

The use of I.T in the mathematics classroom

Daniel Buhagiar

The use of information technology in mathematics is nowadays given a prominent place in the curriculum. Programming helps those children who find it difficult to learn mathematics in the traditional way. To these students the use of computers makes mathematics more appealing and creative. Thus Mathematics is given a new outlook. The Malta Mathematics Resource Centre set up a site, which supports teachers with resources to be abreast of what is happening locally, regarding the teaching of Mathematics. Syllabi, ICT activities and links to other Mathematics websites can easily be accessed at their site whose URL is <http://schoolnet.magnet.mt/mathis>.

Logo

The principal credit for the development of LOGO is attributed to Seymour Papert. The concept of turtle graphics was born. This programming language helps children to learn the concepts of mathematics. Through commands that move the picture of a turtle on the screen, children are provided with concrete experiences of a number of concepts, which include distance, angle, shape and symmetry. It encourages new learning and teaching styles where importance is given to the "process" of learning rather than to the "product". Children are encouraged to understand the problem, devise a plan and finally check the solution.

The table below contains a summary of commands used in LOGO programming:

Name	Abbreviation
FORWARD	FD
BACKWARDS	BK
RIGHT	RT
LEFT	LT
PENUP	PU
PENDOWN	PD
HIDETURTLE	HT
SHOWTURTLE	ST
CLEARGRAPHICS	CG
SETCOLOR	SETC
SETBACKGROUND	SETBG
HOME	
REPEAT	

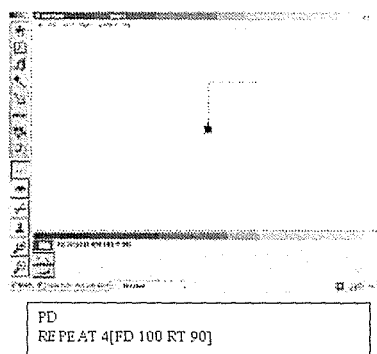


Figure 1: Various LOGO commands and a screenshot

Excel

The main aim of Excel in the mathematics classroom is to acquaint the student with the spreadsheet and its ability to store, manipulate, calculate and analyse data. For students from eleven to twelve years of age, work is done on pre-written computer stored worksheets. However at a later stage, students are encouraged to create their own work. With an electronic spreadsheet, the computer does all the calculations. It includes features such as automatic calculations, sorting and finding data, graph plotting, and built-in statistical formulae.

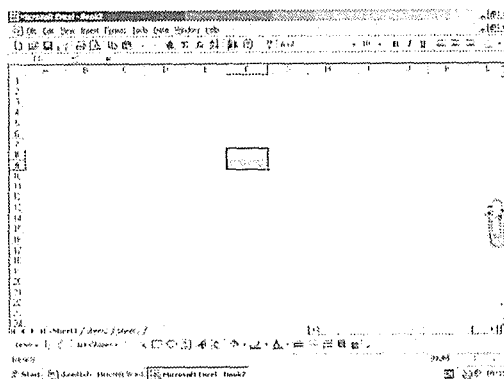


Figure 2: Microsoft Excel

Derive

Derive is a tool which eliminates the drudgery of performing long mathematical calculations. Many calculations can be worked out more efficiently and effectively than by using the traditional methods. Techniques of problem solving are emphasized. Derive is dedicated to algebra manipulation, equations, trigonometry, vectors, matrices and calculus although the latter three are no longer part of the present syllabus. Derive encourages students to be curious and provides new ways of teaching. It induces in our children a sense of motivation where they are seen as active participants rather than potential recipients of knowledge.

Cabri

Cabri provides a medium for pupils to construct elementary theorems for themselves. It is an interactive notebook for learning geometry. By moving basic points on a screen and observing changes, the students make a simple conjecture. They try to explain what they have noticed and make their own notes.

If properly used the support of computers in the mathematics classroom has the potential to make a significant contribution to pupils' learning in mathematics.

