

© ROSE SOFTWARE INTERMEDIATE MATHS 1

This cassette contains six 48K Spectrum programs designed to make maths interesting and exciting for the 10 - 14 year old, and at the same time increasing his knowledge and ability.

Each program uses the teach and test technique, which allows the student to proceed at his own pace, checking at each stage for his understanding of the problem.

In four of the programs, "help" facilities are available to the user when he is in difficulty, and there is a clear and detailed explanation of the correct answer, should the student's answer prove incorrect.

There is also the facility for the student to enter his working directly onto the screen, so that he has no need of a notepad and pencil.

Each program carries a different incentive "jackpot" game, whereby the student can hit the jackpot if he answers enough questions correctly.

At the end of each program, there is a certificate (with hard copy if a printer is attached) showing the student's name and his achievements during the course of the program.

The six programs cover the following topics:-

1st. program: Long multiplication

There are two levels of difficulty to choose from, the first being to multiply a two digit number by a two digit number, and the second being to multiply a three digit number by a three digit number.

The student is shown how to multiply first by the units, then by the tens, and then by the hundreds, ensuring that each figure is entered in the correct column.

When testing the student, the program allows for up to three lines of calculation to be entered, each line starting from the right hand end as in normal pen and paper calculations.

If the student inadvertantly makes an error when keying in, there is a facility to rub out. He can also ask for help if unsure what to do.

If the student's answer is incorrect, the computer goes through the detailed workings alongside the student's answer, so he can see where his error occurred.

The jackpot game in this program is a ten pin bowling alley together with a tune.

2nd. program: Long division

The student is shown how to divide a four digit number by a two digit number, ensuring that figures are entered in the correct columns and demonstrating how to "bring down" the next number as part of the calculation.

When the student is entering his own calculations, he is told if he has made an error, enabling him to correct his mistake before proceeding.

The jackpot game is to get a rocket to the moon by getting three correct answers.

3rd. program: Highest common factor

The highest common factor (hcf) is the highest number that divides each of two or more numbers exactly eg:

12 is the hcf of 24, 36 and 60

We calculate this by splitting 24, 36 and 60 into their prime factors like this:-

24 = 2 × 2 × 2 × 3 36 = 2 × 2 × 3 × 3 60 = 2 × 2 × 3 × 5 50 that 2 × 2 × 3 (= 12) is common to all three

When testing the student, there is a "help" facility available when he is in difficulty, and an explanation of the correct answer should his answer prove incorrect.

The jackpot game is to get a train to the end of the line with enough correct answers. A tune is incorporated.

4th. program: Lowest common multiple

The lowest common multiple (Icm) is the smallest number that is exactly divisible by each of two or more given numbers eg:

60 is the 1cm of 4, 6 and 10

We calculate this by splitting 4, 6 and 10 into their prime factors like this:-

4 = 2 x 2 6 = 2 x 3 10 = 2 x 5

The Icm is the number that contains ALL their factors, so that

2 x 2 x 3 x 5 (= 60) is the 1cm of 4, 6 and 10

When testing the student, there is a "help" facility available when he is in difficulty, and an explanation of the correct answer should his answer prove incorrect.

The jackpot game is to make a caterpillar crawl to its food and eventually turn into a butterfly. A tune is incorporated.

5th. program:

Adding and subtracting fractions The top number of each fraction is called the numerator, and the bottom number is called the denominator. In order to add or subtract fractions, we must first find the Icm of the denominators, eg:

Add
$$\frac{1}{3} + \frac{1}{6} + \frac{2}{5}$$
 The lcm of 3, 6 and 5 is 30
So we can re-write our example:-

Add $\frac{10}{30} + \frac{5}{30} + \frac{12}{30}$ giving us $\frac{27}{30}$

But we must put the answer in its lowest terms

So
$$\frac{27}{30}$$
 becomes $\frac{9}{10}$

When testing the student, there is a "help" facility, and the explanation of the correct answer shows the Icm of the original denominators.

The jackpot game is target practice in hitting the bullseye. A tune is incorporated.

6th. program:

Multiplying and dividing fractions

In order to multiply fractions, first multiply the numerators to give the new numerator, and then multiply the denominators to give the new denominator, eg:

$$\frac{2}{3} \times \frac{2}{5} = \frac{4}{15}$$

Often the task can be made easier by cancelling before carrying out the multiplication, eg:

$$\frac{6}{7} \times \frac{1}{9}$$

Divide the 6 and the 9 by 3 like this:-

$$\frac{2}{7} \frac{\cancel{6}}{\cancel{7}} \times \frac{1}{\cancel{9}}_{3}$$
 The answer is $\frac{2}{21}$

In order to divide one fraction by another fraction, eg:

 $\frac{1}{5} \div \frac{3}{4}$ turn the second fraction upside-down and then multiply

So our example becomes

 $\frac{1}{5} \times \frac{4}{3}$ Answer $\frac{4}{15}$

When testing the student, there is a "help" facility available, and an explanation of the correct answer.

The jackpot game is a ten pin bowling alley.

TO LOAD A PROGRAM:-

Ensure the heads of your cassette deck are clean and demagnetised

Key in

LOAD "long mult" (for the 1st. program) and press ENTER

OTHER SPECTRUM PROGRAMS PUBLISHED BY ROSE SOFTWARE INCLUDE:-

"O" Level Maths Revision - GEOMETRY
"O" Level Maths Revision - TRIGONOMETRY
"O" Level Maths Revision - EQUATIONS & INEQUALITIES
"O" Level French Vocubulary Revision
Intermediate Maths 2
Young Learners 1
Young Learners 2
Young Learners 2
Primary Arithmetic
Learning To Read Music
Quazer

Send sae for brochure of all our products to:-

ROSE SOFTWARE, 148 Widney Lane, Solihull, West Midlands B91 3LH.

© Copyright 1984 Rose Software. No part of this recording shall be reproduced, hired or loaned without written permission. While every precaution has been taken in the preparation of this recording, the publisher assumes no responsibility for errors nor liability for damages arising from its use.