

Sinclair ZX Software on cassette



Sinclair: publishers of proven software

The unprecedented popularity of the ZX Series of Sinclair Personal Computers has generated a large volume of programs written by users.

Sinclair has undertaken to publish the most elegant of these on pre-recorded cassettes. Each program is carefully vetted for interest and quality, and then grouped with other programs to form a single-subject cassette.

Each cassette costs £3.95 (including VAT and p&p) and comes complete with full instructions.

Although primarily designed for the Sinclair ZX81, many of the cassettes are suitable for running on a Sinclair ZX80-

if fitted with a replacement 8K BASIC ROM.

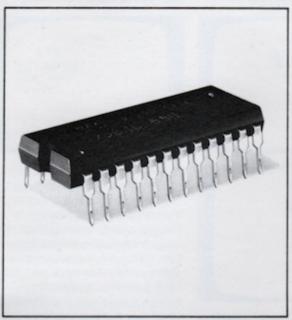
Some of the more elaborate programs can be run only on a Sinclair ZX Personal Computer augmented by a 16K-byte add-on RAM pack.

This RAM pack and the replacement ROM are described opposite. And the section describing each cassette makes it clear what hardware is required.

At the end of this catalogue we have included a few free programs for you to try. Printed as full listings, they can be run on any ZX81-and all but one on a ZX80 with 8K BASIC ROM.

Sinclair ZX Hardware options

8K BASIC ROM



The 8K BASIC ROM used in the ZX81 is available to ZX80 owners as a drop-in replacement chip. With the exception of animated graphics, all the advanced features of the ZX81 are now available on a ZX80-including the ability to run much of the Sinclair ZX Software.

The ROM chip comes with a new keyboard template, which can be overlaid on the existing keyboard in minutes, and a new operating manual.

16K-byte RAM pack



This provides 16-times more memory in one complete module. Compatible with the ZX81 and the ZX80, it can be used for program storage or as a database.

The RAM pack simply plugs into the existing expansion port on the rear of a Sinclair ZX Personal Computer.

Cassette 1: GAMES

For ZX81 (and ZX80 with 8K BASIC ROM)

I Orbit



Dynamic graphics are used to display a space craft in orbit around a star. In another orbit lies some valuable cargo. You must manoeuvre your ship to capture it. Moving to an outer orbit slows down your rotation; in an inner orbit, you rotate faster. When you reach the cargo, it pops into your hold and you're told your score - or how many days you took to collect your cargo. A good captain makes the swiftest rendezvous possible-fuel and crew wages are expensive! Speedy captures require artful calculations.

II Sniper





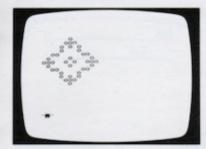
Tests your ability to think under pressure! 40 of the enemy surround you. At irregular intervals, they pop into sight at any of ten positions. In the brief moments they're on view, you must calculate which number key corresponds to that position and press it. If you're right, the man hit by your shot spreads out his arms and legs as he falls. If you miss, he ducks out of sight again. As time goes on, they duck out more quickly.

III Meteors



A dynamic graphics game requiring forethought and swift reactions. You're in command of a starship trundling happily through space when a storm of meteors suddenly bursts upon you. You must manoeuvre your ship between the meteors. Looking ahead and plotting a course is essential. If you're hit, your warp factor (initially 5) shown on your hull, decreases by one until it reaches zero, and your ship is so badly damaged it cannot go on. You're then told how many light years you've travelled.

IV Life



Devised in 1970 by J. H. Conway, the Game of Life has achieved tremendous popularity in the computer world. A pattern of cells is drawn on a square grid. The first pattern generates a second, which generates a third, and so on. Each cell is born, lives or dies according to a few simple rules.

If a space is empty, and there are 3 and only 3 adjacent live cells, a new cell is born in the space. If it has 2 or 3 neighbours it survives. If it has 1 or more than 3 neighbours, it dies. Diagonally and squarely adjacent neighbours count, and all rules are applied simultaneously.

The results are often surprising and fascinating. Some colonies expand rapidly, some die off, some settle into a repeating pattern.

V Wolfpack







You're a naval destroyer commander hunting submarines. The enemy is displayed in the depths beneath you. By careful timing, you position your ship, release your depth charge, and hit his conning tower—an exercise in precision, in the best navy tradition.

VI Golf







Tests your visual skills and judgement of distance. The fairway profile is shown on the screen with the hole at a random distance from the tee. You must estimate the correct force for your drive on a 35-75 scale. If you miss, you are allowed further shots till your ball drops in and the score for that hole appears.

Cassette 2: JUNIOR EDUCATION 7-11 year-olds

For ZX81 with 16K RAM pack

I Crash





The program displays a series of simple addition sums (the solution being not greater than 9). If the answer entered is correct, the car on the left of the screen remains stationary. If, however, an incorrect answer is entered, or if no answer is entered within the time limit, the car moves towards another car on the right hand of the screen. The time limit decreases for every correct answer. How many can you score before the cars crash?

II Multiply



Ten long multiplication sums are provided by this program. There are five levels of difficulty available. If the answer entered is wrong, the problem is explained by splitting the numbers into thousands, hundreds, tens and units. On completion of ten questions, the score is displayed and an option to attempt a further ten questions is given. The level of difficulty is adjusted according to the previous score.

III Train





This is a game designed to assist with multiplication. The rules of the game are displayed when the program is loaded. If the correct number is entered, the train moves towards the finishing point. If, however, the entered number is incorrect, or if no answer is entered in the given time limit, the ZX81's train moves towards the finish. At the end of the game the option is given to play again.

IV Fractions





This program helps to teach children fraction arithmetic. The four rules (addition, subtraction, multiplication and division) are used, each one having three levels of difficulty. If the answer entered is incorrect, the problem is repeated using graphics or other means to help the child understand why the answer was wrong. Ten questions are set, at the end of which a score is given and the chance to try another set of problems.

V Addsub



This program is designed to aid in the understanding of addition and subtraction. A choice of three levels of difficulty is given. Ten questions are displayed, some addition, some subtraction. If an incorrect answer is entered, the problem is explained by splitting the numbers into thousands, hundreds, tens and units. At the end of the tenth question, the score is displayed and an option to try a further ten questions of the same level is given.

VI Division





Five levels of difficulty are available in this program. Ten

division sums are displayed one at a time. The answers may be input in either decimal or integer and remainder form. If an incorrect answer is entered, the problem is explained by means of a graphic display. At the end of the game, the score is displayed and an option to play again is provided. If another round is requested the level of difficulty may be altered, according to the score obtained in the previous game.

VII Spelling





This program has five levels of difficulty. On selection of the required level, words are displayed, one at a time, for a short time. After each display, the child is asked to spell the word. On completion of ten words, an option to attempt more of the same level is offered. Up to one hundred words may be attempted within each of the five levels.

Cassette 3: BUSINESS & HOUSEHOLD

For ZX81 (and ZX80 with 8K BASIC ROM) with 16K RAM pack

I Telephone







This is a combined telephone directory and address book which allows instant access to the details of up to 50 people. But over and above normal details of name, address, and telephone number, you can also store additional information such as their birthday, office phone number, or whether they sent you a Christmas card last year!

You can search for an entry not only by name, but also by address, by telephone number or by other information. You can even search by part-name or by an incomplete address.

Additions, deletions and changes are easy to make, and you can store the whole directory on cassette for future use.

II Notepad







III Bank Account

This program puts a very powerful—yet straightforward—system for storing and retrieving everyday information at your fingertips.

There are endless possibilities, but the following examples give you some idea of the scope of the system –

- a) Address and telephone directory.
- b) Catalogue for your stamp/ coin/record collection.
- c) Diary to record appointments and keep notes of past events.
- d) Literature references if you have academic interests.
- e) Reminder system for shortterm memos.
- f) Shopping list.

Up to 11,500 bytes (characters) of information can be stored in any form you like – letters, numbers, even graphics characters. And the program shows you how much storage space you've got left every time you use it.

Retrieving information is easy, and you can search by words, numbers or a combination of both. Updates and deletions are encouraged by the 'Clean up the file' option.

Finally, you can date-stamp all entries automatically by entering the date once only at the start of the day.









A sophisticated financial recording system with comprehensive documentation. The illustrations show the system in use to keep track of a fairly simple current account.

A list of options comes first. Suppose you'd decided to enter a receipt of £300 and two other small payments. The second screen shows how it might happen.

Later on you might want to check your bank balance – via a statement. Firstly, the computer tells you the date of your last balance (or statement) and asks you for the new date.

Now you get an up-to-date statement starting with your last balance; itemising subsequent entries, and maintaining a running balance.

But this program has much, much more to offer. For example, it can also keep track of expenditure under a variety of separate headings—car expenses, home fuel bills, holiday costs—up to 26 if you need them all.

And the combination of these two features makes the system ideal for use at work—to keep track of departmental budgets, expenses, etc.

Sums of money up to £99,999.99 are catered for, and the system can accommodate regular (eg salary cheques, standing orders) and one-off transactions.

Cassette 4: GAMES

For ZX81 (and ZX80 with 8K BASIC ROM) with 16K RAM pack

I Lunar Landing



The Lunar Excursion Module starts in a stable lunar orbit. You aim to bring it out of orbit to a soft landing by controlling the attitude and the throttle. A hard landing is reported as a crash. The screen is split in two, one half reporting your current flight status and the other giving a graphic display of your path. If you land successfully, you are invited to re-enter orbit. But make sure you check your fuel status first!

II Twenty-one



This is a dice version of Blackjack. There are five rounds to a game and the player always goes first. In each round the player tries to get a total of, or as close as possible to, twenty-one but not more!

III Combat



Your spacecraft is alone in space and you have 12 manoeuvrable missiles on board. After a random time a hostile alien will appear. He will home in on your ship and use his shortrange weapons, which are lethal once he is within two spaces of you.

To defend yourself you can move your ship, launch your missiles and pilot them once launched.

If you succeed in destroying the alien while keeping your own ship in one piece, another will appear, meaner and faster than his predecessor. If you destroy him, another will appear and so on. You cannot win—the best you can do is to destroy twelve aliens.

IV Substrike





In this game you command a frigate patrolling an area of sea in which up to 10 enemy submarines lie submerged. If you destroy a submarine this is marked by an asterisk, otherwise a number is shown giving the distance, in squares, to the nearest submarines. Beware, however, you must move quickly as other submarines now know your position and launch torpedoes at you. You must try to eliminate all of the submarines in the minimum number of moves and drops.

V Codebreaker



The computer thinks of a four-digit number which you must guess in up to 10 tries. Only the digits 1 to 9 are used and they are not repeated. The computer gives you a score for each attempt. Each white scored shows the right number guessed but in the wrong place. Each black scored shows the right number in the right place.

VI Mayday





You have only 10 hours to search for a lost space person tumbling somewhere in a 7 x 7 x 7 km cube of chilly space. You can enter 3 search co-ordinates in the range of 1 to 7 and the computer will indicate if any of the co-ordinates are correct. Can you find the astronaut before his life-support system fails?

Cassette 5: JUNIOR EDUCATION 9-14 year-olds

For ZX81 (and ZX80 with 8K BASIC ROM)

I Maths



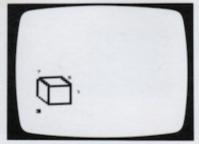
This tests arithmetic (addition, subtraction, multiplication and division) with three levels of difficulty. The computer asks you 10 questions, and marks your answers "correct" or "wrong". After 10 questions you are given your score, and the chance to try again. Record your score on paper so that you can monitor progress.

II Balance



This tests your understanding of the theory behind the lever or see-saw-with three levels of difficulty. The computer draws a see-saw with a weight on each side. The distances from the fulcrum are marked for each weight. The weight on the lefthand side is given in kg and you have to enter the weight on the other side needed to balance it. Remember the rule, the weight multiplied by the distance from the fulcrum must be the same on both sides. The computer marks your answer and at the end of 10 questions gives you your score out of 10.

III Volumes



This tests your ability to calculate the volume of a cube. Remember that the volume is the result of the three sides being multiplied together. The computer offers you the choice of two levels of difficulty. It then draws a cube and labels its dimensions. You now have to enter its volume. To your answer the computer marks "yes" or "no".

IV Averages



This program will help you understand the concept of MEAN and MEDIAN and will draw bar charts to help you. Before running the program collect some statistics. The height of each person in a group for example. Then tell the computer how many measurements you have collected. You will then be asked for the min. and max. values, and then for your measurements, in any order.

The computer will then plot a bar graph (histogram) and tell you the MEAN and the MEDIAN, (the MEAN is the average and the MEDIAN is the most popular value).

V Bases



This will test your ability to convert from decimal (base 10) to other bases in the range 2 to 9. First the computer asks which BASE you wish to use and then gives you decimal numbers which you must convert to the base chosen. Your answers are marked and if you are wrong, the correct answer is given. The computer displays your score with each question and after 10 questions it offers you the chance to select another base.

VI Temp



This program displays two barrels full of water. Each barrel has its volume displayed in litres and its temperature in degrees centigrade. You have to calculate the temperature that would result if the two barrels had their contents thoroughly mixed together. The computer will check your answer and correct it if it is wrong. Keep a note of your score.

Sample program: MATHS

For ZX81 (and ZX80 with 8K BASIC ROM)

This tests arithmetic (addition, subtraction, multiplication and division) with three levels of difficulty. The computer asks you 10 questions, and marks your answers 'correct' or 'wrong'. After 10 questions you are given your score, and the chance to try again. Record your score on paper so that you can monitor progress.

```
10
    RAND
 20
    SLOW
 30
    LET F=0
 40
    LET A$="+-*/"
 50
    CLS
 60
    PRINT "FUNCTION 1=+; 2=-; 3=*; 4=/"
 70
    INPUT A
 80
    PRINT , , "LEVEL 1-3"
 90
    INPUT B
100
    FOR N=1 TO 10
110
    CLS
120
    PRINT "QUESTION "; N, F; " CORRECT"
130
    LET C=INT (10 ** B * RND)
140
    LET D=INT (10 ** B * RND)
150
    IF A>2 THEN LET D=INT (D / (10 ** (B-1)))+1
160
    LET B$=STR$ C+ " "+A$(A)+ " "+STR$ D
170
    PRINT , , B$; "=";
180
    INPUT D
190
    PRINT D
200
    IF ABS (VAL B$-D)>0.01 THEN GOTO 240
210
    PRINT , , "CORRECT PRESS N/L"
220
    LET F=F+1
230
    GOTO 250
240
    PRINT , , "WRONG PRESS N/L"
250
    INPUT D$
260
     NEXT N
270
    PRINT , , "SCORE "; F; " OUT OF 10"
280
    INPUT D$
290 RUN
```

Sample program: SNIPER

For ZX81 (and ZX80 with 8K BASIC ROM)

Tests your ability to think under pressure! 40 of the enemy surround you. At irregular intervals, they pop into sight at any of ten positions. In the brief moments they're on view, you must calculate which number key corresponds to that position and press it. If you're right, the man hit by your shot spreads out his arms and legs as he falls. If you miss, he ducks out of sight again. As time goes on, they duck out more quickly.

7, 8, 9, 0 (from left to right). On a ZX81, run this program in the FAST mode.

Firing keys are 1, 2, 3, 4, 5, 6,

```
40 CLS
 50 LET S=0
 60 LET C=0
 70 LET X=INT (RND * 9.9)
 80 LET T = (X+1)*SGN(9-X)
 90 LET X=X*3
100 PRINT AT 4, X; " O"
110 PRINT AT 5, X; "
120 PRINT AT 6, X; "
130 PRINT AT 7, X; "
140 PAUSE 90-C
150 POKE 16437, 255
160 IF INKEY$<>STR$ T THEN GOTO 250
170 PRINT AT 4, X; "■ O ■"
180 PRINT AT 5, X; " ■ "
190
    PRINT AT 6, X; "
    PRINT AT 7, X; "- -
200
210
    LET S=S+1
220
     PRINT AT 15, 0; "SCORE ": S
230
    PAUSE 60
240
    POKE 16437, 255
250
     CLS
260
    IF C=40 THEN GOTO 40
270
    PAUSE INT(RND*120)+30
     POKE 16437, 255
280
290
     LET C=C+1
300
     GOTO 70
```

Sample program: KEYBOARD TESTER

For ZX81

This tests your speed of reaction. At random intervals, a character will appear on the screen. You have to hit the same character on the keyboard as quickly as you can. After 10 goes, your score comes up.

5 CLS 10 LET N=0 20 FOR M=1 TO 10 30 FOR B=0 TO RND*100+50 40 NEXT B 50 LET B\$=CHR\$(28+35*RND) 60 PRINT B\$ 70 LET C\$="" 80 FOR B=0 TO 30 90 NEXT B 100 LET C\$=INKEY\$ 110 IF C\$=B\$ THEN GOSUB 200 120 CLS 130 NEXT M 140 PRINT "SCORE="; N 150 PRINT , , , , "PRESS N/L" **160 INPUT I\$** 170 RUN 200 LET N=N+1 210 PRINT "YES" 220 FOR B=0 TO 20 230 NEXT B 240 RETURN

Sample program: TEMPERATURE CONVERSION

For ZX81 (and ZX80 with 8K BASIC ROM)

This programe converts temperatures from Fahrenheit to Centigrade, and from Centigrade or Kelvin to Fahrenheit.

```
REM TEMPERATURE CONVERTER
 10
20 PRINT "ENTER TEMPERATURE":
30 INPUT T
40 PRINT T
50 PRINT "C, F OR K? ";
60 INPUT Q$
70 IF Q$<>"F" AND Q$<>"C" AND Q$<>"K"
    THEN GOTO 60
80 PRINT Q$
90 IF Q$="F"THEN GOSUB 200
100 IF Q$="C" OR Q$="K" THEN GOSUB 300
110
    CLS
120
   PRINT T; " "; Q$; " = "; N; " "; R$
130
   INPUT A$
   CLS
140
150
    GOTO 10
200 LET N=(T-32)*5/9
210 LET R$="C"
220 RETURN
300
   LET C=T
310 IF Q$="K" THEN LET C=T-273
320 LET N=C*9/5+32
330 LET R$="F"
340 RETURN
```

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