

# **RM Starting Graph**

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HS369

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# Starting Graph

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# Introducing RM Starting Graph

## About this book

This book introduces you to the main features of RM Starting Graph that you will need to meet your everyday teaching requirements.

## Overview

RM Starting Graph is a simple introduction to data handling. This application is primarily intended for use by younger children; however, the range of graphs and charts makes it also suitable for use by older students. The program can be operated at 2 levels of complexity (Yellow and Green) to allow for different abilities.



## Uses of Starting Graph

- Makes entering and manipulating data easy.
- Turns data entered into a table into a variety of graphs that can be printed out.
- Carries out simple calculations automatically.
- Data can be sorted into alphabetical or numerical order.
- Can be used with a concept keyboard.
- Allows pupils to create reports, which they can print out.

# Getting started

## Introducing the levels

Pupils can begin using Starting Graph to enter data into simple tables. They can then turn this data into a variety of graphs and charts, analyse their findings, and create simple reports about the information on which they have been working. The program can be set to automatically total columns and calculate averages within a table, ensuring that the pupil's conclusions are based on accurate calculations.

## Yellow and Green levels

Starting Graph has two different levels, Yellow and Green.

### Yellow level

At Yellow level pupils can change the data in a table using the mouse. They can also change the type of graph or chart; for example, by changing it from a bar chart into a pie chart. Pupils cannot enter data using the keyboard or create a new datafile.

## Getting started

### Green level

At Green level pupils can carry out all editing functions, such as adding pictures, rows and columns to a table. Pupils must use Green level if they want to create a new datafile.

The icons on the right show the Green and Yellow level icons.



**Note:** You can tell what level you are in by looking at the icon on the far-left button of the toolbar. The toolbar below shows the green icon.



To change the level of use, click on the icon in the toolbar. Next click the level you wish to set, then click **OK**.



### Learning Starting Graph

You can learn about this program either by editing an already created graph file, or by learning how to create your own. If you would like to learn how to create a new file from scratch, go to the section **Creating a new datafile: Green level**, on page 3. If you would like to learn how to edit, using an existing file, go to the section, **Editing an existing datafile: Yellow level**, on page 7.

## Creating a new datafile: Green level

### Introduction

This section describes how to create a datafile from scratch, how to save it, and how to print it.

You can only create a new datafile in Green level. When you open a blank datafile, the program will automatically default to Green level.



### Opening the program

Open the program by double-clicking the Starting Graph icon on the desktop. The first screen you will see is the **Open Project** dialog box.



### Opening a new file

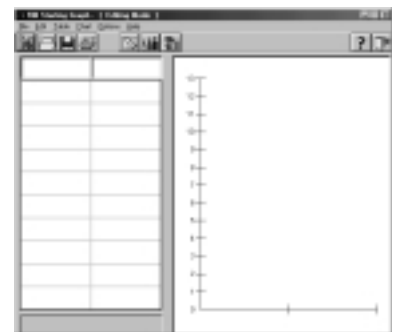
To open a blank file:

1. Click **New Project** in the **Open Project** dialog box. In the description box, **New Project** is described as **A blank table**.
2. Click **OK** to open the blank file (right).

### Saving the file

When you open a blank datafile you should save it immediately. To save a file:

1. Click the **Save** button (below right).
2. Save the file on the computer using a name relevant to the subject of the datafile you are about to create. For example, if you are going to create a file about the favourite foods of pupils in the class, the file could be called “favourite foods”.



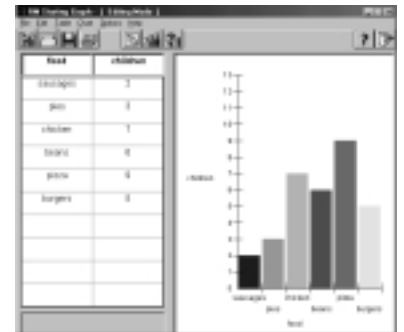
## Creating a new datafile: Green level

### Adding data to the blank file

Add data to the table area of the screen, the left-hand side (right):

1. Enter the two column headings in the top two boxes of the table, for example 'food' and 'children'. Click in a cell to start typing.
2. The two headings appear on the two axes of the graph.
3. In the 'food' column enter types of food.
4. In the 'children' column enter the number of children whose favourite food it is.

Whenever you add a category or number to a table, it is automatically shown on the graph on the left of the screen. This means the child can see immediately when they enter data how it affects the graph, instead of having to wait until the end of the project.

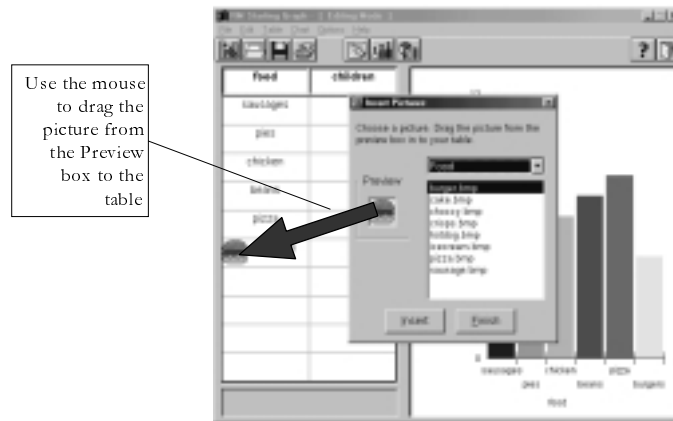


### Adding pictures to a table

Pictures make the data look more interesting, and are also necessary if you wish to change the bar chart into a pictogram. To add pictures to the favourite foods file:

1. Click **Table** on the menu bar then Click **Insert pictures**. The **Insert Pictures** dialog box displays as shown on the right.
2. At the top of the dialog box is the word **BLOCKS**. Under this title is a list of pictures in that category. Click the name of a picture in the list to see what the picture looks like in the **Preview** box.
3. Click the arrow to the right of the word **BLOCKS** to display the drop-down menu.
4. Select another category and click on the files in the list for each one to view the pictures. One of those categories is called **food**.
5. When you have selected a picture relevant to one of the categories in your table, move the mouse pointer over the preview of the picture.
6. Press and hold the left mouse button and move the mouse to one of the boxes in the table as shown in the following illustration.





7. Release the mouse button. The picture is now part of the table.
8. To increase the number of pictures to be shown in the chart, click **Chart** from the menu bar, choose **Format Pictogram**, and click **Picture Scale**. This allows more items to be displayed in the graph and also makes the graph easier to read.

Note: This feature does not support additional frequency columns and is only valid if the chart type is changed to a pictogram.

### Creating a report

As well as a table and a graph or chart, Starting Graph enables you to create a report on the data. Report sheets can be printed and manually filled in.

1. With favourite foods still open, click **File** on the menu bar and click **File Information**. The **File Information** dialog box is then displayed (right).

The **File Information** dialog box allows you to enter the project title, description and four report questions. The **Report Questions** field allows you to set or change the report questions. You can type in any question that you would like the pupils to answer – or pupils can set each other questions.



3. Click in a cell to add information, just as with the table on the main screen.
4. When you are satisfied with the information, click **OK**.

You may wish to create three or four different sets of report questions to reflect the abilities of different pupils.

To save different reports, you will need to save different versions of the same datafile.

## Creating a new datafile: Green level

### Printing the file

You may print your graph, the table, or the report, or any combination of these. When you conduct a survey, you will find it useful to print out an empty table on which to collect information.

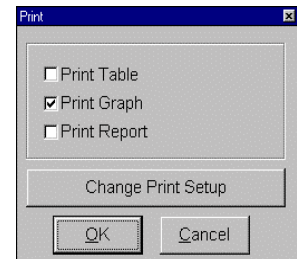
To print:

1. Click the **Print** button (right), or alternatively, click **File**, then **Print**. Tick one or more of these boxes:
  - **Print Table** if you want to print the table.
  - **Print Graph** if you want to print the graph of your results.
  - **Print Report** to print the report.
2. Click **OK**.

**Note:** You can choose several of these options at once.

If you want to change the type of printer, then click **Change Print Setup**, and select another printer in the **Specific Printer** dialog box, then click **OK**.

**Note:** Do not forget to click the save button again (right) at the end of a lesson and when you have completed a datafile.



## Editing an existing file: Yellow level

### Introduction

Yellow level is the basic editing level of Starting Graph. It offers a limited number of functions, with more buttons but fewer menu options, and is therefore easier for younger pupils to use. The following explanation uses the Travel Survey, which comes installed on Starting Graph.

### Opening an existing file

1. Double-click the icon to open Starting Graph.
2. On the **[Open Project]** dialog box, double-click the file you want to edit – in this case, **Travel Survey**.



This will open an existing file on the main screen.

Make sure the Yellow level icon is visible on the button at the left-hand side of the button bar on the main screen. If the Green level icon is visible, click on the button then click **Yellow (touch mode)** in the dialog box.

### Changing numbers in the table

To begin with, all the values in the table are set at 0. Pupils can change the values in the table using the mouse:

1. Make sure the **Plus** button on the toolbar is depressed (right). If necessary, click on it to select it.
2. Click the mouse in the cell next to the **car** cell.



The value increases from 0 to 1. It will increase every time you click the mouse in the cell, as long as the **Plus** button remains depressed.

## Editing an existing file: Yellow level

To reduce the number in a cell:

1. Make sure the **Minus** button is depressed by clicking on it if necessary.
2. Click the mouse in the cell next to the **car** cell.

### Changing the graph type

The default graph in Starting Graph is a bar chart. This can be changed easily. The three buttons on the right represent a pictogram, a block graph and a tick graph. Click any of these buttons to change the graph type.

**Note:** You cannot create a pictogram if there are no pictures in the table. Refer to the section, **Adding pictures to a table on page 4**, to find out how to add pictures.

Click the **Change Chart Type** button (right) to display the **Change graph type** dialog box (below right). This dialog box has more chart options.

Click the buttons on the dialog box to change the graph or chart type.

### Sorting the data

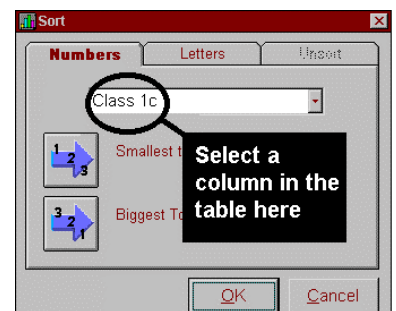
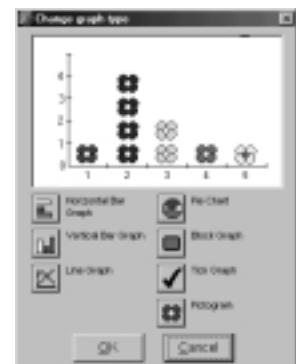
You can sort the columns in a graph. This allows the pupil to see instantly which category has the highest and lowest frequency, and how the categories can be sorted alphabetically.

#### To sort the columns

Click the **Sort** button (right), or alternatively, click **Table**, then click **Sort**. The **Sort** dialog box displays (below right)

There are three tabs in this dialog box: Numbers, Letters, and Unsort (which is greyed out if no sort has been performed).

- The **Numbers** tab allows you to sort the numbers in the frequency column.
- The **Letters** tab allows you to sort the category column, according to the first letter of each category type.
- The **Unsort** tab allows you to undo the last sorting action, if it did not produce the required effect.



To sort the numbers in a frequency column:

1. Click the **Numbers** tab.
2. Select the column you wish to sort using the drop-down menu on the dialog box.
3. Decide if you would like to sort the number in the column from biggest to smallest, or from smallest to biggest.
4. Select the appropriate button on the dialog box.
5. Click **OK**. The frequency column is sorted, and the category column is sorted with it. The graph is redrawn according to the new layout of the categories.

If you do not like the new layout of the graph, undo the sorting process by using the **Unsort** tab on the **Sort** dialog box. This undoes the last sorting action.

## Entering totals and averages

### SHOWING THE TOTALS

To show the totals of the frequency column, click **Table**, then click **Show Totals**. The total appears at the bottom of the table.

To stop showing the total, repeat this step.

### SHOWING THE AVERAGE (MEAN)

To show the average of the frequency column, click **Table**, then click **Show Average (Mean)**. The mean now appears at the bottom of the table.

To stop showing the mean, repeat the above step.

## Formatting the table

You can change the way the table looks. Click **Table**, then **Format the Table**. The **Format the Table** dialog box displays. It has two tabs:

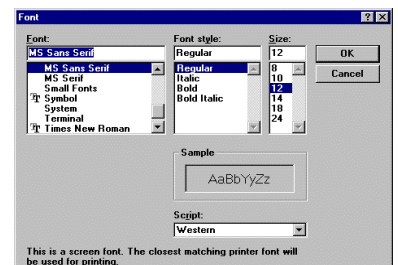
### CHOOSE TEXT POSITION

Use the options under this tab to change the position of the text in the table.

You can also change the text font. To do this, click **Choose a text font**. The **Font** dialog box appears (right).

### CHOOSE NUMBER TYPE

By selecting the appropriate options button, you can set the numbers in the table to appear simply as numbers, money, two decimal places or as percentages. Once you have selected the required number type click **OK**.



## More editing functions: Green level

### Introduction

Green level has all the functionality of Yellow level, together with additional editing options. However, some buttons present in Yellow level are not present in Green level, and therefore certain functions must be carried out in a different way.

### Editing values by delete/replace

The user does not have to use the mouse to change numbers in the table, as in Yellow level. To change a number in a table:

1. Click the mouse in the cell so a cursor appears.
2. Use the keyboard to delete the number and type a new number.
3. Press **Enter**.

### Adding/removing rows and columns

**Additional rows (this will only work if the chart is not a pictogram, block, or tick graph)**

To add a row to your table, click **Table**, then click **Add a Row**. A new row displays at the base of the table.

**Note:** The new row may appear not to have been inserted. This is because it has been inserted at the bottom of the table. Scroll down to see the new row.

### Additional frequency columns

You can add a further frequency column to your table. Note that you cannot add another category column.

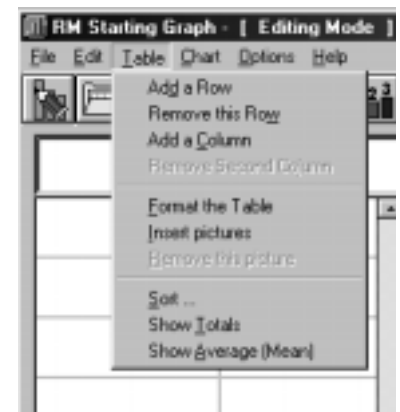
You can use an additional frequency column for a number of things. Examples include:

- A graph comparing data for two different classes.
- Two surveys of the same categories, of the same class, separated by a time interval.
- A survey of temperature and rainfall as part of a weather project.

The following graph types **do not** support additional frequency columns or additional rows:

- pictograms.
- block graphs.
- tick graphs.

**Note:** You cannot add another column to a table if any of these graph types is selected.



**To add another frequency column to a graph:**

1. Make sure you have a graph open, and you are working at Green level.
2. Click **Table**, and click **Add a Column**. A new frequency column appears to the right of the existing frequency column.
3. Label the new sub-columns with appropriate names by clicking the mouse in the heading cells.
4. Add the frequencies for the second column.
5. If you decide to remove the second frequency column, click **Table**, and click **Remove Second Column**.

**Removing a row**

To remove a row:

1. Move the pointer over a cell in the row to be removed, and click so that a cursor appears in the cell.
2. Click **Table**, and click **Remove this Row**.
3. Click **Yes** to confirm this.

**Creating and adding your own pictures**

As well as the pictures included on Starting Graph, you may want to design your own pictures to use in a similar manner, or you may take pictures from a variety of sources. Examples include:

- Clipart from RM Colour Magic or other programs.
- Images that you have taken from the Internet.

The pictures must be bitmaps (picture files that end in .BMP). They must be 35 pixels wide and 35 pixels high. This means you must scale images to this size using a painting program.

Once you have a bitmap of the correct dimensions, you need to create the following sub-folder with **Windows Explorer**: C:\Documents and Settings\All Users\Application Data\Research Machines\Starting Graph\Graphics. Now create a new folder under the Graphics location (rename this folder) and copy your bitmap file to the new folder. The name of the folder is then listed in the **category** box in the **Insert Pictures** dialog box (see section **Adding pictures to a table**, on page 4).

## More editing functions: Green level

### Formatting the graph

When you click **Chart** and select **Format Chart**, the **Format Chart** dialog box displays. This allows you to change the way your graph looks.

**Note:** This is not possible if you are editing one of the sample files in Green level.

There are four tabs in the **Format Chart** dialog box. Their functions are described as follows:

#### CHANGE COLOUR

This allows you to change the colour of each of the bars, sections, or blocks in your chart, or the colour of the line if it is a line chart. Click the coloured boxes to change the colours. Some object colours cannot be changed.

#### GRAPH TEXT

This allows you to change the title of the graph and the labels on either of the axes. Click over the text you wish to change, so that the cursor is in one of the text boxes to the right of the tab, then delete the old text and type the new text.

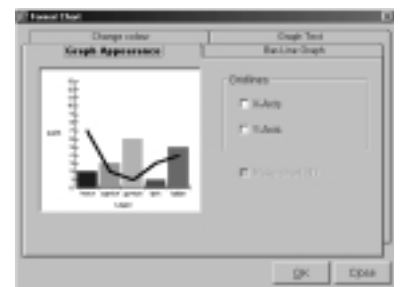
#### GRAPH APPEARANCE

This allows you to include horizontal and/or vertical lines across your graph. The units on the Y-axis (vertical scale) define the position of the horizontal lines. When they are present, they instantly allow you to see which numbers are the same, and how many units each bar comprises.

To change the look of your graph in a more spectacular way, check the box **Make chart 3D**.

#### BAR-LINE GRAPH

This is only active if you have a bar-line graph. One set of frequencies is plotted as a bar, and the other is plotted as a line. On the **Bar-Line Graph** tab you are able to swap the two plots; that is, the frequency that was plotted as a bar can be plotted as a line, and vice-versa. The pull-down dialog on this tab shows how the data is plotted for the first (left-hand) frequency column; you can select either **Block Graph** or **Line Graph**.



## Classroom activities

Now you are familiar with the main features of Starting Graph, you can explore further to give you ideas that will help you get the most out of using the features in your classroom.

### RM Work Box

Work Box comes with a selection of Activities that include a suggested Lesson Plan, and one or more sample files. These Activities are written, tested and checked by teachers, advisors, and curriculum experts.

In Work Box, you can search for Activities by age range and subject to find those that are best suited for your class.

### RM Window Box OnLine

<http://www.wbol.co.uk>

In addition to its collection of Activities, Window Box OnLine has an archive of feature articles.

This site is available to everyone who has the programs described in this manual - you do not need to have a Window Box computer.

### Further information

For additional resources and contact details, refer to the Resource Information card.



#### RM Work Box

Work Box is supplied ready installed on a Curriculum Window Box computer and on the latest RM networks.

If you do not have a Work Box computer, you can download Work Box free of charge from Window Box OnLine at:

<http://www.wbol.co.uk>

