VIC 20
COLOUR COMPUTER

Test your Child Series

AGE RANGE 7-11

Arithmetic

EDITORIAL MATERIAL SUPPLIED BY HODDER & STOUGHTON EDUCATIONAL

This program requires the use of an 8K or 16K RAM Expansion Cartridge in the VIC 20.

The information in this manual has been reviewed and is believed to be entirely reliable. No responsibility, however, is assumed for inaccuracies. The material in this manual is for information purposes only, and is subject to change without notice.

All programs require the use of an 8K or 16K plug-in RAM Expansion Cartridge with the VIC. **The programs will not run in an unexpanded machine or in any other make of computer.** Your dealer will have stock of the necessary expansion cartridge. In case of difficulty, please contact Commodore Business Machines (UK) Limited at the address below.

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MADE IN ENGLAND

TEST YOUR CHILD'S

ARITHMETIC

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ARITHMETIC

Introduction

There is no 'right' way to teach arithmetic. Indeed there are more different teaching approaches to arithmetic and mathematics than to any other basic skill area, and the separation of 'old' and 'new' maths is not as clear cut as is widely believed.

The purpose of these programs is to give graded examples of some of the different types of questions commonly found in published tests, and to give a broad indication — no more — of a child's attainment in arithmetic. Thus the scores given at the end of each program — and printed at the back of this booklet — give the range of scores which might be expected from average children of the same age.

The material (not more than one section at a time) should be presented to the child as informally as possible, to be worked through at the child's own pace firstly *without* the aid of a calculator. Pencil and paper will almost certainly be necessary for some of the questions. Answers have not been provided because it is assumed that the parent will help the child to check those questions which were incorrect, when VIC shows them the second time. At this stage many of the questions can be reworked by the child *with* a calculator, thereby gaining practice in its use. The accurate use of a calculator, however, is no substitute for the child's own ability to understand and manipulate figures.

Since many of the questions in the tests are randomly generated by the computer, a child can use the tests time and time again. Use the table at the back of the booklet to keep a check on your child's progress.

LOADING AND RUNNING

1. Switch off VIC to clear the memory completely and make sure your 8K or 16K RAM Expansion Cartridge is plugged into the slot at the back of VIC before carrying out the following:

2. Switch on VIC. Place the required cassette into the cassette deck. You will find "Addition", "Subtraction" and "Multiplication" on one cassette and "Division", "Fractions" and "Problems" on the other.

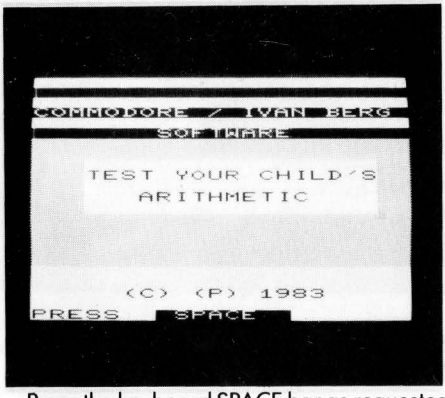
3. Type LOAD"ADD" (or, if you require one of the other programs, "SUB", "MULT", "DIV", "FRACS" or "PROBS") and press RETURN. VIC will respond with PRESS PLAY ON TAPE.

4. Press PLAY on the cassette deck and VIC will respond with OK SEARCHING FOR ADD, then after a few seconds, FOUND ADD LOADING. Loading will take a couple of minutes.

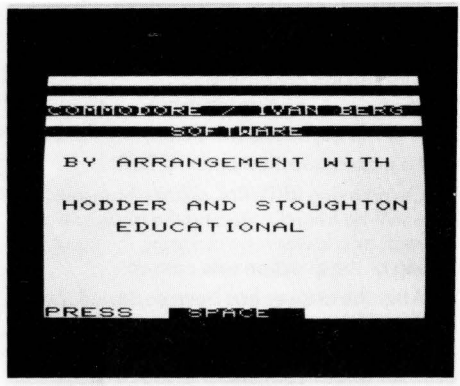
If VIC does not display FOUND ADD LOADING after approximately 30 seconds, carry out steps 1 to 4 again. If VIC does load the program but presents LOAD ERROR on screen, turn the tape over and carry out steps 1 to 4 again. The programs are recorded on both sides of the cassette for problem-free loading. Once the program is loaded VIC will display READY.

5. Type RUN and press RETURN. If you require sound effects, please turn up the volume on the television set.

6. This is the program title.



Press the keyboard SPACE bar as requested and the program credits are presented. Press SPACE again.



7. VIC introduces himself and asks for the child's name. Type in the name and press RETURN.

For scoring purposes, the tests have an upper age limit of 11 and, generally, a lower limit of 7, although the tests on fractions and problems are best suited to slightly older children. If a child outside this range wishes to take the tests, he must 'pretend' to be within the age group. In this case the score at the end of the test becomes invalid. Enter the age in years and press RETURN.

8. The next screen display will tell you how many questions there are in the test, and on pressing the SPACE bar, the test begins.

NOTES ON PROGRAMS

These notes are for your guidance. Please read them through carefully.

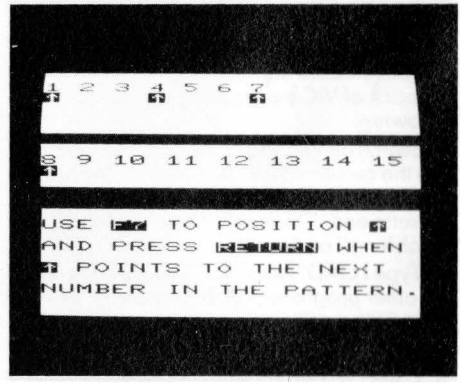
Please note the following points which apply throughout the programs:

1. The key marked "INST/DEL" on the top right of the keyboard will delete any mistakes.
2. To pass a question press RETURN.
3. On pressing RETURN, either a high-pitched tone will be heard, meaning the answer was correct, or a lower tone meaning the input was wrong or the question was passed.
4. After the answer has been accepted, press the SPACE bar to continue to the next question.
5. As the questions in each section are graded in order of difficulty, there is a facility incorporated to 'jump out' of a section to avoid a child becoming unduly disillusioned if he cannot answer the questions. Pressing the CLR/HOME key (top right of the keyboard) will jump from one section of questions to the next, or from the final section to the score. Questions passed in this way are not presented again for a second attempt.
6. When the test has been completed and the score given, VIC will present all those questions wrongly answered a second time. This allows the child a second attempt at these questions. If this facility is not required, and you would like to END the program, use CLR/HOME.

You can break out of the program completely at any time by pressing the RUN STOP and RESTORE keys simultaneously. The screen will go blank and display READY. The program is, however, still in the VIC's memory, so to run the program again, type RUN and press RETURN.

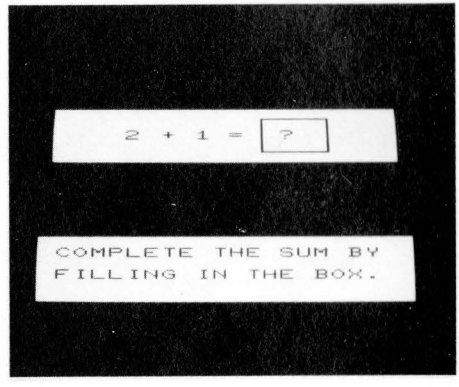
Addition

This test comprises 60 questions. The first 10 are number sequences where the child has to point out the next number in the sequence.



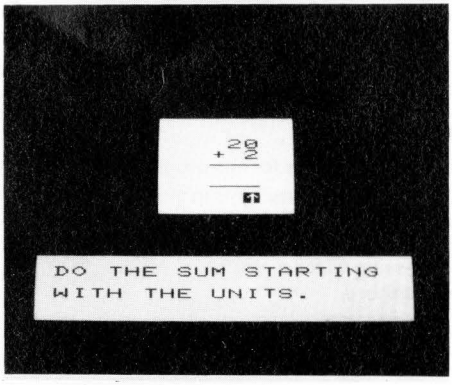
The first 5 questions are of this type. In the top portion of the screen, the arrow points to the numbers in the series — in this case 1 4 7. The middle section of the screen gives the possible options for the next number in the series. Use the f7 key on the right of the keyboard to move the pointer and press RETURN to enter the choice into the computer. In this case, the answer is 10 (adding 3 to the number each time). In the next 5 questions, the child is to type in the next number in the sequence and press RETURN.

The next 40 sums are of this type:



These questions are generated randomly by the computer, and so will be different each time the test is used.

The last 10 questions are of this type:



The arrow indicates the position of the next figure to be typed in. There is space for 5 figures but "leading" zeros need not be entered.

Subtraction

There are 45 questions in this test. The first 5 are, again, number sequences of the type:

36 30 —— 18 12

The answer is 24 — arrived at by subtracting 6 from the previous number.

The remainder of the questions are presented in the same way as those in "Addition".

Multiplication

The Multiplication test contains 50 questions. The first 5 are number sequences of the sort:

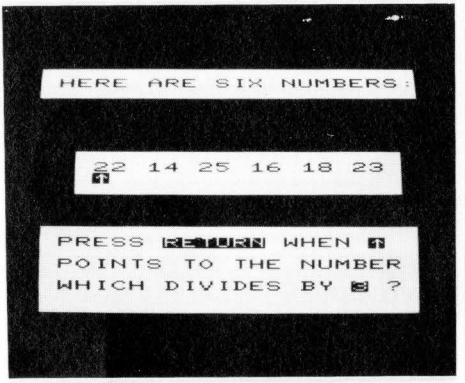
2 4 —— 8 10

The sequence is $1 \times 2 = \mathbf{2}, 2 \times 2 = \mathbf{4}, 4 \times 2 = \mathbf{8}$ etc., so the answer will be **6**, being 3×2.

The remainder of the questions are presented in the same way as those in "Addition" and "Subtraction".

Division

There are 45 questions in the Division test. In the first 10 questions the child has to point out a number which is divisible by a specified number.



The six numbers in the middle portion of the screen change after the first 5 questions. Only the specified number changes each time. Use the f7 key to move the arrow and press RETURN when it is correctly placed.

The next 5 questions are simple division problems. The child calculates the answer, types it in and presses RETURN.

The next 10 questions are straightforward one-line division sums. These are followed by a number of long division type sums. The child should calculate his answer first then type the answer in the box. Leading zeros need not be typed.

Fractions

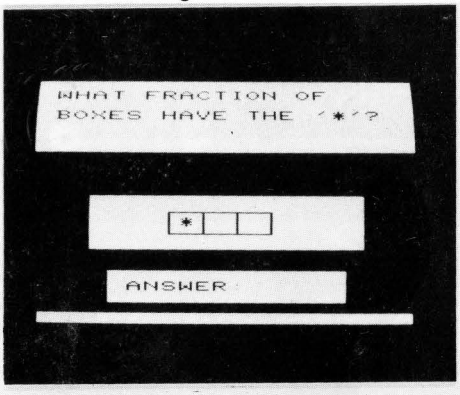
The minimum age for this test is 9.

This test contains 45 questions covering addition, subtraction, multiplication and division of vulgar fractions as well as decimal fractions. Because the keying in of fractions and mixed numbers is a little more complex than the input of answers for the previous tests, special instructions are given where necessary. Read these carefully with the child and ensure that he understands how to key in his answers.

All answers should be cancelled down to their lowest terms, unless an "equivalent" fraction is requested or the fraction is part of a sequence.

eg. $\frac{6}{8}$ – becomes – $\frac{3}{4}$

The first 5 questions require the child to state the fraction of a figure which is indicated.



The answer here is a third, so type in 1 (the cursor moves to the next position), then — (the cursor moves down again), then 3 and press RETURN.

Where whole numbers are required as part of the answer, type in the whole number by pressing the SHIFT key simultaneously with the whole number, then release the SHIFT and key in the fractional part as before.

The last 20 questions use decimal fractions. It is important here to type in a zero where it precedes the decimal point, e.g. Ø.5 not .5.

Problems

The minimum age for this program is 8.

There are 40 problems in this test which involve all the "4 rules", including fractions, as well as other aspects of arithmetic.

Pressing CLR/HOME here will jump directly to the score.

RATING CHART

Test	Age 7	8	9	10	11
Addition	20-26	30-38	40-46	48-52	53-55
Subtraction	1- 3	8-12	18-25	30-36	38-53
Multiplication	2- 5	10-17	21-27	30-36	38-43
Division	1- 3	5-10	13-20	25-32	33-37
Fractions	—	—	3- 5	7-10	11-15
Problems	—	1- 2	5- 8	9-10	11-15

PROGRESS CHART

Date			
Name			
Age/Sex			
Addition			
Subtraction			
Multiplication			
Division			
Fractions			
Problems			