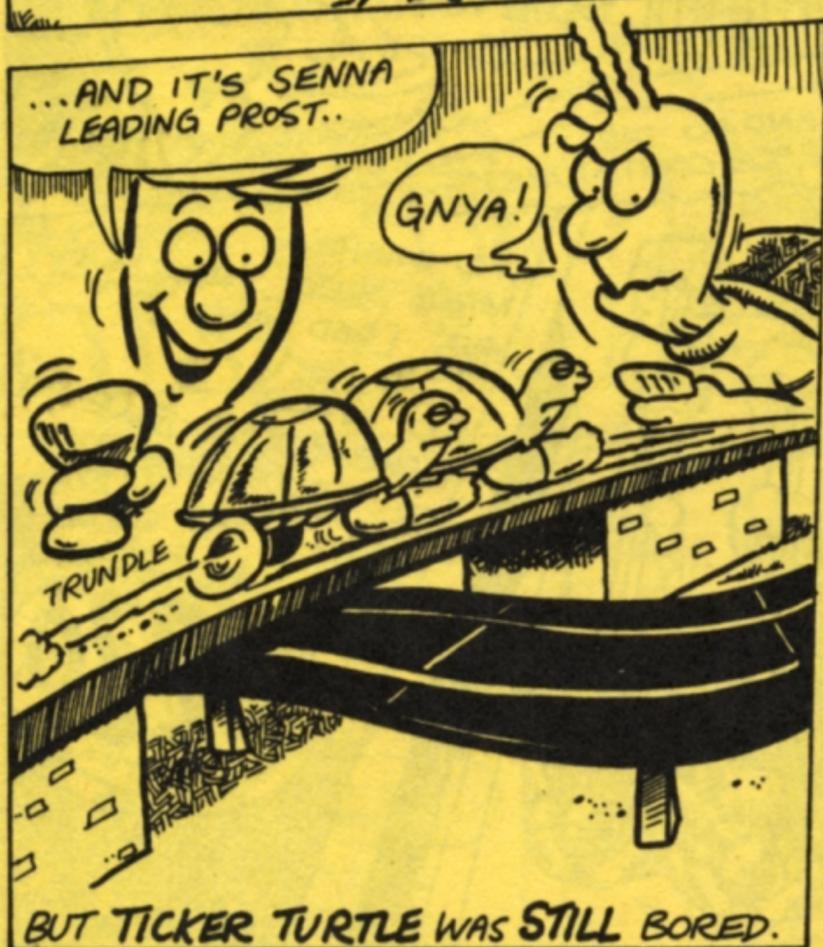
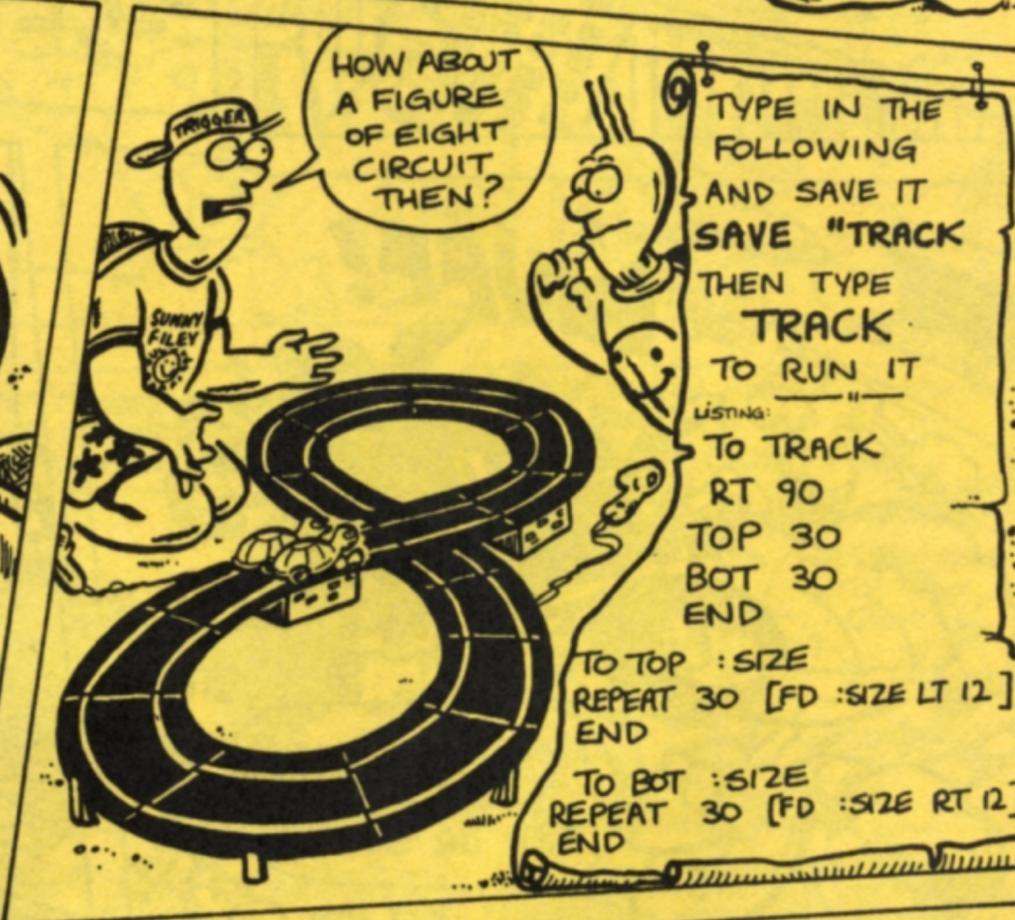
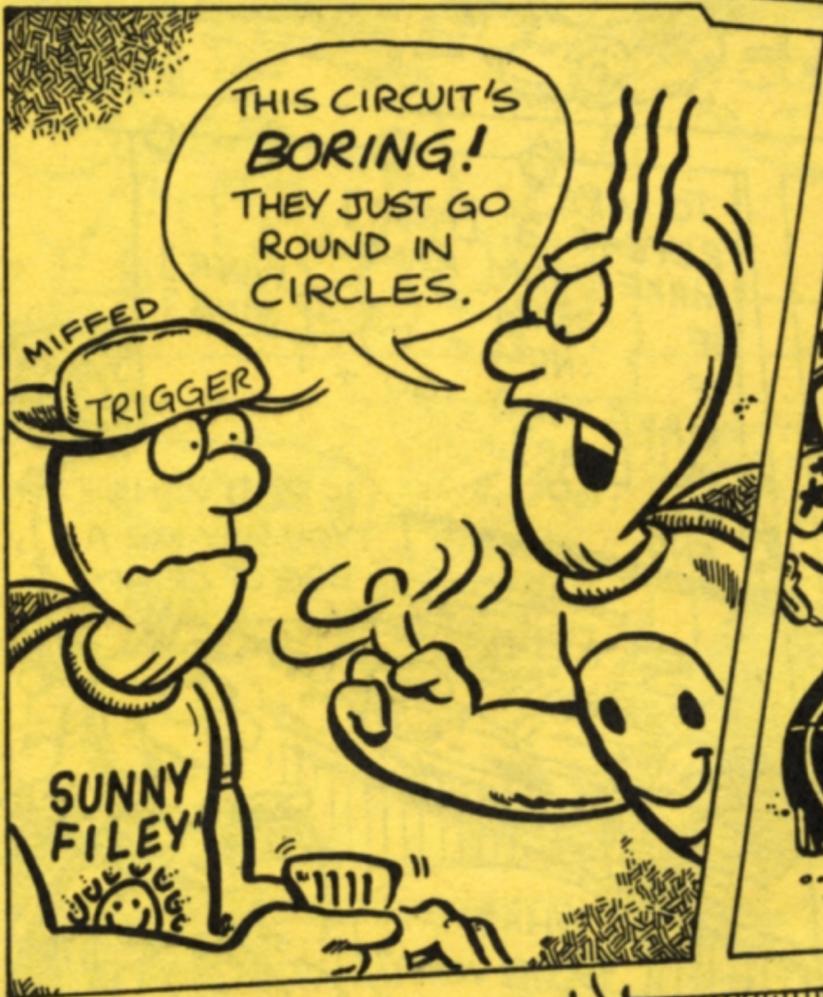
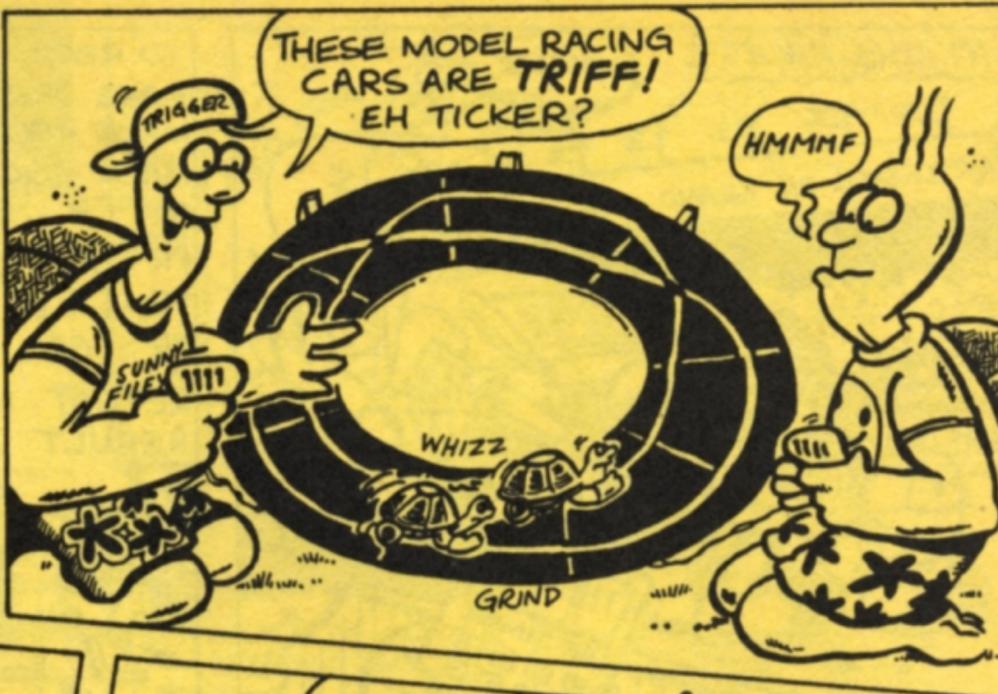


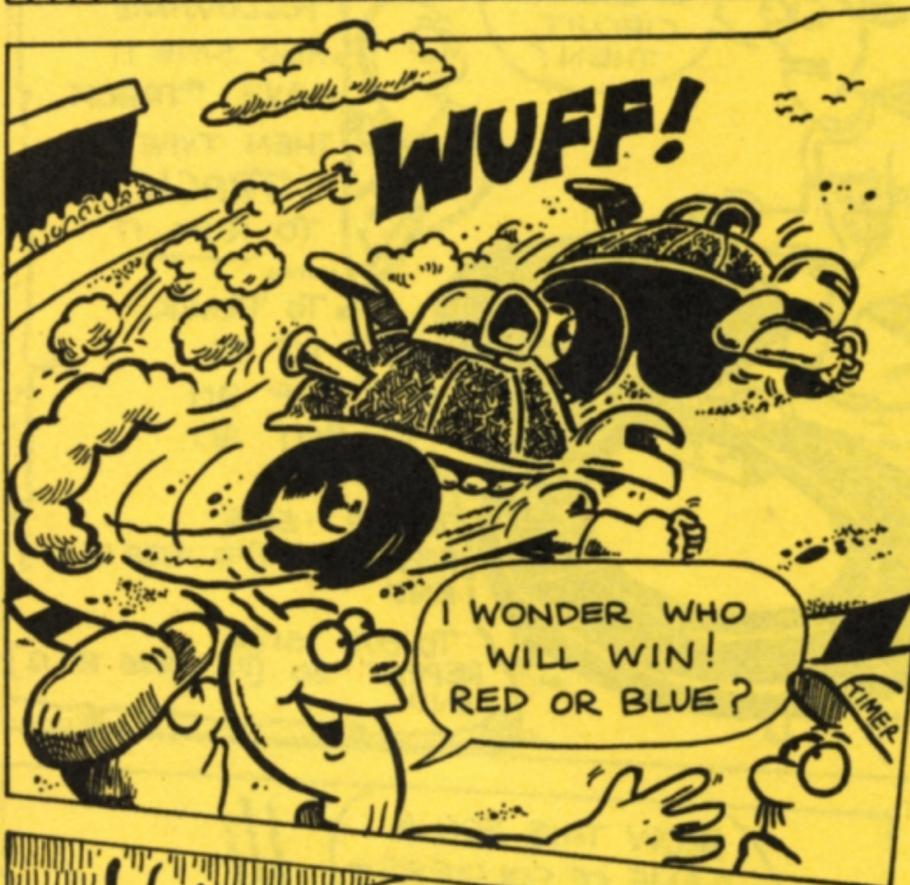
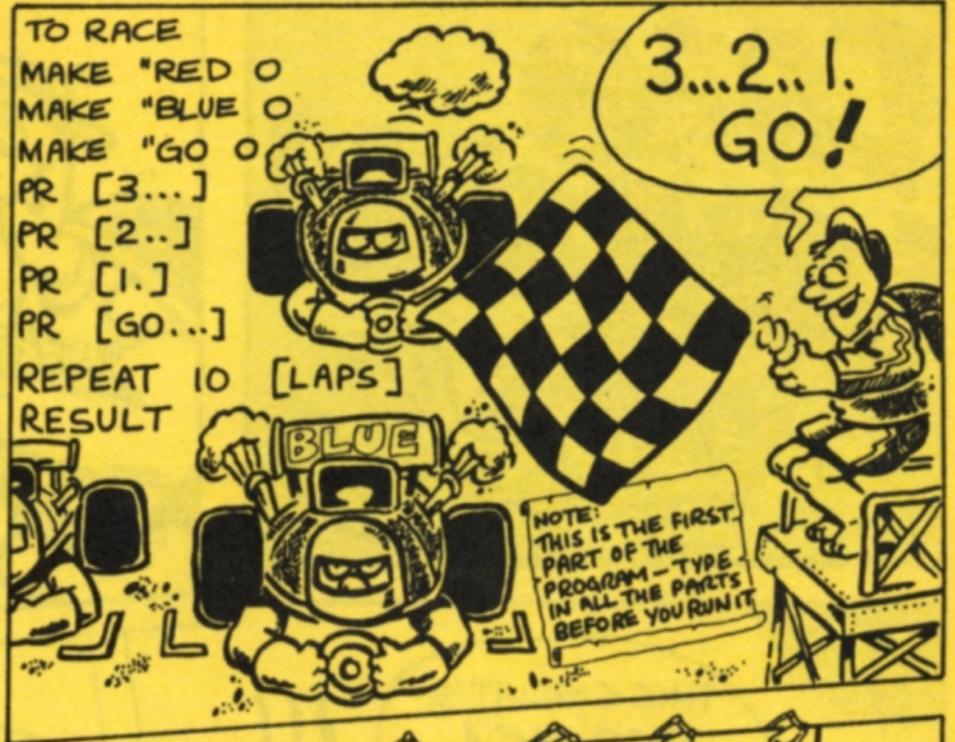
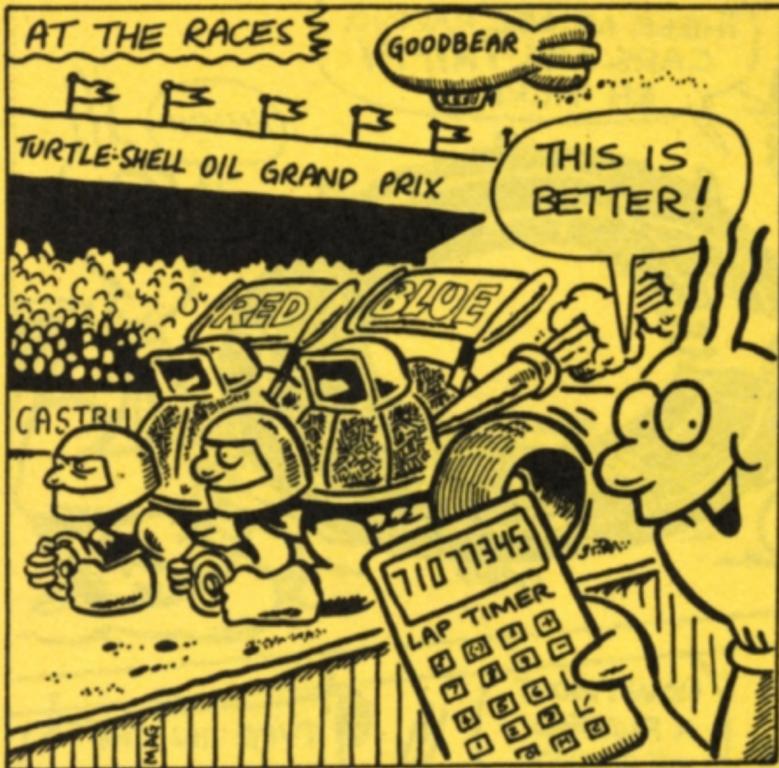
```
TO IMPOS :BIG
HT RT 90
SHAPE :BIG
JUMP :BIG
SHAPE :BIG
END
```

```
TO SHAPE :BIG
FD :BIG * 2 LT 90
REPEAT 3 [FD :BIG * 3 LT 90]
RT 90
FD :BIG * 2 RT 135
FD :BIG * 14 / 10 RT 45
REPEAT 3 [FD :BIG * 5 RT 90]
RT 45
FD :BIG * 14 / 10
END
```

```
TO JUMP :BIG
PU
RT 45 FD :BIG * 2 LT 90
PD
END
```

# LOGO LONDDOWN







☆ O **TURTLE PROFILE** O ☆

**TICKER  
TURTLE**

-TYRANT!

FACTS:

- HEIGHT: HUGE
- EYES: STARING
- HAIR: THREE STRANDS
- CLOTHES: SAME AS TIPSY TURTLE
- LIKES: TICKING PEOPLE OFF!
- DISLIKES: BEING WRONG
- FAVOURITE FOOD: OTHER PEDPLES
- HOBBIES: MOANING, SHOUTING, BOSSING PEOPLE ABOUT

TICKER SAYS:-

"DID I SAY YOU COULD DO A PROFILE ON ME?! GO AWAY!"

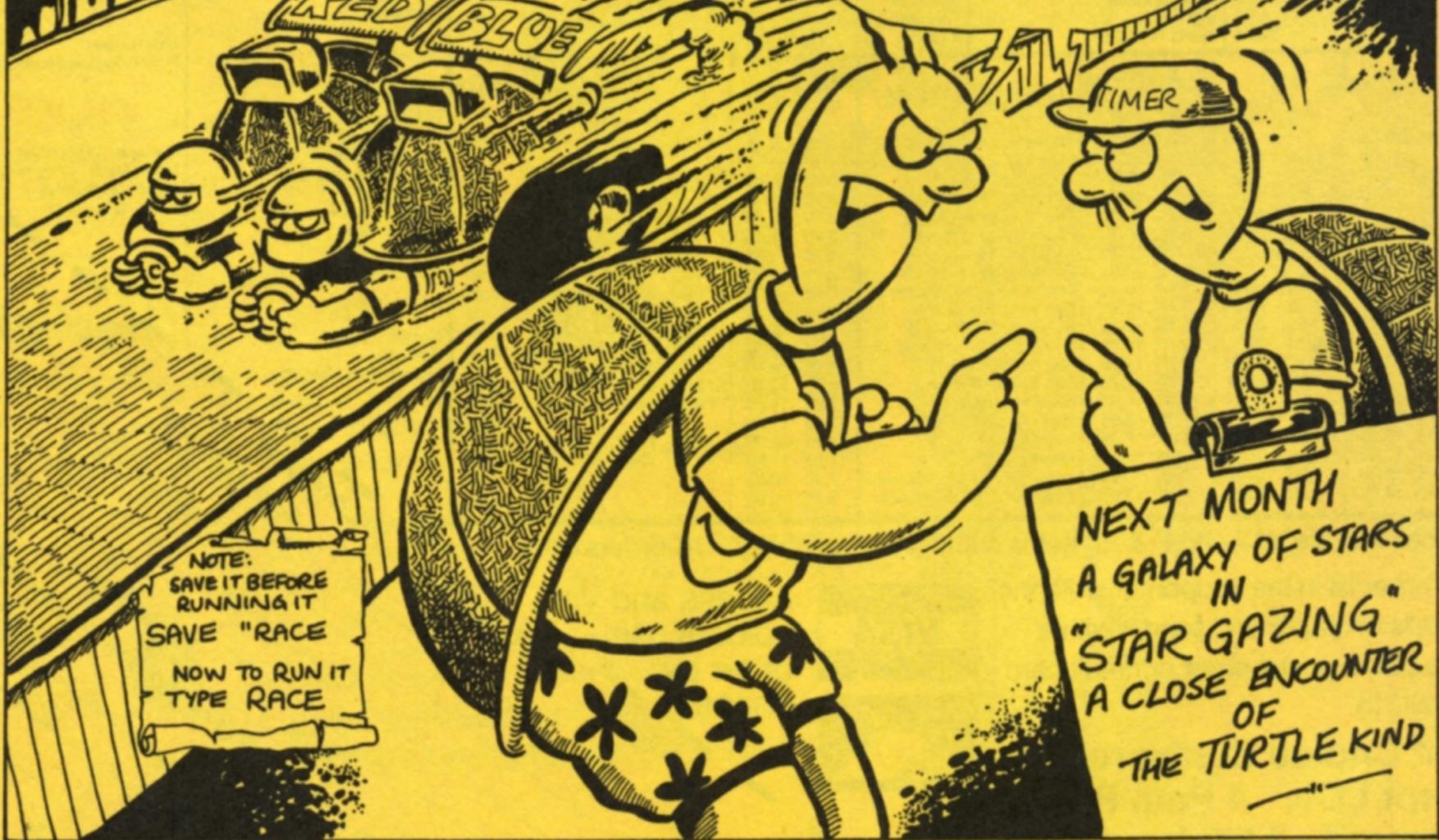


```

TO RESULT
REPEAT 10 [PR "RESULTS"]
PR [RED]
PR :RED
PR [BLUE]
PR :BLUE
END
    
```

WHAT? IT CAN'T BE A DEAD HEAT!?

WHERE'S MY CRISPS?!



NOTE:  
SAVE IT BEFORE  
RUNNING IT  
SAVE "RACE"  
NOW TO RUN IT  
TYPE RACE

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Frankenstein Jr.....	2.99	Postman Pat.....	1.99
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G.B. Air Rally.....	NEW 2.99	Pro Golf (Codemasters).....	2.99
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## CBM 64

<b>BUDGET GAMES</b>			
2 Player Super League Soccer.....	2.99	Frank Bruno.....	2.99
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4 x 4 Road Race.....	2.99	G.B. Air Rally.....	NEW 2.99
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Crazy Cars.....	2.99	Matchday 2.....	2.99
Cricket Captain.....	2.99	Mike Reid's Pop Quiz.....	2.99
Cup Football.....	NEW 2.99	Monty on the Run.....	2.99
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FIRST THE LEFT EAR. THEN THE RIGHT EAR, AND NOW  
**THE FINAL FRONT-EAR**

THE SHED HAS BEEN TAKEN OVER BY ALIENS - AND DIM'S GOT OTHER PROBLEMS TOO ...



COMPUTER RECORDS SHOW YOU'RE £500 IN DEBT CAPTAIN BIRK! SO WHO'S PAYING FOR THE HADDOCKS?

PASS!

DIM! I'VE GOT AN IDEA.

LISTEN, IF WE CONVERT THAT ARCADE MACHINE TO A SHUTTLE CRAFT, OUR PROBLEMS SOLVED!



OH AYE SHOCK! AND I SUPPOSE IT'S A 5 MINUTE JOB - YEH?!

WELL, I'VE GOT MY SPANNER

AND SO THE DIM-WIT-FITTERS SET TO WORK ...



PAY UP!

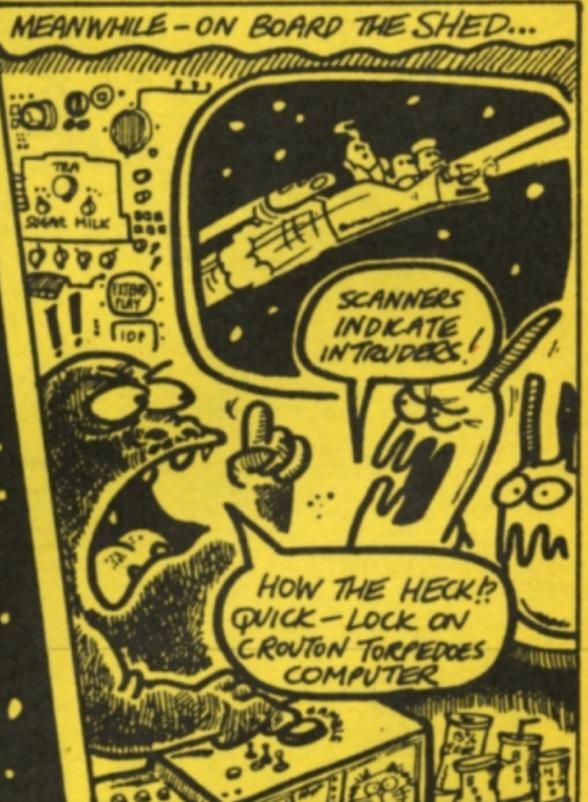
WE WILL - WHEN WE GET THE SHED BACK.

ATOMIC BATTERIES TO POWER...

...TURBINES TO SPEED!



LOCK ON TO THE SHED MR SHOCK!



SCANNERS INDICATE INTRUDERS!

HOW THE HECK? QUICK - LOCK ON CROUTON TORPEDOES COMPUTER



TOO LATE FOR CROUTONS ALIEN!

YIKE



HEY, THEY'VE LEFT THEIR WALLETS BEHIND!

WHAT LUCK - THERES JUST ENOUGH TO PAY THE CHIPPY



BUT NOT ENOUGH TO PAY ME! YOUR "SHUTTLE" OUT THERE ISN'T TAXED!!

OH NO!! NOT THE INTER GALACTIC TRAFFIC WARDENS?!

YES, AFRAID SO DIM! CAN DIM EXPLAIN HIMSELF TO THE KIND WARDENS? PARK HERE NEXT MONTH!

**The Archimedes Specialists**  
**Competitive Pricing**

# BEEBUG

**The Archimedes Specialists**  
**Superb Service**

Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...Beebug Computers...



**A3000**

0255g	A3000 Entry System	599.00
0256g	A3000 Colour System	798.00
0209g	JetSet Pack + TV Modulator	649.95
0220g	Learning Curve Entry	699.00
0221g	Learning Curve Colour	898.00



**Archimedes Computers**

0260g	410/1 Entry System	1099.00
0261g	410/1 Colour System	1298.00
0262g	420/1 Entry System	1265.00
0264g	420/1 Colour System	1464.00
0197g	420/1 Learning Curve Entry	1299.00
0198g	420/1 Learn. Curve Colour	1498.00
0275g	440/1 Entry System	1699.00
0276g	440/1 Colour System	1898.00
0194g	540/1 Entry System	2995.00
0195g	540/1 Colour System	3194.00

*The official Acorn Colour Monitor (AKF12) is supplied with all Acorn Colour Systems as we believe the quality is superior to other, cheaper monitors.*

**SPECIAL FREE OFFERS:**

*A free RISCOS extra's disc, plus:*

**A3000 & Learning Curve (Not JetSet)**  
Beebug's high quality 1Mb RAM Board

**Archimedes 410/1**  
20 Mb Drive & RAM upgraded to 2Mb

**Archimedes Learning Curve (420/1)**  
Drive changed to 40Mb, RAM expanded to 4Mb

**Archimedes 440/1**  
A Taxan 775 monitor (Entry system) or a Star XB24-10 printer (Colour System)

**Archimedes 540/1**  
Taxan 795 (or 775 if preferred) monitor (entry) or a Star XB24-10 Colour Printer (Colour system)

**Memory Upgrades**

0266f	0.5Mb RAM for A305 (Acorn) *	139.00
0222g	1Mb A310 Upgrade (CJE) *	287.65
0223g	3Mb A310 Upgrade (CJE) *	444.17
0278d	1Mb RAM upgrade for A400 *	60.00
0813g	Atomwide 8Mb RAM *	850.00
0225f	A540 4Mb RAM Card *	469.00

*\* Dealer fit only - Free fitting by appointment*

**Hard Drives (\$T506)**

0268g	A310 20Mb (Acorn)	379.00
0120g	A400/1 20Mb (Beebug)	173.87
0121g	A400/1 40Mb (Beebug)	284.30
0122g	A400/1 53Mb (Beebug)	399.00

**SCSI Hard Drives for A300/400**

Supplied complete with controller card.

0140g	20Mb Internal	375.00
0141g	45Mb Internal	495.00
0142g	80Mb Internal	699.00
0145g	20Mb External	535.00
0146g	45Mb External	655.00
0147g	80Mb External	859.00

**Archimedes Upgrades**

0795d	A310 5.25" disc buffer (B'bug)	28.91
0267e	A310 Floppy drive (2nd) *	114.95
0784d	A410/1 5.25" disc buffer	28.91
0279e	A410/1 Floppy drive (2nd)	119.95
0134f	ARM 3 30Mhz (Beebug) *	399.00
0269d	Backplane 2-way (Acorn)	37.00
0768d	Backplane 4-way inc fan (Ifel)	55.00
0236b	MEMC 1A upgrade *	65.48
0817b	VIDC Enhancer (Atomwide)	29.95
0139b	VIDC Mode Expander (B'bug)*	29.95

**Archimedes Add-Ons**

0716b	Archimedes Dust Cover	7.43
0832b	Keyboard Extension Lead	6.91

**Archimedes Expansion Cards**

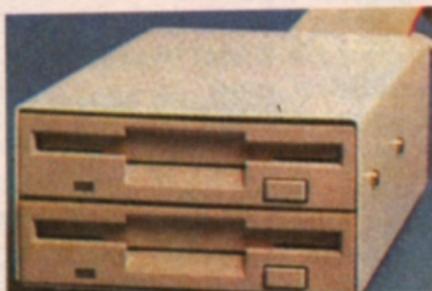
1950d	16 bit I/O card (Intell. Interf.)	199.00
0803d	A448A Mono sound sampler	135.00
0833d	A448B Stereo Sound Sampler	165.00
0834d	A448M Stereo + MIDI sampler	195.00
0265d	Floating Point Co-pro	559.95
0271d	I/O Podule (Acorn)	79.95
0272d	MIDI add-on to I/O podule	28.95
0273d	MIDI Podule (Acorn)	66.95
1948b	MIDI upgrade to Podule	15.00
0874g	Multipod Professional I/O	115.95
0158d	SCSI 16-bit card (Oak)	189.95
0870f	SCSI podule (Acorn)	279.95

**Archimedes / A3000 General Add-Ons**

0900b	PC Emulator (Acorn)	88.95
0794b	Spiral Keystrip Holder	2.56
1965g	Teletext Adaptor (Morley)	125.00

**A3000 Memory Expansion**

0133d	1Mb RAM Card (Beebug)	95.00
0130d	1Mb Upgradeable RAM card	105.00
0131f	3Mb RAM Card (Beebug)	249.00
0132f	1 to 3Mb Upgrade for 0130	155.00



**A3000 External Disc Drives**

1961g	External 3.5" drive (Morley)	125.00
0288g	External 5.25" drive (Morley)	169.00

**NEW**

Beebug's range of SCSI drives for the A3000

**SCSI Hard Drives for A3000**

Beebug drive. Supplied with internal controller card.

5200g	A3000 SCSI 20Mb	399.00
5201g	A3000 SCSI 45Mb	499.00
5202g	A3000 SCSI 80Mb	599.00
5203g	A3000 SCSI 180Mb 15.5ms	899.00

**A3000 Add-Ons**

0712b	A3000 Keyboard Dust Cover	4.30
0801e	Monitor Plinth (Acorn)	29.00
0896c	Podule case	14.96
0277a	Serial Chips *	19.00



**A3000 Expansion Cards**

0234d	BBC A/D + User Port (Morley)	69.00
0135d	Disc Drive Interface (B'bug)	34.74
0136f	Disc Interface with SCSI	136.91
0238d	MIDI + I/O Podule (Acorn)	49.00
0137c	SCSI upgrade for code 0135	120.44

**Scanners & Video Digitisers**

1964g	I-Scan (Irlam Instruments)	579.00
1960f	Scan Light Junior A3000	189.00
1963g	Scan Light II (CC)	380.74
1962f	Scan Light Junior (CC)	176.95
0731g	Scavenger A4	342.60
0732f	Scavenger A4 Sheet Feeder	146.96
0730f	Scavenger A6	149.00
0735f	Scavenger A6 for A3000	175.00
0733f	Scavenger A4 for A3000	408.65
0878e	Hawk V9 Colour Digitiser	334.95
1952e	Pineapple Colour Digitiser	273.87



**Joysticks and Mices**

0723c	Deltacat Joysticks	24.74
0742c	Joystick adaptor Arch (RTFM)	34.99
0743c	Joystick adaptor A3000 (RTFM)	37.99
0722b	Joystick Controller (Serial Port)	20.83
6603c	Deluxe Quickshot Joystick	10.43
0696a	Furry Mouse Cover	6.91
0685b	Mouse House	2.60
0789b	Mouse Mat (blue)	3.04
0788b	Mouse Mat (red)	3.04

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Connect an Amiga or Atari Joystick such as the Deluxe Quickshot to your Archimedes.

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0899b 1st Word Plus Version II	72.00
1170b Easiword (Minerva)	33.95
1975b Premier 3 (Circle Software)	70.00
5462b Premier 3 WP application	23.00
1088b Protex 5.0 (Arnor)	130.39

### Spreadsheets

0954b Intersheet II (CC)	24.95
1084d Logistix (Acorn)	89.00
1998b Schema (Clares)	107.35
0931b Sigmashet (Minerva)	43.44

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1089c Desk Top Publisher (Acorn)	125.00
1113c Impression II (CC)	158.00
1115b Impression Junior (CC)	89.00
1077b Tempest (Clares)	125.00
0108b Ovation (Beebug)	99.00

### Integrated Packages

5427b Desktop Office (Minerva)	109.95
0901d Pipedream 3 (Colton)	125.00

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1913b DataVision (Silicon Vision)	123.86
1992b Flexfile (Minerva)	125.95
0987c Flying Start II (Mitre)	84.95
1900b Genesis (Software Solutions)	79.95
5460b Carousel (for Genesis)	39.95
5448b Genindex (for Genesis)	29.95
0910b Knowledge Organiser (Clares)	45.00
0100b Masterfile II (Beebug)	19.13
0989d Multistore (Minerva)	199.95
5447b Squirrel (Digital Services)	129.00
0921c System Delta Plus VII (Minerva)	55.00

### Accounting Packages

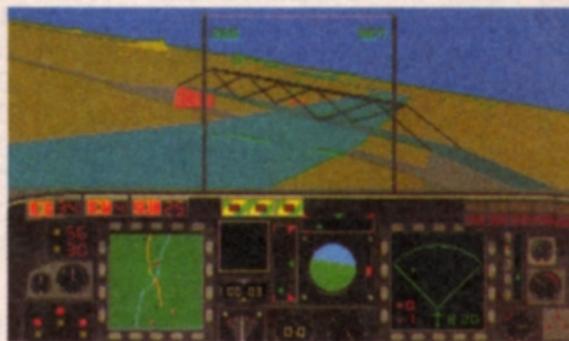
5458d Business Accounts (Minerva)	379.95
0947b Home Accounts (Minerva)	40.00
1159c MicroTrader Accounts	199.00
1916c MicroTrader Stock Control	75.00
1914d Office Tools (Silicon Vision)	299.95
1917b Share Holder (Silicon Vision)	161.09



### Arcade Games

1930b Apocalypse (4th Dimension)	24.75
0997b Arcade Soccer	17.00
54450b Ballarena	17.35
1931b Battle Tank (Minerva)	12.35
5455b Blowpipe (Eclipse)	17.35
1978b Break 147 (4th Dimension)	20.65
1995b Chock' Away (4th Dimension)	20.62
1187b Conquerer (Superior)	19.00

0952b Corruption	20.61
1979b Drop Ship (4th Dimension)	16.48
1070b E-Type (4th Dimension)	16.48
1058b E-Type Designer (4th Dim.)	14.00
0999b E-Type Extra 100 miles (4thD)	14.00
1929b Fireball 2 (CIS)	21.70
0944b Fish	20.64
1980b Guild of Thieves	20.65
0964b Holed Out (4th Dimension)	16.48
0993b Holed Out Designer (4thD)	16.48
0991b Holed Out Extra 1 (4thD)	14.00
0992b Holed Out Extra 2 (4thD)	14.00
1984b Hostages (Superior)	17.35
1901b Inertia (4thD)	17.35
1993b Interdictor II (Clares)	27.95
1902b Man at Arms (4th Dimension)	17.35
1987b Manchester United	16.48
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1999b Pysankle (4th Dimension)	16.48
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1933b Rotor (Arcana)	20.70
5451b Starch	13.00
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5452b Superpool (4th Dimension)	17.35
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1981b The Pawn	20.65
0963b Thundermonks (Minerva)	12.35
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5453b Wimp Game (4th Dimension)	17.35
5456b Worldscape (Eclipse)	17.35
1179b Zarch (Superior)	16.48



### Languages

0938c ABC Basic Compiler (Dabs)	84.95
0897c ABX Utils for ABC (Dabs)	44.00
1085d ANSI C release 3 (Acorn)	128.95
0107c ISO C Dev. System (Beebug)	77.39

### Music & MIDI

1091b Armadeus (Clares)	66.21
0904c EMR Creations set (6 discs)	43.39
0948c EMR Studio 24 Plus v2	164.35
1971b EMR MicoStudio	68.70
0995d Inspiration (Pandora)	260.00
0239f Pandora PMI-4 Midi Interface	179.95
1997b Rhapsody (Clares)	41.36
5457b Tracker (Serial Port)	41.95

### Utilities

1946b ARC-DFS (Dabs)	24.74
0102a DFS Reader (Beebug)	9.06
0106b Hard Disc Companion (B'bug)	33.91
5445b Investigator II (Serial Port)	24.30
1990b PC Access (Minerva)	33.91
0796b Serial Link Disc (Beebug)	15.79
1908b Star LC10 Colour Driver (Ace)	14.95

### CAD

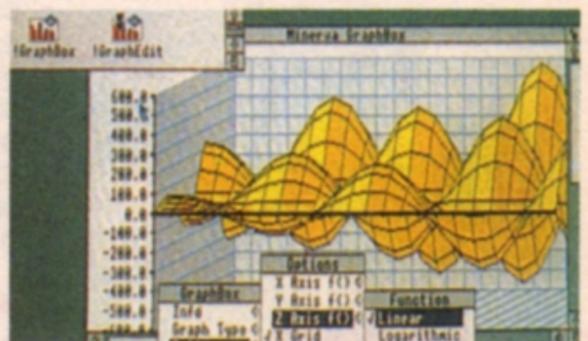
0911c Autosketch II	75.00
0913c PCB + autorouting	161.95
1909d PCB Professional	310.95
0959d P.D.T. (Oak)	349.95
1936c WorraCAD (Oak)	73.95

### Drawing / Painting

1103c Artisan II (Clares)	54.95
0962b Atelier (Minerva)	79.95
0937c Pro-Artisan (Clares)	79.95

### Graphics Manipulation

1976b FontFX	10.00
1938c Mogul (Ace)	19.00
19143b Poster (4mation)	84.95
1078c Render Bender (Clares)	58.00
1912c Solids Render (Silicon Vision)	123.87



### Presentation Graphics

0932c GammaPlot (Minerva)	49.95
0912c Graph Box Inc Hotlink (Min.)	64.00
0908b Presenter II Inc Hotlink (Lindis)	46.95
5429c Presenter Story (Lindis)	159.00

### Outline Fonts

1920b Font Starter Pack (Acorn)	40.95
1921b Newhall Font Pack (Acorn)	40.95
1922b Symbol Font Pack (Acorn)	40.95
0111b Outline Font Pack 1 (Beebug)	47.39

### Educational Software

1008c Desk Top Stories (Resource)	32.95
0935b Dread Dragon Droom	25.95
1193b Fun School II (0-6 years)	16.48
1194b Fun School II (6-8 years)	16.48
1195b Fun School II (8+ years)	16.48
1150c Jigsaw (4mation)	29.00

### Books

There is no VAT to pay on books

1211b Arch Assembly Language	12.95
1246b Archimedes First Steps	9.95
1243c Arch Operating System	14.95
1208b Basic V : A Dabhand Guide	9.95
1245g RISCOS Prog. Ref. Manual	79.00
1207c 30 Hour Basic	12.95

### Communications

3110f Amstrad SM2400 Modem	217.35
0779f Linnet Modem	120.83
0101d Hearsay comms Software	60.00

### AMSTRAD SM2400

A high performance V22/V23 modem complete with Archimedes lead.

With Free Hearsay package (worth £69)

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### Monitors

0189g	Acorn Colour Monitor	216.95
0530g	Microvitec 1431/MS	174.95
0531g	Microvitec 1451/MS	218.95
0527g	Microvitec CUB3000	192.95
0503g	Phillips BM7502 (Green)	74.95
0504g	Phillips CM8833	214.95
0537g	Phillips CM8833 Mk II	214.95
0506g	Taxan 775 MultiSync	399.00
0511g	Taxan 795 Trinitron Multisync	499.95
0508g	Taxan Viking II/R140 (mono)	719.95



Three New Star Printers  
The Star LC200, LC24-200 and LC24-200

### Matrix Printers

0379g	Epson LQ400	206.95
0329g	Epson LQ550	277.95
0327g	Epson LQ860	539.95
0378g	Epson LX400	139.95
0322g	Epson LX850	209.95
0299g	Panasonic KX-P1081	124.95
0389g	Panasonic KX-P1124	239.95
0388g	Panasonic KX-P1180	129.95
0346g	Star FR10	309.95
0347g	Star FR15	399.95
0337g	Star LC24-10	195.00
0335g	Star LC10 (mono)	129.00
0343g	Star LC15	286.95
0338g	Star LC24-15	347.95
0436g	Star LC200	185.00
0404g	Star LC24-200 Mono	228.95
0402g	Star LC24-200 Colour	264.95
0339g	Star XB24-10	379.00
0340g	Star XB24-15	489.00

### Matrix Printer Accessories

0357d	Epson S'feeder LX/LQ400	69.00
0349d	Epson S'feeder LQ550	76.95
0363e	Epson LQ Multifont card	95.00
0435d	Epson RS232 Interface 0k	36.00
0434d	Epson RS232 Interface 8k	79.00
0512d	Star S'feeder for LC24-10	55.00
0443e	Star S'feeder for LC10	64.95
0395d	Star S'feeder for XB/FR	89.95
0513b	Star 32k RAM for LC/XB/FR	55.00
0458c	Star Parral. to Serial convert.	55.00
0341d	Star XB/FR Colour Kit	35.00

### Printer Ribbons

All ribbons are manufacturers originals.

0437a	Epson FX/LX800,FX/RX/MX80	4.95
0403b	Epson FX/RX/MX100,FX1000	6.42
0445a	LQ850/800,LQ500/550,LQ400	5.99
0413a	Epson LX80,LX86, LX400	3.95
0449a	Star LC10 Black	4.00
0450a	Star LC10 Colour	6.00
0467a	Star XB24-10/15 Black	6.95
0459a	Star XB24-10/15 Colour	12.50
0432a	Star LZ24 ribbon	8.00



### Inkjet Printers

0430g	Canon BJ-10e (Black case)	299.95
0431g	Canon BJ-10e (White case)	289.95
0478g	Canon BJ130e	434.95
0399g	Integrex 132 Colourjet	515.00
0464g	HP DeskJet 500	427.05

### Inkjet Accessories

0465a	Canon BJ10e Cartridge	17.99
0313c	BJ10e Auto Sheet Feeder	54.00
0314b	BJ10e NiCad Battery pack	39.99
0479b	Canon BJ130e Cartridge	12.65
0502d	BJ130e Pin Tractor	40.00
0493b	Deskjet Ink Cartridge	14.95
0492b	Deskjet+ FX80 Emulation	55.24
0409b	PJ1080/Integrex Black Cartr.	11.25
0410b	PJ1080/Integrex Colour Cartr.	19.50
0398b	Integrex Paper Roll	6.50



### Laser Printers

0496g	Laser Direct (CC)	949.00
0497g	Laser Direct Hi-Res Card	350.00
0498g	Canon LPB-4 for above	825.00
0393g	Panasonic KX-P4450I	1321.60
0472g	Qume Publisher II	2207.83
0471g	Qume Super Series II	1156.48
0480g	Star LaserPrinter 8 II	1099.00
0481g	Star Laserprinter 8 DB	1535.00
0482g	Star LaserPrinter 8 DX	1789.00
0483g	Star StarScript	1575.00

### Laser Accessories

0474c	Qume CrystalPrint Toner	64.00
0370c	KX-P4450/I Toner Kit	27.78
0488c	StarLaser Toner Cartridge	90.48
0304d	Canon LPB-4 Toner	69.95

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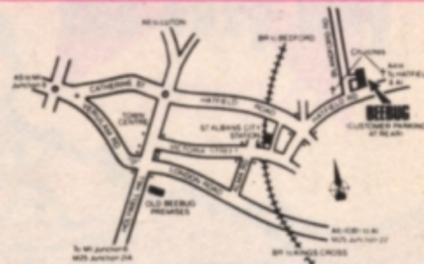
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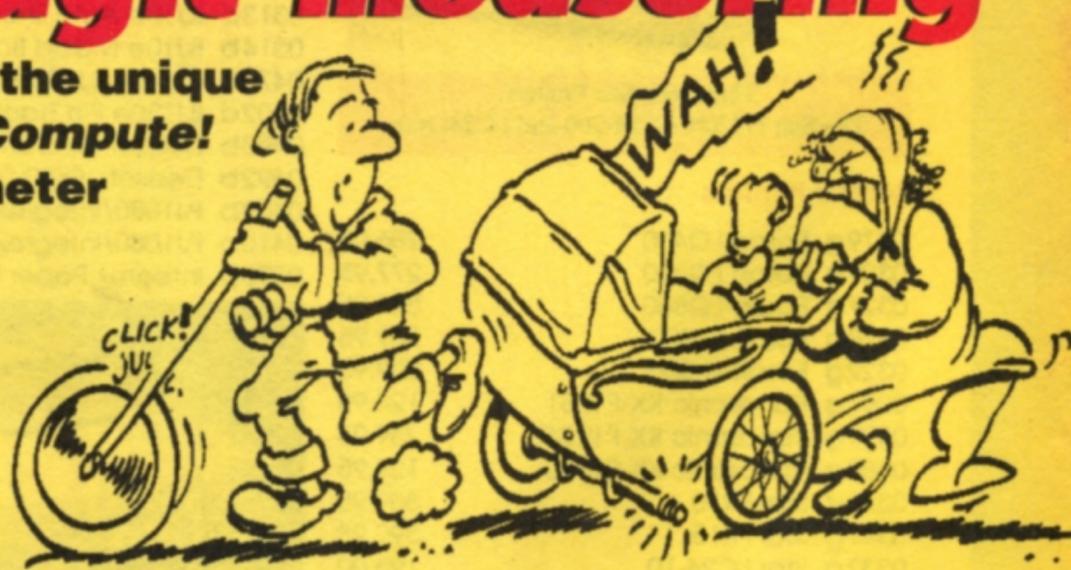
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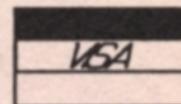
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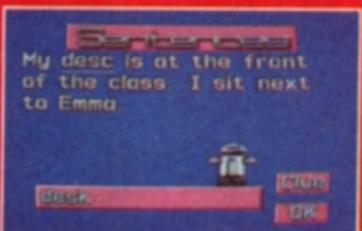
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