Gerald's Column
by Gerald Fitton

Letters referring to my discussions of mathematical (and other) philosophical matters keep pouring in but I have decided that, at least for the moment, I shall make no more comment in Archive though I will continue to answer your letters individually.

My thanks to Paul and to Gareth Owen of Clares for the copy of Schema 2 which I received about a week ago. This month I shall follow up last month's comparisons of the way in which various spreadsheet packages allow you to enter text and how they cope with my most difficult charting problem, a graph of the cube and cube root functions.

PipeDream

On 10th May 1996 Jill and I were invited to a meeting with Protechnic at Cambridge. To my surprise and great pleasure the possibility of a new version of PipeDream was discussed. It would seem that Protechnic would be willing to invest in a new version of PipeDream if the extent of the demand were to be such that they can make it a financially viable proposition. If Protechnic go ahead then current registered users would be offered a paid for upgrade. Over the past year or so I have received much correspondence from PipeDream enthusiasts asking if there was any way of getting PipeDream upgraded. Some even suggested that we users should club together and buy PipeDream from the owners and then commission the upgrade ourselves. Consequently I started looking into what would be involved in buying PipeDream – but I've put those plans on hold for the moment; maybe we won't need to buy it after all.
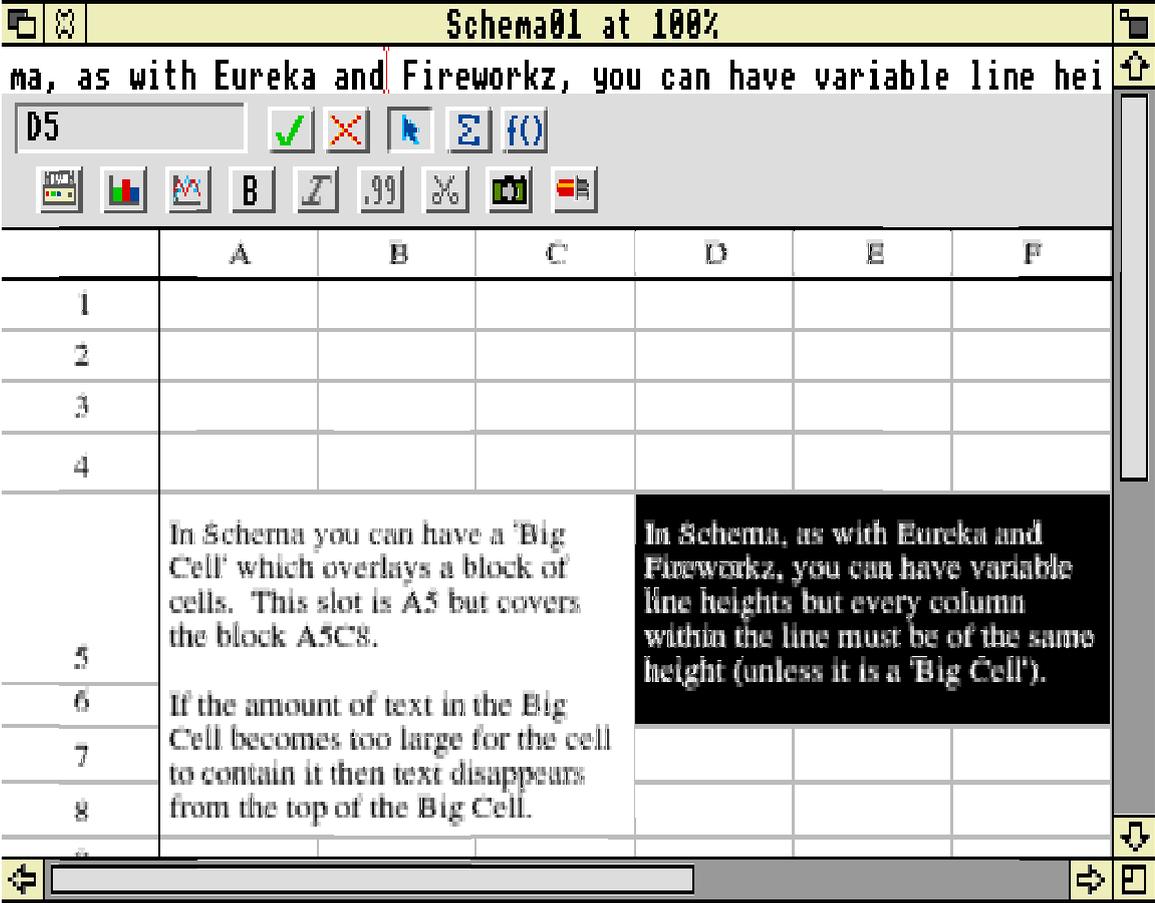
Text in a Spreadsheet

Last month I explained that PipeDream and Fireworkz were primarily spreadsheets but with word processing features built in so that you can mix many paragraphs of text quite easily with live spreadsheets within the same document. The facility for the inclusion of text in Eureka documents is more limited. However, Eureka can be linked to Impression using Acorns OLE – many of you will prefer to use such a combination of Impression and Eureka rather than the PipeDream or Fireworkz integrated packages.

The screenshot below appeared last month and should remind you of the way you can include text in these two packages.
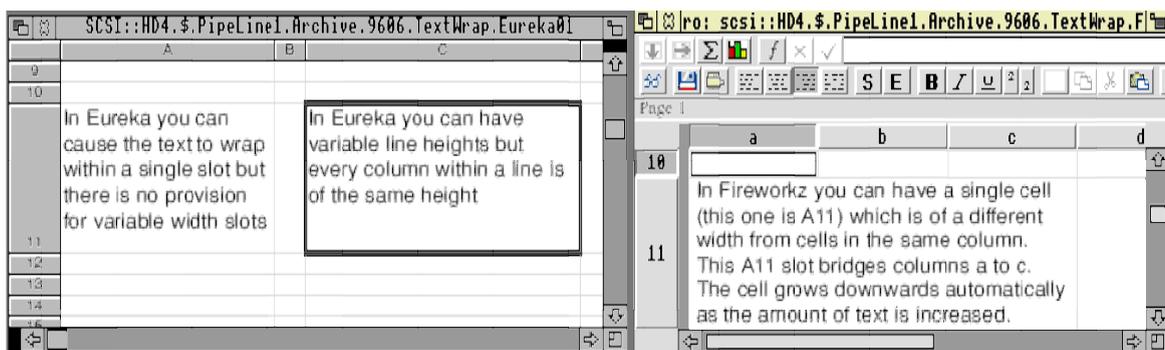
For comparison, look at the screenshot below and you will see a couple of text cells in a Schema 2 spreadsheet. Schema has a facility not shared by the other spreadsheets called a 'Big Cell'. You can create a Big Cell which overlays a block of cells. In the screenshot I have created two such Big Cells, A5C8 and D5F6. If you make a Big Cell too large or too small for the text which you want it to contain you can not go back and add or delete cells from the block which it overlays. However, you can change both the line height and column widths of the cells which the Big Cell overlays and sometimes this is sufficient.

ma, as with Eureka and Fireworkz, you can have variable line hei

D5

|	A	B	C	D	E	F
1						
2						
3						
4						
5	In Schema you can have a 'Big Cell' which overlays a block of cells. This slot is A5 but covers the block A5C8.			In Schema, as with Eureka and Fireworkz, you can have variable line heights but every column within the line must be of the same height (unless it is a 'Big Cell').		
6						
7	If the amount of text in the Big Cell becomes too large for the cell to contain it then text disappears from the top of the Big Cell.					
8						

The screenshot also demonstrates what I believe to be a negative feature of Schema which it shares with Eureka – you can not edit text within the cell but only in what is generally referred to as the 'formula line'. Contrast this with PipeDream or Fireworkz in which you can edit text within a cell. Indeed, later versions of Fireworkz have a facility which I usually turn off, namely that you can edit not only text but also numbers and formulae within a cell. I turn it off so that I can see more easily which cells are 'text cells' and which are 'number cells' by looking at the formula line to see if it's blank (a text cell) or if it contains a number or formula (a number cell).

I find PipeDream and Fireworkz easier to use because, as I enter or edit text within the cell, I can see exactly what the layout is like. In Eureka and Schema 2 the text is entered or edited within the formula line as a single long line. You only see what it looks like in the cell when you finally tap <Return>.

Graphs in Schema

Last month I included examples of a rather complex graph which I produced using PipeDream, Fireworkz and Eureka with varying degrees of success. To remind you of the graph I repeat the PipeDream version below.

The points I made about this PipeDream graph were: (a) there are three independent lines on the chart; (b) you can add more lines without starting again; (c) each line has different x and y ranges; (d) there is no limit to the number of text objects which you can add to the chart (e) these text objects can be placed anywhere you like. I would add (f) any text object can be individually edited (rather than having to delete an incorrect text object before starting on it again); (g) there is complete control over the intervals on the axes.
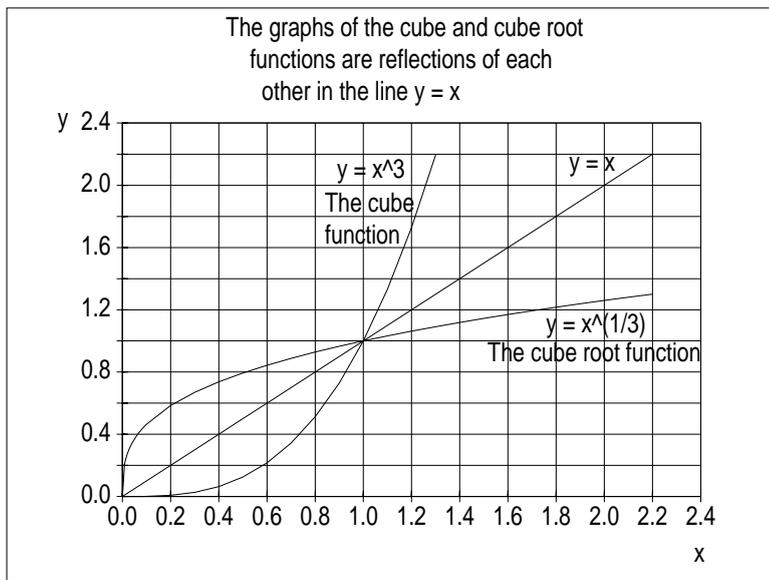
The graph below shows the best I have managed to achieve up to now using Schema:
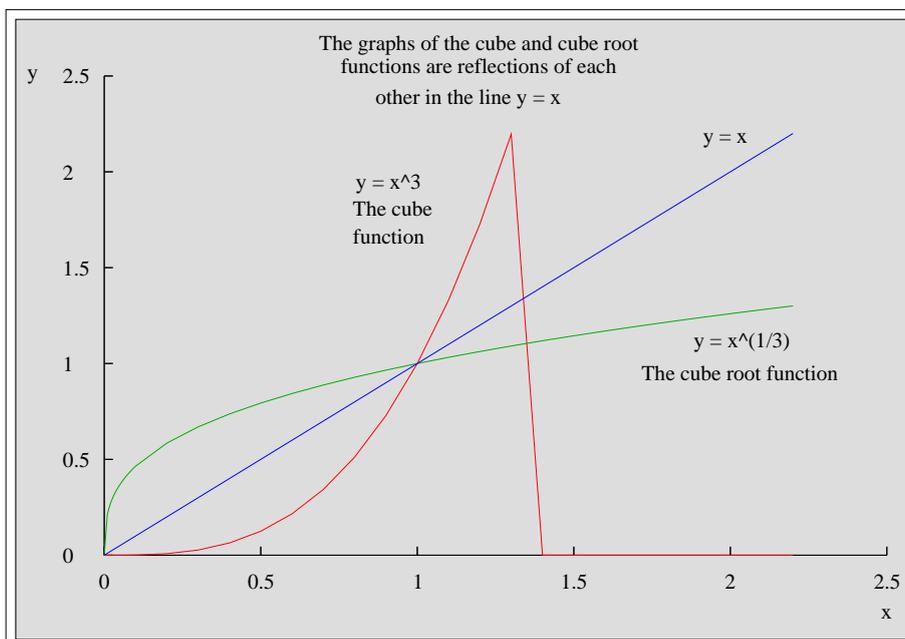
You will appreciate from this graphic that I have had a serious problem trying to suppress that part of the cube function corresponding to values of x above x = 1.2. I did not have such a problem using Eureka – I just left blank spaces for the y values corresponding to x greater than 1.2. What you might not realise from the graphic is that the values on the axes can not be controlled as they can in PipeDream. I was unable to force an interval of 0.2.

In Schema you can add as much text as you like to a graph. You can reposition added text and you can delete individual text objects from the graph. You can apply text styles to any of the text objects including the numbers on the axes. I did have a problem keeping the graph in the spreadsheet hot linked when I added my fifth text object. I don't know whether the number of text objects is limited or whether I have been doing something wrong. The graphic shown here has been saved as in drawfile format. The graph in the spreadsheet on the Archive monthly disc shows how far I got in adding text objects.

Using Schema you can not add extra lines to a graph retrospectively; you can in Eureka, Fireworkz and PipeDream.

Before leaving the subject of graphs in Schema I have to say that I feel as if I have been unfair to Schema by choosing a graph type which is particularly difficult for Schema to reproduce. In my defence I must say that I chose the graph type a couple of months ago before I had Schema! Schema is able to produce many different graph types, for example it produces superb horizontal bar charts (incorrectly – and to my annoyance – referred to as histograms!) which can not be produces in PipeDream or Fireworkz, and, unlike the other spreadsheets I have been considering, you can add your own drawfiles to your charts.

Finally on the subject of text in charts let me answer a question many of you have asked about Fireworkz. I have it direct from the programmer of Fireworkz (Stuart Swales) that you can not add text to a Fireworkz chart yet. The manual says that to add text you should enter text in a cell, mark the cell and then execute the command Extra – Chart – Add. This doesn't work but will do one day!

The Common Clip Board

The common clipboard is a feature of RISC OS supplied by Acorn. The way it works is this. Suppose you have both a Schema document and an Impression document on screen. In Schema mark a block, probably a table, and Copy it to the (Schema) clipboard. Click in the Impression document and place the cursor at the point where you want the table to appear. Click on the Impression Paste icon (or use <Ctrl V>) and the table will appear within the Impression document. This works because Schema and Impression share the Acorn common clip board.

You may be interested to know that the database package DataPower also shares this common clipboard. This means that if you have a Schema, DataPower, Impression combination you will be able to Copy and Paste data between the three packages. You may prefer to use such a combination rather than an integrated package such as Fireworkz because you will be able to use each individual package to do the things which it does best.

Neither PipeDream, Fireworkz nor Eureka make use use Acorn's common clipboard.

Other features of Schema

In later articles I will compare other aspects of the four spreadsheets Eureka, Schema, PipeDream, Fireworkz in detail but I do want to mention some of the more positive features of Schema 2 now so that you don't write it off on the basis of one graph which undoubtedly is difficult to produce.

Schema has a superb set of matrix functions including one which enables you to solve a set of simultaneous equations. I have successfully solved a set of six simultaneous equations. The two spreadsheets I am most familiar with, PipeDream and Fireworkz, will handle up to three only. So how can you use this facility? One which might be useful to some of you, is curve fitting (by which I mean specifically that you can choose the order of polynomial you wish to fit to a set of experimental points) – an alternative to the finite difference method I outlined last month.

I have sent for the separate book about writing your own macros (known as custom functions in PipeDream and Fireworkz). Some interesting ones are already included on the Schema discs. Schema is almost totally compatible with Lotus and many functions specific to Lotus are included as Schema macros so that Lotus files can be loaded directly into Schema and files from Schema into Lotus. Unlike Eureka and Fireworkz you can not load Excel files directly into Schema.

You can define Sheet Variables. These are known as Names in PipeDream and Fireworkz. Using Sheet Variables simplifies the use of interdependent documents. Another feature of Schema which simplifies the use of multiple interdependent spreadsheets is the concept of a WorkSpace. A WorkSpace is a single name for a set of interdependent documents including all the macros used by the main spreadsheets. Saving a set of documents as a workspace preserves all the relative addresses so that, if you decide to copy the set to new directory, you will not have problems with the path name to the files.

Finally

Thank you for all your letters. I am still getting letters (without discs) with problems which I can answer best showing how to do it with a disc file. Let me give you just one example. The question was how to draw horizontal lines (without the vertical grid lines) between rows in a PipeDream document – a sort of extended underline separating the records of a database. I tried to explain in words how to do it but I know my words are not as clear nor as relevant as I could have achieved with the correspondents own file.

Please write to me (with a disc showing examples if appropriate) at the Abacus training address given at the back of Archive. I shall be particularly interested to hear about your experiences with either Eureka or Schema.