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February 1984

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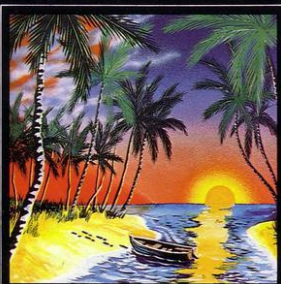

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Sinclair Programs is published monthly by ECC Publications Ltd.

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Sinclair Programs
ISSN No 0263-0265
Printed and typeset by
Cradley Print PLC,
Warley,
West Midlands
Distributed by
Spotlight Magazine Distribution Ltd,
1 Benwell Road,
Holloway,
London N7
01-607 6411
Cover Design/Illustrations
Ivan Hissey

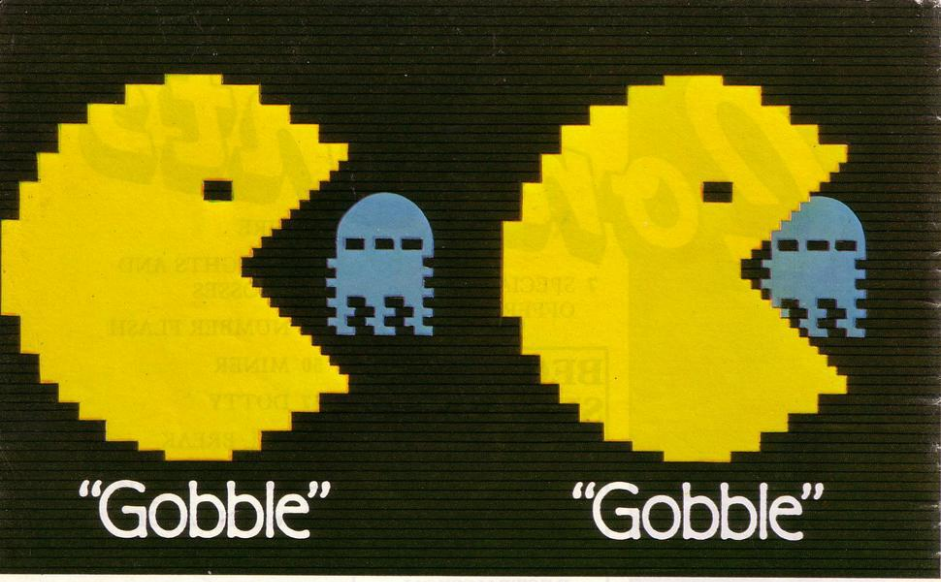
Instructions for graphics characters are printed in lower-case letters in our listings. They are enclosed by brackets and separated by colons to distinguish them and the brackets and colons should not be entered.

Inverse characters are represented by the letter "i" and graphics characters by "g". Thus an inverse W would be represented by "iw", a graphics W by "gw", and an inverse graphics W by "igw".

Spaces are represented by "sp" and inverse spaces by "isp". Whenever any character is to be used more than once, the number of times it is to be used is shown before it, together with a multiplication sign. Thus "6*isp" means six inverse spaces and "(g4:4*i4:g3)" would be entered as a graphic four, followed by an inverse four, repeated four times, followed by a graphics three.

Where whole words are to be written in inverse letters they appear in the listings as lower-case letters. Letters to be entered in graphics mode on the Spectrum are underlined.

Inverse characters may be entered on the ZX-81 by changing to graphics mode and then typing the appropriate characters and on the Spectrum by changing to inverse video and typing the appropriate letters. Graphics characters may be entered on the ZX-81 by changing to graphics mode and then pressing symbol shift while the appropriate characters are entered. On the Spectrum graphics characters may be obtained by changing to graphics mode and then pressing the appropriate character. User-defined graphics will appear as normal letters until the program has been RUN.



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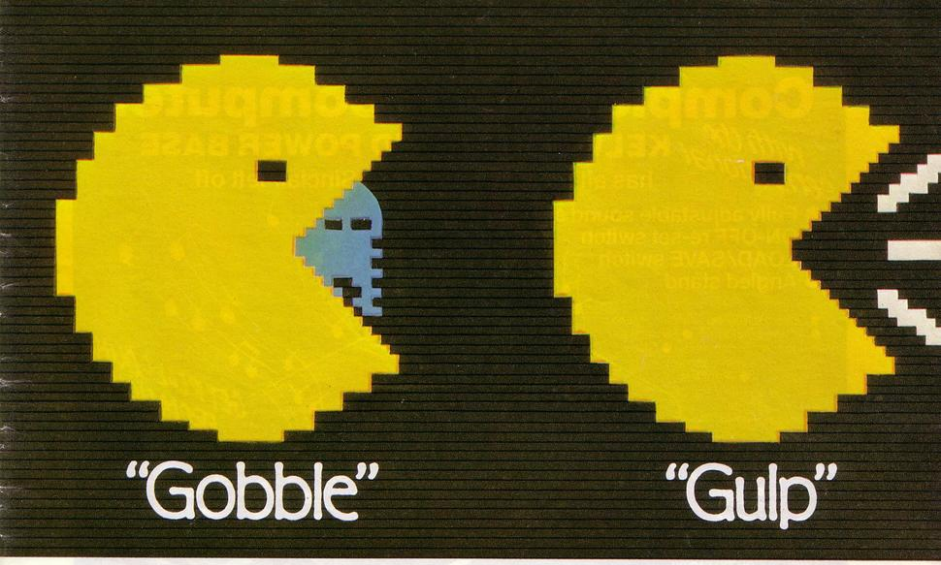

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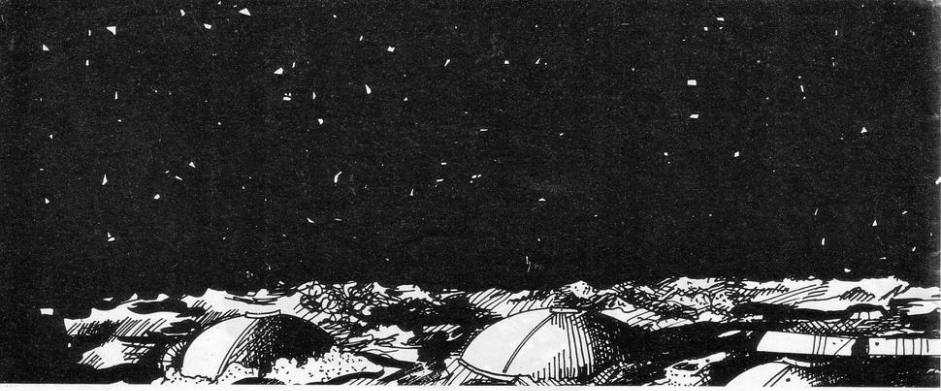
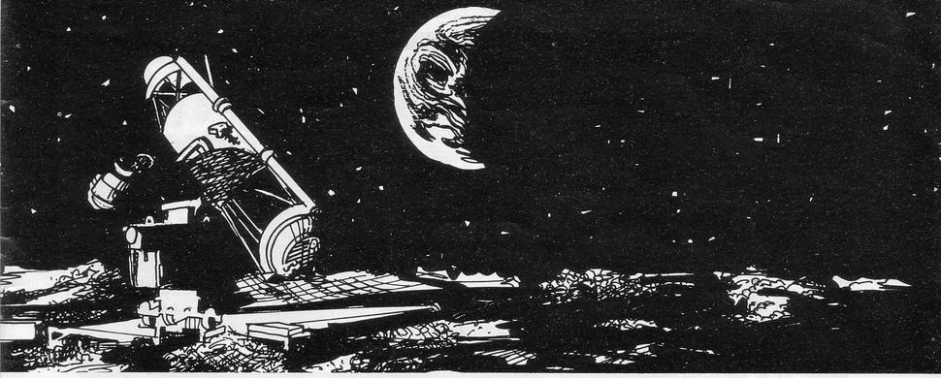


MOONLA

```
   5 LET high=0
   8 GO SUB 9000
   9 GO SUB 8000
  10 BORDER 0: PAPER 0: INK 7: C
LS
  12 LET l=l/100: LET fuel=20
  15 LET lives=3: LET saved=0
  20 LET a=1: LET b=15
  21 LET Pad=INT (RND*24+1): IF
Pad<6 THEN  GO TO 21
  24 FOR n=1 TO 25
  25 LET c=INT (RND*254): LET d=
INT (RND*120)+40
  26 PLOT  BRIGHT 1;c,d
  28 NEXT n
  30 FOR n=18 TO 21
  31 PRINT  INK 4; BRIGHT 1;AT n
,0;"(32*isP)"
  32 NEXT n
  33 PRINT  INK 4; BRIGHT 1;AT 1
7,0;"(5*isP)";AT 16,0;"(3*isP)";
AT 15,0;"(2*isP)";AT 14,0;"(isP)
"
  34 PRINT  INK 4; BRIGHT 1;AT 1
7,28;"(4*isP)";AT 16,30;"(2*isP)
"
  35 PRINT  INK 2; BRIGHT 1; PAP
ER 4; OVER 0;AT 18,Pad;"(3*ig3)"
  36 FOR p=0 TO 2
  37 LET f=INT (RND*14)+2: LET g
=INT (RND*29)+1
  38 PRINT AT f,g; INK 3; BRIGHT
 1;"d"
  39 NEXT p: REM ***MAIN*LOOP***
  40 PRINT AT a,b; INK 5;"a"
  41 PRINT AT 0,0;"FUEL ";INT fu
el: IF fuel<=7 THEN  PRINT AT 0,
0; FLASH 1;"FUEL ";INT fuel
  42 PRINT AT 0,10;"  LIVES ";li
ves;AT 0,20;"  SAVED ";saved
  43 BEEP 1,50
  44 LET a=a+1: LET fuel=fuel-.2
5
  45 PRINT AT a-1,b;" "
  60 IF INKEY$="5" AND b>0 THEN
 LET b=b-1: PRINT AT a,b+1;" "
  80 IF INKEY$="8" AND b<31 THEN
  LET b=b+1: PRINT AT a,b-1;" "
 105 IF fuel<=0 THEN  GO TO 1000
 110 IF ATTR (a,b)=68 THEN  GO T
O 1000
 115 IF ATTR (a,b)=71 THEN  GO T
O 1000
 120 IF ATTR (a,b)=98 THEN  GO T
O 2000
 125 IF ATTR (a,b)=67 THEN  LET
fuel=fuel+5: BEEP .5,25: BEEP .5
,30
 130 GO TO 40
1000 PRINT AT a,b; PAPER 2; FLAS
H 1;"b"
1020 BEEP 1,-12: BEEP .6,-12: BE
EP .3,-12: BEEP .9,-12: BEEP .6,
-9: BEEP .3,-10: BEEP .57,-10: B
EEP .3,-12: BEEP .6,-12: BEEP .4
,-13: BEEP 1,-12
1030 LET lives=lives-1
1035 IF fuel<=0 THEN  GO TO 1054
1045 IF lives<=0 THEN  GO TO 105
4
1050 CLS : GO TO 20
1054 CLS
1055 IF saved>high THEN  LET hig
h=saved
```



ANDER

PASSENGER RESCUE was written for the 16K Spectrum by Steven Brown of Epsom, Surrey. Make a successful landing on the moon and pick up your passenger who awaits rescue. Hit the fuel pods when your supply runs low but avoid the hostile asteroids as they attempt to sabotage your mission.

```
1056 PRINT AT 18,6; PAPER 6; INV
ERSE 1; INK 2;"YOUR HIGH SCORE I
S ";high
1057 PRINT AT 16,8; INK 4; INVER
SE 1;"YOU SAVED ";saved;" MEN"
1500 PRINT  PAPER 2; INK 7; FLAS
H 1;AT 10,11;"GAME OVER": INPUT
"Another game y/n ?";a$
1510 IF a$="y" THEN  GO TO 9
1520 STOP
2005 PRINT AT a-1,b; INK 5;"a"
2006 FOR m=27 TO b+1 STEP -1
2007 PRINT AT 17,m+1;" "
2010 PRINT AT 17,m;"c"
2020 BEEP .1,30
2030 NEXT m
2035 PRINT AT 17,m+1;" "
2040 PRINT AT a-1,b; INK 5;"a"
2050 BEEP .4,6: BEEP .3,6: BEEP
.8,8
2060 LET saved=saved+1
2065 CLS
2070 GO TO 20
8000 BORDER 1: PAPER 1: INK 5: C
LS
8010 PRINT AT 0,10; INK 2; BRIGH
T 1;"MOONLANDER"
8020 PRINT '''"You are the Pilot
of              MOONLANDER 1.It is
 your job       to rescue a team o
f explorers     from an unknown Pl
anet.Your       fuel supply is rat
her low,        but if you manage
to hit a        fuel Pod you will
gain extra      fuel."
8030 PRINT '"You must dodge the
stars and       land on the red lan
ding Pad,       otherwise it will s
Pell            instant"; FLASH 1;"
 DEATH."
8040 PRINT  INK 4; INVERSE 1;''"
CONTROLS ARE:"
8050 PRINT "5&8 - Left + Right"
8070 PRINT  INK 2; INVERSE 1; PA
PER 6;''"PRESS ANY KEY TO PLAY"
8080 PAUSE 0
8090 CLS
8510 INPUT "ENTER SKILL LEVEL 1
to 9 EASIEST";l
8515 IF l<0 OR l>9 THEN  GO TO 8
510
8520 RETURN

9000 FOR n=0 TO 7
9010 READ a: POKE USR "a"+n,a
9020 NEXT n
9030 DATA 60,255,60,0,126,255,21
9,195
9040 FOR n=0 TO 7
9050 READ a: POKE USR "b"+n,a
9060 NEXT n
9070 DATA 137,73,44,231,24,44,74
,137
9080 FOR n=0 TO 7
9090 READ a: POKE USR "c"+n,a
9100 NEXT n
9110 DATA 14,14,4,30,5,12,19,17
9120 FOR n=0 TO 7
9130 READ a: POKE USR "d"+n,a
9140 NEXT n
9150 DATA 24,60,126,255,255,126,
60,24
9500 RETURN
```

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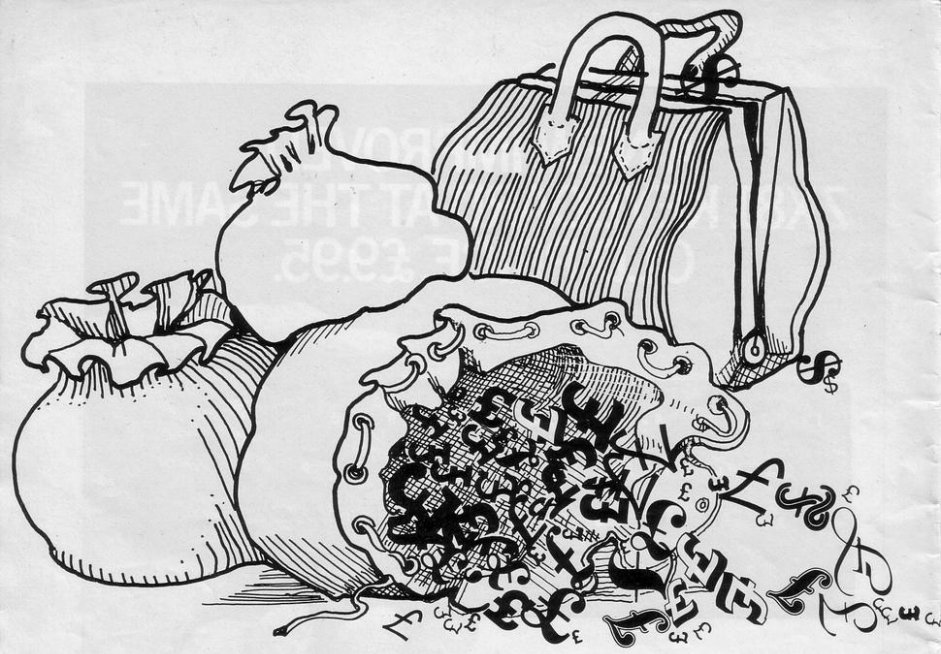
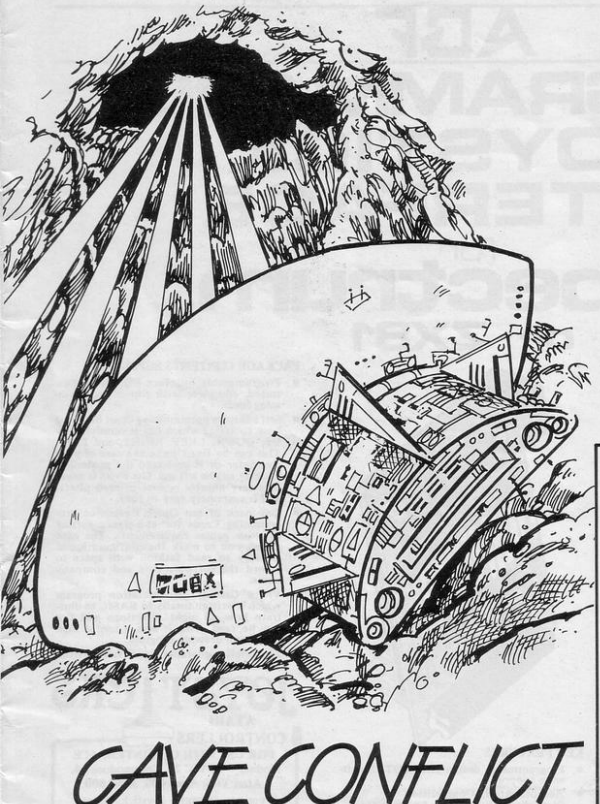


MONEY BAGS

MONEY BAGS was written by R Smith of Scunthorpe, South Humberside. Race from your starting position to the "H", jumping the barrels using "K" and jumping for the money bags to collect extra points. Use "M" to go straight ahead, and "Z" to go backwards. You score in pounds and gain an extra life on accumulating £1,500.

Money Bags is for the 16K Spectrum.

```
  1 PAPER 0: INK 4: BORDER 0: C
LS
  2 GO SUB 120
  3 LET hi=3500: LET h$="SPECTR
UM"
  4 POKE 23658,0: LET l=3: LET
a$="": LET t=0
  5 LET a=1+INT (RND*28): LET y
=19: LET x=0
  6 CLS
  7 IF t>=100 THEN  PRINT AT 2,
31;"b"
 10 PLOT 0,15: DRAW 255,0
 20 PLOT 0,87: DRAW 255,0
 30 PLOT 0,135: DRAW 255,0
 40 FOR n=11 TO 19: PRINT AT n,
a; INK 2;"c": NEXT n
 50 FOR n=5 TO 10: PRINT AT n,(
a/a+10); INK 2;"c": NEXT n
 55 PRINT  INK 6;AT 3,(a/a+15);
"bb"
 60 GO SUB 250
 70 PRINT AT 3,31;"H"
 80 IF RND>.3 THEN  GO SUB 200
 90 PRINT AT 0,0;"Money=£";t;"
Lives=";l''"Hi score=£";hi;" By
";h$
100 PRINT AT 18,a-1;"   ";AT 19
,a;"  ";AT 9,(a/a+9);"   ";AT 10
,(a/a+10);"  "; INK 2;AT 18,a;"c
"'TAB a;"c";AT 9,(a/a+10);"c"'TA
B (a/a+10);"c": GO TO 60
110 PRINT AT y,x+1;"b": LET t=t
+100: BEEP .01,0: BEEP .01,2: BE
EP .01,4: GO TO 5
120 FOR n=USR "a" TO USR "c"+7
130 READ a: POKE n,a: NEXT n
140 DATA 56,56,56,16,124,16,40,
108,126,60,102,219,143,223,195,1
26,129,255,129,129,129,255,129,1
29
150 RETURN
200 LET b=y: FOR n=30 TO 1 STEP
-1: PRINT AT b,n;" 0 ": GO SUB
250: NEXT n
210 RETURN
290 IF INKEY$="k" THEN  LET y=y
-1: LET a$="k": PRINT AT y+1,x;"
 "
251 IF SCREEN$ (y,x+2)="0" THEN
 LET l=l-1: BEEP .5,50
252 IF t=1500 THEN  LET l=l+1
253 IF ATTR (y-1,x+1)=2 THEN  L
ET y=y-3: GO TO 253
254 IF ATTR (y,x+2)=6 THEN  LET
 t=t+50: BEEP .1,0
255 IF SCREEN$ (y-1,x+2)="H" TH
EN  GO TO 110
256 IF l<=0 THEN  GO TO 300
260 PRINT AT y,x;" a ";AT y-1,x
-1;"  "
270 IF a$="k" THEN  LET x=x+1:
LET y=y+1: LET a$=" "
280 LET x=x+(INKEY$="m" AND x<2
9)-(INKEY$="z" AND x>1)
290 RETURN
300 CLS : POKE 23658,8
310 IF t>hi THEN  LET hi=t: PRI
NT AT 10,5; FLASH 1;"YOU HAVE TH
E HIGH ";AT 11,5; INVERSE 1;"SCO
RE! PLEASE ENTER YOR NAME AFTER
THE TONE.": PAUSE 100: BEEP 1,-1
0: INPUT h$
320 CLS : PRINT AT 6,6;"Your sc
ore=£";t''TAB 8;"High score=£";h
i''TAB 10;"By "; FLASH 1;h$
330 INPUT ''''"Another go (Y/N)
";b$: IF b$="Y" THEN  GO TO 4
340 IF b$<>"N" THEN  GO TO 330
360 STOP
```



CAVE CONFLICT

YOUR SPACESHIP is trapped in a cave and your life is threatened by the approaching invaders. Fire at the enemy and prevent them passing you. Failure to do so will result in the loss of a life, of which you have three. A bonus ship is gained at 1,000 points and again at 5,000 points. Sunlight enters the cave as you gain each bonus ship and diminishes the visibility in the cave.

Cave Conflict was written for the 16K Spectrum by Rhodri Jones of Anglesey, Gwynedd.

```
  3 GO SUB 7000
  10 LET score=0
  12 LET lives=3
  20 BORDER 0: PAPER 0: CLS : IN
K 3
  40 INK 4: PRINT AT 4,0;"Your s
paceship is stuck in a     narrow
  cavern. Invaders attack     you.D
on't let any Pass or you    will l
oose a life"
  50 INK 3: PRINT AT 9,0;"Missio
n controls are:";AT 11,4;"7 UP";
AT 12,4;"6 DOWN";AT 13,4;"0 FIRE
"
  60 INK 4: PRINT AT 14,0;"You c
an loose a life by...";AT 15,2;"
Letting an invader Pass UP";AT 1
6,2;"Being hit by an invader"
  70 INK 3: PRINT AT 18,0;"20 pt
s PER INVADER.U GOT 3 LIVES";AT
19,2;"BONUS SHIP AT 1000+5000 pt
s";AT 21,7; INVERSE 1;"PRESS 'EN
TER' KEY"; INVERSE 0
  75 INPUT b$
  78 CLS
  80 PRINT AT 10,6;"PRESS ANOTHE
R ENTER"
  90 INPUT b$
  95 CLS
  100 INK 7
  101 PRINT AT 0,3;"SCORE ";AT 0,
17;"LIVES ";lives
  105 LET w=255: LET r=165
  110 DRAW w,0: PLOT 0,20: DRAW w
,0
  120 PLOT 0,40: DRAW w,0: PLOT 0
,165
  130 DRAW w,0: PLOT 0,145: DRAW
w,0
  140 PLOT 0,125: DRAW w,0
  150 PLOT 0,0: DRAW 127,40
  160 PLOT 90,0: DRAW 37,40
  170 PLOT r,0: DRAW -38,40
  180 PLOT w,0: DRAW -128,40
  190 PLOT 0,r: DRAW 127,-40
  200 PLOT 90,r: DRAW 37,-40: PLO
T r,r: DRAW -38,-40
  210 PLOT w,r: DRAW -128,-40
  300 LET x=10: LET y=1
  394 LET e=INT (RND*7)+7
  396 FOR p=INT (RND*20)+10 TO 0
STEP -1
  400 PRINT AT x,y;"a": BEEP .000
1,0: PRINT AT x,y;""
  405 LET a$=INKEY$
  410 IF a$="7" AND x>7 THEN  LET
 x=x-1
  420 IF a$="6" AND x<15 THEN  LE
T x=x+1
  435 LET u=135
  440 IF a$="0" THEN  PRINT AT x,
y;". . . . . .  "
  442 PRINT AT x,y;"
                    "
  445 IF e=x AND a$="0" THEN  GO
TO 5000
  460 IF p<=0 THEN  GO TO 6000
  470 PRINT AT e,p; INK 4;"b": BE
EP 0.001,20: PRINT AT e,p;" "
  480 NEXT p
  490 GO TO 391
  5000 FOR a=0 TO 5: FOR n=0 TO 30
  STEP 30: BEEP .01,n: NEXT n: NE
XT a
  5010 LET score=score+20
  5011 PRINT AT 0,9;score
  5012 IF score=1000 THEN  GO TO 5
050
  5014 IF score=5000 THEN  GO TO 5
100
  5020 GO TO 391
  5050 PRINT AT 11,4;"BONUS!!!EXTR
A SHIP"
  5060 LET lives=lives+1
  5065 FOR b=0 TO 100: NEXT b
  5070 PAPER 6: CLS : BORDER 6: IN
K 2
  5080 PRINT £0;"            CAVE CO
NFLICT          "
  5090 GO TO 101
  5100 PRINT AT 11,4;"BONUS!!!EXTR
A SHIP"
  5110 FOR c=0 TO 100: NEXT c
  5120 LET lives=lives+1
  5130 PAPER 5: CLS : BORDER 5
  5140 PRINT#0;"            CAVE C
ONFLICT          "
  5150 GO TO 101
  6000 BEEP 1,1: BEEP 1,-20
  6003 LET lives=lives-1
  6005 PRINT AT 0,23;lives
  6010 IF lives=0 THEN  GO TO 6050
  6020 GO TO 319
  6050 PRINT AT 10,5;"Game Over (h
a ha)"
  6055 FOR g=0 TO 200: NEXT g
  6060 GO TO 10
  7000 FOR a=USR "a" TO USR "b"+2
  7010 READ user: POKE a,user
  7020 NEXT a
  7030 DATA 192,224,252,255,252,22
4,192
  7040 DATA 36,126,219,255,90,102,
0
  7050 RETURN
```

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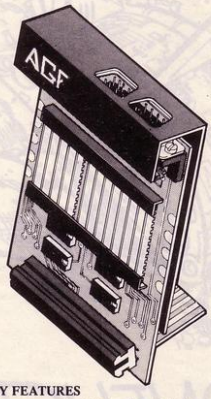

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- One pack of ten Quick Reference Programming Cards for at-a-glance setting to your games requirements. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and company name.
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TARDIS LANDER

AS DOCTOR WHO you must use keys 5 and 8 to steer the tardis on to the landing pad of the planet you are approaching. Avoid the stars and planets which appear or their gravitational field will send you crashing downwards. If you land safely you will gain 30 extra points and move to the next sheet.

Tardis Lander was written for the 1K ZX-81 by Terry Bishop of Leyton, London.

```
  1 LET S=VAL "-30"
  2 LET S=S+VAL "30"
  3 LET Y=INT (RND*10)
  4 CLS
  5 PRINT AT 15,0;"(11*9a)"
  6 PRINT AT 14,RND*Y;"(1*P)"
  7 FOR X=0 TO VAL "15"
  8 PRINT AT RND*13,RND*Y;"(91)
";AT RND*13,RND*Y;CHR$ 23
 10 PRINT AT X,Y;
 20 LET C=PEEK (PEEK 16398+VAL
"256"*PEEK 16399)
 30 IF C=23 OR C=1 OR C=8 THEN
GOTO 200
 40 IF C=VAL "128" THEN GOTO 2
 50 PRINT "(1)"
 55 LET Y=Y+(INKEY$="8" AND Y<1
0)-(INKEY$="5" AND Y>0)
 60 LET S=S+VAL "2"
 70 NEXT X
 80 GOTO 4
200 FOR T=X TO VAL "15"
200~FOR T=X TO VAL "15"
210 PRINT AT T,Y;"(1)";AT T,Y;
"A"
220 NEXT T
230 PRINT AT T-1,Y;"(1)"
240 PRINT "(1*1C(10(1F(10(95)"
;S
```

FOXHUNT

USING the cunning of a fox you have to weave in and out of the descending pack of hounds. As you negotiate one pack, you are met by another pack.

The highest score appears at the end of each game, along with the name of the scorer. Use cursor key 5 to move left and 8 to move right. Beware, you have only one life.

Foxhunt was written for the 1K ZX-81 by Adam Evans of East Dereham, Norfolk.

```
  2 LET M=0
  3 LET A=20
  4 LET Z=10
  5 CLS
  6 LET T=20-A
  7 LET X=INT (RND*9)+1
 10 FOR N=1 TO A
 15 PRINT AT A,Z-1;"(*P(11*1*P)"
 20 PRINT AT N,0;"(11*1*P)";AT
N-1,0;"                ";AT N,X;" "
 50 LET Z=Z+(INKEY$="8" AND Z<1
1)-(INKEY$="5")
 60 NEXT N
 70 IF Z<>X THEN GOTO 500
 95 LET A=A-1
100 GOTO 6
500 PRINT "SPLAT"
502 PAUSE 50
505 CLS
507 IF T>M THEN PRINT "NAME?"
508 IF T>M THEN INPUT U$
509 IF T>M THEN LET M=T
510 PRINT "SCORE=";T;"  HIGH SC
ORE HELD BY ";U$;" WITH ";M;" PO
INTS"
520 INPUT C$
530 GOTO 3
```

WALKIES

IN RESPONSE to our request for animation programs, Patricia Richardson of Maidstone, Kent submitted this short program, **Walkies.** A man is seen to throw a ball which is retrieved by a dog. The process is repeated with a GOTO instruction in the program. The flight of the ball has been plotted with half a SIN curve.

We would still like to see more animation programs. (16K Spectrum).

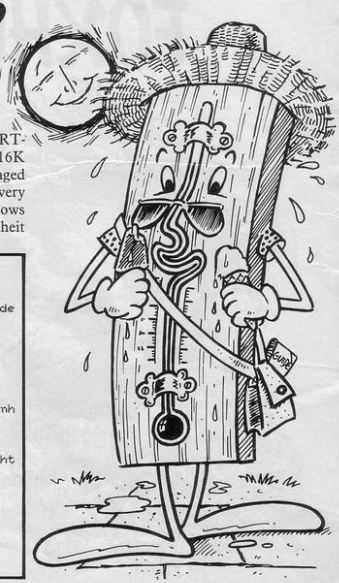
BEGINNER

```
 10 GO SUB 300
 40 PRINT AT 20,0;"a"
 50 PRINT AT 21,0;"ch"
 60 PAUSE 5: PRINT AT 20,0;"b"
 70 PAUSE 5: PRINT AT 20,0;"a"
 99 REM ££ PLOT BALL TRAJECTORY ££
100 FOR n=0 TO 255 STEP 4
120 PLOT n,40*SIN (n/255*PI)
130 PLOT  INVERSE 1;n,40*SIN (n/255*PI)
140 NEXT n
150 PLOT 255,0
199  REM  ££ BALL CHASE ££
200 FOR b=1 TO 30
210 PRINT AT 21,b;" d": PAUSE 4
: PRINT AT 21,b;" f": PAUSE 4
220 NEXT b
230 FOR b=29 TO 1 STEP -1
240 PRINT AT 21,b;" e ": PAUSE 4: PRINT AT 21,b;" g ": PAUSE 4
250 NEXT b
260 PRINT AT 21,1;"i ": PAUSE 30
270 GO TO 50
299 REM ££ GRAPHICS ££
300 FOR m=0 TO 8: FOR n=0 TO 7: READ a: POKE USR CHR$ (144+m)+n,a: NEXT n: NEXT m
305 DATA 96,112,96,64,96,96,112,110,96,114,100,72,112,96,96,96,96,96,96,80,72,72,72,108
310 DATA 0,0,4,131,63,60,66,129,0,0,32,193,254,62,66,129
315 DATA 0,0,4,131,63,60,68,40,0,0,32,193,254,62,34,20
320 DATA 0,0,5,3,31,28,28,52,0,160,192,248,56,56,44
330 RETURN
```

TEMPERATURE CONVERTER

BEGINNER

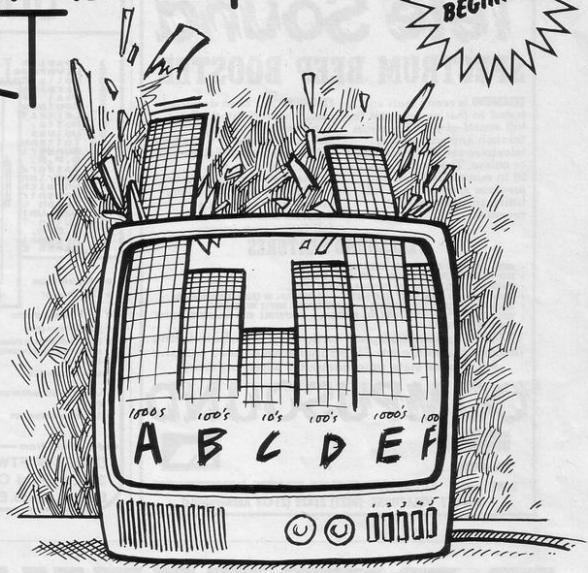
TEMPERATURE CONVERTER was written for the 16K Spectrum by Carl Inwood, aged 13, of Shelfield, Walsall. It is a very accurate and useful program and allows you to convert Centigrade to Fahrenheit and vice versa.



```
  5 INK 7: BORDER 1: PAPER 1: CLS
 20 PRINT AT 0,10; FLASH 1;"CONVERTER"
 25 PRINT AT 2,3;"Choose from either:-"
 30 PRINT '"a)Centigrade to Fahrenheit"
 40 PRINT "  ---------------------"
 50 PRINT '"b)Fahrenheit to Centigrade"
 60 PRINT "  ---------------------"
 65 PRINT '"Input a) or b)"
 70 INPUT x$
 80 IF x$="a" THEN  GO TO 100
 83 IF x$="b" THEN  GO TO 300
 85 IF x$<>"" THEN  GO TO 70
100 CLS
105 PRINT AT 0,7;"Input Centigrade"
106 INPUT x
107 CLS
109 PRINT AT 1,3;x;" Centigrade="
110 LET x=(x*1.8)+32
111 PRINT AT 1,23;x;"F"
115 PAUSE 200
116 CLS
120 GO TO 10
300 CLS
310 PRINT AT 0,7;"Input Fahrenheit"
320 INPUT y
330 CLS
340 PRINT AT 1,3;y;" Farenheight="
350 LET y=(y-32)/1.8
360 PRINT AT 1,23;y;"C"
370 PAUSE 200
380 CLS
390 GO TO 10
```

ALPHABET CHART

BEGINNER

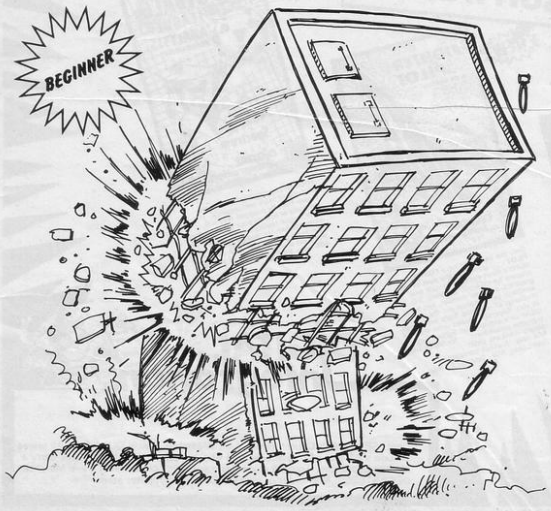


PHILIP TAYLOR of Rowlands Castle, Hampshire submitted a simple program for the 1K ZX-81. **Alphabet Chart** could be useful to people interested in language study or code-breaking. Input a piece of text with no punctuation or numbers and the computer will draw a bar chart.

```
  1 FAST
  2 INPUT A$
  8 SLOW
 20 PRINT AT 21,3;"ABCDEFGHIJKL
MNOPQRSTUVWXYZ"
 30 FOR J=1 TO LEN A$
 40 LET A=CODE A$(J)-35
 45 FOR Z=VAL "20" TO VAL "0" S
TEP -1
 50 IF CODE A$(J)<>38 OR CODE A$
(J)>63 THEN NEXT J
 60 PRINT VAL Z;A;"";
 70 IF PEEK (PEEK 16398+256*PEE
K 16399)=128 THEN NEXT Z
 80 PRINT AT Z,A;"(1$P)"
 90 NEXT J
```

TOWER OF DESTRUCTION

BEGINNER



YOU ARE the pilot of an aircraft and have to fly across a randomly-generated city, bombing the tower blocks as you pass over. You can drop only two bombs each time you pass over the city and must wait for the return journey to fire again.

Use key "Z" to fire your bombs.

Tower Destruction was written for the 1K ZX-81 by Stephen Hill of Seabridge, Newcastle.

```
  2 INPUT A
  4 LET U=VAL "0"
  5 FOR W=3 TO 16
 10 FOR N=INT (RND*5)+10-A TO 1
0
 20 PRINT AT N,W;"(4=)"
 30 NEXT N
 40 NEXT W
 90 FOR B=0 TO 10
100 FOR N=0 TO 17
104 PRINT AT B,N+1;
105 IF PEEK (PEEK 16398+256*PEE
K 16399)=148 THEN STOP
110 PRINT AT B,N;" >"
112 IF N=0 THEN LET U=0
115 IF INKEY$="Z" THEN GOSUB 19
0
116 IF U=3 THEN STOP
117 PRINT AT B,18;" "
120 NEXT N
130 NEXT B
135 PRINT "    YOU HAVE LANDED"
190 LET U=U+1
200 FOR P=B+1 TO 10
210 PRINT AT P,N+1;"."
215 PRINT AT P,N+1;" "
221 NEXT P
250 RETURN
```

HEARING IS BELIEVING

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3	Notts Cnty	13	9	5	45	19	48
4	Birmingh						
5	West Ha						
6	Southam						
7	Leicest						
8	Notts.						
9	Wolves						
10	Tottenh						
11	Sunderl						
12	C.P.R.						
13	Watford						
14	Everton						
15	Norwich						
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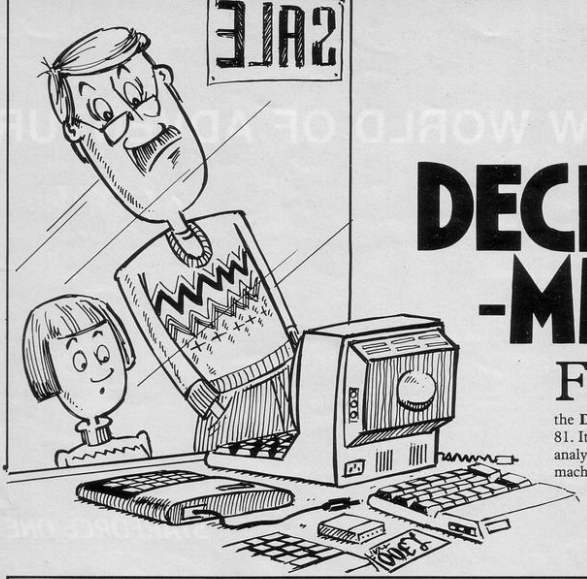


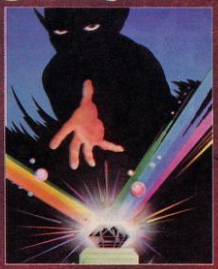
DECISION -MAKER

FACED with the daunting prospect of buying a new computer, P Bayliss of Willerby, Hull wrote the **Decision-Maker** for the 16K ZX-81. It provides a purely objective way of analysing the pros and cons of various machines on the market.

```
  190 DIM O$(32)
  200 LET W$="(31*9h)"
  210 CLS
  220 PRINT AT 6,0;W$
  230 PRINT ,,,,," HOW MANY OPTION
S ARE THERE TO          DECIDE B
ETWEEN ?"
  240 PRINT ,,,,;W$
  250 INPUT NO
  260 IF NO<2 OR NO>20 THEN GOTO
210
  270 DIM A(NO)
  280 CLS
  290 DIM O$(NO,30)
  300 FOR F=1 TO NO
  310 PRINT AT 0,0;W$;AT 0,0;O$;A
T 0,5;"NAME OF OPTION NO.";F;" ?
"
  320 INPUT O$(F)
  330 IF PEEK 16442<4 THEN GOSUB
1260
  340 PRINT AT F+2,0;F;")";O$(F)
  350 NEXT F
  360 GOSUB 1230
  370 CLS
  380 PRINT AT 8,0;W$
  390 PRINT ,,"HOW MANY FACTORS A
RE THERE WHEN  CONSIDERING THESE
 ";NO;" OPTIONS ?"
  400 PRINT ,;W$
  410 INPUT NF
  420 IF NF>300 THEN GOTO 410
  430 CLS
  440 DIM F$(NF,30)
  450 FOR F=1 TO NF
  460 PRINT AT 0,0;W$;AT 0,0;O$;A
T 0,5;"NAME OF FACTOR NO.";F;" ?
"
  470 INPUT F$(F)
  480 PRINT AT F+2,0;F;")";F$(F)
  490 IF PEEK 16442<4 THEN GOSUB
1260
  500 NEXT F
  510 DIM I(NF)
  520 GOSUB 1230
  530 CLS
  540 PRINT AT 4,0;W$
  550 PRINT ,,,,"IN DECIDING BETW
EEN THE ";NO
  560 PRINT ,,"OPTIONS,HOW IMPORT
ANT TO YOU IS"
  570 FOR F=1 TO NF
  580 PRINT AT 11,0;W$;AT 11,0;O$
;AT 11,0;F$(F)
  590 PRINT ,,TAB 5;"(ON A SCALE
1 TO 20)"
  600 PRINT ,,,,;W$
  610 INPUT I(F)
  620 IF I(F)<1 OR I(F)>20 THEN G
OTO 530
  630 NEXT F
  640 DIM R(NO,NF)
  650 CLS
  660 FOR F=1 TO NO
  670 LET A(F)=0
  680 CLS
  690 FOR G=1 TO NF
  700 CLS
  710 PRINT AT 4,0;W$
  720 PRINT ,,,,"TAKING THE ";O$(
F)
  730 PRINT "HOW WOULD YOU RATE I
TS";TAB 0,,F$(G)
  740 PRINT ,,"(1 TO 20 AGAIN)"
  750 PRINT ,,,,;W$
  760 INPUT R(F,G)
  770 IF R(F,G)<1 OR R(F,G)>20 TH
EN GOTO 700
  780 LET R(F,G)=R(F,G)*I(G)
  790 LET A(F)=A(F)+R(F,G)
  800 NEXT G
  810 NEXT F
  820 CLS
  830 PRINT AT 8,0;W$;AT 10,1;"LE
T ME DIGEST THE FIGURES A BIT";A
T 12,0;W$
  840 FOR F=0 TO 4
  850 GOSUB 1230
  860 NEXT F
  870 CLS
  880 GOSUB 1310
  890 PRINT "OK,THIS IS HOW THEY
SCORE:"
  900 PRINT W$;AT 3,0;
  910 FOR F=1 TO NO
  920 PRINT TAB 0;O$(F);" TO 29-LE
N STR$ (S(F)));S(F);"/"
  930 IF PEEK 16442<6 THEN GOSUB
1230
  940 IF NO<6 THEN PRINT
  950 NEXT F
  960 POKE 16418,0
  970 PRINT AT 23,0;"Press P for
Printout'r to re 'run"
  980 POKE 16418,2
  990 LET A$=INKEY$
1000 IF A$="P" THEN GOTO 1030
1010 IF A$="R" THEN RUN
1020 GOTO 990
1030 FAST
1040 PRINT AT 0,0;
1050 LPRINT TAB 3;"decision make
r iii'results",,
1060 LPRINT TAB 0;
1070 FOR F=1 TO NO
1080 LET L=LEN STR$ S(F)
1090 LPRINT O$(F)( TO 29-L);S(F)
;"92/94"
1100 NEXT F
1110 LPRINT
1120 LPRINT TAB 6;"(factors cons
idered)"
1130 LPRINT TAB 0,,
1140 FOR F=1 TO NF
1150 LET L=LEN STR$ I(F)
1160 LPRINT F$(F)( TO 32-L);I(F)
1170 NEXT F
1180 FOR F=0 TO 3
1190 LPRINT
1200 NEXT F
1210 SLOW
1220 GOTO 960
1230 FOR S=0 TO 15
1240 NEXT S
1250 RETURN
1260 FOR F=0 TO 3
1270 SCROLL
1280 NEXT F
1290 RETURN
1300 REM calculate Percentages
1310 LET MAX=(NF*20)*2
1320 DIM S(NO)
1330 FOR F=1 TO NO
1340 LET S(F)=(A(F)/MAX)*10
1350 LET S(F)=(INT (((S(F)*100))
+.5)/100)
1360 NEXT F
1370 RETURN
9997 CLEAR
9998 SAVE "DECISION MAKER II:"
9999 RUN 190
```

A NEW WORLD OF ADVENTURE

BLACK CRYSTAL



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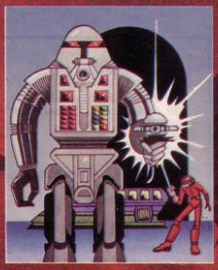

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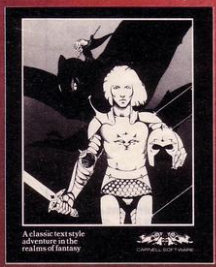

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THE DEVIL RIDES IN

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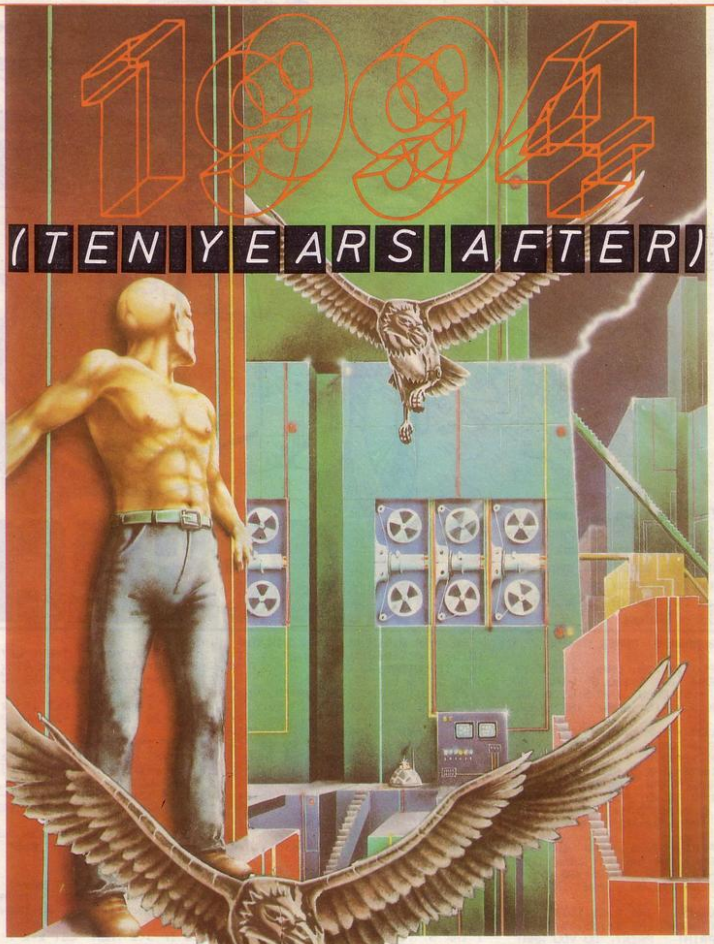

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SMOKE STACK

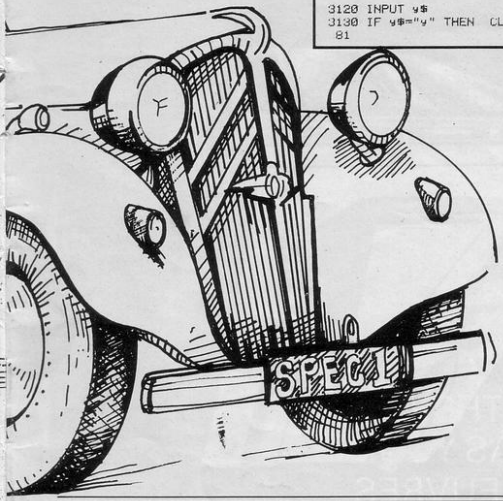
THE AIM of **Smoke Stack** is to block the car the computer controls with the smoke which your car emits. You must also avoid the smoke trail of the other car.

Written for the 16K Spectrum by David Gill of Walsall.

```
  3 BORDER 0: PAPER 0: INK 7: C
LS
  4 PLOT 20,20: DRAW  INK 5;10,
30: DRAW  INK 5;100,0: DRAW  INK
 5;20,-15: DRAW  INK 5;45,0: DRA
W  INK 5;0,-15: DRAW  INK 5;-30,
0
  5 DRAW  INK 5;-5,5: DRAW  INK
 5;-10,0: DRAW  INK 5;-5,-5: DRA
W  INK 5;-80,0
  6 DRAW  INK 5;-5,5: DRAW  INK
 5;-10,0: DRAW  INK 5;-5,-5: DRA
W  INK 5;-25,0: PLOT 35,35: DRAW
  INK 5;0,10: DRAW  INK 5;30,0:
DRAW  INK 5;0,-10: DRAW  INK 5;-
30,0
  7 PLOT 100,35: DRAW  INK 5;0,
10: DRAW  INK 5;20,0: DRAW  INK
5;10,-10: DRAW  INK 5;-30,0
  8 PLOT 110,50: DRAW  INK 5;-1
0,20
  9 CIRCLE  INK 5;55,15,7
 10 CIRCLE  INK 5;155,15,7
 20 PRINT  PRINT "DO YOU WANT
THE INSTRUCTIONS ?  (y,n)"
 21 BEEP .1,10: BEEP .1,10: BEE
P .1,10: BEEP .7,5: BEEP .7,0: B
EEP .1,10: BEEP .1,10: BEEP .1,1
0: BEEP .7,5: BEEP .7,0
 23 BEEP .5,20: BEEP .5,20: BEE
P .5,20: BEEP .9,10: BEEP .9,5:
BEEP .5,20: BEEP .5,20: BEEP .5,
20: BEEP .9,10: BEEP .9,5
 30 INPUT a$
 31 IF a$="y" THEN  GO TO 9000
 32 IF a$="n" THEN  GO TO 40
 33 IF a$<>"y" OR a$<>"n" THEN
 GO TO 30
 50 FOR g=0 TO 7: READ a: POKE
USR "a"+g,a: NEXT g
 60 DATA BIN 10010010,BIN 00100
100,BIN 10010010,BIN 00100100,BI
N 10010010,BIN 00100100,BIN 1001
0010,BIN 00100100
 70 FOR s=0 TO 7: READ h: POKE
USR "h"+s,h: NEXT s
 80 DATA 0,BIN 00111000,BIN 010
10100,BIN 11010110,255,BIN 11101
110,BIN 01000100,0
 81 GO TO 90
 85 CLS : PRINT : PRINT "DO YOU
 WANT THE INSTRUCTIONS ?  (y,n)"
 86 INPUT b$
 87 IF b$="y" THEN  GO TO 9000
 88 IF b$="n" THEN  GO TO 40
 89 IF a$<>"y" OR a$<>"n" THEN
 GO TO 30
 90 CLS
 100 PRINT AT 10,10; INK 6;"(11*
isP)"
 110 PRINT AT 11,10; INK 6;"(11*
isP)"
 120 PRINT AT 9,10; INK 6;"(11*i
sP)"
 130 PRINT AT 8,10; INK 6;"(11*is
P)"
 191 FOR a=0 TO 31: PRINT AT 0,a
; INK 5;"(isP)": NEXT a
 192 FOR b=0 TO 19: PRINT AT b,0
; INK 5;"(isP)": NEXT b
 193 FOR c=0 TO 31: PRINT AT 19,
c; INK 5;"(isP)": NEXT c
 194 FOR d=0 TO 19: PRINT AT d,3
1; INK 5;"(isP)": NEXT d
 195 LET men=1
 196 LET score=0
 197 LET j=2: LET i=2
 198 LET x=29: LET z=17
 199 FOR l=0 TO 1
 200 IF INKEY$="q" THEN  LET j=j
-1: PRINT AT j+1,i; INK 4;"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN  LET j=j+1
 201 IF j<=0 THEN  LET j=j+1: BE
EP .7,-20: BEEP .7,-20: BEEP .9,
-30
 210 IF INKEY$="a" THEN  LET j=j
+1: PRINT AT j-1,i; INK 4;"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN  LET j=j-1
 211 IF j>=19 THEN  LET j=j-1: B
EEP .7,-20: BEEP .7,-20: BEEP .9
,-30
 220 IF INKEY$="i" THEN  LET i=i
-1: PRINT AT j,i+1; INK 4;"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN  LET i=i+1
 221 IF i<=0 THEN  LET i=i+1: BE
EP .7,-20: BEEP .7,-20: BEEP .9,
-30
 230 IF INKEY$="o" THEN  LET i=i
+1: PRINT AT j,i-1; INK 4;"a": L
ET score=score+5: IF ATTR (j,i)=
6 THEN  LET i=i-1
 231 IF i>=31 THEN  LET i=i-1: B
EEP .7,-20: BEEP .7,-20: BEEP .9
,-30
 233 IF ATTR (j,i)=4 THEN  LET m
en=men-1: BEEP .7,-20: BEEP .7,-
20: BEEP .9,-30
 234 NEXT l
 235 IF j>z THEN  LET z=z+1: PRI
NT AT z-1,x; INK 4;"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN  LE
T z=z-1
 236 IF j<z THEN  LET z=z-1: PRI
NT AT z+1,x; INK 4;"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN  LE
T z=z+1
 237 IF i<x THEN  LET x=x-1: PRI
NT AT z,x+1; INK 4;"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN  LE
T x=x+1
 238 IF i>x THEN  LET x=x+1: PRI
NT AT z,x-1; INK 4;"a": IF ATTR
(z,x)=6 OR ATTR (z,x)=4 THEN  LE
T x=x-1
 240 IF ATTR (z,x)=3 THEN  LET m
en=men-1: IF ATTR (z,x)=4 THEN
LET x=x+1: PRINT AT z,x; OVER 1;
 INK 2;"a": BEEP .7,-20: BEEP .7
,-20: BEEP .9,-30: BEEP .7,-20:
BEEP .7,-20: BEEP .9,-40
 575 PRINT AT 20,0;"SCORE= ";sco
re
 589 PRINT AT j,i; INK 3;"b"
 590 PRINT AT z,x; INK 2;"b"
 600 PRINT AT 21,0;"LIVES= ";men
```

```
 710 IF me%<=0 THEN  GO TO 3100
1000 GO TO 199
3100 CLS
3110 PRINT  INK 5; FLASH 1;AT 0,
5;"GAME OVER.DO YOU WANT"; INK 5
; FLASH 1;AT 1,5;"ANOTHER GAME (
y,n)": PRINT : PRINT : PRINT  IN
K 6;"    YOUR SCORE IS: ";score

3120 INPUT y$
3130 IF y$="y" THEN  CLS : GO TO
 81
```




```
3140 IF y$="n" THEN  STOP
3150 IF y$<>"y" OR y$<>"n" THEN
 GO TO 3002
8999 STOP
9000 CLS : PRINT "          BLOCK'
EM      "
9001 PRINT  OVER 1;AT 0,8;"_____
___"

9002 PRINT : PRINT "THE OBJECT O
F THIS GAME IS TO   OUT RUN THE
OPPOINENTS CAR      (CONTROLLED
BY THE COMPUTER).   YOU ALSO HAV
E TO AVOID BUMPING  INTO THE SMO
KE YOU LAY AND THE  SMOKE THE CO
MPUTER LAYS."

9003 PRINT : PRINT "YOU ALSO HAV
E TO AVIOD BUMPING  INTO THE OUT
-SIDE AND INSIDE    WALLS.": PRI
NT : PRINT "YOU LOSE A LIFE WHEN
 YOU:-": PRINT "HIT YOUR SMOKE."

: PRINT "HIT THE OTHER CAR OR IT
'S SMOKE.": PRINT "IF YOU CRASH
INTO THE OUT SIDE  OR INSIDE WAL
L."

9004 PRINT : PRINT "PRESS ANY KE
Y FOR THE KEYS": PAUSE 0
9005 CLS :
9007 PRINT : PRINT "THE KEYS ARE
:-": PRINT : PRINT  INK 3; FLASH
 1;"PLAYER 1 THE MAGENTA CAR:-":
 PRINT  INK 4; FLASH 1;"UP DOWN
LEFT RIGHT": PRINT  FLASH 1; INK
 5;"q   a    l    o"
9008 PRINT : PRINT : PRINT "PRES
S";AT 8,6; INK 2; FLASH 1;"r"; F
LASH 0; INK 7;" TO RUN THE GAME"
9009 INPUT INKEY$
9010 IF INKEY$<>"r" THEN  GO TO
9009
9020 IF INKEY$="r" THEN  GO TO 4
0
```

```
  1 LET Z=SGN PI
  2 LET S=PI-PI
  3 LET X=CODE "(9t)"
  5 PRINT AT CODE "(9s)",CODE "
?";"score ";S
 10 LET A=INT (RND*X)+Z
 20 LET B=INT (RND*X)+Z
 30 LET C=INT (RND*X)+Z
 40 PRINT A
 50 PRINT B
 60 PRINT C
 70 IF A=B AND B=C THEN PRINT "
JackPot 100"
 73 IF A=B AND B=C THEN LET S=S
+VAL "100"
 75 IF A=B AND B=C THEN GOTO CO
DE "ABS "
 80 IF A=B OR A=C OR B=C THEN G
OTO CODE "COS "
 90 GOTO CODE "ABS "
200 PRINT "BONUS ";CODE "M"
205 LET S=S+CODE "M"
210 IF INKEY$="" THEN GOTO CODE
 "ABS "
215 CLS
220 GOTO CODE "(95)"
```

JUNIOR JACKPOT

A SIMPLE program submitted by S G Wylie of Ramsgate, Kent for the 1K ZX-81. Three random numbers, chosen by the computer, appear to the left of the screen. Fifty bonus points are awarded for two corresponding numbers, between 1 and 6, and a jackpot of 100 bonus points for three identical numbers.

You have to press NEWLINE key for each set of numbers and your score is totalled at the end of each turn. A POKE command is inserted in the program which must be executed before typing the program into the computer prior to cassette storage—(POKE 16389,76).

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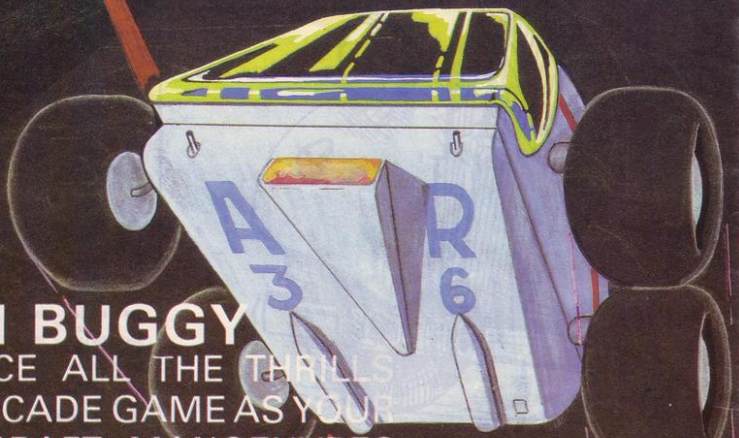

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All the fun of the arcade game brought to life with animated graphics. Fireballs, ladders, lifts and rolling barrels provide fun for the whole family. Enjoy the collapse of Kong's lair when you have finally rescued the damsel in the fourth screen. Hall of fame and demo mode are included.

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A stunning action packed game with superb large animated graphics. Giant Space Hawks whirl and weave in intricate patterns as they drop their deadly homing mines which will destroy your base on contact. While you are busy defending yourself the Hawks will feed on your helpless population returning only their skulls. All M/C game complete with high score table that will blow your mind with its graphics and sound effects.

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MISSILE DEFENCE

Brings the well known arcade game to life on the Spectrum screen in glorious colours. Defend your cities from the missile attack and smart bombs. 10 skill levels.

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SLAP DAB

An exciting game based on the arcade game Painter which combines fast action with strategy. Giant insects hiding under the old paint surface are released by your paint brush. You require fast action and quick thinking to outwit them and finish the panel. The game is 100 percent machine code and HI-RES. Graphics also includes Hi-score and running score.

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Popular arcade game. All machine code with brilliant colour graphics and sound effect. Features include snakes, crocodiles, lady frogs, turtles, cars, lorries and logs.

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FIND THE LETTER

FIND THE LETTER for the 16K ZX-81 was written by R Banks of Leigh-on-Sea, Essex. You have 15 seconds in which to find the letter the computer has selected.

```
  10 SLOW
  20 GOSUB 600
  30 LET W=0
  40 PRINT AT 2,0;"TRY TO GUESS
THE RIGHT LETTER..."
  50 LET A=INT (RND*26)+1
  60 IF A=1 THEN LET A$=CHR$ 38
  70 IF A=2 THEN LET A$=CHR$ 39
  80 IF A=3 THEN LET A$=CHR$ 40
  90 IF A=4 THEN LET A$=CHR$ 41
 100 IF A=5 THEN LET A$=CHR$ 42
 110 IF A=6 THEN LET A$=CHR$ 43
 120 IF A=7 THEN LET A$=CHR$ 44
 130 IF A=8 THEN LET A$=CHR$ 45
 140 IF A=9 THEN LET A$=CHR$ 46
 150 IF A=10 THEN LET A$=CHR$ 47
 160 IF A=11 THEN LET A$=CHR$ 48
 170 IF A=12 THEN LET A$=CHR$ 49
 180 IF A=13 THEN LET A$=CHR$ 50
 190 IF A=14 THEN LET A$=CHR$ 51
 200 IF A=15 THEN LET A$=CHR$ 52
 210 IF A=16 THEN LET A$=CHR$ 53
 220 IF A=17 THEN LET A$=CHR$ 54
 230 IF A=18 THEN LET A$=CHR$ 55
 240 IF A=19 THEN LET A$=CHR$ 56
 250 IF A=20 THEN LET A$=CHR$ 57
 260 IF A=21 THEN LET A$=CHR$ 58
 270 IF A=22 THEN LET A$=CHR$ 59
 280 IF A=23 THEN LET A$=CHR$ 60
 290 IF A=24 THEN LET A$=CHR$ 61
 300 IF A=25 THEN LET A$=CHR$ 62
 310 IF A=26 THEN LET A$=CHR$ 63
 320 IF INKEY$=A$ THEN GOTO 360
 330 LET W=W+1
 340 IF W=100 THEN GOTO 520
 350 GOTO 320
 360 PRINT
 370 PRINT "WELL DONE."
 380 PRINT
 390 PRINT
 400 PRINT "THE LETTER WAS:""";A
$;""""
 410 PRINT
 420 PRINT "YOU WERE LUCKY..."
 430 PRINT "BUT I BET YOU CAN,T
DO IT AGAIN."
 440 PRINT AT 1,0;
 450 FOR N=1 TO 200
 460 NEXT N
 470 FOR F=1 TO 20
 480 PRINT "
                "
 490 NEXT F
 500 LET E=1
 510 RUN 30
 520 PRINT
 530 PRINT
 540 PRINT "YOU RAN OUT OF TIME.
"
 550 PRINT
 560 PRINT "THE LETTER WAS:""";A
$;""""
 570 PRINT
 580 PRINT "TRY AGAIN."
 590 GOTO 440
 600 PRINT
 610 PRINT "DO YOU WANT INSTRUCT
IONS ?"
 620 IF CODE INKEY$=51 THEN RETU
RN
 630 IF CODE INKEY$=62 THEN GOTO
 650
 640 GOTO 620
 650 PRINT AT 2,0;"          -INSTR
UCTIONS-
                "
 660 PRINT
 670 PRINT "ALL YOU HAVE TO DO I
S TO GUESS  WHICH LETTER THE COM
PUTER HAS   CHOSEN."
 680 PRINT
 690 PRINT "BUT BE CAREFUL,THERE
 IS A 15    SECOND TIME LIMIT."
 700 PRINT
 710 PRINT "GOOD LUCK..."
 720 PRINT AT 21,5 ;"PRESS N/L T
O PLAY."
 730 IF CODE INKEY$=118 THEN GOT
O 750
 740 GOTO 730
 750 PRINT AT 0,31;
 760 FOR F=1 TO 21
 770 PRINT "
                "
 780 NEXT F
 790 RETURN
 9998 SAVE "G.T.L■"
 9999 RUN
```

CALPAC LEARNING SERIES

Colour graphics and sound are used extensively to make learning more enjoyable.

1. TENS AND UNITS ADDITION. You may choose simple sums or sums which involve carrying ten. Helpful correction sequences are provided if mistakes are made. An attractive landscape is formed as the sums are successfully completed, and the scene is animated at the end of the program.

2. TENS AND UNITS SUBTRACTION. Choose simple or difficult sums. Either of the two methods of subtraction taught in schools may be selected at the start of the program. Detailed help is given if errors are made. Correct answers add sections to a bridge. If no mistakes are made, the tank will drive across the completed bridge and fire its gun.

3. PICTURE PLOTTER. This program has been written so that children can create their own pictures on the television screen. It is so simple that even pre-reading children can use it, yet its sophistication makes it suitable for producing multicolour maps and diagrams.

4. NORTH AMERICAN INDIANS. This program helps to develop reading and comprehension skills. You complete sentences using a word from the list on the screen. Correct responses are rewarded by the creation of an Indian scene which includes tipis and buffalo.

You may replace the questions in this program with your own (create a bank of up to 250 questions with a 48K Spectrum). Any subject area may be chosen.

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ZX SPECTRUM

VOL. 1 FROM 6 YEARS

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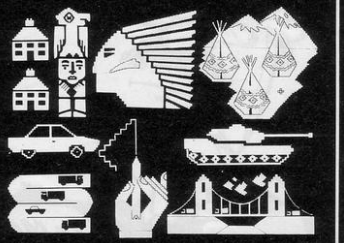
PROGRAMS 1-4



1. TENS AND UNITS ADDITION
2. TENS AND UNITS SUBTRACTION
3. PICTURE PLOTTER
4. NORTH AMERICAN INDIANS

SPECTRUM FROM 6 YEARS 16K 48K

CALPAC LEARNING SERIES

Colour graphics and sound are used extensively to make learning more enjoyable.

9. NOUNS, VERBS, ADJECTIVES AND ADVERBS. Sentences are displayed and you select the named parts of speech. Instant feedback and helpful comments ensure positive learning. Correct answers are rewarded by the creation of a coastal scene, which is animated at the end of the program.

10. VERB PRACTICE. You have to complete the sentences using the correct tenses of the verbs. The program concentrates on those irregular verbs that often cause difficulty. An underwater landscape is created as questions are correctly answered.

11. THE STRUCTURE OF THE FLOWER. This program explains how the parts of the flower are involved in the formation of seeds. This is a three part program which makes full use of high resolution colour graphics.

12. LONG DIVISION. This detailed program takes the learner through long division sums in easy stages. Correction sequences are automatically provided when they are needed. Sums with remainders can be chosen if required.

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ZX SPECTRUM

VOL. 3 FROM 9 YEARS

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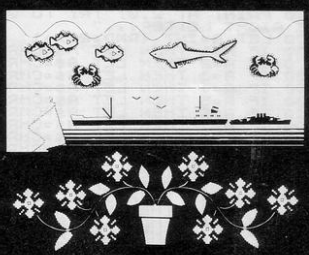
PROGRAMS 9-12



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10. VERB PRACTICE
11. THE STRUCTURE OF THE FLOWER
12. LONG DIVISION

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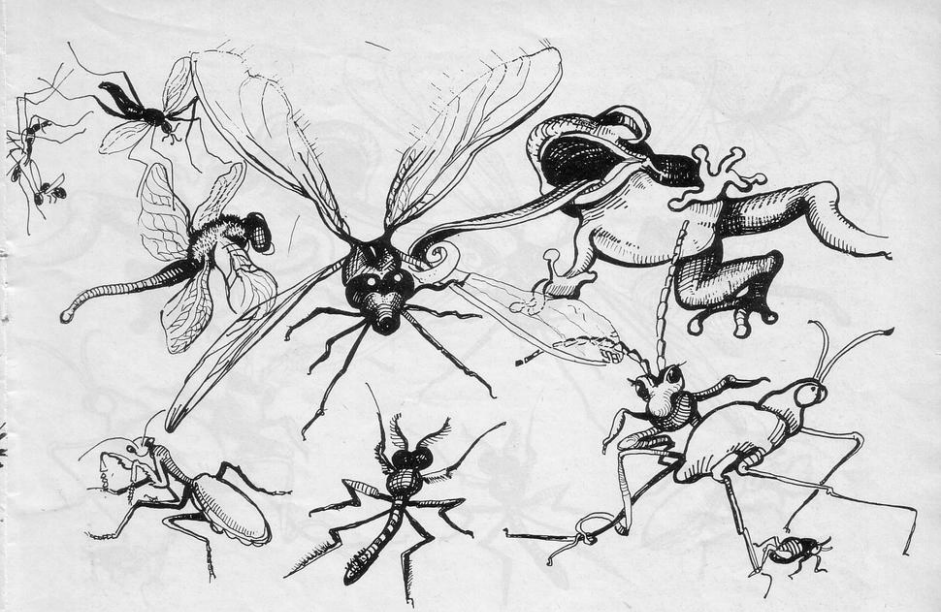
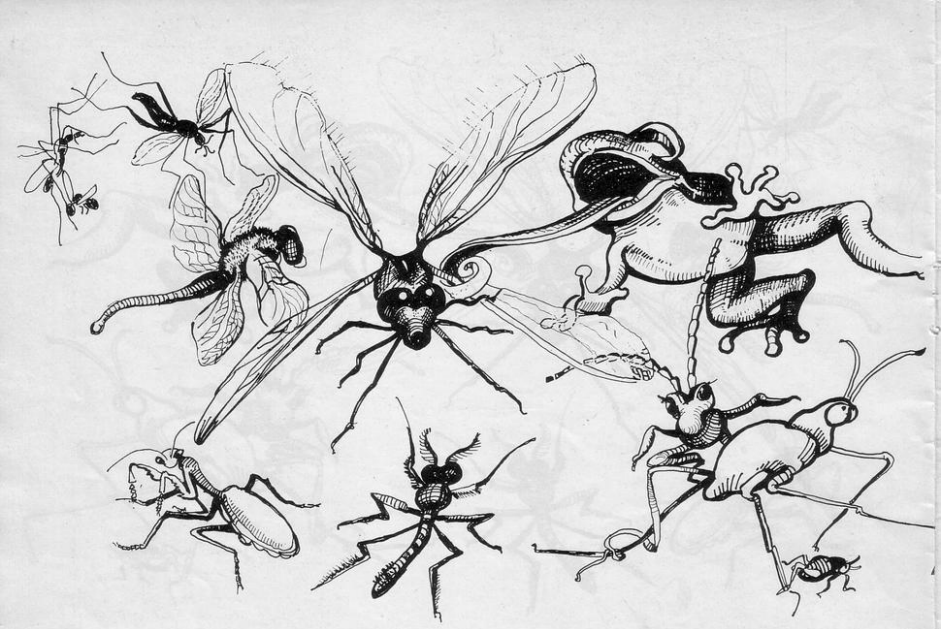


BUG FEVER

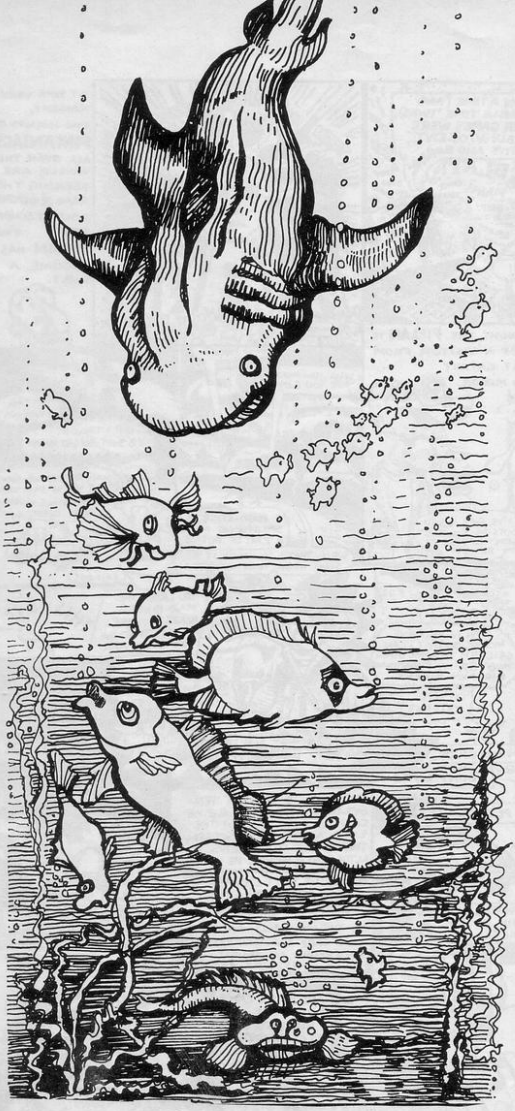
YOU HAVE one minute to catch as many types of insects as possible with the sticky tongue of your frog. The controls are 5 — skip left; 8 — skip right; 6 — jump left; 7 — jump right; 0 releases the tongue. Press R to return to the lily pad for a new game.

Bugfever was written by Simon Cox of Dunstable, Beds.

```
  1 DATA 14,17,17,35,37,42,116,
63,96,152,8,8,16,32,132,248,96,1
56,65,48,72,7,5,9,3,4,100,181,23
4,100,4,2,24,32,64,170,85,64,32,
24,0,0,192,62,61,255,62,32,0,127
,1,0,1,127,0,0,3,14,255,255,255,
14,3,0
  2 DATA 240,0,128,128,128,0,24
0,0,0,0,0,0,130,130,130,186,186,
254,124,124,56,56,56,56,108,68,6
8,68,68,68,68,0,0,34,34,34,34,34
,34,54,28,28,28,28,62,62,127,93,
93,65,65,65,65,0,0,0,112,216,124
,126,255,127,63,255
  3 DATA 14,27,62,126,255,254,2
52,255,248,0,128,255,128,0,248,0
,0,0,254,128,0,128,254,0,0,192,1
12,255,255,255,112,192,0,15,0,1,
4,1,0,15
  4 RESTORE : FOR q=0 TO 167 ST
EP 8: FOR r=0 TO 7: READ a: POKE
 USR "(9a)"+q+r,a: NEXT r: NEXT
 q
  10 DATA BIN 1010010,BIN 010101
01,BIN 01010101,BIN 00101011,BIN
 00101011,BIN 10010111,BIN 10001
111,BIN 01111111,BIN 01100101,BI
N 01101010,BIN 10101010,BIN 1101
0100,BIN 11010100,BIN 11101001,B
IN 11100001,255
  15 DATA BIN 1010010,BIN 010101
01,BIN 01010101,BIN 00101011,BIN
 00101011,BIN 10010111,BIN 10001
111,BIN 01111111,BIN 01100101,BI
N 01101010,BIN 10101010,BIN 1101
0100,BIN 11010100,BIN 11101001,B
IN 11100001,255
  20 DATA 14,17,17,35,37,42,116,
63,96,152,8,8,16,32,132,248
  900 BORDER 5: PAPER 8: BRIGHT 1
: CLS : FOR n=0 TO 10: PRINT AT
n,0; PAPER 5,,: NEXT n: FOR n=11
 TO 21: PRINT AT n,0; PAPER 1,,:
 NEXT n
  901 INK 7: FOR r=0 TO 80 STEP 1
6: FOR q=0+RND*4 TO 255 STEP 16:
 PLOT q,r: DRAW 2,2: DRAW 2,-1:
NEXT q: NEXT r
  911 LET time=60: LET score=0
  912 INK 1: PAPER 4: PRINT AT 17
,3;"(i$P i93 19%$P i93)"
  913 PRINT AT 18,3;"
                    "
  914 PRINT AT 19,3;"(i$P 93 21%$
P i93)"
  915 INK 0: PAPER 4: PLOT 35,26:
 DRAW 170,0
  916 FOR n=45 TO 190 STEP 8: PLO
T n,26: DRAW 0,8: DRAW -8,-8: DR
AW 8,-8: NEXT n
  917 FOR n=0 TO 255: PLOT INK 4
,n,8: DRAW INK 4;0,1NT (RND*8):
NEXT n
  918 RESTORE 10: FOR n=0 TO 15:
READ a: POKE USR "(9a)"+n,a: NEX
T n
  919 PRINT AT 19,1; INK 3; PAPER
 1;"(9a 9b)";AT 16,3; INK 6; PAP
ER 1;"(9a 9b)";AT 16,26; INK 7;
PAPER 1;"(9a 9b)";AT 19,28; INK
 6; PAPER 1;"(9a 9b)"
  920 RESTORE 20: FOR n=0 TO 15:
READ a: POKE USR "(9a)"+n,a: NEX
T n
  930 FOR q=1 TO 0 STEP -.1: PLOT
 INK 6;224,175: DRAW INK 6;31,
-q*4,q: NEXT q
  940 OVER 0: FOR r=40 TO 200: FO
R q=1 TO 4: PLOT INK 3;r+q,16:
DRAW INK 3;0,12: NEXT q: LET r=
r+INT (10+RND*20): NEXT r
  1010 PAPER 8: INK 0: REM fro9
  1015 PRINT AT 21,0; PAPER 4,,
  1016 PRINT AT 21,11; INK 7;"BUGF
EVER"
  1020 LET x=16: LET y=13
  1021 PRINT AT x,y; INK 7;"(9q)"
  1025 LET z=10
  1026 GO TO 5360
  5020 FOR n=x-3 TO x-z+(3 AND y)=
25 AND z)3): STEP -1: INK 0+(7 AN
D n>10): BRIGHT 1: PRINT AT n,y;
"9j ";AT n+1,y;"9k ";AT n+2,y;"l
 ";AT n+3,y;" ": GO SUB 6050
  5030 NEXT n
  5035 PRINT AT n+1,y;" ";AT n+2,y
;" ";AT n+3,y;" "
  5040 FOR p=y TO y+4-(3 AND y)=25
)
  5050 PRINT AT n,p;" (99 9h 91)"
  5051 IF INKEY$="0" THEN BEEP .0
1,0: PRINT AT n,p+3; INK 0;"(9r)
"
  5052 IF (SCREEN$ (n,p+4)<>" ") A
ND INKEY$="0" THEN PRINT AT n,p
```



```
+3; INK 2;"(9r)": FOR r=5 TO 1 S
TEP -1: BEEP .01,-r: NEXT r: PRI
NT AT a,b-1;"    ": LET score=sc
ore+sc1: GO SUB 6050
5060 NEXT P
5061 LET time=time-(4 AND z<>2)-
(4/10 AND z=3)
5065 PRINT AT n,P-1;"    "
5070 FOR n=x-z+(3 AND y>=25 AND
z>3) TO x: INK 0+(7 AND n>10): P
RINT AT n-3,y+4;"(9m)";AT n-2,y+
4;"(9n)";AT n-1,y+4;"(9o)";AT n-
4,y+4;" ": GO SUB 6050
5080 NEXT n
5085 PRINT AT n-4,y+4;" ";AT n-3
,y+4;" ";AT n-2,y+4;" "
5090 LET y=y+4: PRINT AT x,y; IN
K 7;"(9q)"
5095 BEEP .01,-20: BEEP .01,-10
5096 IF y>=29 THEN  LET time=tim
e-3: PRINT AT x,y; INK 1;" "; IN
K 7: FOR n=1 TO 20: BEEP .003,n:
 PLOT 236,32: GO SUB 6050: DRAW
INT (-10+RND*20),INT (RND*15): N
EXT n: GO SUB 6050: FOR q=16 TO
18: PRINT AT q,28; PAPER 1;"
": GO SUB 9120: GO SUB 6050: NEX
T q: LET x=16: LET y=13
5100 RETURN
5120 FOR n=x-3 TO x-z STEP -1: I
NK 0+(7 AND n>10): PRINT AT n,y;
"(9j)";AT n+1,y;"(9k)";AT n+2,y;
"(9l)";AT n+3,y;" ": GO SUB 6050
5130 NEXT n
5135 PRINT AT n+1,y;" ";AT n+2,y
;" ";AT n+3,y;" "
5140 FOR p=y TO y-4 STEP -1
5150 PRINT AT n,p;"(9u)(9t)(9s) ":
 GO SUB 6050: POKE USR "(9u)"+4,
4
5156 IF INKEY$="0" THEN  BEEP .0
1,0: POKE USR "(9u)"+4,255
5157 IF (SCREEN$ (n,p-1)<>" ") A
ND INKEY$="0" THEN  POKE USR "(9
u)"+4,255: FOR r=5 TO 1 STEP -1:
 BEEP .01,-r: NEXT r: PRINT AT a
,b-1;"    ": LET score=score+sc
1: GO SUB 5310
5160 NEXT p
5161 LET time=time-(4 AND z<>3)-
(4/10 AND z=3)
5165 PRINT AT n,p+1;"    "
5170 FOR n=x-z TO x: INK 0+(7 AN
D n>10): PRINT AT n-3,y-4;"(9m)"
;AT n-2,y-4;"(9n)";AT n-1,y-4;"(
9o)";AT n-4,y-4;" ": GO SUB 6050
5180 NEXT n
5185 PRINT AT n-4,y-4;" ";AT n-3
,y-4;" ";AT n-2,y-4;" "
5190 LET y=y-4: PRINT AT x,y;"(9
p)"
5195 BEEP .01,-20: BEEP .01,-10
5196 IF y<=3 THEN  LET time=time
-3: PRINT AT x,y; INK 1;" ": INK
 7: FOR n=1 TO 20: BEEP .003,n:
PLOT 11,32: GO SUB 6050: DRAW IN
T (-10+RND*20),INT (RND*10): NEX
T n: GO SUB 6050: FOR q=16 TO 18
: PRINT AT q,0; PAPER 1;"    ": G
O SUB 9110: GO SUB 6050: NEXT q:
 LET x=16: LET y=13
5200 RETURN
5310 LET a=INT (1+RND*7): LET b1
=INT (1+RND*3)
5320 IF b1=1 THEN  LET a$="(9a)(9
b)": LET d=-1: LET d1=0: LET b=
29: LET sc1=150
5330 IF b1=2 THEN  LET a$="(9d)(9
e)": LET d=-1: LET d1=0: LET b=
29: LET sc1=200
5340 IF b1=3 THEN  LET a$=" (9c)(
9f)": LET d=1: LET d1=29: LET b=
0: LET sc1=50
5350 RETURN
5360 GO SUB 5310
6000 GO SUB 6050
6001 PRINT AT 21,0; INK 7;"TIME:
";INT time AND time>=0;" ";AT 21
,22; INK 7;"SCORE:";score
6002 IF time<=0 THEN  LET time=0
: PRINT AT 10,9; INK 7; PAPER 4;
"  GAME-OVER  ": GO TO 9000
6005 IF INKEY$="8" THEN  LET z=3
: BEEP .01,8: GO SUB 5016
6010 IF INKEY$="7" THEN  LET z=x
-a-1: BEEP .01,7: GO SUB 5016
6020 IF INKEY$="5" AND y>1 THEN
 LET z=3: BEEP .01,5: GO SUB 512
0
6030 IF INKEY$="6" AND y>1 THEN
 LET z=x-a-1: BEEP .01,6: GO SUB
 5120
6035 LET time=time-1/10
6040 GO TO 6000
6050 PRINT AT a,b; INK 0;a$
6060 LET b=b+d: IF b=d1 THEN  PR
INT AT a,b-1;"  ": GO SUB 5310
6065 BEEP .001,b
6070 RETURN
9000 IF INKEY$<>"r" THEN  GO TO
6000
9015 PRINT AT 1,12;"SCORING";AT
2,12;"-------"
9020 PRINT AT 4,3;"(9d)(9e)  DRAG
ONFLIES------ 200"
9040 PRINT AT 6,3;"(9a)(9b)  BUTT
ERFLIES------ 150"
9070 PRINT AT 8,3;"(9c)(9f)  FLIE
S---------- 50 "
9080 FOR n=1 TO 50: NEXT n
9090 IF INKEY$<>"r" THEN  GO TO
9090
9100 FOR n=1 TO 10: PRINT AT n,0
; PAPER 5; INK 7;"
                ": NEXT n: PRI
NT AT 21,28; PAPER 4; INK 4;"
": PRINT AT x,y;" ": LET score=
0: LET z=10: LET x=16: LET y=13:
 LET time=61: PRINT AT x,y; INK
7;"(9q)": GO TO 5360
9110 INK 7: FOR n=0 TO 16 STEP 1
6: PLOT n,32: DRAW 2,1: DRAW 2,-
1: NEXT n: PRINT AT 16,13;"(9q)"
: RETURN
9120 INK 7: FOR n=0 TO 16 STEP 1
6: PLOT n+230,32: DRAW 2,1: DRAW
 2,-1: NEXT n: PRINT AT 16,13;"(
9q)": RETURN
```



JAWS

SHEILA BRITTON of Reading, Berkshire wrote **Jaws** for her five-year-old daughter. It is for the 16K ZX81 and is a simple mathematics program with a shark chasing a fish at the bottom of the screen. If you answer correctly the fish will escape.

```
 10 PRINT AT 3,12;"JAWS"
 15 PRINT AT 4,12;"====="
 20 PRINT AT 7,0;"TRY TO HELP T
HE FISH ESCAPE FROM"
 25 PRINT "THE SHARK BY GETTING
 THE ANSWERS"
 30 PRINT "RIGHT."
 35 PRINT AT 12,0;"AT THE END P
RESS Y AND NEWLINE"
 40 PRINT "TO PLAY THE GAME AGA
IN."
 45 PRINT AT 16,0;"PRESS ANY KE
Y TO START."
 50 IF INKEY$="" THEN GOTO 50
100 CLS
105 LET W=0
110 LET F=8
120 LET X=0
130 PRINT AT 20,0;"(9a'9d'9a'9d
9a'9d'9a'9d'9a'9d'9a'9d'9a'9d'9a
'9d'9a'9d'9a'9d'9a'9d'9a'9d'9a'9
d'9a'9d'9a'9d'9a'9d)"

140 PRINT AT 16,30;"Y"
150 PRINT AT 17,30;"Y"
160 PRINT AT 18,28;"Y Y"
170 PRINT AT 19,28;"Y Y"
180 GOSUB 600
190 GOSUB 700
200 RAND
210 LET A=INT (RND*11)
220 LET B=INT (RND*11)
230 IF X=0 THEN GOTO 800
235 GOSUB 900
240 PRINT AT 4,5;"WHAT IS ";A;"
+";B
250 INPUT ANSWER
260 PAUSE 40
270 PRINT TAB 13;A;"+";B;"=";AN
SWER
280 IF ANSWER=A+B THEN GOTO 400
300 PRINT TAB 13;"WRONG.TRY AGA
IN."
310 FOR Z=15 TO 18
320 PRINT AT Z,W;"      "
330 NEXT Z
340 LET W=W+6
350 GOSUB 600
360 IF F=W+2 THEN GOTO 490
370 GOTO 235
400 PRINT TAB 13;"RIGHT.WELL DO
NE."
410 PRINT AT 16,F;"   "
420 PRINT AT 17,F;"   "
430 LET F=F+6
440 GOSUB 700
450 IF F=26 THEN GOTO 540
460 GOTO 210
490 PRINT AT 10,0;"SORRY.YOUR F
ISH HAS BEEN EATEN."
490 GOTO 550
540 PRINT AT 10,0;"CLEVER YOU.T
HE FISH HAS ESCAPED."
550 PRINT AT 12,0;"DO YOU WANT
TO PLAY AGAIN?Y OR N"
560 INPUT R$
570 IF R$="Y" THEN GOTO 100


580 CLS
585 PRINT AT 10,12;"GOODBYE."
590 STOP
600 PRINT AT 15,W;"(9a' 4*9a')"
610 PRINT AT 16,W;"(4*9a'10'9a)
"
620 PRINT AT 17,W;"(6*9a)"
630 PRINT AT 18,W;"(9a' 4*9a')"
640 RETURN
700 PRINT AT 16,F;"(9w'1$P'1*)"
710 PRINT AT 17,F;"9e'2*1$P')"
720 RETURN
800 PRINT AT 3,0;"HELLO."
810 LET X=1
820 GOTO 240
900 FOR Z=3 TO 6
910 PRINT AT Z,0;"
                  "
920 NEXT Z
930 RETURN
```

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ZOT
FONNS!
MAIM!
BEEP!
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ALL-TIME CLASSIC!
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CORKS!
I'VE GOT A SNIP OUTSIDE YOU JUST WON'T BE ABLE TO RESIST!
HOW MUCH?
WELL, 'OW MUCH 'AVE YOU GOT?
A POGO-STICK, A SAXOPHONE AND A CAN OF WORMS
WELL THAT'S 'OW MUCH IT IS! SIGN HERE, HERE AN' HERE!
TATTAH, MUGGINS!
OY! I THOUGHT I'D JUST BOUGHT THAT!
LOOK AT THE LUG-BOOK! IT IS I YOU'VE PAID YOUR HARD-EARNED WORMS FOR! BEEP!
EH, WOT?
WHAT DO YOU KEEP STOPPING FOR?
CAR PARK
BEEP! CAR-SICKNESS!
LEMME OUTTA HERE, YA BUM!
TELEPORT BEAM
NOW TO RETRIEVE MORRIS SO THAT I CAN SELL HIM TO SOME OTHER MUG! GO, MY PHANTOM PHREAKY BIKERS!
I'M FREE! TAKEEEE!!
TOO LATE! THE MAD BIKERS BLAZE IN, LIKE GHOSTS THROUGH THE BRICK WALL...
THIS IS IT
MORRIS meets the Bikers
WATCH OUT FOR.....
...TREACHEROUS TIN-TACKS THAT SLOW HIM DOWN...
HSSSS
YOW!
CREEPY CARBON MONOXIDE...
LOONY LIFTS
ELEVATOR
PRECIOUS PETROL
GRRR!
AND CLINGING WHEEL CLAMPS THAT BRING HIM TO A GRINDING HALT...
AND HAS TO COLLECT TEN GOLDEN COINS BEFORE HE CAN ESCAPE THROUGH THE EXIT TO THE NEXT SCREEN. THERE ARE 9 SCREENS ALTOGETHER, BEFORE HE IS FREE!
MAYBE WE DON'T LIKE THE NOISE HIS HORN MAKES, AN' MAYBE WE CAN'T GET HIM IN THE LIFTS - BUT WE CAN FLY THROUGH WALLS, AN WE DON'T CARE ABOUT NO HAND-SIGGERNALS OR DOUBLE-YELLER LINES! HAR HAR!!
SO WHAT'S AUTOMATA GOT IN THE WAY OF CLASSIC ENTERTAINMENT? HOW ABOUT THE DIFINITIVE VERSION OF THAT BOARD GAME!
HEH HEH...
GO TO JAIL
..COMPUTER!
BUT BEWARE...
AND IF YOU CAN'T FIND ANY HUMANS TO PLAY AGAINST, WE DARE YOU TO PLAY YOUR..
IT MAY WELL WIN!!
*2 TO 5 PLAYERS *LARGE SIZE MOVING BOARD DISPLAY *SAVE-GAME FACILITY. *STATE OF PLAY AT THE TOUCH OF A BUTTON *YOUR COMPUTER AS 'HONEST BANKER' GO TO JAIL!

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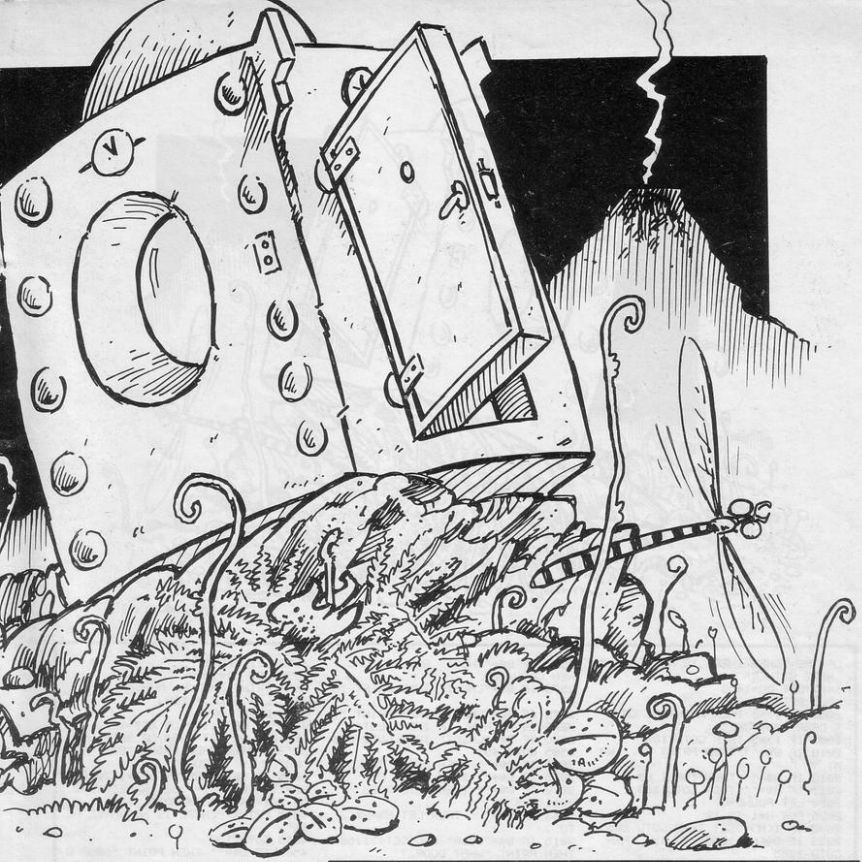
SP

TIMESLIDE

```
  2 LET FED=0
  3 LET I=0
  4 LET SET=1000
  5 LET INIT=9100
  6 GOSUB INIT
 14 LET A$=""
 17 CLS
 20 LET NO=0
 22 LET EA=0
 24 LET WE=0
 26 LET SO=0
 27 LET UP=0
 28 LET DO=0
 30 LET I$=""
 32 FAST
 35 GOSUB SET
 40 CLS
 45 PRINT I$
 50 LET FOUND=0
 52 LET P=0
 60 GOTO 9600
 70 SLOW
 80 GOTO 100
 90 IF A$="LOOK" AND NOT FOUND
THEN PRINT "I CAN""T SEE ANYTHIN
G SPECIAL"
100 PRINT "WHAT SHALL I DO ?"
101 SLOW
102 INPUT J$
103 IF J$="" THEN GOTO 100
104 CLS
106 LET A=RND
107 IF SET=1240 AND A>.95 THEN
PRINT "THE DOG AWOKE AND KILLED
YOU"
108 IF SET=1240 AND A>.95 THEN
GOTO 9000
109 GOSUB 500
110 PRINT A$;" ";B$
111 IF B$="" THEN GOTO 115
112 IF B$(1)=" " THEN LET B$=B$
(2 TO )
113 IF A$="TAKE" OR A$="GET" OR
A$="PUT" OR A$="DROP" THEN LET
B$=B$+"                "
114 IF B$=" " THEN GOTO 112
115 IF A$="N" AND NO<>0 THEN LE
T SET=NO
120 IF A$="S" AND SO<>0 THEN LE
T SET=SO
130 IF A$="W" AND WE<>0 THEN LE
T SET=WE
140 IF A$="E" AND EA<>0 THEN LE
T SET=EA
150 IF A$="D" AND DO<>0 THEN LE
T SET=DO
155 IF A$="N" OR A$="S" OR A$="
W" OR A$="E" OR A$="D" THEN GOTO
 20
156 IF A$="U" AND SET<>1210 AND
SET<>1240 AND SET<>1450 THEN GO
TO 158
157 IF A$="U" THEN GOTO 6000
158 FAST
160 IF A$="R" THEN GOTO 40
170 IF A$="HELP" THEN PRINT "NO
CHANCE MATE"
175 IF A$="HELP" THEN GOTO 100
180 IF A$="TAKE" OR A$="GET" TH
EN GOTO 2000
185 IF A$="SAVE" THEN GOTO 9800
190 IF A$="PUT" OR A$="DROP" TH
EN GOTO 4500
200 IF A$="OPEN" THEN GOTO 2500
205 IF A$="FEED" THEN GOTO 3500
210 IF A$="LOOK">= GOTO 60
215 IF A$="SWIM" THEN GOTO 4000
225 IF A$="LIGHT" THEN GOTO 750
0
230 IF A$="READ" THEN GOTO 6500
240 IF A$="UNLOCK" THEN GOTO 30
00
250 IF A$="I" THEN GOSUB 5500
255 IF A$="I" THEN GOTO 100
260 IF A$="INSERT" THEN GOTO 70
00
275 IF A$="QUIT" THEN GOTO 9000
280 IF A$="SAVE" THEN GOSUB 990
0
490 IF LEN A$=1 THEN PRINT "I C
AN""T "
491 IF LEN A$=1 THEN GOTO 100
498 PRINT "I CAN""T ";A$;" ";B$
499 GOTO 100
500 IF J$(1)=" " AND LEN J$>1 T
HEN LET J$=J$(2 TO )
501 IF J$(1)=" " THEN GOTO 500
502 LET SP=0
503 LET A$=""
504 LET B$=""
505 FOR N=1 TO LEN J$
507 IF J$(N)=" " AND NOT SP THE
N LET SP=1
508 IF J$(N)=" " AND NOT SP THE
N GOTO 520
510 IF SP=0 THEN LET A$=A$+J$(N
)
515 IF SP>0 THEN LET B$=B$+J$(N
)
520 NEXT N
530 RETURN
1000 LET I$="YOU ARE IN A FOREST
. THERE ARE  PATHS LEADING NORTH
 AND SOUTH"
1010 LET NO=1390
1015 LET SO=1030
1020 RETURN
1030 LET I$="YOU ARE IN A FOREST
, WITH PATHS LEADING NORTH AND E
AST AND A    CLEARING TO THE WES
T"
1035 LET NO=1000
1040 LET EA=1090
1045 LET WE=1060
1050 RETURN
1060 LET I$="YOU ARE IN A CLEARI
NG. IN THE   CENTRE IS A TIME MA
CHINE, WHICH LACKS A POWER SOURC
E. EXIT EAST"
1070 LET EA=1030
1080 RETURN
1090 LET I$="YOU ARE IN A FOREST
. THERE IS A PATH RUNNING EAST-W
EST"
1100 LET WE=1030
1105 LET EA=1120
1110 RETURN
1120 LET I$="YOU ARE IN THE FORE
ST. THROUGH  A GAP TO THE NORTH
YOU CAN SEE ALAKE. THE PATH RUNS
 EAST-WEST   AND THERE IS A CAVE
 TO THE SOUTH"
1125 LET EA=1300
1130 LET WE=1090
1135 LET SO=1150
1140 RETURN
1150 LET I$="YOU ARE IN A SMALL
CAVE.        DAYLIGHT IS TO THE
NORTH. THERE IS A DOOR TO THE WE
ST AND AN    OPENING TO THE SOUT
H"
1160 LET SO=1180
1165 LET NO=1120
1170 RETURN
1180 LET I$="YOU ARE IN A LARGE
CAVERN. THEREIS A CHEST LYING IN
 ONE CORNER, AND A SKELETON IN A
NOTHER. THE  ONLY EXIT IS TO THE
 NORTH"
1190 LET NO=1150
1200 RETURN
1210 LET I$="I CAN""T SEE A THIN
G"
```

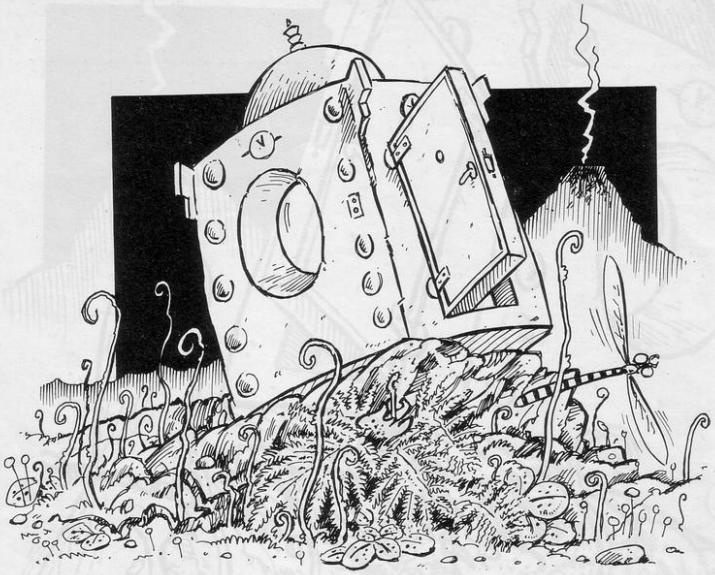


KEITH BEVAN, aged 14, of Stevenage, Herts wrote **Timeslide,** a 16K ZX-81 adventure game. Your time machine crashes in the dim and distant past. To return to your own time you must repair your craft. With trial and error, make a plan of your environment and collect the objects you think may be of use. The computer will accept direct commands, i.e., verbs followed by nouns. These are:

Take or get	Drop or put
Open	Feed
Look	Swim
Light	Read
Unlock	Insert
Quit	

The abbreviations for directions are N,S,E,W, and D for descend and C for climb. I will bring up the inventory and R repeats the description. Bevan sold his ZX-81 recently, this is his final offering before he upgrades to a Spectrum.

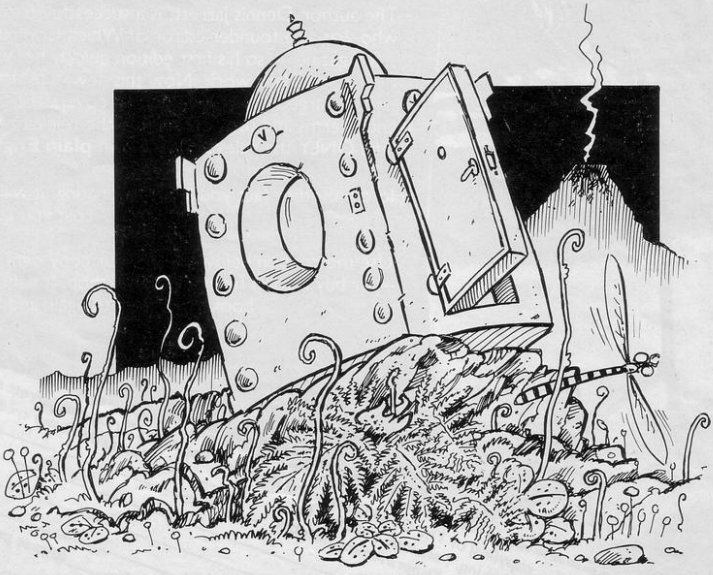
```
1220 LET UP=1150
1230 RETURN
1240 LET I$="YOU ARE IL A LONG P
ASSAGE. YOU  CAN HEAR THE SOUND
 OF DRIPPING  WATER. TO THE NORTH
 IS A FLIGHT OF STAIRS WITH A LA
RGE DOG      SLEEPING ON THE BOT
OM STEP"
1250 LET SU=1210
1260 RETURN
1270 LET I$="YOU ARE ON AN ISLAN
D IN THE     CENTRE OF THE LAKE.
 THERE IS A  HOLE IN THE GROUND
WITH A STAIR-CASE IN IT"
1280 LET DU=1240
1290 RETURN
1300 LET I$="YOU ARL BESIDE A LA
KE. THERE IS AN ISLAND IN THE MI
DDLE OF THE  LAKE. TO THE WEST I
S THE FOREST AND TO THE NURTH IS
 A ROCKERY"
1310 LET NU=1330
1315 LET WE=1120
1320 RETURN
1330 LET I$="YOU ARE IN A ROCKER
Y. THE LAKE  IS TO THE WEST, AND
 THERE ARE   SOME REEDS TO THE N
ORTH"
1340 LET NO=1360
1345 LET SO=1300
1350 RETURN
1360 CLS
1365 PRINT "I HAVE FALLEN INTO A
 SWAMP.      GLUG.....GLUG....GLU
G......."
1370 GOTO 9000
1390 LET I$="YOU ARE IN A SHRUBB
ERY. THE     FOREST IS TO THE SO
UTH. THE LAKEIS TO THE EAST, AND
 MEADOW IS   TO THE NURTH"
1400 LET NO =1420
1405 LET SO=1000
1410 RETURN
1420 LET I$="YOU ARE IN A MEADOW
. THE LAKE ISTO THE SOUTH-EAST.
TO THE SOUTH IS THE SHRUBBERY AN
D TO THE EASTIS A TOWER"
1430 LET EA=1450
1435 LET SO=1390
1440 RETURN
1450 LET I$="YOU ARE AT THE FOOT
 OF A TOWER. THERE IS NO DOOR TO
 BE SEEN. TO THE WEST IS THE MEA
DOW AND TO   THE EAST ARE SOME R
EEDS."
1455 LET EA=1360
1460 LET WE=1420
1465 LET UP=1480
1470 RETURN
1480 LET I$="YOU ARE AT THE TOP
```



```
OF THE TOWER THERE IS NO DOOR UP
 HERE EITHER"
1490 LET DO=1450
1500 RETURN
2000 IF I>=5 THEN PRINT "I CAN""
T CARRY ANYMORE"
2005 IF I>=5 THEN GOTO 100
2010 IF B$="" THEN PRINT A$;" WH
AT ?"
2013 IF B$="" THEN INPUT B$
2015 IF B$="" THEN GOTO 100
2020 LET FOUND=0
2025 FOR N=1 TO 12
2030 IF I(N)<>SET THEN GOTO 2055
2033 IF O$(N)<>B$(1 TO 15) THEN
GOTO 2055
2035 PRINT "OK..."
2040 LET FOUND=1
2045 LET I(N)=0
2050 LET I=I+1
2055 NEXT N
2060 IF FOUND=0 THEN GOTO 499
2065 GOTO 100
2500 IF B$="" THEN PRINT "OPEN W
HAT ?"
2505 IF B$="" THEN INPUT B$
2510 IF B$="" THEN GOTO 2500
2511 CLS
2515 IF B$="DOOR" AND SET<>1150
THEN PRINT "WHAT DOOR"
2520 IF B$="DOOR" AND SET<>1150
THEN GOTO 499
2525 IF B$="DOOR" AND UND=0 THEN
 PRINT "IT""S LOCKED DUMBO.."
2530 IF B$="DOOR" AND UND=0 THEN
 GOTO 499
2535 IF B$="DOOR" THEN PRINT "TH
ERE IS A STAIR GOING DOWN."
2540 IF B$="DOOR" THEN LET DO=12
10
2545 IF B$="DOOR" THEN GOTO 100
2550 IF B$="CHEST" AND SET<>1180
 THEN PRINT "I SEE NO CHEST"
2555 IF B$="CHEST" AND SET<>1180
 THEN GOTO 100
2560 IF B$="CHEST" AND NOT UNC T
HEN PRINT "IT""S LOCKED"
2565 IF B$="CHEST" AND NOT UNC T
HEN GOTO 100
2570 IF B$="CHEST" THEN PRINT "O
K"
2575 IF B$="CHEST" THEN PRINT "T
HERE IS NOTHING IN THE CHEST"
2580 IF B$="CHEST" THEN GOTO 100
2585 GOTO 499
3000 IF B$="" THEN PRINT "UNLOCK
3005 IF B$="" THEN INPUT B$
3010 IF B$="" THEN GOTO 3000
3011 CLS
3013 IF B$=" " THEN LET B$=B$(2
TO )
3015 IF B$="DOOR" AND SET<>1150
THEN PRINT "WHAT DOOR ?"
3020 IF B$="DOOR" AND SET<>1150
THEN GOTO 100
3025 IF I(7)>0 THEN GOTO 499
3030 IF B$="DOOR" THEN LET UND=1
3035 IF UND=1 THEN PRINT "CLICK
"
3040 IF UND=1 THEN GOTO 100
3045 IF B$="CHEST" AND SET<>1180
 THEN PRINT "WHAT CHEST ?"
3050 IF B$="CHEST" AND SET<>1180
 THEN GOTO 100
3055 IF B$="CHEST" THEN LET UNC=
1
3060 IF B$="CHEST" THEN PRINT "C
LUNK"
3065 IF B$="CHEST" THEN GOTO 100
3070 GOTO 499
3500 IF B$="" THEN PRINT "FEED W
HAT ?"
3505 IF B$="" THEN INPUT B$
3510 IF B$="" THEN GOTO 3500
3515 IF B$<>"DOG" THEN PRINT "DO
N""T BE SILLY"
3520 IF B$<>"DOG" THEN GOTO 499
3525 IF SET<>1240 THEN PRINT "TH
ERE IS NO DOG HERE"
3530 IF SET<>1240 THEN GOTO 100
3535 IF I(12)>0 THEN PRINT "I HA
VE NO DOG FOOD"
3540 IF I(12)>0 THEN GOTO 100
3545 LET I=I-1
3550 LET FED=1
3555 LET UP=1270
3560 PRINT "MUNCH, MUNCH"
3565 LET I(12)=1180
3570 GOTO 100
4000 IF SET=1120 OR SET=1270 OR
SE=1300 OR SET=1330 OR SET=1390
OR SET=1420 THEN PRINT "BRR. THE
 WATER IS TO COLD"
4005 IF SET=1120 OR SET=1270 OR
SE=1300 OR SET=1330 OR SET=1390
OR SET=1420 THEN GOTO 100
4010 PRINT "THERE IS NO WATER HE
RE"
4015 GOTO 100
4500 IF B$="" THEN PRINT "DROP W
HAT ?"
4502 IF B$="" THEN INPUT B$
4503 IF B$="" THEN GOTO 4500
4505 FOR N=1 TO 12
4507 IF B$(1)=" " THEN LET B$=B$
(2 TO )
4508 IF B$(1)=" " THEN GOTO 4507
4510 IF I(N)<>0 THEN GOTO 4545
4520 IF O$(N)>B$(1 TO 15) THEN
GOTO 4545
4530 LET I(N)=SET
4532 LET FOUND=1
4535 PRINT "OK..."
4540 LET I=I-1
4545 NEXT N
4555 GOTO 100
5500 LET FOUND=0
5505 FOR N=1 TO 12
5510 IF I(N)<>0 THEN GOTO 5530
5515 IF NOT FOUND THEN PRINT "I
HAVE THE FOLLOWING.."
5520 PRINT TAB 10;" A ";O$(N)
5525 LET FOUND=1
5530 NEXT N
5555 RETURN
6000 IF SET=1240 THEN GOTO 6100
6002 IF SET=1210 THEN LET SET=UP
6005 IF SET<>1450 THEN LET SET=U
P
6010 IF SET=UP THEN GOTO 20
6020 IF I(3)>0 THEN PRINT "THERE
```

```
 IS NO WAY UP"
6030 IF I(3)>0 THEN GOTO 100
6040 IF UP>0 THEN LET SET=UP
6050 IF SET=UP THEN GOTO 20
6060 PRINT "I CAN""T GO UP"
6070 GOTO 100
6100 IF FED=0 THEN PRINT "THERE"
"S A DOG IN THE WAY"
6110 IF FED=0 THEN GOTO 100
6120 LET SET=1270
6130 GOTO 20
6500 IF B$="" THEN PRINT A$; " W
HAT ?"
6510 IF B$="" THEN INPUT B$
6520 IF B$="" THEN GOTO 6500
6530 IF B$<>"MANUSCRIPT" THEN GO
TO 499
6540 IF I(11)>0 AND SET<>1480 TH
EN PRINT "I DO NOT HAVE ";B$
6550 IF I(11)>0 AND SET<>1480 TH
EN GOTO 100
6555 CLS
6560 PRINT "THE MANUSCRIPT SAYS:

                    PP3 - TM      I
SLAND "
6570 GOTO 100
7000 IF SET<>1060 OR I(9) THEN G
OTO 499
7010 PRINT "YOU HAVE SUCCESFULLY
 COMPLETED  THE ADVENTURE."
7015 PRINT
7020 PRINT "YOUR TIME SHIP TAKES
 OF FOR      YOUR OWN TIME."
7025 PRINT AT 14,12;"(6*isP)"
7026 PRINT AT 16,12;"(6*isP)"
7027 PRINT AT 15,12;"(isP)";TAB
17;"(isP)"
7030 LET Z=INT (RND*250)+1995
7040 FOR A=2003 TO 1983 STEP -1
7050 PRINT AT 15,13;A
7060 NEXT A
7070 PRINT
7100 GOTO 9000
7500 IF B$="" THEN PRINT "LIGHT
WHAT ?"
7510 IF B$="" THEN INPUT B$
7520 IF B$="" THEN GOTO 7500
7530 IF I(8)>0 THEN GOTO 499
7540 IF SET=1210 THEN LET NO=124
0
7550 IF NO>0 THEN PRINT "YOU ARE
 IN A SMALL ROOM. THERE  IS A ST
AIR CASE TO THE EAST AND A DAMP
PASSAGE TO THE NORTH."
7560 IF NO<>0 THEN GOTO 100
7570 PRINT "THAT DIDN""T DO MUCH
 GOOD"
7580 GOTO 100
8000 CLS
8010 PRINT ,,,,,,,,,"          TIME
    SWITCH                  ======
============"
8020 PRINT
8030 PRINT
8040~PRINT "   YOU ARE STRANDED
IN THE DIM  AND DISTANT PAST. YO
U MUST FIND YOUR WAY BACK TO YOU
R OWN TIME  USING WHAT YOU CAN F
IND ON YOUR JOURNEY"
8050 PRINT AT 18,4;"PRESS A KEY
TO START"
8060 IF INKEY$="" THEN GOTO 8060
8070 GOTO 9500
9000 PRINT "DO YOU WANT TO TRY A
GAIN Y OR N"
9010 INPUT B$
9020 IF B$="Y" THEN RUN
9030 STOP
9100 FAST
9101 CLS
9110 DIM I(12)
9120 DIM O$(12,15)
9130 FOR N=1 TO 12
9140 LET X=INT (RND*15)
9145 LET I(N)=(X*30)+1000
9147 IF I(N)=1360 THEN GOTO 9140
9148~IF I(N)>1200 AND I(N)<1271
THEN GOTO 9140
9150 NEXT N
9160 LET I(9)=1270
9170 LET I(7)=1480
9180 LET I(11)=1480
9190 LET I(3)=1060
9200 LET O$(1)="ROPE"
9210 LET O$(2)="ROCK"
9220 LET O$(3)="LADDER"
9230 LET O$(4)="GOLD RING"
9240 LET O$(5)="GUN"
9250 LET O$(6)="13 AMP PLUG"
9260 LET O$(7)="GOLDEN KEY"
9280 LET O$(8)="TORCH"
9290 LET O$(9)="BATTERY"
9300 LET O$(10)="LOG"
9310 LET O$(11)="MANUSCRIPT"
9320 LET O$(12)="MARROW-BONE"
9400 SLOW
9425 LET UND=0
9475 LET UNC=0
9480 GOTO 8000
9500 RETURN
9600 FOR N=1 TO 12
9605 LET P=P+1
9610 IF I(N)=SET THEN GOTO 9630
9615 IF P=12 THEN GOTO 90
9620 GOTO 9650
9630 IF NOT FOUND  THEN PRINT "I
 CAN SEE A...."
9640 PRINT O$(N)
9650 NEXT N
9700 GOTO 100
9800 SAVE "Ts"
9900 GOTO 1
```



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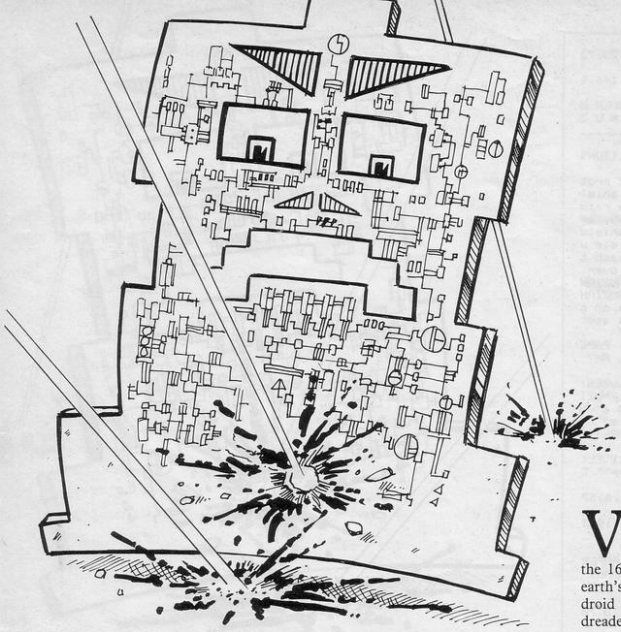
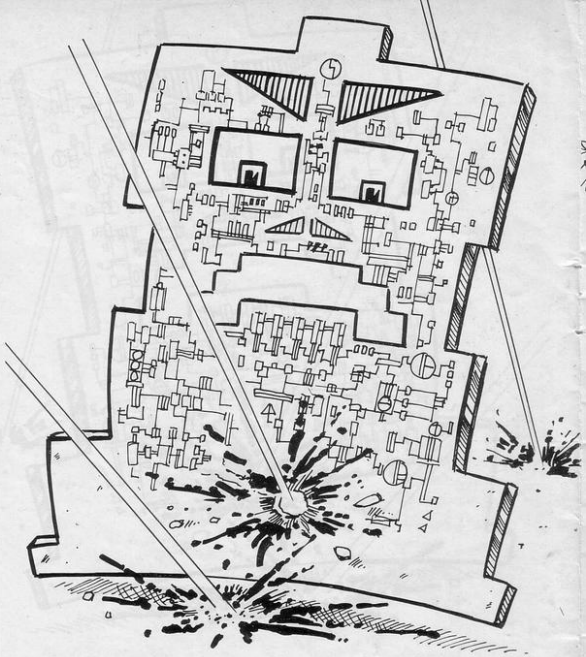


VENUSIAN INVASION was written by Andrew Kirk of Brough, North Humberside for the 16K ZX-81. You must protect the earth's defence shields with your android from the kamikaze raids of the dreaded Zanuzians.

VENUSIAN INVASION

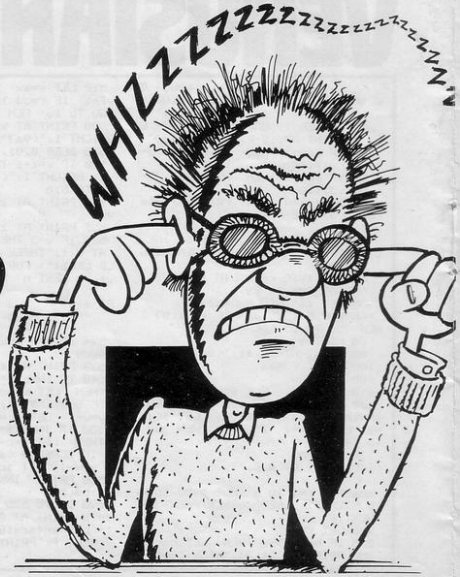
```
  2 GO SUB 5000: GO SUB 6000: G
O SUB 7000: REM  initialise,UDGs
,          instructions
  10 BORDER 1: PAPER 1: INK 2: C
LS : PRINT AT 19-k,0;"(31*193)"
  20 IF ss>=2 THEN  PRINT AT 19-
k,0;"(31*193)"
  30 IF ss>=3 THEN  PRINT AT 20-
k,0;"(31*193)"
  40 IF ss>=4 THEN  PRINT AT 21-
k,0;"(31*193)"
  41 INK 6
  45 PRINT AT 4,6; FLASH 1; INK
2; PAPER 7;"VENUZIANS ASSEMBLING
"
  50 LET a=18-k: DIM a(32)
  53 FOR f=1 TO 28
  55 LET aa=INT (RND*32)
  60 FOR g=1 TO 32: IF aa=a(g) T
HEN  GO TO 55
  70 NEXT g
  80 PRINT AT sx,aa;"(9a)"
 100 LET a(f)=aa
 105 NEXT f
 110 LET v=28: FOR g=0 TO 31
 120 IF SCREEN$ (sx,g)="" " THEN
 PRINT AT sx,g;"(9a)": LET a(g)
=g: LET j=j+1: IF j=33 THEN  GO
 TO 140
 130 NEXT g
 140 PRINT AT 4,6;"
                  "
 200 FOR f=1 TO 3: FOR g=50 TO -
10 STEP -1: BEEP .005,g: NEXT g:
 NEXT f
 210 LET f=1
 220 IF hsc>9999 THEN  LET hsc=0
 230 PRINT AT 21,23;"HIGH";hsc
 510 LET x=sx: LET y=a(f): LET f
=f+1: IF f=33 THEN  GO SUB 2000:
 GO TO 10: REM all dropped
 520 PRINT AT x-1,y;" ";AT x,y;
BRIGHT 1;"(9a)": LET x=x+1
 525 BEEP 0.01,-x+10
 530 IF x=s+1 THEN  PRINT AT x-1
,y; BRIGHT 1;"(9a)": LET v=v+1:
GO TO 510
 531 PRINT AT 21,0;"VENUZIANS:";
v;
 532 PRINT AT 21,13;"SCORE:";sc
 533 IF v=3 THEN  LET v=0: PRINT
 AT 5,1;"THREE LANDED...ONE SHIE
LD LESS!": FOR h=1 TO 30: BEEP 0
.1,h: NEXT h: PRINT AT s+s,0;"
                              ";
AT a,0;"
                ";AT 5,1;"
                          ": LET s=s-1
 534 IF s=0 THEN  LET s=4: GO TO
4000
 539 PRINT AT a,b;" "
 540 IF INKEY$="o" OR INKEY$="U"
 THEN  LET b=b-(b<>0): LET b1=1:
 IF  SCREEN$ (a,b)<>" " THEN  LET
 v=v-1: LET sc=sc+10
 550 IF INKEY$="P" OR INKEY$="P"
 THEN  LET b=b+(b<>31): LET b1=2
: IF SCREEN$ (a,b)<>" " THEN  LE
T v=v-1: LET sc=sc+10
 560 PRINT  INK 7; BRIGHT 1;AT a
,b;b$(b1)
 600 GO TO 520
2010 PRINT AT 7,7;"NEXT LEVEL..."
: LET sc=sc+100: FOR f=1 TO 300
: NEXT f: PRINT AT 17,0;"
                          ": LET
v=0: LET s=s-1: LET l=l-1
2020 LET ss=ss-1: IF ss=0 THEN
BEEP 1,2: LET sx=sx+2: LET ss=4
2030 LET s=ss
2040 RETURN
4010 BEEP 1,1
4020 PRINT AT 10,11;"GAME OVER":
 FOR g=1 TO 5: FOR f=0 TO 10: BE
EP .02,f: NEXT f: NEXT g: IF sc<
hsc THEN  GO TO 4500
4100 PAPER 3: BORDER 3: INK 6: C
LS : INVERSE 1: PRINT AT 5,1;"YO
U HAVE THE NEW HIGH SCORE OF";AT
 7,15;sc: INVERSE 0: LET hsc=sc:
 FOR f=1 TO 3: FOR g=-20 TO 20:
BEEP 0.01,g: NEXT g: NEXT f
4500 PAPER 2: BORDER 2: INK 6: C
LS : PRINT AT 10,10;"ANOTHER GU?
"
4510 IF INKEY$="y" OR INKEY$="Y"
 THEN  GO SUB 7000: LET sc=0: LE
T l=1: LET s=17: LET b=16: LET v
=0: LET s=4: LET ss=4: LET sx=0:
 GO TO 10
4520 IF INKEY$="n" OR INKEY$="N"
 THEN  STOP
4530 GO TO 4510
5000 LET l=1: LET s=17: LET b=16
: LET v=0: LET s=4: LET ss=4: LE
T sx=0: LET hsc=0: LET sc=0: LET
 b$="(9c(9d)": LET b1=1
5010 RETURN
6010 FOR f=USR "a" TO USR "d"+7:
 READ xx: POKE f,xx: NEXT f: RET
URN
6020 DATA 65,65,99,127,73,91,127
,28
6030 DATA 28,127,73,109,127,99,6
```

```
5,65
6040 DATA 15,137,64,70,127,73,73
,134
6050 DATA 240,145,2,98,254,146,1
46,97
7000 BRIGHT 1: PAPER 0: BORDER 0
: INK 7: CLS : PRINT ;"V E N U Z
 I A N  I N V A S I O N_________
_____________________"
7010 PRINT AT 4,10;"INSTRUCTIONS
";AT 7,10;"-------------"
7030 PRINT AT 7,1;"You must prot
ect the Earth's      defence shiel
ds from the          kamikaze raid
s of the dreaded     VENUZIANS. If
 three of them are   on the shield
 at any one time,    that shield w
ill collapse.You     must squash t
he ZANUZIANs by      running over
them with your       ANTI-VENUZIAN
 ANDROID.            If a VENUZIAN
 should land         directly on t
oP of it,it will     count as anot
her one on the       shield."
7040 PRINT  FLASH 1; INK 1; PAPE
R 6;AT 21,0;"                PRESS ANY
KEY                 "; PAUSE 0
7050 CLS : PRINT AT 2,5;"SCORES:
";AT 4,5;"10   Smashing a VENUZI
AN";AT 5,5;"100  Destroying a wh
ole                attack wave"
7055 PRINT AT 10,10;"KEYS ARE:";
AT 12,10;"<<O  P>>"
7056 PRINT AT 18,7;"SKILL LEVEL(
1-9)": LET k$=INKEY$: IF k$="" T
HEN  GO TO 7056
7057 IF CODE k$<49 OR CODE k$>57
 THEN  GO TO 7056
7058 LET k=VAL k$: PRINT AT 19,7
;"SKILL LEVEL: ";k
7059 FOR f=1 TO 100: NEXT f
7060 PRINT AT 21,0; INK 1; PAPER
 6; FLASH 1;"          PRESS ANY
KEY          "
7065 BRIGHT 0
7070 IF INKEY$="" THEN  GO TO 70
70
7080 RETURN
9999 RUN
```



```
9000 CLEAR 28500: FOR n=28500 TO
 28527: READ v: POKE n,v: NEXT n
: RANDOMIZE USR 28500
9010 DATA 38,2,1,25,1,22,0,122,2
11,254,20,124,186,32,248,11,62,0
,184,32,240,36,62,210,188,32,231
,201
9020 BORDER 7
```

SOUND EFFECT


WHIZZZ

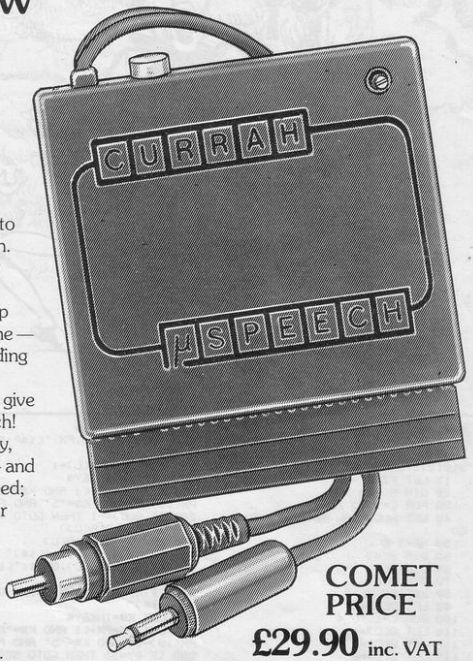
FIRE!

CATCH the fleeing inhabitants of a blazing tower block and direct them towards the ambulance. **Fire** was written for the 16K ZX-81 by C Robson of Cowley, Middlesex.

```
  1 FAST
  2 RAND
 10 LET A$="0505060709121512100
9101215100911121314"
 15 LET FIRST=1
 20 DIM A(20)
 30 FOR C=1 TO 20
 40 LET A(C)=VAL A$(2*C-1 TO 2*
C)
 50 NEXT C
 60 DIM S(4)
 65 DIM O(4)
 70 DIM B(4)
 80 LET SCORE=0
 90 LET DEAD=0
100 FOR C=1 TO 4
110 LET S(C)=-1
112 LET O(C)=0
115 LET B(C)=0
117 NEXT C
118 LET S(1)=INT (RND*5+5)
120 FOR C=0 TO 21
130 PRINT AT C,0;"(30*isP)"
140 NEXT C
150 FOR C=5 TO 19 STEP 2
160 PRINT AT C,1;" (96' 96) ";A
T C+1,1;" (97' 97) "
170 NEXT C
180 PRINT AT 16,25;"  (94) ";AT
17,25;" (92'9e' 97')";AT 18,25;
"  ";AT 19,25;"(isP'1*'isP'1*
)"
190 LET PX=7
191 SLOW
192 IF FIRST=1 THEN GOSUB 2000
195 FOR C=1 TO 4
200 PRINT AT 16,PX;"(isP'9e'2*9
6'9r'isP)"
210 LET B(C)=B(C)+1
220 LET K$=INKEY$
225 LET PX=PX+(1 AND K$="8" AND
PX<19)-(1 AND K$="5" AND PX>6)
230 IF S(C)=-1 THEN GOTO 400
240 LET BY=A(B(C))
250 LET BX=S(C)+B(C)
260 PRINT AT BY,BX;"(1*)"
270 PRINT AT O(C),BX-1;"(isP)"
275 LET O(C)=BY
276 PRINT AT 16,PX;"(isP'9e'2*9
6'9r'isP)"
277 LET K$=INKEY$
278 LET PX=PX+(1 AND K$="8" AND
PX<19)-(1 AND K$="5" AND PX>6)
280 IF BY=15 THEN GOTO 500
290 IF B(C)=20 THEN GOTO 600
300 GOTO 1000
400 IF RND(=.9-SCORE*.05 THEN G
OTO 1000
410 LET S(C)=INT (RND*5+5)
420 LET B(C)=0
430 PRINT AT 4,6;"help";AT 4,6;
"(4*isP)"
440 GOTO 1000
500 IF BX=PX+2 OR BX=PX+3 THEN
GOTO 1000
510 PRINT AT 15,BX;"ouch";AT 15
,BX-1;"(isP)"
520 LET DEAD=DEAD+1
530 PRINT AT 1,DEAD;"(1*)"
540 IF DEAD<4 THEN GOTO 800
550 PRINT AT 10,10;"GAME(isP)OV
ER";AT 12,10;"SCORE(isP)=(isP)";
SCORE
560 GOSUB 2040
570 GOTO 80
600 PRINT AT 14,25;"(5*isP)"
620 LET SCORE=SCORE+1
800 LET S(C)=-1
810 LET O(C)=0
820 LET B(C)=0
1000 NEXT C
1010 GOTO 195
2000 LET FIRST=0
2010 PRINT AT 4,10;"(3*1*isP'fi
re'isP'3*1*)"
2020 PRINT AT 6,6;"use the curso
r keys 5-8";AT 7,6;"to move the
sheet ";((9e'2*96'9r'1)"
2030 PRINT AT 9,6;"and get the P
eople";AT 10,6;"safely to the am
bulance"
2040 PRINT AT 14,6;"Press any ke
y to start"
2050 IF INKEY$="" THEN GOTO 2050
2060 IF INKEY$()"" THEN GOTO 206
0
2070 FOR Q=4 TO 14
2080 PRINT AT Q,6;"(24*isP)"
2090 NEXT Q
3000 RETURN
5000 CLEAR
5010 SAVE "FIRe"
5020 RUN
```

The Currah Microspeech from COMET

BRINGS A NEW DIMENSION TO YOUR SPECTRUM COMPUTER!



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COMET PRICE
£29.90 inc. VAT

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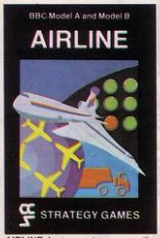
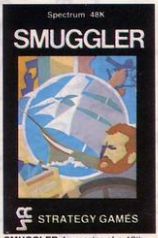
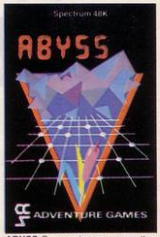


AIRLINE A wing and a prayer will not be enough to turn your £3 million to £30 million in the time allowed, but your financial wizardry will enable you to take over British Airways, or will it? Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.

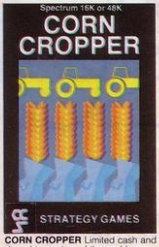


SMUGGLER As master of a 19th century vessel you plough between England and the continent visiting ports to buy and sell your cargo, but beware the customs men, pirates and gale force winds can all run you aground. Runs on Spectrum 48K — £6.

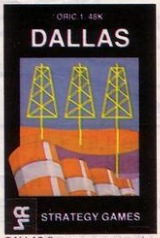
PLUNDER Can you singe the King of Spain's beard. Engage the Spanish ships on the high seas survive their broadsides and plunder the gold destined for the Armada and you might get your Knighthood before Francis Drake. Runs on Spectrum 48K — £6.



ABYSS Can you journey across the long-forgotten Abyss and outwit the evil monsters that lurk in the shadows awaiting the foolhardy and careless adventurer. There are many bridges and many monsters. Will you be the one to make the Abyss safe to cross again. Runs on Spectrum 48K — £5.

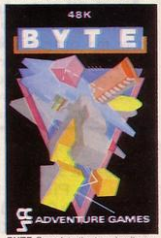


CORN CROPPER Limited cash and droughts are two of the problems facing the farmer. Planting fertilizing and harvesting must all be done economically if you are to reap the rewards offered in corn cropper. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.

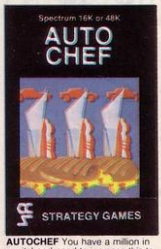


DALLAS Can you amass enough petro dollars to take over the Euing empire. Cut throat business and an eye for the main chance may get you there but you'll need nerves of steel to become the oil king of Dallas. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.

GANGSTER Are you cold hearted and callous enough to warrant the title of Don. You need to be if you are to rise to the top of the pile. A quick trigger finger and an even quicker brain are needed to control the mobs and their rackets. Runs on Spectrum 48K — £6.

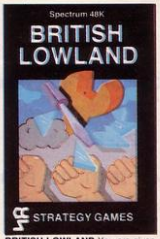


BYTE Complete the ten circuits you need to build your computer system then return home. Easy. Byte has sent its electronic monsters to harry you through this three dimensional maze of circuitry, if any of them catch you . . . Runs on Spectrum 48K — £5.

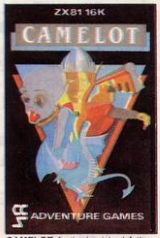


AUTOCHEF You have a million in capital and need to increase this to £25 million in the shortest time possible. Inflation, strikes, sluggish markets are only some of the hazards to overcome. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.

PRINT SHOP In print shop are scheduling, staffing, purchasing and quoting within this time limit will test your business acumen to the full and weekly balance sheets will prove the quality of your decision making. Runs on ZX81 16K — £5 and Spectrum 16K/48K — £6.



BRITISH LOWLAND You are given a racing start for your small sports car company but you have an overdraft to repay and a workforce to be kept happy. Steer your way to success with careful management and industrial relations. Runs on Spectrum 48K — £6.



CAMELOT As the banished Arthur Pendragon you must find seven treasures without falling prey to the Brigands, Dragons and Evil Magicians that stand in your way and make a triumphant return to Camelot to be crowned King. Runs on ZX81 16K — £5 and Spectrum 48K — £5.

Available from W H Smith, Boots, Rumbelows and all good computer shops or Cases Computer Simulations Ltd., 14 Langton Way, London SE3 7TL.

Strategy Games. They're no pushover

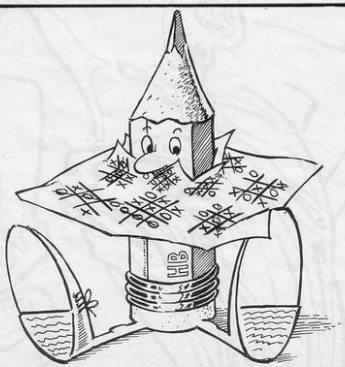
NOUGHTS AND CROSSES

IN Noughts and Crosses for the 16K ZX-81 by Andrew Moore of Hoyland, Barnsley, you can either play the computer or a friend. The computer will keep track of each person's move and will check for invalid moves. Input the move as the number, then the letter, e.g., 1A.

```
  10 PRINT AT 0,6;"NOUGHTS AND C
ROSSES";AT 1,6;"(18*"7")"
  20 PRINT AT 8,7;"HOW MANY PLAY
ER'S?";AT 10,12;"(1 OR 2)"
  30 IF INKEY$<>"2" AND INKEY$<>
"1" THEN GOTO 30
  40 LET P=VAL INKEY$
  45 DIM S(3)
  50 LET S(1)=0
  55 LET S(2)=0
  60 DIM B$(3,9)
  65 LET S(3)=0
  70 IF P=2 THEN GOTO 120
  80 PRINT AT 8,7;"WHAT IS YOUR
NAME?";AT 10,12;"          "
  90 INPUT B$(1)
 100 LET B$(2)="  ZX-81  "
 110 GOTO 160
 120 PRINT AT 8,4;"WHAT IS PLAYE
R 1""S NAME?";AT 10,12;"
"
 130 INPUT B$(1)

 140 PRINT AT 8,19;"2"
 150 INPUT B$(2)
 160 PRINT AT 8,4;"
             ";AT 3,0;"PLAYER 1";A
T 3,23;"PLAYER 2"
 170 PRINT AT 5,0;B$(1);AT 5,23;
B$(2)
 175 LET PG=1
 180 LET G=1
 185 LET C=0
 190 PRINT AT 7,10;"(4*sp:isp:3*
sp:isp)","(10*sp:1:3*sp:isp:3*sp
:isp)","(14*sp:isp:3*sp:isp)","(
11*sp:11*isp)","(14*sp:isp:3*sp:
isp)","(10*sp:2:3*sp:isp:3*sp:is
p)","(14*sp:isp:3*sp:isp)","(11*
sp:11*isp)","(14*sp:isp:3*sp:isp
:sp)","(10*sp:3:4*sp:isp:3*sp:is
p)","(14*sp:isp:3*sp:isp)"
 195 PRINT AT 10,12;"A   B   C"
 200 DIM A$(3,3)
 205 LET G=PG
 210 IF C=9 THEN GOTO 850
 215 PRINT AT 4,0;"(30*sp)";AT 2
,0;"(29*sp)";AT 4,(G-1)*23;"(8*9
s)";AT 2,(G-1)*23;"(8*9d)"
 220 LET C=C+1
 225 LET 2$=("O" AND G=1)+("X" A
ND G=2)
 230 IF G=2 AND P=1 THEN GOTO 60
0
 240 INPUT M$
 245 IF LEN M$<>2 THEN GOTO 500
 250 IF VAL M$(1)>3 OR VAL M$(1)
<1 OR M$(2)<>"A" AND M$(2)<>"B"
AND M$(2)<>"C" THEN GOTO 500
 260 LET A=VAL M$(1)
 270 LET B=CODE M$(2)-37
 280 IF A$(A,B)<>" " THEN GOTO 5
00
```

```
 290 PRINT AT (A*4)+4,(B*4)+8;Z$
 300 LET A$(A,B)=Z$
 310 IF A$(1)=Z$+Z$+Z$ OR A$(2)=
Z$+Z$+Z$ OR A$(3)=Z$+Z$+Z$ OR A$
(1,1)=Z$ AND A$(2,2)=Z$ AND A$(3
,3)=Z$ OR A$(1,3)=Z$ AND A$(2,2)
=Z$ AND A$(3,1)=Z$ THEN GOTO 100
0
 320 IF A$(1,1)=Z$ AND A$(2,1)=Z
$ AND A$(3,1)=Z$ OR A$(1,2)=Z$ A
ND A$(2,2)=Z$ AND A$(3,2)=Z$ OR
A$(1,3)=Z$ AND A$(2,3)=Z$ AND A$
(3,3)=Z$ THEN GOTO 1000
 330 LET G=G+1
 340 IF G=3 THEN LET G=1
 350 GOTO 210
 490 STOP
 500 PRINT AT 20,4;"INVALID MOVE
,TRY AGAIN."
 510 FOR F=0 TO 20
 520 NEXT F
 530 PRINT AT 20,4;"
                    "
 540 GOTO 240
 600 LET B=0
 605 IF C<=3 THEN GOTO 770
 610 LET F$="X"
 620 FOR A=1 TO 3
 630 LET B=(1 AND A$(A)=" "+F$+F
$)+(2 AND A$(A)=F$+" "+F$)+(3 AN
D A$(A)=F$+F$+" ")
 640 IF B>0 THEN GOTO 290
 650 NEXT A
 660 LET A=0
 670 FOR B=1 TO 3
 680 LET A=(1 AND A$(1,B)=" " AN
D A$(2,B)=F$ AND A$(3,B)=F$)+(2
AND A$(1,B)=F$ AND A$(2,B)=" " A
ND A$(3,B)=F$)+(3 AND A$(1,B)=F$
AND A$(2,B)=F$ AND A$(3,B)=" ")
 690 IF A>0 THEN GOTO 290
 700 NEXT B
 705 LET M$=""
 710 LET M$=("1A" AND A$(1,1)="
" AND A$(2,2)=F$ AND A$(3,3)=F$)
+("2B" AND A$(1,1)=F$ AND A$(2,2
)=" " AND A$(3,3)=F$)+("3C" AND
A$(1,1)=F$ AND A$(2,2)=F$ AND A$
(3,3)=" ")
 715 IF M$<>"" THEN GOTO 260
 720 LET M$=("1C" AND A$(1,3)="
" AND A$(2,2)=F$ AND A$(3,1)=F$)
+("2B" AND A$(1,3)=F$ AND A$(2,2
)=" " AND A$(3,1)=F$)+("3A" AND
A$(1,3)=F$ AND A$(2,2)=F$ AND A$
(3,1)=" ")
 730 IF M$<>"" THEN GOTO 260
 740 IF F$="O" THEN GOTO 770
 750 LET F$="O"
 760 GOTO 620
 770 LET A=INT (RND*3)+1
 775 LET B=INT (RND*3)+1
 780 IF A$(A,B)<>" " THEN GOTO 7
70
 785 IF C=2 AND A$(2,2)=" " THEN
 GOTO 800
 790 GOTO 290
 800 LET A=2
 810 LET B=2
 820 GOTO 290
 860 LET G=3
 870 LET B$(G)=" NOBODY"
1000 FOR F=0 TO 20
1010 NEXT F
1015 FOR F=7 TO 18
1020 PRINT AT F,10;"
   "
1025 NEXT F
1030 PRINT AT 9,8;"**************
***";AT 10,8;"*";B$(G);" WINS*";
AT 11,8;"****************"
1035 LET S(G)=S(G)+1
1037 LET G=2
1050 FOR F=1 TO C
1060 LET G=G+1
1065 IF G=3 THEN LET G=1
1070 NEXT F
1080 PRINT AT 7,0;"(2*ISP*95)";S
(1);"(97-7*ISP*95:SCORE:97-8*ISP
)";S(2);"(97-2*ISP)"
1090 FOR F=0 TO 4E4
1095 PRINT AT 13,10;"Press any k
ey";AT 13,10;"                "
1100 IF INKEY$="" THEN NEXT F
1105 FOR F=9 TO 11
1106 PRINT AT F,8;"
                "
1108 NEXT F
1110 PRINT AT 7,0;"
                "
1120 IF S(1)=9 OR S(2)=9 THEN ST
OP
1130 LET PG=PG+1
1140 IF PG=3 THEN LET PG=1
1500 GOTO 185
2990 STOP
3000 SAVE "NAc"
3010 RUN
```



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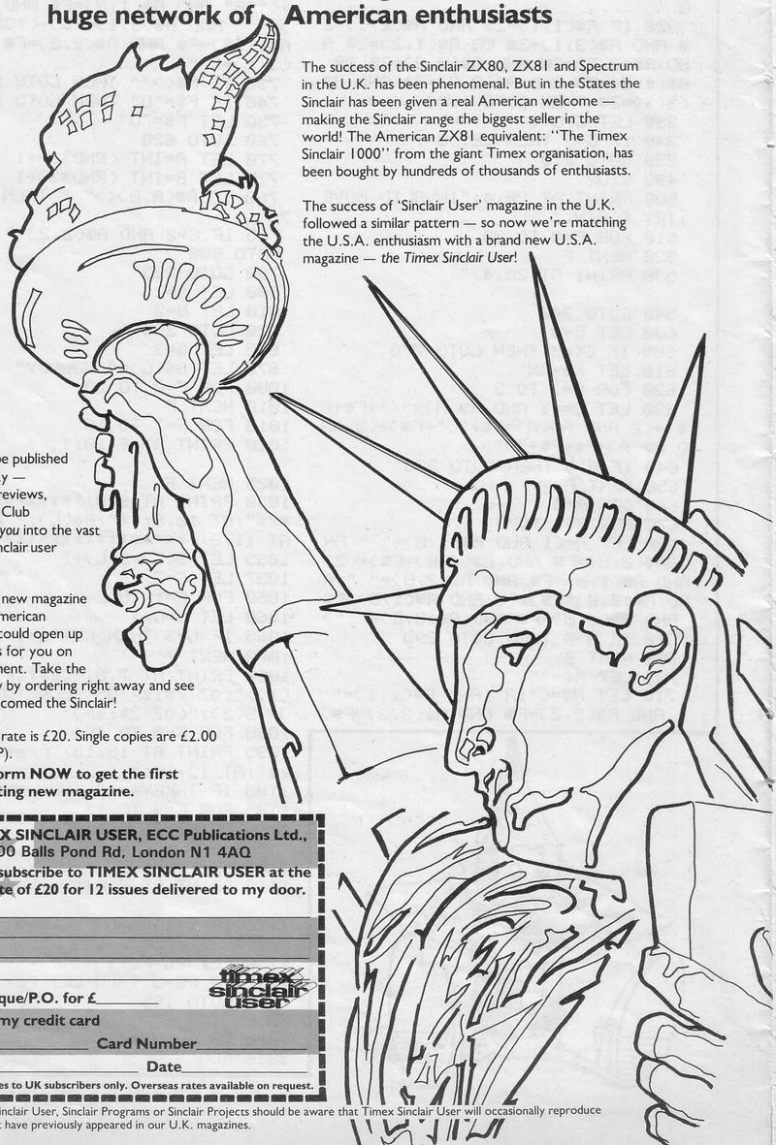

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```
  2 CLS
  3 LET HI=0
  5 LET Z=0
  7 LET SCORE=0
 10 PRINT "HELLO,ANYONE THERE?"
 11 PAUSE 200
 12 PRINT "WELL PRESS SOMETHING
THEN"
 13 PRINT
 14 IF INKEY$="" THEN GOTO 13
 20 PRINT "A RANDOM NUMBER WILL
APPEAR ON  THE SCREEN FOR A SET
TIME,YOU   HAVE TO TYPE IT BACK
"
 25 PRINT "SELECT LEVEL 1(HARD)
OR LEVEL 2 (VERY HARD"
 30 PRINT
 40 PRINT "SELECT LEVEL 1(HARD
OR 2(SUICIDE"
 50 INPUT A$
 60 IF A$="1" THEN LET TIME=6.7
5
 70 IF A$="2" THEN LET TIME=2.7
5
 80 LET X=INT (RND*999)+1
 90 LET C=INT (RND*20)
100 LET D=INT (RND*18)
110 CLS
130 PRINT AT D,C;X
140 PAUSE TIME
150 CLS
160 INPUT B
170 IF X=B THEN PRINT AT 0,0;"c
orrect"
175 IF X=B THEN LET SCORE=SCORE
+1
180 IF B<>X THEN PRINT AT 0,0;"
wrong"
184 PAUSE 4E4
190 CLS
200 LET Z=Z+1
202 IF Z<10 THEN GOTO 220
205 PRINT AT 0,0;"score="
210 PRINT AT 0,7;SCORE
211 IF SCORE<=HI THEN GOTO 218
212 LET HI=SCORE
213 PRINT "YOU HAVE ACHIEVED TH
E HI-SCORE,ENTER YOUR NAME"
214 INPUT H$
215 PRINT AT 13,8;"hi="
217 PRINT AT 13,13;HI;" BY ";H$
218 PAUSE 4E4
219 GOTO 0
220 GOTO 80
230 SAVE "NUMBER FLASH"
240 RUN
```

NUMBER FLASH

R WILLIAMSON aged 11, of Hucknall, Notts, wrote **Number Flash** for the 16K ZX-81. Set your level at difficult, or suicidal, then enter the number flashed before your eyes.

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fantasy SOFTWARE

DOOMSDAY CASTLE

is an arcade style game with the feel of a real adventure

Doomsday Castle consists of a labyrinth of 76 complexly inter-connected Halls and Passages where you will meet a whole host of adversaries serving the infinitely evil Scarthax, the Garthrogs, the Orphacs, the phenomenally nasty Googly Bird and the Urks which manifest themselves in over fifty unbelievably weird and wonderful guises.

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For 48K Spectrum

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despatched by return first class post together with free membership and current newsletter of the Fantasy Micro Club.
Trade Enquiries welcome – telephone 0242-583661.

MINER

MINER for the 16K ZX-81 was submitted by Philip Turner of Warley, West Midlands. A lift will take you into the mine, where you have to search for gold while avoiding the hazards. On clearing the mine, enter the lift to return to the surface, where you will be able to deposit your gold in the bank. Use cursor keys 5, 6, 7 and 8.

```
   1 GOTO 1000
 100 POKE MA,CH
 102 IF I=1 THEN GOSUB 3300
 103 IF PEEK MA=8 THEN LET DE=1
 104 IF U=1 THEN GOSUB 3200
 105 POKE LI,128
 108 IF DE=1 THEN GOTO 4000
 110 LET P$=INKEY$
 120 LET D=(P$="8")-(P$="5")+33*
((P$="6")-(P$="7"))
 123 IF D=0 THEN IF PEEK (MA+DD)
=0 THEN LET D=DD
 125 POKE LI,0
 126 IF D<>0 THEN IF DD<>D THEN
LET DD=D
 127 IF PEEK (MA+D)=0 THEN LET D
D=D
 130 IF PEEK (MA+D)=0 THEN GOTO
500
 140 IF PEEK (MA+D)=128 THEN GOT
O 200
 150 IF PEEK (MA+D)=155 THEN GOT
O 2000
 160 IF PEEK (MA+D)=133 THEN GOT
O 3000
 170 IF U=1 THEN GOSUB 3200
 180 IF I=1 THEN GOSUB 3300
 190 GOTO 100
 200 LET MA=MA+D
 205 LET CH=23
 210 POKE MA,CH
 215 POKE MA-D,0
 220 GOTO 100
 450 GOTO 100
 510 LET MA=MA+D
 513 IF D=-1 THEN IF PEEK (MA-2)
=136 AND PEEK (MA-1)=136 THEN GO
TO 700
 515 IF CH=151 AND ABS D=33 THEN
 LET LI=MA
 517 IF CH=151 AND LI<>MA THEN L
ET CH=23
 520 POKE MA,CH
 530 POKE MA-D,0
 540 IF MA=LI THEN LET CH=151
 650 GOTO 100
 700 POKE MA+1,0
 713 IF MA=LI THEN GOTO 515
 715 IF MA=L+662 THEN GOTO 100
 720 POKE MA,23
 730 POKE MA+33,23
 740 LET MA=MA+33
 750 POKE MA-33,0
 760 IF MA<>L+662 THEN GOTO 720
 765 FOR O=1 TO 30
 770 POKE MA,131
 780 POKE MA,3
 790 NEXT O
 800 GOTO 4000
 999 STOP
1000 PRINT "
    BANK
1005 PRINT "
  000000
"
1010 FOR D=1 TO 18
1020 PRINT "
"
1030 NEXT D
1040 PRINT "
"
1045 PRINT AT 1,23;"000100"
1050 LET L=PEEK 16396+256*PEEK 1
6397+1
1060 FOR A=1 TO 40
1070 LET X=INT (RND*660)+L+66
1080 IF PEEK X<>128 THEN GOTO 10
70
1090 POKE X,155
1100 NEXT A
1110 LET LI=L+35
1120 LET MA=L+45
1130 LET CH=23
1140 LET MO=0
1150 LET CA=0
1160 LET SCO=100
1170 LET DD=0
1180 LET U=0
1190 LET I=0
1200 LET U$="GOLD ROCK SAND GAS
 WATER"
1210 LET P=L+33*21-1
1220 LET DE=0
1230 LET V=0
1500 GOTO 100
2000 LET R=INT (RND*5)+1
2005 IF R=5 THEN IF I=1 THEN GOT
O 2000
2007 LET V=V+1
2010 POKE MA,0
2020 LET MA=MA+D
2030 POKE MA,143
2040 LET H$=U$(R*5-4 TO R*5)
2050 PRINT AT 0,4;H$
2060 GOTO (2000+R*100)
2100 LET GL=INT (RND*20)+10
2110 PRINT AT 0,8;"-";GL;" NUGGE
TS"
2120 LET CA=CA+GL
2130 LET MO=MO+GL*(INT (RND*5)+3
)
2140 FOR O=1 TO 30
2150 POKE MA,136
2160 POKE MA,CH
2170 NEXT O
2180 PRINT AT 0,4;"
    "
2190 GOTO 100
2200 PRINT AT 0,3;" ROCK ";
2202 PRINT "YOU USE DRILL"
2204 PRINT AT 1,6;"LOSE MONEY"
2210 FOR O=1 TO 30
2220 POKE MA,6
2230 POKE MA,134
2240 NEXT O
2270 LET SCO=SCO-25
2285 PRINT AT 0,3;"
  ";AT 1,6;"          "
2290 GOTO 3010
2300 PRINT AT 1,3;"RISK OF LOSIN
G GOLD"
2320 LET CA=INT (CA*.4+.5)
2330 LET MO=INT (MO*.6+.5)
2340 FOR O=1 TO 30
2350 POKE MA,INT (RND*10)
2360 NEXT O
2370 PRINT AT 1,3;"
    ";AT 0,4;"     "
2380 GOTO 100
2400 LET GA=MA
2410 LET U=1
2420 FOR O=1 TO 30
2430 POKE MA,9
2440 POKE MA,137
2450 NEXT O
2460 PRINT AT 0,4;"    "
2470 GOTO 100
2500 PRINT AT 0,4;"FLOODING"
2510 FOR O=1 TO 30
2520 POKE MA,48
2530 POKE MA,0
2540 NEXT O
2550 LET I=1
2560 PRINT AT 0,4;"          "
2570 GOTO 100
3000 LET SCO=SCO+MO*(INT (RND*4)
+2)
3002 LET U=0
3003 LET I=0
```

```
3005 LET MG=0
3007 IF V=40 THEN GOTO 5000
3010 LET H$="000000"+STR$ (SCO)
3020 PRINT AT 1,23;H$(LEN H$-5 T
O )
3050 GOTO 100
3200 LET UU=GA+INT (RND*3)-1+33*
(INT (RND*3)-1)
3210 IF PEEK UU=0 OR PEEK UU=8 T
HEN LET GA=UU
3220 POKE GA,136
3230 POKE GA,8
3240 RETURN
3300 LET P=P-1
3310 IF PEEK P=0 THEN POKE P,8
3320 RETURN
4000 PRINT AT 0,4;"DEAD ...."
4010 FOR A=21 TO 0 STEP -1
4020 PRINT AT A,0;"          G A M E
   O V E R                    "
4025 IF A<18 THEN PRINT AT A+4,0
;"                            "
4030 NEXT A
4040 PRINT ,,,,"YOU FINISHED THE
 GAME WITH"
4050 PRINT ,,,"...>>>  £";SCO
4070 GOTO 5000
5000 CLS
5010 PRINT "                    "
5020 PRINT "                    "
5030 PRINT "                    "
5040 PRINT "                    "
5050 PRINT "                    "
5060 PRINT "                    "
5070 PRINT "                    "
5080 PRINT "                    "
5090 PRINT ,,"YOU HAVE £";SCO
5100 PRINT "AND ";CA;" GOLD NUGG
ETS"
5000 PRINT AT 17,0;"
E OVER                          "
5100 STOP
```

```
   1 LET X=10
   2 LET score=0
   3 LET r=INT (RND*30)+1
   5 LET W=0
   6 PAPER 7: INK 0
   7 PAPER 7: INK 0
  10 PRINT AT 21,0;"lll=LIVES"
  11 FOR Z=1 TO 3
  20 PRINT AT 21,15; FLASH 1;"SC
ORE = ";score
  21 PRINT AT 20,0;"eeeeeeeeeeee
eeeeeeeeeeeeeeeeeeee"
  23 FOR f=2 TO 19
  25 FOR n=0 TO 3
  30 PRINT AT f,r;"d": PRINT AT
f-1,r;" ": NEXT n
  70 IF INKEY$="5" THEN  LET x=x
-1
  80 IF INKEY$="8" THEN  LET x=x
+1
  81 IF x<0 THEN  LET x=0
  82 IF x>27 THEN  LET x=27
  85 PRINT AT 19,x;" abc "
  86 NEXT f
  87 IF r=x+1 OR r=x+2 OR r=x+3
THEN  LET score=score+1: LET r=I
NT (RND*30)+1: BEEP .1,1: BEEP .
1,5: GO TO 20
  88 PRINT AT 21,Z-1;" "
  89 BEEP .1,1: BEEP .1,2: BEEP
.1,3: BEEP .1,4: BEEP .1,5
  90 NEXT Z
  94 GO SUB 105
  95 BEEP 1,0: BEEP 1,2: BEEP .5
,2: BEEP 1,0
  96 BEEP 1,0: BEEP 1,2: BEEP .5
,2: BEEP 1,0
  97 BEEP 1,3: BEEP 1,5: BEEP 2,
7
  98 BEEP 1,3: BEEP 1,5: BEEP 2,
7
  99 BEEP .75,7: BEEP .25,8: BEE
P .5,7: BEEP .5,5: BEEP .5,3: BE
EP .5,2: BEEP 1,0
 100 BEEP .75,7: BEEP .25,8: BEE
P .5,7: BEEP .5,5: BEEP .5,3: BE
EP .5,2: BEEP 1,0
 101 BEEP 1,0: BEEP 1,-5: BEEP 2
,0
 102 BEEP 1,0: BEEP 1,-5: BEEP 2
,0
 103 CLS
```

YOU HAVE three lives, during which your objective is to catch as many cannonballs in your boat as possible. Each time you miss a cannonball you lose a life. Move left with key 5 and right with key 8.

Start the game by entering GOTO 1003. Underlined letters should be entered in graphics mode.

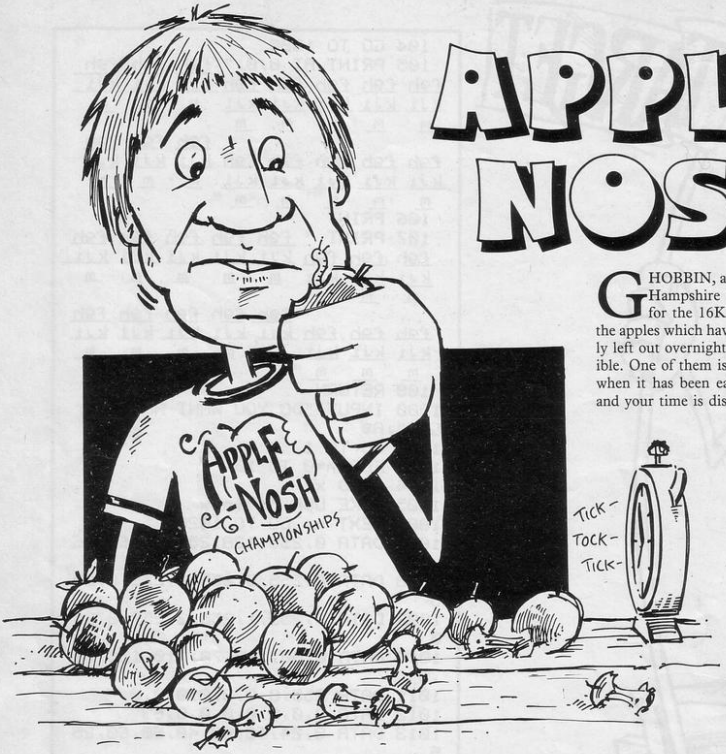
Catch a Cannonball was written for the Spectrum by Brett Marl of Chester.

CATCH A C

```
 104 GO TO 1000
 105 PRINT AT 0,0;" f9h f9h f9h
f9h f9h f9h f9h f9h kJi kJi kJi
kJi kJi kJi kJi kJi  m   m   m
 m   m   m   m   m
                      f9h f9h f9h
f9h f9h f9h f9h f9h kJi kJi kJi
kJi kJi kJi kJi kJi  m   m   m
 m   m   m   m   m "
 106 PRINT
 107 PRINT " f9h f9h f9h f9h f9h
f9h f9h f9h kJi kJi kJi kJi kJi
 kJi kJi kJi  m   m   m   m   m
  m   m   m
                f9h f9h f9h f9h f9h
f9h f9h f9h kJi kJi kJi kJi kJi
 kJi kJi kJi  m   m   m   m   m
  m   m   m "
 108 RETURN
1000 INPUT "DO YOU WANT ANOTHER
GO?";A$
1002 GO TO 1
1003 FOR n=0 TO 104
1004 READ x
1005 POKE USR "a"+n,x
1006 NEXT n: GO TO 1020
1007 DATA 0,255,128,255,64,63,16
,15
1008 DATA 0,255,0,255,0,255,0,25
5
1009 DATA 0,255,1,255,2,252,8,24
0
1010 DATA 0,60,110,70,110,126,60
,0
1011 DATA 255,0,0,0,0,0,0,0
1012 DATA 0,0,0,0,0,0,0,63
1013 DATA 0,24,60,60,40,60,60,25
5
1014 DATA 0,0,0,0,0,0,0,252
1015 DATA 246,246,252,0,0,0,0,0
1016 DATA 255,231,255,60,60,60,6
0,60
1017 DATA 111,111,63,0,0,0,0,0
1018 DATA 0,0,0,0,255,66,60,24
1019 DATA 60,60,60,60,60,60,60,2
4,0
1020 PRINT AT 10,10;" READY
                     PRESS A
                      KEY TO
                       START"
1021 PAUSE 0
1022 CLS : GO TO 1
```

ANNONBALL

APPLE NOSH



G HOBBIN, aged 15, of Liphook, Hampshire wrote **Applenosh** for the 16K Spectrum. Munch the apples which have been inadvertently left out overnight as quickly as possible. One of them is a magic apple and when it has been eaten the game ends and your time is displayed.

```
  3 PAPER 1: INK 7: BORDER 1: C
LS
  5 FOR n=USR "a" TO USR "e"-1
  6 READ a: POKE n,a: NEXT n
 10 DATA 60,126,201,237,255,189
,66,60
 20 DATA 16,8,42,127,127,127,62
,28
 22 DATA 60,126,201,237,255,129
,66,60
 24 DATA 0,8,8,8,42,28,8,0
 26 GO SUB 9000
 30 LET x=10: LET y=15
 50 FOR n=1 TO 35
 51 PRINT AT RND*20,RND*30; PAP
ER 1; INK 4;"(9b)": BEEP .0009,R
ND*30+20
 52 NEXT n
 100 LET a=INT (RND*20): LET b=I
NT (RND*30)
 140 PRINT AT a,b; INK 4; PAPER
1;"(9b)"
 150 IF x=a AND y=b THEN  GO TO
2000
 210 LET x=x+(INKEY$="6" AND x<2
0)-(INKEY$="7" AND x>0)
 220 LET y=y+(INKEY$="8" AND y<3
1)-(INKEY$="5" AND y>0)
 500 PRINT AT x,y; INK 6;"(9a)"
 520 PRINT AT x,y; INK 6;"(9c)"
 521 BEEP .0009,55: BEEP .0005,6
0
 522 LET t=t+1
 530 PRINT AT 21,2;"TIME ";t;"
QUICKEST ";ht
 999 PRINT AT x,y;" "
 1000 GO TO 140
 2000 FOR n=0 TO 21
 2010 PRINT AT n,0; INK 4;"(32*9b
)"
 2015 OUT 100,20: OUT 100,130: OU
T 100,140
 2020 NEXT n
 2030 PRINT AT 10,1; FLASH 1; INK
 0; PAPER 7;"YOU FOUND THE APPLE
!"
 2031 IF ht>t THEN  LET ht=t: GO
TO 5000
 2032 PRINT AT 12,1; PAPER 6; INK
 0;"TIME TAKEN ";t
 2033 PRINT AT 14,1; PAPER 6; INK
 0;"QUICKEST TIME ";ht
 2035 FOR n=1 TO 7: BORDER n: PAU
SE 20: NEXT n: BORDER 1
 2050 PRINT AT 16,1; PAPER 7; INK
 0;a$;" best so far"
 7; FLASH 1;"Any key for another
 go"
 2110 PAUSE 0
 2115 LET t=0
 2120 CLS : BORDER 1: GO TO 30
 5000 CLS : PRINT AT 10,2;"YOU HA
VE THE QUICKEST TIME!!"
 5010 INPUT "ENTER your name";A$
 5020 GO TO 2050
 9000 LET t=0: LET ht=999999
 9010 PRINT AT 9,8; INK 4; PAPER
 1;"(12*9b)"
 9020 PRINT AT 10,8; INK 4;"(9b+1
0*sp+9b)"
 9030 PRINT AT 10,9; INK 6; FLASH
 1; PAPER 2;"APPLE-NOSH"
 9040 PRINT AT 11,8; INK 4; PAPER
 1;"(12*9b)"
 9060 FOR f=0 TO 200: OUT 200,200
: OUT 200,250: OUT 10,10: OUT 20
,20: NEXT f
 9070 CLS
 9100 PRINT AT 0,8;"INSTRUCTIONS"
 9110 PRINT AT 4,2;"The idea is t
o eat the (9b) and     try to get
 the mystery apple     in the qui
ckest time."
 9120 PRINT AT 10,2;"Move (9a) wi
th keys:";AT 13,3;"1 2 3 4 5 6 7
 8 9 0"
 9130 PRINT AT 15,5;"       < ↑ d
 >"
 9140 PRINT AT 20,8;"Any key to P
lay"
 9300 PAUSE 0
 9400 CLS
 9500 RETURN
```

SPECTRUM ORWIN SOFTWARE ZX-81

FOR 16K SPECTRUM
(will also run on 48K Spectrum)

CASSETTE A

GHOST GOBBLER Eat the ghosts before the ghosts eat you. Eat a star and you can chase the ghosts for a while.

ALIENKILL Control lasers, rockets and a force-field to stop the aliens from landing.

MOUSETRAP Trap the mouse in the corner but not anywhere else.

REVERSI A game of skill with simple rules but sophisticated tactics. Play against the computer.

LASER DEFENCE Control the laser sight to shoot down the alien ships. Machine code sound routines.

Ten programs for £6

TANK BATTLE For 2 players simultaneously or play against the computer. Each player has 2 rotate controls and move and fire controls. The tanks fire steerable missiles.

PHOEBUS A puzzle.

BLACKSPOT Gobble the stars and avoid running into black spots created by crossing your own path.

CUBE Manipulate a cube any size from 2 × 2 × 2 to 7 × 7 × 7.

MINEFIELD Collect the crowns while avoiding the mines and the electrified fence.

plus an extra . . .

GRAPHIC DEMO Did you know your Spectrum could do all this?

CASSETTE 1: eleven programs (including 7 in machine code): React, Invaders, Phantom Aliens, Maze of Death, Planet Lander, Bouncing Letters, Bug Splat, I Ching, Codebreak, Robots, Basic Hangman.

for 1K ZX-81 £3.80

CASSETTE 2: ten games in Basic: Reversi, Awari, Laser Bases, Wordmaster, Rectangles, Crash, Roulette, Pontoon, Penny Shoot, Gun Command.

for 16K ZX-81 £5

CASSETTE 3: eight programs (including 1 in machine code): Starship Trojan, Startrek, Princess of Kraal, Battle, Cube, Kalabriasz, Secret Messages, Martian Cricket.

for 16K ZX-81 £5

CASSETTE 4 8 games for 16K ZX-81 £6

ZX-SCRAMBLE with 3 stages. (machine code) Bomb and shoot your way through the fortified caves.

GUNFIGHT (machine code)

INVADERS (machine code)

GALAXY INVADERS (machine code) Fleets of swooping and diving alien craft to fight off.

SNAKEBITE (machine code) Eat the snake before it eats you. Variable speed (very fast at top speed).

LIFE (machine code) A ZX-81 version of the well known game.

3D TIC-TAC-TOE (Basic) Played on a 4 × 4 × 4 board, this is a game for the brain. It is very hard to beat the computer at it.

7 of the 8 games are in machine code, because this is much faster than Basic. (Some of these games were previously available form J. Steadman).

"quantity as well as quality" *Sinclair User,* Oct '82

"if each game was on a separate tape and selling for £5 each I would still recommend them" *ZX Computing, Oct/Nov '82*

"Easy to operate, graphically impressive and good value for money." *The Times,* 11th Dec '82

"Definitely good value for money at £6 . . . A smooth clear display and a relatively fast response from the keys. Graphics are as good as you will ever get on the 81." *What Micro?* Nov '83

EDUCATIONAL COMPENDIUM FOR 16K/48K SPECTRUM £6
All these programs on one cassette.

These programs were developed for use in a Junior School and have been in regular use there for some time. Older people also find them interesting and fun.

TORTOISE GRAPHICS: an educational graphics language.

16K version commands include: forward, left and right through a specified angle, wipe, pen up and down, paper and ink colour, macro, edit.

48K version has extra commands including: backward, quit, cancel, printer and tape commands, auto, home, variables, loops.

TORTRAIL & TORTMAZE: 16K games using the forward, left and right commands. These are good for learning a feeling for distances and angles and are fun to play.

REVEAL: an addictive 16K word game. A piece of writing has had its letters rubbed out and you have to find out what they are. You buy letters or try to predict them. Included are 20 textfiles to be solved and a textmaker which will let you input your own text and store it on tape for someone else to solve.

EQUATION INVADERS: a 16K game to make simple equations more interesting.

CENTIPOID PLUS THREE for 48K SPECTRUM. £6

CENTIPOID (machine code). Centipoid is a full-feature arcade game with mushrooms, spiders, webs, scorpions, gobblers, indestructible dead segments of centipoids that drop down on you, and, of course, the centipoids themselves.

You can choose your own control keys. It is playable from the keyboard or using any joystick interface which, like AGF Interface II, makes the joystick behave like keys on the keyboard.

Plus these games in Basic for the 48K Spectrum on the same cassette.

PANIC

HOUND

3D TIC TAC TOE A 3D game of skill played against the computer.

CASSETTE 5 8 games for 16K ZX-81 £6

BYTE-MAN (machine code) (previously available from Mindseye)

BREAKOUT (machine code)

PLANETOIDS (machine code) Rotate, move, fire and hyperspace controls. Wide range of choice of speed and difficulty.

DODGEMS (machine code) Dodge the computer's car while eating the dots.

DRAUGHTS (machine code) Three skill levels.

MERCHANT (Basic) Make your fortune on trading voyages in the Mediterranean and beyond.

SPACE RESCUE (machine code) (previously available from Mindseye)

BLITZ (machine code)

7 of the 8 games are in machine code because it is much faster than Basic.

"New polish on old favourites. . . . the quality of the software and the smooth action displays created on the screen make the programs worthwhile for anyone who has a ZX-81 and plays games using it. . . . It is pleasant to see that Orwin's kind of quality is available again." *Sinclair User,* Sept '83

"Among the best reviewed was Cassette 5 from Orwin Software. For a mere £6, you get eight top-quality games . . . All the games are of very high quality and would cost £4 or £5 if sold separately . . . Many of the other software houses could learn a lesson from these." *What Micro?* Games supplement, Nov '83

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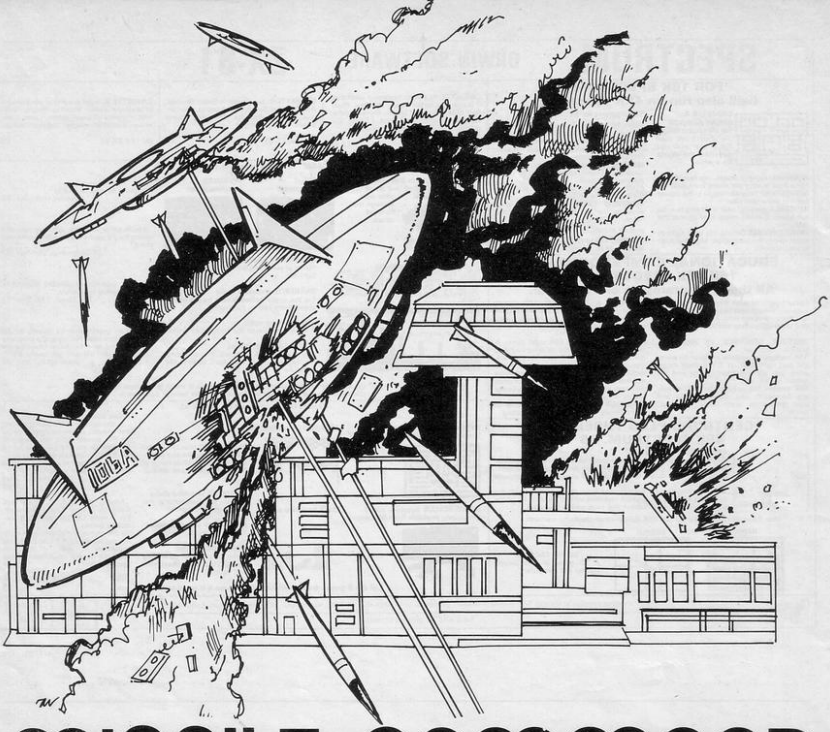
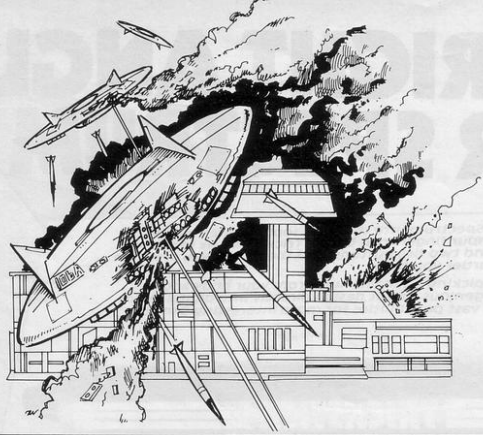
SP2



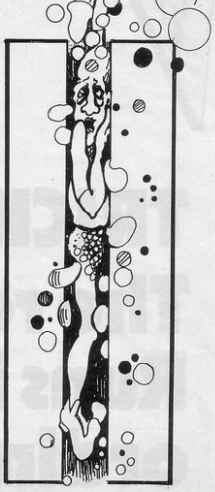
MISSILE COMMAND

```
   1 CLS
  20 GO SUB 900
  30 GO SUB 700
  35 GO SUB 800
  40 GO SUB 300
  45 GO SUB 100
  50 IF ht<>1 THEN  GO SUB 100
  70 PRINT  INK 5; OVER 0;AT 19,
6;po;" ";AT 19,25;sc;AT 20,6;lz;
AT 20,15;tno;AT 20,25;k1
  80 IF po<0 THEN  GO TO 600
  90 GO TO 40
 100 LET uxo=ux: LET uyo=uy
 101 LET u$=INKEY$
 105 IF u$="" THEN  RETURN
 106 IF u$="m" OR u$="n" THEN  G
O TO 150
 110 LET ux=ux+(u$="p" AND ux<29
)-(u$="i" AND ux>2)
 120 LET uy=uy+(u$="z" AND uy<13
)-(u$="q" AND uy>2)
 125 IF ux=uxo AND uy=uyo THEN
RETURN
 130 PRINT  INK 7;AT uyo,uxo;"a"
; INK 6;AT uy,ux;"a": LET po=po-
1: BEEP .005,20-uy: RETURN
 150 INK 5: LET po=po-10
 155 LET lz=lz+1: LET lcx=ux*8+4
: LET lcy=(21-uy)*8+4
 160 FOR n=1 TO 2: BEEP .04,6: B
EEP .02,12: PLOT 8,56: DRAW lcx-
8,lcy-56: INK 7: NEXT n
 175 INK 6: FOR n=1 TO 2: PRINT
AT uy,ux-1;">g<": BEEP .03,24: I
NK 7: NEXT n
 180 IF NOT (uy=ty AND ux>=tx-df
 AND ux<tx+df+LEN t$) THEN  INK
5: RETURN
 200 OVER 1: LET ht=0: LET k1=k1
+1: LET sc=sc+100-LEN t$*10
 210 FOR n=1 TO 4: PRINT AT uy-1
,ux-1;"\f/";AT uy,ux-1;"fgf";AT
uy+1,ux-1;"/f\": BEEP .1,36: BEE
P .05,6: INK 7: NEXT n: LET ht=1
 220 RETURN
 300 IF ht=1 THEN  GO TO 360
 302 LET tyo=ty: LET txo=tx
 305 LET u$=t$: LET tx=tx+1
 310 IF ty>=12 THEN  LET tc=-1
 311 IF ty<=4 THEN  LET tc=1
 312 LET ty=ty+tc+(INT (RND*2) A
ND ty<14)-(INT (RND*2) AND ty>3)
 315 LET t$="": LET t$=("b" AND
tx<9)+("cd" AND tx>=9 AND tx<18)
+("ced" AND tx>=18)
 330 PRINT  INK 4;AT tyo,txo;u$;
AT ty,tx;t$: BEEP .02,-12
 343 IF ty>8 AND RND<.7 AND ((tx
>16 AND tx<21) OR tx=24) THEN  I
NK 2: FOR m=1 TO 2: FOR n=-1 TO
2: PLOT tx*8+12,175-(ty*8)-12: D
RAW n*3,-40: BEEP .003,30: NEXT
n: INK 7: PRINT  INK 6;AT 21,0;"
TOWER LOSS": LET po=po-9: NEXT m
 355 IF tx<=27 THEN  RETURN
 360 PRINT  INK 7;AT ty,tx;t$: L
ET tno=tno+1: LET tx=2: LET ty=7
+INT (RND*6): LET tc=1: LET ht=0
 375 LET t$="b"
 380 PRINT  INK 4;AT ty,tx;t$
 385 RETURN
 600 FOR n=0 TO 74: INK n/10: BE
EP .06,n-50: PRINT AT 10,8;"- MI
SSION ENDED -": NEXT n
 640 FOR n=0 TO 74: BORDER 7-n/1
0: BEEP .05,n-20: NEXT n
 680 INPUT  INK 6;TAB 6;"ANOTHER
 MISSION? ";u$
 685 IF u$="n" THEN  GO TO 9999
 690 RESTORE : GO TO 30
 700 INPUT  INK 2;"Difficulty?:0
(hard) or 1 ";r$: IF r$<>"0" THE
N  LET r$="1"
 705 LET df=VAL r$
 710 LET ux=10: LET uy=10
 715 LET uxo=ux: LET uyo=uy
 720 LET tx=4: LET ty=2: LET txo
=tx: LET tyo=ty: LET tc=1
 730 LET po=999: LET sc=0: LET k
1=0: LET lz=0: LET ht=0
 740 LET t$="b": LET tno=1
 750 FOR n=USR "a" TO USR "9"+7
 760 READ d: POKE n,d: NEXT n
 770 RETURN
 780 DATA 255,129,0,0,0,129,129,
255,0,0,0,24,36,255,36,0
 786 DATA 0,0,2,7,9,255,9,2,0,0,
32,224,144,255,144,64,112,32,210
,255,126,255,126,189
```



```
 790 DATA 16,66,16,6,230,0,20,16
,149,88,40,231,82,20,74,145
 800 BORDER 0: PAPER 0: INK 7
 805 OVER 0: CLS
 810 PLOT 3,26: DRAW 247,0: DRAW
 0,144: DRAW -247,0: DRAW 0,-144
 811 LET 9y=34: LET 9c=6
 812 FOR n=1 TO 6: PLOT 5,9y
 813 DRAW 243,0: LET 9c=9c-1: LE
T 9y=9y+9c: NEXT n
 815 FOR n=1 TO 70: INK 2+RND*6:
 PLOT 10+RND*230,70+RND*90: DRAW
 RND,0: NEXT n: INK 7
 820 LET 9c=1: LET 9y=54
 821 FOR n=5 TO 247: LET 9y=9y+9
c+INT (RND*3)-1: PLOT n,9y: DRAW
 0,-(RND*(9y-55) AND 9y>54)
 822 IF RND<.1 THEN  LET 9c=-9c
 823 IF 9y>61 THEN  LET 9c=-1NT
(RND*2.5)
 824 IF 9y<54 THEN  LET 9c=INT (
RND*2.5)
 826 NEXT n
 828 PRINT  INK 5;AT 15,1;"(92)"
;AT 15,28;"(91)"
 830 FOR m=0 TO 60 STEP 20
 832 IF m=40 THEN  NEXT m
 834 FOR n=38 TO 51: PLOT 140+m,
n: DRAW 20,0,.7: NEXT n: DRAW -2
0,0,.7: NEXT m
 850 FOR n=1 TO 5: CIRCLE  INK 4
;23,140,n: NEXT n: OVER 1
 870 PRINT  INK 6;AT uy,ux;"a"
 880 PRINT AT ty,tx;"b"
 885 PRINT AT 19,0;"POWER";AT 19
,19;"SCORE";AT 20,0;"LAZER";AT 2
0,12;"NO";AT 20,19;"KILLS"
 890 BEEP 1,9: RETURN
 900 BORDER 7: PAPER 7: INK 0
 905 OVER 0: CLS
 910 PRINT AT 0,4;"- MOON BASE A
LPHA -"
 915 PRINT '''"You control a laz
er station"'"protecting a moon b
ase from"'"the dreaded ZALROGS"
 930 PRINT '''"Press any key to
 continue": PAUSE 0: CLS
 950 PRINT "You use up your limi
ted amount  of POWER,firing the
laser and  moving the tracking
sights."
 955 PRINT '"The base is shielde
d by an"'"energy field."'"This a
lso takes Power to sustainEvery
time the base is hit Poweris los
t."
 960 PRINT '"When your Power is
 exhausted,  the mission ends."
 965 PRINT '"CONTROLS:"''"I to m
ove left"'"P to move right"'"Z t
o move down"'"Q to move up"'"& M
 or N to fire"
 970 PRINT '"Press any key to co
ntinue"
 985 PAUSE 0: RETURN
9999 SAVE "ALPHA": PRINT " VERIF
Y REWIND TAPE": VERIFY ""
```

DOTTY



MOVE AROUND the maze eating as many dots as possible before the maze closes in on you and you become trapped. You score 10 points for each dot you eat. Use key "Z" to move down, "W" to move up, "A" to move left and "S" to move right.

Dotty was written for the 1K ZX-81 by Jason Moody of Thornton Heath, Surrey.

```
   2 PRINT "(15*is)"
   3 FOR N=1 TO 14
   4 PRINT "(is)'.............'(1
sP)"
   5 NEXT N
   6 PRINT "(15*is)"
   7 LET D=VAL "2"
   8 LET S=VAL "0"
   9 LET C=VAL "2"
  10 LET D=D+(INKEY$="S")-(INKEY
$="A")
  11 LET C=C+(INKEY$="Z")-(INKEY
$="W")
  12 PRINT AT C,D;
  13 LET A=VAL "PEEK (PEEK 16398
+256*PEEK 16399)"
  14 IF A=VAL "128" THEN GOTO VA
L "19"
  15 IF A=VAL "27" THEN LET S=S+
VAL "10"
  16 PRINT "(9h)";AT RND*14,RND*
14;"(isP)";AT RND*14,RND*13;"(2*
isP)";AT 0,20;"SCORE ";S
  17 PRINT AT C,D;" "
  18 GOTO VAL "10"
  19 PRINT "GAME OVER"
```

GET THE RIGHT ANGLE ON YOUR SPECTRUM

Trickstick turns your Spectrum into the most sophisticated games machine in the world. Your fingers rest on the Trickstick's six sensitive pads (four directions and two fire buttons) and the harder you press the faster you go or the harder you turn.

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A FORTH Toolkit (giving floating point etc) and an extension for the Microdrive will be available shortly. 48/80 FORTH uses standard FIG-FORTH definitions with extensions to exploit the special characteristics of the Spectrum, including BEEP (for real arcade quality sound), DRAW, PLOT and CIRCLE.

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This teaching program has already made computing less mysterious for thousands of people. It guides you through the Spectrum 48k memory, teaches you to PEEK and POKE systems variables, shows you how the display file and colour attributes work, how a BASIC program is stored byte by byte, and much much more. Outstanding value for those who get stuck on the second half of the Spectrum manual.

SP80

THE 80k SPECTRUM – £57.50

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See 48/80 FORTH for another angle.

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SP2

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EAST LONDON ROBOTICS

MORTAR PLATOON

IN A BATTLE situation, you are armed with an anti-tank mortar which you must train on enemy tanks by entering your distance from the tank. **Mortar Platoon** was written for the 16K Spectrum by C L Baker of Chesterfield.

```
  1 BORDER 6: PAPER 6: INK 0: C
LS : GO SUB 9000: REM instructio
ns
  2 PRINT AT 0,8;"MORTAR PLATOO
N"
  3 PRINT '"You are in a battle
 situation  armed with an anti-
tank mortar  with which you must
 destroy the lowest enemy tank w
hich appears out of the woods at
 BOTTOM RIGHT"
  4 PRINT '"To train the mortar
 you enter  the RANGE (MIN. 200
to MAX. 450 depending on your j
udgement of  distance to the tan
k)."
  5 PRINT ''"YOU MUST HIT THE T
ANK ON THE  TURRET OR REAR TO
DESTROY"''''"PRESS ANY KEY TO PL
AY"
  6 PAUSE 0: CLS : IF INKEY$<>""
 THEN  GO TO 20
  20 LET shots=0: LET hi=0: LET
sc=0: LET b$=""
  30 LET f=INT (RND*18)+10
  40 PRINT AT 12,10; INK 4;"(9h
9h  9h)(9h  9h)(9h)(9h  9h)";AT 13
,0;"    (9h  9h  9h  9h
9h  9h      9h)"
  45 PRINT  INK 4;AT 14,26;"(9h
9h)(9h  9h)";AT 15,26;"(9h  9h
9h)";AT 18,0;"(9h)(9h)";AT 20,3;
"(9h  9h  9h)(9h)";AT 21,4;"(4*9
h)";AT 21,20;"(9h  9h  9h  9h  9
h  9h)"
  50 PRINT AT 20,0; INK 0;"(9a*9
b)"
  60 IF shots=9 THEN  GO TO 300
  80 LET shots=shots+1
  90 PRINT AT 1,1; PAPER 7; INK
1;"TANK No.";shots;AT 3,11;"YOUR
 SCORE=";sc;AT 1,11;"HI-SCORE=";
hi;" by ";b$
  100 INK 0: PRINT AT 20,f;"(9c*9
d)"
  110 PRINT  INK 0;AT 10,28;"(9c*
9d)";AT 11,28;"89c*9d)";AT 12,28
;"(9c*9d)"
  120 LET p=40
  140 INPUT "RANGE ? (200 TO 450)
";rn9
  141 IF rn9>450 THEN  PRINT  FLA
SH 1; INK 0;AT 15,5;"RANGE TOO
HIGH FOR MORTAR": PAUSE 100: FLA
SH 0: PRINT AT 15,5;"
                    ": GO TO 140
  142 IF RNG<200 THEN  PRINT  FLA
SH 1; INK 0;AT 15,0;"RANGE TOO S
HORT FOR SAFETY": PAUSE 150: FLA
SH 0: PRINT AT 15,0;"
                    ": GO TO 140
  150 PRINT AT 5,1;"RANGE=";rn9
  160 LET a=rn9*COS (PI*p/180)
  170 LET b=rn9*SIN (PI*p/180)
  180 FOR x=0 TO b/16 STEP .5
  190 LET c=.01*(b*x-16*x*x)+1
  200 IF a*x>6200 THEN  GO TO 270
  220 PLOT  PAPER 6; INK 2;.04*a*
x+12,4*c+8
  230 BEEP .005,c+25
  240 NEXT x
  250 IF ABS (a*b/3200-f)<1 THEN
 GO TO 280
  260 PRINT AT 9,15; INK 0; FLASH
1;"MISSED": BEEP .5,-20
  270 PAUSE 150: CLS : GO TO 30
  280 PRINT AT 10,10; INK 0; FLAS
H 1;"DIRECT HIT": PRINT  PAPER 2
; INK 0; FLASH 1;AT 20,f;"(9f*99
)": FOR n=-10 TO 30: BEEP .03,n:
 NEXT n: NEXT n: LET sc=sc+1
  290 PAUSE 50: CLS : GO TO 30
  300 CLS : INK 1
  310 IF sc>0 AND hi<sc THEN  LET
 hi=sc: CLS : GO TO 350
  320 PRINT  FLASH 1;AT 5,2;"END
OF GAME"; FLASH 0;" ANOTHER GO (
Y/N) ?"
  330 INPUT a$
  340 IF a$="y" THEN  LET sc=0: L
ET shots=0: CLS : GO TO 30
  350 INK 1
  360 PRINT AT 5,2;"GOOD - BEST S
CORE SO FAR          ENTER INITIAL
S max.7 letters": INPUT b$
  370 LET shots=0: LET sc=0: CLS
: GO TO 30
  9000 FOR i=1 TO 8: FOR n=0 TO 7:
 READ a: POKE USR CHR$ (i+143)+n
,a: NEXT n: NEXT i: RESTORE 9010
  9010 DATA 0,0,0,0,3,3,31,231,255
  9020 DATA 3,6,12,24,240,240,28,4
8
  9030 DATA 0,0,63,0,15,31,15,0
  9040 DATA 0,8,248,248,252,254,25
2,0
  9050 DATA 36,36,36,36,36,36,36,2
55
  9060 DATA 56,0,0,32,24,60,255,25
5
  9070 DATA 2,42,32,0,0,15,255,255
  9080 DATA 60,60,126,255,219,153,
24,60
  9100 RETURN
```

JAIL BREAK

RACE against time in **Jailbreak** by P Carolan of Marsh Green, Wigan for the 16K ZX-81. Using the cursor keys, you dash from your cell when the guard's back is turned. A key is hidden somewhere in the prison yard at the locations marked "X". Once you have found the key you may pass through the wall on the right of the screen and make for home "H".

```
   10 PRINT "(26*i+5*isP)"
   15 PRINT AT 21,0;"(27*i+5*isP
)"
   16 FOR W=1 TO 20
   17 PRINT AT W,1;"(31*isP)"
   18 NEXT W
   20 FOR I=1 TO 21
   22 PRINT AT I,0;"(i+)"
   25 NEXT I
   31 PRINT AT 11,30;"H"
   32 FOR H=0 TO 21
   33 PRINT AT H,27;"(i+)"
   35 NEXT H
   50 LET Z=20
   52 LET X=1
   54 FOR T=1 TO 10
   56 LET A=INT (RND*20+1)
   58 LET S=INT (RND*26+1)
   68 PRINT AT A,S;"X"
   69 NEXT T
   70 SLOW
   71 FOR D=1 TO 100
   72 PRINT AT Z,X;""""
   73 PRINT AT Z,X;""""
   74 PRINT AT Z,X;"(isP)"
  100 LET X=X+(INKEY$="8")-(INKEY
$="5")
  110 IF X>26 THEN LET X=X-1
  120 IF X<1 THEN LET X=X+1
  130 LET Z=Z+(INKEY$="6")-(INKEY
$="7")
  140 IF Z>20 THEN LET Z=Z-1
  145 IF Z<1 THEN LET Z=Z+1
  147 IF Z=A AND X=S THEN PRINT A
T 21,0;"YOU""VE GOT THE KEY"
  148 IF Z=A AND X=S THEN GOTO 10
00
  150 NEXT D
  160 PRINT AT 0,0;"HARD LUCK,YOU
""VE RUN OUT OF TIME"
  165 STOP
1000 FOR S=1 TO 100-D
1004 PRINT AT Z,X;""""
1005 PRINT AT Z,X;""""
1007 PRINT AT Z,X;"(isP)"
1010 LET X=X+(INKEY$="8")-(INKEY
$="5")
1020 IF X>31 THEN LET X=X-1
1030 IF X<0 THEN LET X=X+1
1040 LET Z=Z+(INKEY$="6")-(INKEY
$="7")
1050 IF Z>21 THEN LET Z=Z-1
1070 IF Z=11 AND X=30 THEN PRINT
 AT 0,0;"*HOORAY*  YOU""VE DONE
IT"
1080 IF Z=11 AND X=30 THEN STOP
1090 NEXT S
2000 PRINT AT 0,0;"HARD LUCK YOU
""VE RUN OUT OF TIME"
2010 STOP
```

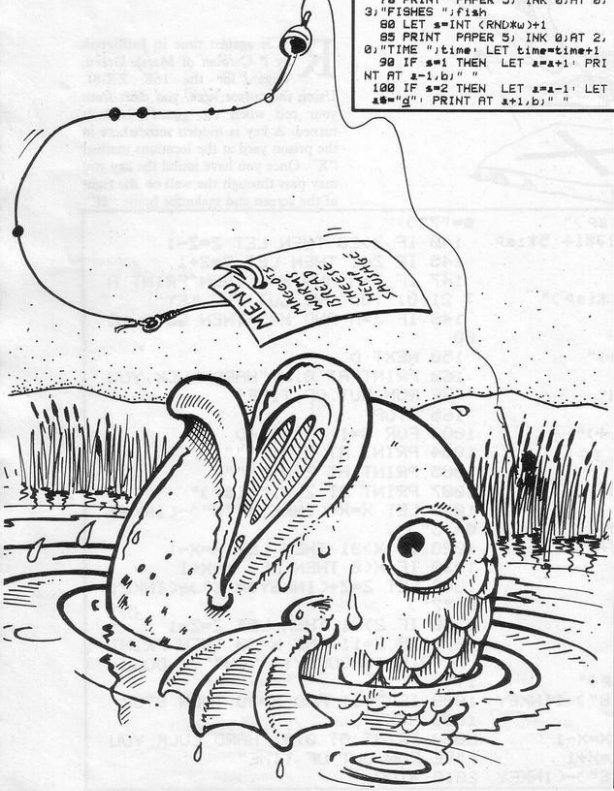
MATCH FISHING

IF YOU fancy your chances as an angler but the prospect of sitting on a river bank does not appeal, try **Match Fishing** for the 16K Spectrum.

There are three levels of play and you have a minute to catch as many fish as possible. Use key "Z" to move left, "X" to move right, "K" to move down. When the game has ended the angler walks away.

Match Fishing was written for the 16K Spectrum by Nicholas Marshall, aged 13, of Hull, North Humberside.

```
  1 INK 7: BORDER 2: PAPER 1: C
LS : FOR t=1 TO 30: BEEP .01,t:
NEXT t: FOR t=30 TO 1 STEP -1: B
EEP .01,t: NEXT t: PRINT "1-EASY
": PRINT : PRINT "2-MEDIUM": PRI
NT : PRINT "3-HARD": PRINT : FLAS
H 1;AT 12,0;"MATCH FISHING": INP
UT q: IF q=1 THEN  LET w=7
  2 CLS : FOR t=-10 TO 50: BEEP
.01,t: NEXT t: PRINT "KEYS:";AT
2,0;"Z left";AT 4,0;"X right";A
T 6,0;"K up";AT 8,0;"M down": PR
INT AT 21,0;"PRESS ANY KEY TO ST
ART": PAUSE 0: BEEP .5,10: IF q=
2 THEN  LET w=5
  3 IF q=3 THEN  LET w=4: CLS
  4 LET fish=0
  5 LET a$="d"
  6 LET c=16: LET d=10
  7 LET time=0
 10 PAPER 1: BORDER 2: CLS
 13 GO SUB 2000
 15 INK 7
 20 FOR a=0 TO 10: PRINT  PAPER
5;"
": NEXT a
 30 PRINT  PAPER 5; INK 0;AT 10
,0;"bbbbc"
 40 PRINT  PAPER 5; INK 0;AT 9,
4;"a"
 50 LET a=15: LET b=15
 60 PRINT AT a,b;a$
 70 PRINT  PAPER 5; INK 0;AT 0,
3;"FISHES ";fish
 80 LET s=INT (RND*w)+1
 85 PRINT  PAPER 5; INK 0;AT 2,
8;"TIME ";time: LET time=time+1
 90 IF s=1 THEN  LET a=a+1: PRI
NT AT a-1,b;" "
 100 IF s=2 THEN  LET a=a-1: LET
 a$="d": PRINT AT a+1,b;" "
 110 IF s=3 THEN  LET b=b+1: LET
 a$="s": PRINT AT a,b-1;" "
 120 IF s=4 THEN  LET b=b-1: PRI
NT AT a,b+1;" "
 130 IF a>21 THEN  LET a=21
 140 IF a<11 THEN  LET a=11
 150 IF b>31 THEN  LET b=31
 160 IF b<0 THEN  LET b=0
 170 PRINT  PAPER 1; INK 4;AT 21
,0;"  f      ff  f    f f f
   "
 180 PRINT AT c,d;"g"
 190 IF INKEY$="z" THEN  LET d=d
-1: PRINT AT c,d+1;" "
 200 IF INKEY$="x" THEN  LET d=d
+1: PRINT AT c,d-1;" "
 210 IF INKEY$="m" THEN  LET c=c
+1: PRINT AT c-1,d;" "
 220 IF INKEY$="k" THEN  LET c=c
-1: PRINT AT c+1,d;" "
 230 IF c>21 THEN  LET c=21
 240 IF c<11 THEN  LET c=11
 250 IF d>31 THEN  LET d=31
 260 IF d<0 THEN  LET d=0
 270 IF c=a AND d=b THEN  LET fi
sh=fish+1: BEEP .5,30
 280 IF time=200 THEN  GO TO 100
0
 999 GO TO 60
1000 FOR e=11 TO 21
1010 PRINT  PAPER 5; INK 0;AT e,
0;"iiiih
   ": PAUSE 10: NEXT e
1015 INK 0: PAPER 5: FOR p=4 TO
0 STEP -1: PRINT AT 8,p;"l": PRI
NT AT 9,p;"m": FOR m=1 TO 20: NE
XT m: PRINT AT 8,p;"j": PRINT AT
 9,p;"k": FOR m=1 TO 20: NEXT m:
 PRINT AT 8,p;" ": PRINT AT 9,p;
" ": NEXT p: PRINT AT 8,0;" ";AT
 9,0;" ": INK 7
1017 PAPER 0
1020 PAUSE 50: CLS : PRINT "YOU
CAUGHT ";fish;" FISHES": PRINT A
T 10,0;"PRESS ANY KEY FOR ANOTHE
R FISH": PAUSE 0
1998 RUN
1999 STOP
2000 RESTORE 2020
2010 FOR q=1 TO 13: READ q$: FOR
 n=0 TO 7: READ r: POKE USR q$+n
,r: NEXT n: NEXT q
2020 DATA "a",196,200,144,224,12
8,240,208,216
2030 DATA "b",255,8,8,8,8,8,8,8
2040 DATA "c",255,65,65,65,65,65
,65,65
2050 DATA "d",0,BIN 00111001,BIN
 01011111,255,BIN 01111111,BIN 0
0111001,0,0
2060 DATA "e",0,BIN 10011100,BIN
 11111010,255,254,BIN 10011100,0
,0
2065 DATA "f",BIN 00100010,BIN 0
0010100,BIN 00101001,BIN 0011001
0,BIN 01001010,BIN 00101001,BIN
 00010010,BIN 00011100
2067 DATA "g",32,32,32,32,34,30,
18,12
2068 DATA "h",65,65,65,65,65,65,
65,65
2069 DATA "i",8,8,8,8,8,8,8,8
2070 DATA "j",56,56,56,16,56,120
,120,184
2080 DATA "k",56,56,40,40,72,68,
68,BIN 11001100
2085 DATA "l",7,7,7,7,7,7,7,7
2090 DATA "m",7,7,2,2,6,2,3,6
2100 RETURN
```



CATERPILLAR

IN YOUR CAPACITY as chief mushroom it is your task to protect the smaller mushrooms from an invading **Caterpillar.** Fire at the caterpillar as it advances towards you and guarantee the safety of the other mushrooms. If the caterpillar succeeds in eating a mushroom the game ends. Use key 5 to move left, 8 to move right and 0 to fire.

Caterpillar was written for the 16K Spectrum by Stuart Edwards, aged 12, of Brighton, East Sussex.

```
  1 GO SUB 9100: GO SUB 7000: LET s=0: LET h=100
  2 CLS : PAPER 5: BORDER 2: CLS : LET a=0: LET b=INT (RND*31): LET m=12
  4 PRINT AT 20,m;"a"
  5 INK 4: PRINT AT 21,0;"dddddddddddddddddddddddddddddddd"
 10 PRINT AT 0,0;"SCORE=";s
 20 IF INKEY$="5" THEN GO TO 100
 30 IF INKEY$="8" THEN GO TO 200
 40 IF INKEY$="0" THEN GO TO 300
 50 IF INKEY$="" THEN BEEP .005,-5: GO TO 1000
 100 PRINT AT 20,m;" ": LET m=m-1: IF m=0 THEN LET m=30
 101 INK 1: PRINT AT 20,m;"a": GO TO 1000
 200 PRINT AT 20,m;" ": LET m=m+1: IF m=31 THEN LET m=1
 201 INK 1: PRINT AT 20,m;"a": GO TO 1000
 300 PLOT m*8+4,16: INK 3: DRAW 0,159: PAUSE 20: INK 5: PLOT m*8+4,16: DRAW 0,155: IF m=b THEN LET a=0: LET b=5: PRINT AT a,b;" ": LET s=s+5: FOR q=49 TO 56: BEEP .001,q: NEXT q: GO TO 2
 301 IF a>=h THEN BEEP .01,1: PRINT AT 20,0;s: LET h=h+100: LET s=s+5: PAUSE 50: GO TO 9000
 302 GO TO 1000
1000 BEEP .01,a: LET o=INT (RND*3)
1010 IF o=0 THEN GO TO 1500
1020 IF o=1 THEN GO TO 2000
1030 IF o=2 THEN GO TO 2500
1040 GO TO 1000
1500 INK 1: PRINT AT a,b;"c": LET a=a+1: IF a=20 THEN GO TO 8000
1501 INK 2: PRINT AT a,b;"b": GO TO 10
2000 INK 2: PRINT AT a,b;"c": LET b=b-1: IF b=0 THEN LET b=30
2001 INK 2: PRINT AT a,b;"b": GO TO 10
2500 INK 4: PRINT AT a,b;"c": LET b=b+1: IF b=31 THEN LET b=1
2501 INK 2: PRINT AT a,b;"b": GO TO 10
7000 BEEP .1,-2: BEEP .1,+2: PRINT AT 12,8: INK 2: FLASH 1;"STOP THE TAPE": IF INKEY$="" THEN GO TO 7000
7010 CLS : PRINT AT 1,10; INK 2; FLASH 1;"CaTeRpillA'"
7020 PRINT AT 4,2;"USE KEYS 5&8 AND 0 TO FIRE"
7021 PRINT AT 12,0; INK 2;"ccc ccc ccc
```

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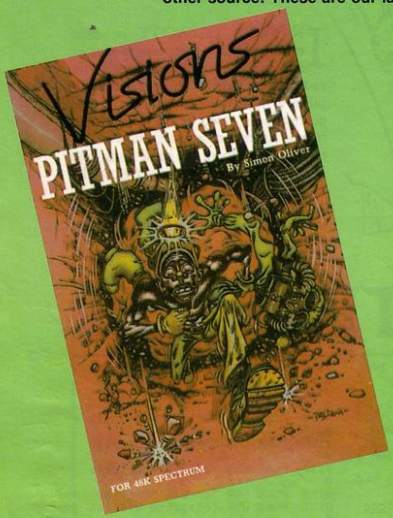

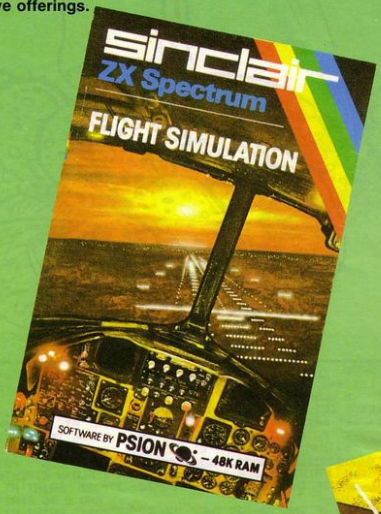

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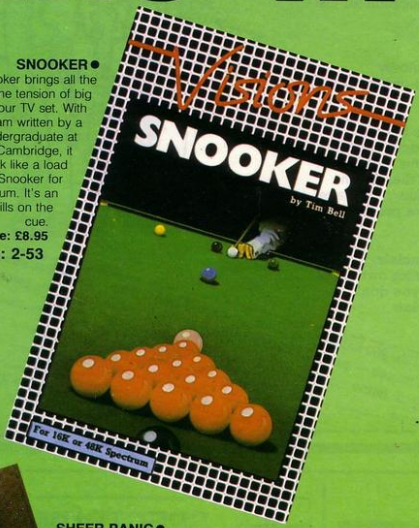

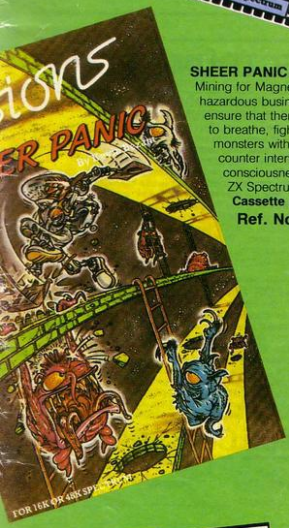

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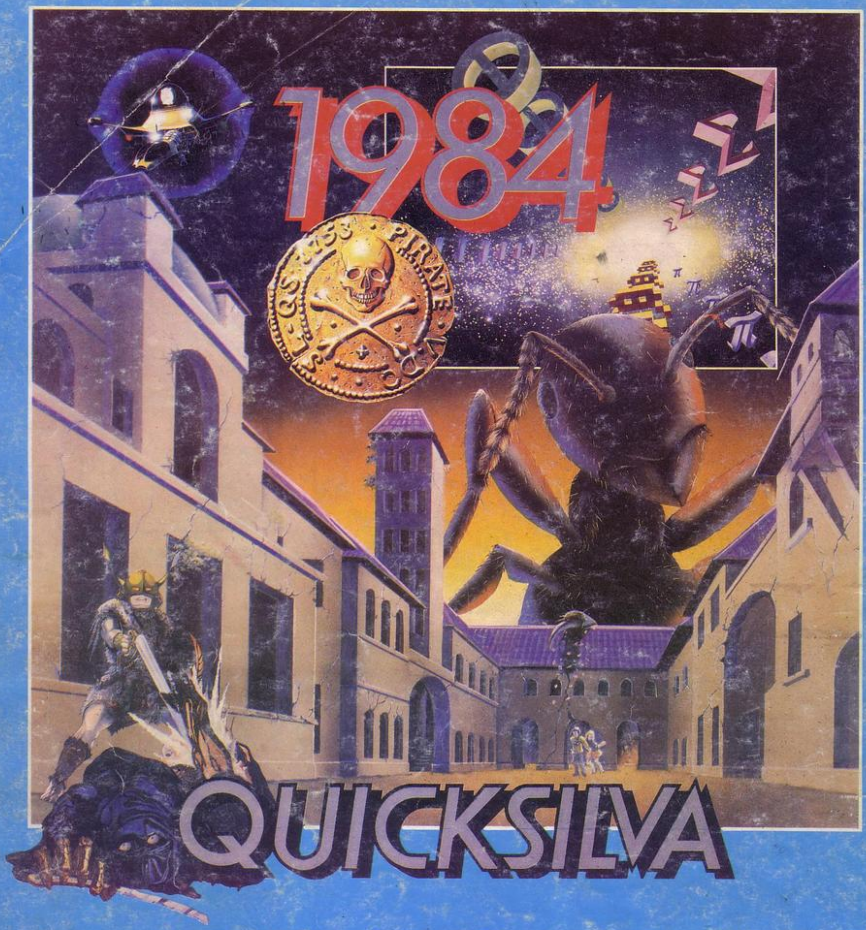

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