   This tutorial will take you through some of the common analyses used in SchoolStat™. We recommend you keep this window open (but in the background) so you can refer to it repeatedly as you go through the tutorial steps.

Open a data file:
   1. SchoolStat™ usually opens with a spreadsheet in the front, which is empty unless you clicked a SchoolStat™ data file, which will open the data previously saved.
   2. You can open another SchoolStat™ data file by choosing "Open Sheet..." under the File menu. Only SchoolStat™ data files will be shown in the "Open" dialog box when the spreadsheet is the active window (but all text files will be shown when the Results Log window is active, or PICT files when the Graph window is active). Click on the file you wish to open, and click the Open button. The data will appear in the spreadsheet, ready for use.
   3. Note the other menu options in the File menu. "New Sheet..." will prompt you to save any changes made to the current spreadsheet, then open an empty spreadsheet ready for data. "Save Sheet As..." will allow you to save the active window under a different name. "Save Selection..." will save the currently selected data only (without headers). "Revert" replaces the current contents of the spreadsheet with the most recently saved version. "Preferences..." adjusts the set up defaults of the program, and also allows you to specify missing values (whose cells "look" empty), the number of decimal places to display and significance level for some analyses. In addition, you can choose which statistical tests appear under the Stats menus if you wish to hide some less commonly required ones. "Page Setup..." and "Print..." are to prepare & print the current window for printing. "Transfer" and "Quit" let you leave SchoolStat™.

Manipulate data in the spreadsheet:
   1. Click on the spreadsheet to make it the active window
   2. Note the location of the outlined cell, this is where your typing will enter data. You can navigate around the spreadsheet using the arrows keys (as you would expect), and the "Return" key (moves you down), "Tab" key (->). The "Shift" key in combination with the "Return" or "Tab" keys reverses their directions.
   3. To select more than one cell, click on the first cell and drag until the selection area contains all the cells you want. You can select a whole column by clicking on the number above its header title. Select more than one by clicking and dragging to the right or left.
   4. Note the Edit menu options when various selections are made. The "Undo", "Cut", "Copy", "Copy Values", and "Clear" options all act only on the current selection or last action. When some data has been put onto the clipboard (using "Cut", "Copy" or "Copy Values") then it can be re-sited using the "Paste" or "Paste Values" options.
   5. Under the Extras menu, you can do other "Sheet Operations" which include "Sort" and "Transform" for the selected data. These bring up dialog boxes with various options, eg sort in ascending or descending order, replace the old values or make a new data set, etc. Once you are confident with how to use the spreadsheet, you can try some statistical techniques.

Performing statistical analyses:
   1. Select "Descriptive Statistics" from the Stats menu. The samples are chosen by clicking on their names in the lefthand list. To select more than one, hold down the Command-key and click on individual titles, or the Shift-key to select a contiguous group. Click below the names to deselect them. Note in this dialog you can select as many of the samples as you require. Click Apply or Do One when ready. The results will appear in the Results Log text window. Note that you can type directly into this window, to add comments, find text, replace or delete text. It   has a fully functioning text editing facility so that you can   customize your results before saving or printing them. They are saved as text files which can be opened by any word processing software. Try the "Mode" and "Confidence Intervals" options too.
   2. Try the "Plots" under the Extras menu. These display dialogs with more options which are explained in their topics below. The results will appear in the graph window. Try double-clicking in this window to alter the charactistics of the text, lines, background, etc. You can save these drawings as PICT (the standard Macintosh™ picture format) which can then be opened by other drawing programs for further editing. You can also copy or cut the picture to the clipboard for pasting into the Scrapbook or other application. The graphs are designed to quickly display your data, and are not meant to allow full graphical features.
   3. If your spreadsheet has more than one column, then the other tests will be available for comparisons using 2 samples under the Stats menu ("Correlation" -> "Independent t-test"). You should

really know which test to select before doing this, but for the moment you can try any them.

   4. Select the "Contingency" option under the Stats menu. This brings up a dialog box with the possible options for the data you have selected. Note that the data should be of the form of a frequency table with actual numbers in the cells rather than percentages or proportions. These analyses will then work out for you the expected values and appropriate chi-square tests (including Fisher's exact test).

Using distribution simulations to create custom data:

   1. Choose the "Simulations" option under the Extras menu.

   2. The dialog box shows that you can create up to 1000 data points obeying the conditions that you request (ie distribution type, constraint parameters and destination column). These rules differ for each type of distribution which you wish to simlulate, eg the normal distribution requires a mean and standard deviation. You can even make up your own distribution by entering the rules to be followed when creating the data, but ensure that the individual category probabilities add up to 1.0 exactly.

   3. Choose the destination column for the data and click Apply. If you want more than 1000 data points, you can create several sets of data in adjacent columns and then save them as a data file for use by other programs. Click the Done button when finished.

Active & Static Probability tables:

   1. Choose the "Normal" option of the "Active Tables" menu item of the Extras menu. Inspect the dialog box which appears under the empty window. Click the Show Graph check box to display a plot of the current normal probability settings (shortcut Command-S). Note that the area under the graph representing the cumulative probability matches the pop-up setting at bottom left of the dialog box (ie the $Pr[N < z] = $). If you click on this popup and change the setting the area filled under the graph will also alter accordingly. You can click in the shaded rectangle of the dialog box to move the shaded area of the graph to left or right by dragging.

   2. The dialog box also has several editable text boxes. To move between these press the "Tab" key, or indicate you have typed your number by hitting the "Return" or "Enter" keys. If you alter a value, you will notice the other values also altering to reflect the new setting. The graph also updates. Making small or large standard deviations or variances will change the curve morphology too.

   3. Note that typed numerical tables are also available by selecting them under the "Static Tables" menu item table if you prefer.

   4. Try the other tables options as well. Each has its own peculiarities. Read the individual topics of each to learn more.

Using the Calculator:

   This menu item is under the Extras menu. It is a mathematical calculator with the usual number keys (which can be activated by pressing the equivalent keyboard keys) and function keys to be pressed after a number has been entered. The functions work sequentially (ie not reverse polish notation). The calculator can remain in the background whilst you do other analyses.