

# **First School Programs**

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Southampton, England



## OSCAR

OBJECTIVES - to provide a simple introduction to the computer and control of its actions (in this case the video display) through the keyboard.

## OPERATION

OSCAR may be loaded from tape and run using CHAIN "OSCAR"

Following display of the title pages Oscar is introduced and the game started. The operator has to guide Oscar around the screen using the four arrow keys in the top right hand corner of the keyboard to extinguish (or 'hit') as many of the white stars as he/she can in 200 moves. Oscar cannot travel through the 'black holes' and has to be guided round them. During the course of the game the number of stars visited is displayed in the upper right hand corner of the screen. On completion of 200 moves the game is ended by Oscar telling you the final score.

## NOTES

The ESCAPE key function has been disabled in this programme. Pressing 'ESCAPE' will cause the programme to rerun from the beginning. To remove this feature delete line 20.

20 ON ERROR RUN.

## OSCARADD

OBJECTIVES - a game for two players to develop skills in simple arithmetic.

### OPERATION

OSCARADD may be loaded from tape and run using

CHAIN "OSCARADD"

A title page is displayed at the beginning of the programme which incorporates simple instructions for the players. Each player is asked to enter their name (and press return at the end of the name) and is then told which Oscar they will be helping. To help Oscar reach his space ship the player must correctly answer the sum displayed in the blue box, each correct answer causes the appropriate Oscar to climb one rung up the ladder. The numbers in the sums range from 1 to 9, having answers up to and including 10. An incorrect answer causes the sum to be passed over to the other player, the same sum being passed backwards and forwards until it is answered correctly. Each answer can be corrected using the 'DELETE' key, and is completed by pressing 'RETURN'. The winner is the player whose Oscar reaches his spaceship first.

Each series consists of three games, at the end of which the number of games won by each player is displayed and another series can be started.

## MOUSE

OBJECTIVES - to develop familiarity with the positions of the letter keys on the keyboard.

### OPERATION

MOUSE may be loaded from tape and run using CHAIN "MOUSE"

When the programme has been loaded the title page will be displayed offering the choice of displaying instructions (I), or continuing,(C),directly into the main programme for those familiar with the instructions. The programme starts by requesting the speed at which the cat is to move, for novices speed 1 is recommended, only people who are familiar with the keyboard will be able to manage speed 3. A staircase is then drawn across the screen and the cat and mouse placed at the top. The cat advances on the mouse, the mouse moves down one step when the key corresponding to the letter displayed in the box in the lower left quarter of the screen is pressed. A wrong entry causes the cat to move faster. The cat wins if it catches the mouse before the mouse reaches the safety of its hole.

Each game comprises three such chases, following which the score of the number of mice saved is given and a new game can be started.

### NOTES

1. The 'BREAK' and 'ESCAPE' keys have been disabled, pressing either will cause the programme to rerun from the beginning. To break out of the programme it is necessary to do a 'hard break' (pressing 'BREAK' twice rapidly in Operating system 0.1, or 'CTRL-BREAK' in versions 1.0 and above).

To remove this feature delete lines 20 and 30 of the programme.

2. To change the speed corresponding to SLOW, MEDIUM and FAST, alter the values in line 70.

70 SLOW = 100: MED = 25: FAST = 10.

### MOUSE (contd.)

The numbers determine the time between each move of the cat in one hundredths of a second. To slow the cat down, by 1 second per move, increase the corresponding value by 100.

## HANGMAN

OBJECTIVES - to develop skills associated with the use of letters and spelling.

### OPERATION

HANGMAN may be loaded from tape and run using

CHAIN "HANGMAN"

The title page at the beginning of the programme offers the choice of displaying the instructions for the game (I) or, for those already familiar with the game, of continuing (C) directly into the main programme. An additional set of instructions detailing how to change the words in the programme is available at the end of the instruction section if the hash (#) is entered.

The programme begins by erecting the scaffold, and inviting the player to "Guess a letter", indicating the number of letters in the selected word by white dashes. Only upper case (capital) letter entries will be accepted. As it is entered each letter appears in the blue box at the top of the screen, entries of letters that have already been used are ignored. If a chosen letter occurs in the word, the appropriate dashes are replaced by that letter, and the player is asked to "Guess the word". If the letter does not occur in the word the next part is added to the man. The game ends when either the word is correctly guessed, or the man is completed.

### NOTES

1. The 'BREAK' and 'ESCAPE' keys have been disabled, pressing either will cause the programme to rerun from the beginning. To break out of the programme it is necessary to do a 'hard break' (pressing 'BREAK' twice rapidly in Operating system 0.1, or 'CTRL-BREAK' in versions 1.0 and above).

To remove this feature delete lines 20 and 30 of the programme.

## HANGMAN (contd)

2. The programme comes with thirty names of animals in the list of words. These are held as DATA statements at lines 10,000 - 10,020 and the words can be altered or the list added to by changing these lines. Each line must start with 'DATA' followed by the words (in CAPITALS) separated by commas. There should be no comma after the final word in each line. The first data statement on line 10,000 MUST be a number indicating the total number of words available.



## OXO

OBJECTIVES - a game for two players designed to develop skills in both addition and subtraction, and introducing an element of strategy.

### OPERATION

OXO may be loaded from tape and run using CHAIN "OXO".

The title page at the beginning of the programme offers the choice of displaying the instructions for the game (I) or, for those already familiar with the game, of continuing (C) directly into the main programme. At the beginning of the programme each player is asked to enter his/her name and is assigned either an 'X' or an 'O'. The players then select the level of difficulty, 1 - 3, before commencing a series of three games. Both addition and subtraction questions will be set having answers falling within the range 0 - 9 (Level 1), 0 - 20 (Level 2) and 0 - 99 (Level 3).

Each player in turn is asked to choose one of the numbered squares on the grid, and to answer a sum. A correct answer causes that player's symbol to be placed in the selected square. If the answer is not correct the opponent can attempt to answer the sum and claim that square. Each entry can be corrected using the 'DELETE' key and is completed by pressing 'RETURN'. A game is completed when one player wins by achieving three symbols in a row, either horizontally, vertically or diagonally, or when all nine squares have been used.

On completion of three games the final scores are displayed and a new series can be started.

### NOTES

1. The 'BREAK' and 'ESCAPE' keys have been disabled, pressing either will cause the programme to rerun from the beginning. To break out of the programme it is necessary to do a 'hard break' (pressing 'BREAK' twice rapidly in Operating system 0.1, or 'CTRL-BREAK' in versions 1.0 and above.).

OXO (contd.)

To remove this feature, delete lines 20 and 30 of the programme.

2. To change the values of the answers corresponding to the levels of difficulty alter the values of the variables LOW, MED and HIGH in Line 45.

## MYSTERY

OBJECTIVES - to develop the skills of addition and subtraction.

OPERATION MYSTERY is supplied as two programmes;

MYSTERY1 which tests addition by setting problems in the  
form  $?-2=10$

MYSTERY2 which tests subtraction by setting problems in the  
form  $6-?=1$

Answers are in the range 0-20

The selected programme may be loaded from tape and run using  
CHAIN "MYSTERY1" or "MYSTERY2"

A title page is displayed at the beginning of the programme, and this is followed by a request to enter the players name. A simple equation is then set, having one number replaced by a question mark. The player is asked to work out the value corresponding to the question mark. A correct answer wins one star and is rewarded with a jingle. If an incorrect answer is given stacks of bricks are used to demonstrate how to solve the problem. This process is repeated until a correct answer is entered. Each answer can be altered using the 'DELETE' key before it is completed by pressing 'RETURN'.

One game consists of a series of ten sums, after which the score of answers correct first time is displayed and the player is invited to play another game.

## WISE OWL

OBJECTIVES - to develop skills in simple arithmetic.

### OPERATION

WISE OWL is supplied as two separate programmes 'OWL+' and 'OWL-' which test addition and subtraction respectively.

They may be loaded from tape and run using:

CHAIN "OWL+"                      or            CHAIN "OWL-"

Following display of the title page the player is invited to enter his or her name and to choose a number between one and nine. Using this number as a base a list of ten example sums is then displayed having answers ranging from 1 to 19. These are the sums that will be used in the game.

The game is started by pressing X. Sums taken at random from the list are presented and the player requested to supply the answer. A correct response causes the owl to appear before moving onto another question. If the answer is incorrect, a second try is allowed, and if this is still incorrect, help is given to the player in the form of a number bar. The arrow on the bar points at the starting number, and the player is instructed to press 'C' the appropriate number of times (each time moving the pointer) until the correct answer is achieved. The player is then given another chance at answering the question. This cycle of events is repeated until a correct answer is given, each sum has to be answered correctly. The game is completed when all ten questions have been correctly answered. At the end the time taken to correctly answer all the sums is given in seconds, allowing a competitive element to be introduced if this is felt to be desirable.

## SEARCH

OBJECTIVES - to develop skills of word recognition.

### OPERATION

SEARCH may be loaded from tape and run using CHAIN "SEARCH"

When the programme has been loaded the title page will be displayed offering the choice of displaying instructions (I) or continuing (C), directly into the main programme for those familiar with the instructions. The programme starts by displaying a grid of letters on the screen, amongst which are hidden ten animal names (on the programme tape supplied these all start with a capital letter to make them easier to find). These words may be arranged horizontally, vertically or diagonally within the grid. The letter in the top left corner is coloured red, which acts as a cursor. This cursor can be moved to anywhere on the grid using the four arrow keys in the top right hand corner of the keyboard.

The letters that make up a word (which must be adjacent to each other on the grid) are copied to the bottom of the screen by positioning the cursor over the selected letter and pressing the SPACE BAR. When the whole word has been copied in this way the entry is registered by pressing 'E', and the player will be told if the answer is RIGHT or WRONG. Incorrect entries will be rubbed out, whilst correct entries are left illuminated in yellow on the grid. Words may be positioned next to each other, but they never use the same letter on the grid. Incorrect entries may be corrected using the 'DELETE' key before pressing 'E'.

When all ten words have been successfully identified the time taken to complete the game is displayed. A new game using the same words can then be started by pressing 'C'. The words are randomly distributed within the grid and their positions change in each game.

NOTES 1. The subject printed in the instruction list at the beginning of the game can be altered by changing the word inside the quotation marks in line 40.

e.g. SUBJECT\$="ANIMALS"

## SEARCH (cont)

2. The list of words is held in the Data statement on line 5000 and can be changed by editing this line. Do not alter line 5010, as this is used to mark the end of the data word list and allows the programme to work out the number of words to be used.

You are recommended not to use more than 10 words, as greater numbers may be difficult to fit into the grid. In addition the construction of the grid (which takes place before the letters are actually displayed) will be considerably faster if the longest words are placed at the beginning of the list, as these are put in first, and the later words fitted around these. The programme will not start until all the words are placed in the grid, and if there is not space left for the last words the programme will appear to 'hang up' before displaying the letters.

3. Once the programme has been run the function of the control keys is altered. To edit the programme it is best to list the programme immediately after it has been LOADED, before it is RUN.

## KEYWORD

OBJECTIVES - to develop skills of word recognition.

### OPERATION

KEYWORD may be loaded from tape and run using CHAIN "KEYWORD"

Following the title page a page of instructions is displayed and the game can be started by pressing "C". The keyword is displayed in the black box and the player challenged to find a target number of 'hidden' words within it. Each entry is checked against a list of words in the memory, and RIGHT or WRONG flashed on the screen as appropriate. When the target number of correct answers has been entered the next keyword is displayed. Should the player be unable to find all the hidden words in a keyword, entering '?' followed by 'RETURN' will cause the remaining words to be revealed. Each game consists of five keywords, after which the player is told his score of correct words out of the maximum number possible.

NOTES 1. The list of words is held in the data statements starting at line 5000 and these can be changed or added to as the user wishes. New data lines must have numbers that are multiples of 10 - for instance 6010, 6020, and the first word on the line following the data statement must be the keyword. This is followed by a list of hidden words, each separated by a comma, and the list must be terminated by three capital X's.

e.g. 5090 DATA father, fat, a, the, he, her, XXX

2. Once the programme has been run the function of the control keys is altered. To edit the programme it is best to list the programme immediately after it has been LOADED, before it is RUN.

3. The entry made by the player on the keyboard must exactly match the entry in the list of words in the data statements to be marked RIGHT. The use of upper instead of lower case letters, or the inclusion of a space at the beginning or end of the word will be treated as a wrong answer.

## REFLECTION

OBJECTIVES - To introduce concepts of symmetry.

### OPERATION

REFLECTION may be loaded from tape and run using CHAIN "REFLECTION".

Following the titles a page of instructions is displayed. When the instructions have been read, entering 'C' causes the screen to be cleared and a white flashing cursor to be displayed near the centre of the screen.

The programme operates at two levels:-

Level 1 - a random pattern generator. Each time the SPACE BAR is pressed a coloured triangle is drawn on the right hand side of the screen. Multiple depressions of the space bar cause subsequent triangles to overlay those already on the screen, thereby building up a pattern of colours. These patterns usually look a jumble, and not aesthetically pleasing, but by pressing 'A' (for Across), this can be copied horizontally to the left hand side of the screen generating a pattern which is symmetrical about the mid-line of the screen. A further plane of symmetry can be generated by pressing 'U' (for Up) which causes the contents of the lower half of the screen to be copied to the upper half.

A and U can be pressed in any order, depending upon the effect desired, and entering A, U in sequence results in the pattern in the lower right hand quarter of the screen being copied onto the other three quarters. This can produce some very pleasing effects.

A, U and the SPACE BAR can be entered in any sequence allowing the contribution of each new addition to the final pattern to be observed. Pressing the 'ESCAPE' key will clear the screen ready for a new pattern to be generated.

Level 2 - a sophisticated drawing programme. Using this level it is possible to construct complex drawings on the screen directly from the keyboard. The flashing cursor seen at the beginning of the programme can be moved anywhere on the screen using the four arrow keys in the



## REFLECTION (cont)

upper right hand corner of the keyboard, this marks the position at which drawing will commence.

### COLOUR

To start drawing you simply select a colour by entering 'C' followed by a number from 0 to 7 and move the cursor using the arrow keys.

The code numbers corresponding to the colours are:-

- 0 - black or rub out
- 1 - red
- 2 - green
- 3 - yellow
- 4 - dark blue
- 5 - magenta
- 6 - light blue (cyan)
- 7 - white
- 8     flashing cursor
- 9

An entry of C8 or C9 will cause the flashing cursor to reappear, which can then be moved about the screen without drawing over what is already there.

(N.B. do not press RETURN between 'C' and the colour code number).

### SIZE

The size of the line drawn can be changed by entering 'S' followed by a number between 1 and 9. Size 9 draws thick lines and is useful for blocking in areas of colour such as background, size 1 is the thinnest and can be used for detailed work.

### LINES

In addition to freehand drawing straight lines can be drawn between a defined origin on the screen and the current cursor position. The origin is initially set at the position of the cursor at the start of the programme, but this can be altered by pressing 'O', when the origin will be moved to the current position of the cursor. The cursor can then be moved around the screen, and lines drawn to the origin by entering 'D'

## REFLECTION (cont)

(Draw). The lines will be drawn in the current cursor colour, and if that happens to be flashing the lines will flash too! Some interesting 'lace' patterns can be obtained by using size 4 or 5 and moving the cursor around the edge of the screen, drawing lines to an origin near the centre.

Levels 1 and 2 are available simultaneously in the programme - random triangles can be added to a 'freehand' drawing by pressing the SPACE BAR, and horizontal and vertical reflections can be generated by using 'A' and 'U'.

The only point to note when mixing the two levels is that each time a random triangle is generated the cursor is automatically set to size 1 (smallest) and moved to the lower left hand corner of the screen.

With a little practice REFLECTION can be used to draw detailed pictures and patterns on the screen.

### SUMMARY OF REFLECTION COMMANDS

SPACE BAR - generates random triangles

A - copies the contents of the right hand of the screen horizontally to the left.

U - copies the contents of the lower half of the screen to the top.

C - colour followed by a number 0 - 9 sets the current drawing colour.

S - size followed by a number 1 - 9 sets the thickness of the line drawn.

D - draws a straight line from the current cursor position to the origin.

O - sets the origin for drawing lines to the current cursor position.

ESCAPE - Clears the screen and resets the cursor position and the origin to near the centre of the screen.

## NOTES ON CHANGING THE WORDS IN HANGMAN, SEARCH AND KEYWORD.

The word games Hangman, Search and Keyword have been designed to enable the lists of words to be easily changed to suit the needs of particular classes. The programmes are written in BASIC and can be altered using the usual BASIC editing commands, full instructions being given in the documentation supplied with the programme. The following additional guide notes will be of use to those unfamiliar with programming techniques. HANGMAN is used in the following examples; the appropriate programme name should be substituted where necessary.

1. Load the programme from the tape by typing

LOAD "HANGMAN" - then press the 'RETURN' key.

2. When the programme is loaded the machine will sound a tone and the prompt '>' will appear on a new line on the screen.

Enter LIST and press 'RETURN'

- a listing of the programme will be displayed on the screen - this will flash past very rapidly until the end of the programme is reached. In the last few lines the data statements containing the words will be found.

If it is necessary to view a line earlier in the programme than those displayed type

LIST, n - followed by 'RETURN'

where n is the number of the line to be examined.

3. In BASIC each programme line starts with a line number (usually a multiple of 10) which is then followed by the programme instruction or list of words.

e.g. 10000 DATA 30, RABBIT, MOUSE, HAMSTER, SHEEP

each line may be longer than can be accommodated in one line on the screen, and so they 'wrap round' onto the following line. A new programme line is indicated by a new line number at the start.

## NOTES ON CHANGING WORDS (contd.)

4. Lines can be added to or edited by either retyping the whole line (including the line number), or by using the screen editor (see pages 29 - 31 of the User Guide).
5. When all the desired changes have been made the new version of the programme can be preserved on a fresh tape by typing

SAVE "HANGMAN" - press 'RETURN' key.

(see User Guide pages 34 - 37).