Pictogram

Introduction

Pictogram is an application that progressively teaches children the use of charts for representing data. Pictures are dragged onto stacks and may either be displayed vertically or horizontally. The chart can be switched to a block chart where the pictures are replaced as more abstract blocks of different colours. Finally the blocks can be joined into one long bar to create the familiar bar chart.

- Wide variety of picture sets for creating pictograms.

- Easy point and drop method for constructing charts.

- All of the charts can be exported as an TIFF file or be copied to the clipboard.

- Pictogram recognises when colours are used as labels and will colour the charts appropriately.

System Requirements

A Macintosh computer running Mac OS X 10.3 or later, a minimum of 256 MB of memory is recommended.

The Pictogram application requires around 7.0 MB of disc space.

User Requirements

To be generally familiar with using the Mac OS X operating system, launching applications, opening and saving files.

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Installation and Registration

- Insert the CD ROM into the CD/DVD ROM drive.

- Run the **Install Pictogram** package and follow the instructions in the installer.

Once the installation is complete you will need to register the software.

- Ensure you are logged onto the computer as an 'Administrator'.

- Run the **Pictogram** application from the **Applications** folder on your computer.

- Choose **Register Software…** from the **Pictogram** application menu.

- Enter your details and the serial number which can be found on the licence card included in the software pack.

- If you have correctly entered your serial number then the **Register** button should become enabled. Click on the **Register** button, you should only need to do this once.

Getting Started

To Run the Pictogram Application

- Double click on the **Pictogram** application which can be found in the **Applications** folder.

The main Pictogram window will appear on screen and the **Picture Groups** sheet will open as shown:

First we need to load a set of pictures into Pictogram. To do this:

- Select a picture group from the **Picture Groups** list that appears by default when you start a new pictogram. The pictures contained in the group will be previewed in the panel to the right of the Picture Groups list.

- When you have selected the group you require, click on the **Add** button.

By default the chart title will be set to the same name as the picture group. If you wish you can change the chart title later.
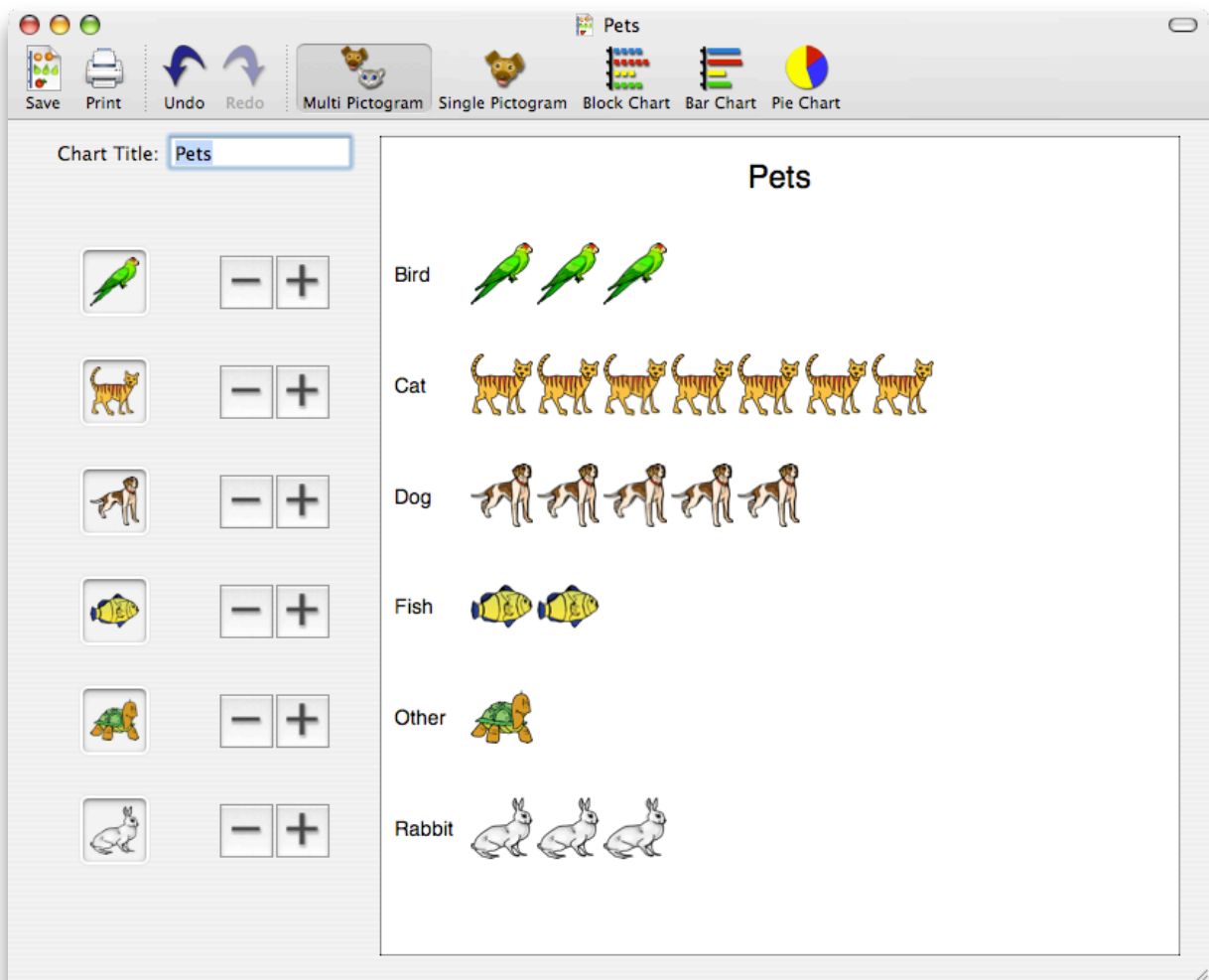
If you wish you can click on the **Cancel** button and choose not use a picture set. In which case Pictogram will default to the Bar Chart, where you can enter all your own data. You can also switch to a Block Chart or Pie Chart too. However, if you try to use a pictogram chart, the Picture Groups sheet will open again.

Creating a Chart

Adding Pictures to the Pictogram

- Either click on the 'plus button' next to the picture to add that item to the chart, or

- Drag the picture you wish to add to the chart onto the adjacent row on the pictogram chart area, the cursor will display a small plus sign when the picture is over the correct area.

By default there is only room for ten pictures in each row or column. This can be changed in Pictogram's preferences. Please refer to the Preferences section for further details on changing the maximum number of pictures displayed.

To Remove a Picture

- Either click on the 'minus button' next to the picture to remove that item from the chart, or

- Position the cursor over the picture you wish to remove on the chart and drag it out of the column.

Too many pictures, not enough room!

You can keep adding pictures to the columns until they contain the maximum number of items allowed, by default this is ten. This number can be changed in Pictogram's preferences.

If you wish to add more pictures when the columns are full then the children should be encouraged to think about how this can be achieved. We cannot just make the screen bigger, and even if could use a bigger screen, we would still have the same problem once the columns become full again. We could make the pictures smaller but the problem with this is that they may become too small to be clearly identifiable. Even if we made the pictures half as big you would only be able to have twice as many pictures which may still not be enough. So we have to adopt an alternative strategy.

The way we solve this problem is to use another type of chart. Let's switch to the **Single Pictogram** chart.

The Single Picture Pictogram

When we switch to any of the other types of chart, one of the immediate changes is the form of data entry. Instead of dragging pictures on or off the chart, we can type in the required number of items directly or use the small 'plus/minus buttons' to increase or decrease the items' count. We can also rename any of the items and add additional items to the chart.

Another addition to the single picture pictogram and the block chart is the **Scale** box:

The scale box shows how many units a single picture represents. As more items are added, the chart will automatically re-scale so that one picture can represent 2 items. If you increase the number of items further eventually one picture will represent 10 items and then later 20 items. You cannot use Pictogram to represent more than 200 items.

Starting with The Single Picture Pictogram

If you wish you can start with the single picture pictogram. To do this, when the application starts:

• Dismiss the picture groups sheet by clicking on the **Cancel** button.

The chart type then defaults to a bar chart.

• Click on the **Single Pictogram** chart type on the toolbar.

The default single picture is a red block. You can load a picture of your choice into the scale box.

Changing the Single Picture

You can change the picture that is used to represent the items in this chart.

• Drag an appropriate picture file from the Finder to the image well in the scale box. If Pictogram can load the picture the cursor will change to display a small 'plus' when the cursor is over the image well. This picture will then be used in the chart.
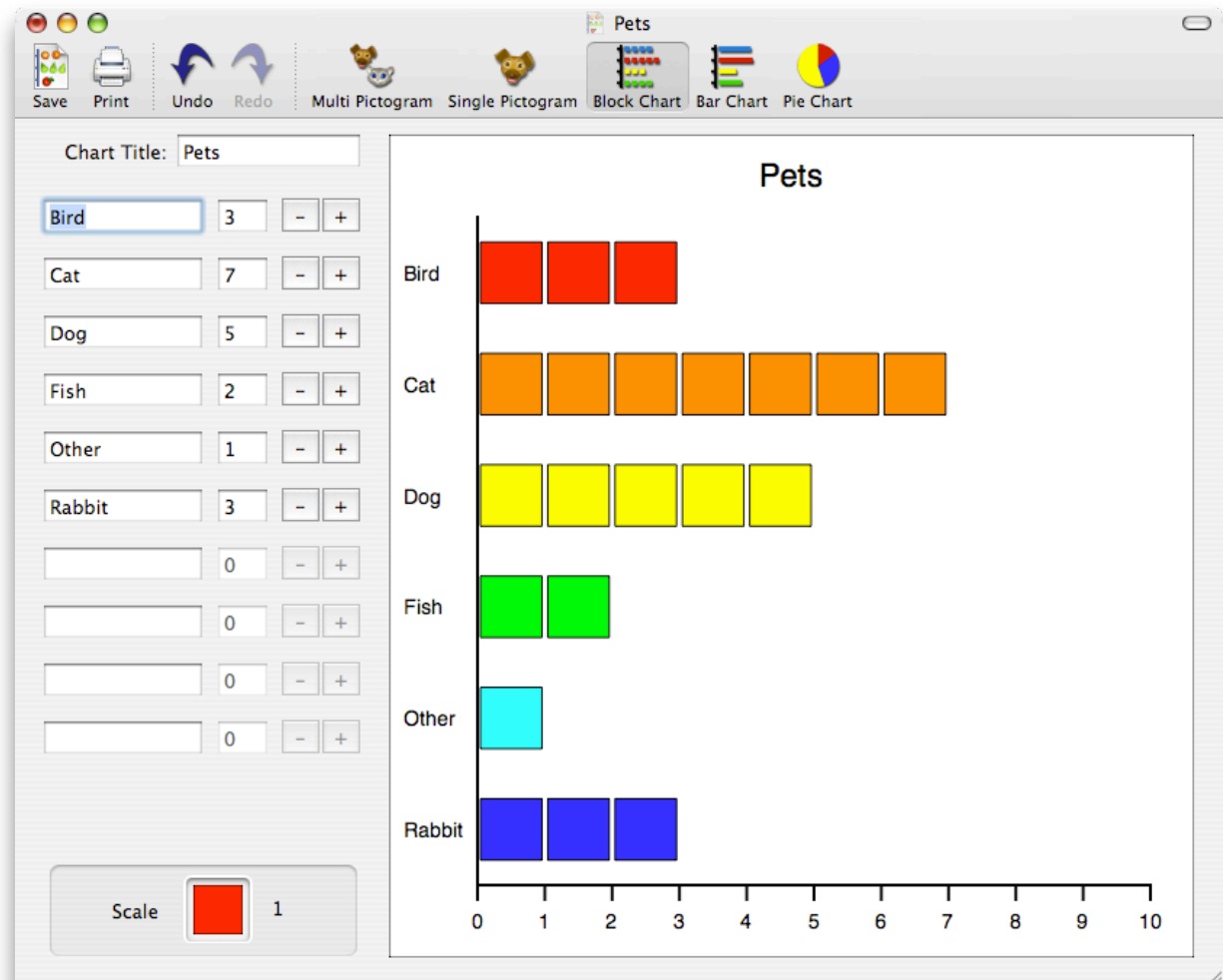
We have supplied some pictures that work particularly well with this type of chart. For example, Happy is a smiley face, Yes is a simple tick. An example you might like to use, is the Ticket file, which could be used to count the number of tickets sold each night at a theatre. You label each of the fields; Monday, Tuesday, Wednesday… Then enter the number of tickets sold on each night.

Using the Block Chart

To change the chart type to a block chart, either:

- Click on the **Block Chart** button on the toolbar or

- Choose the **Chart** > **Block Chart** from the menu bar.

The chart will then be displayed as shown below:

The purpose of the block chart is to replace the pictures with abstract coloured blocks. The children must now refer to the labels by the side of the axis in order to understand what each coloured block represents.

Note: If the item you are counting has a *colour* in its label, for example **Blue Eyes**, then Pictogram will automatically use the colour blue for that item in the chart.

It is still possible to add and remove blocks to the chart when displaying the block chart. You do this in exactly the same way that you would with the single pictogram chart.

You can if you wish click in the text text boxes and change the text label that is used for each item. To confirm the change remember to press the RETURN key.

More than Ten Items?

With the block chart, you can add more than the preset maximum number of items to the chart. However, in order to do this Pictogram will have to re-scale the chart, this means that one block represents more than one item. By switching between the block and bar chart with more than ten items you can explain to the children the necessity of re-scaling a chart as the number of items being counted increases.

Note: Once you have more than the maximum number of items allowed in a pictogram then you cannot switch back to the multi-pictured pictogram.

Changing the Chart Title

- To change the chart title click in the text field labelled **Chart Title** and enter the title you require. Press the RETURN key to confirm the change.

Horizontal and Vertical Charts

Any of the chart types can be displayed either horizontally or vertically.

- Choose either **Chart** > **Horizontal** or **Chart** > **Vertical** from the menu bar. A tick indicates the current orientation.

Count Labels

Any of the chart types can display count labels for each item.

- Choose **Chart** > **Count Labels** from the menu bar. A tick indicates the current setting. The count for each item is displayed at the end of the bar or row of pictures.

Gridlines

Any of the chart types can display gridlines.

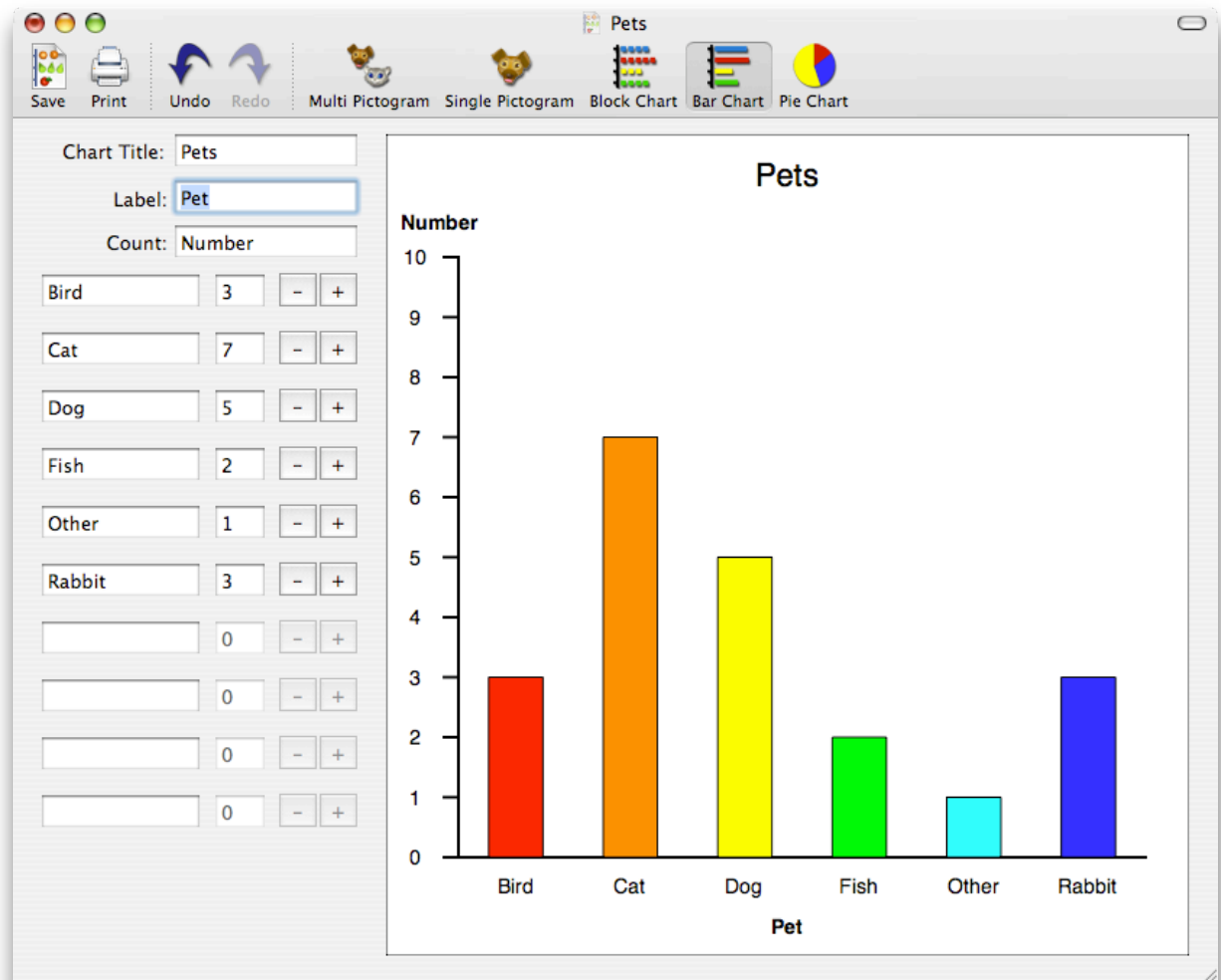- Choose **Chart** > **Gridlines** from the menu bar. A tick indicates the current setting.

Using the Bar Chart

To change the chart type to a bar chart, either:

- Click on the **Bar Chart** button on the toolbar, or

- Choose the item **Chart** > **Bar Chart** from the menu bar.

The chart will then be displayed as shown below:

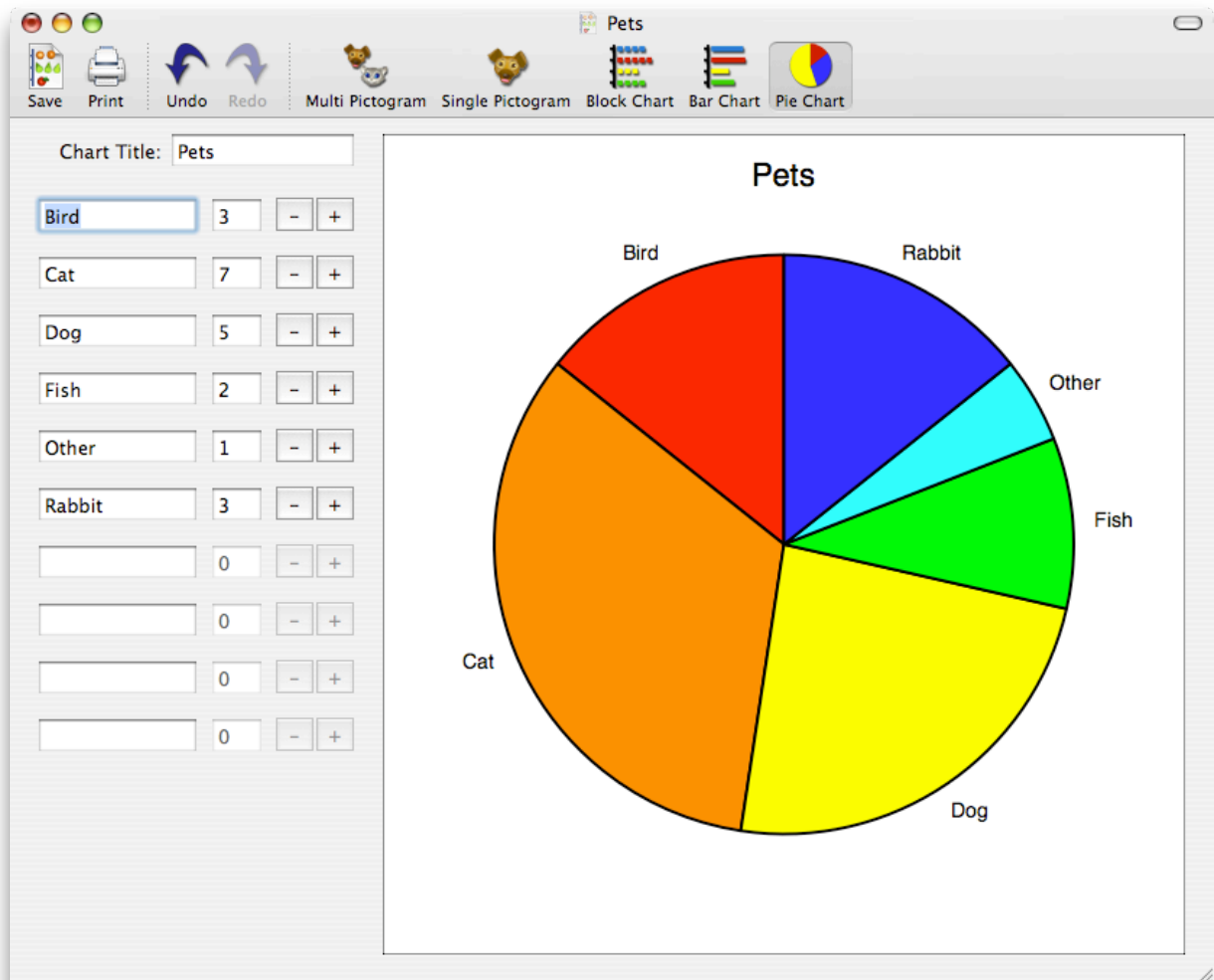In the bar chart we have effectively joined all the blocks together.

As with the block chart, you can still edit the text labels for each of the items and also change the number of items being counted by clicking on the plus/minus buttons.

The Pie Chart

Pictogram also has the ability to display the data as a pie chart. To change the chart type to a pie chart, either:

• Click on the **Pie Chart** button on the toolbar, or

• Choose the item **Chart** > **Pie Chart** fro the menu bar.

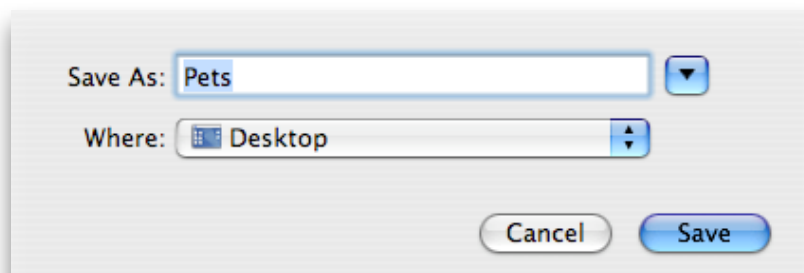An example of a pie chart is shown below:

Pie charts are not really about counting items as with the previous chart types, but rather about looking at proportion. If you don't wish the children to see the pie chart, then you can remove the Pie Chart button from the toolbar. See the section on **Customising The Toolbar** for more details.

Saving the Chart

Pictogram can save a data file which contains information on the chart and the pictures used in the pictogram. This file can be loaded back into Pictogram later and the chart can be changed further.

If the file has not yet been saved, i.e. it does not yet have a file name, or you choose the item **File** > **Save As...** then the **Save As** sheet will drop down from the main window as shown:

- The text in the text field labelled **Save As** will display a default file name for your data.

- Enter the name you wish to give your file in the text field then either press the RETURN key or click on the **Save** button.

The file will be saved in the folder that was displayed in the save as sheet. If you wish you can change the folder using the standard navigation buttons.

Loading Chart Data

The easiest way to open an existing Pictogram file is to locate it in the Finder and double click on it. Alternatively you can,

- Choose **File** > **Open...** from the menu bar and locate the file using the standard file open dialogue box.
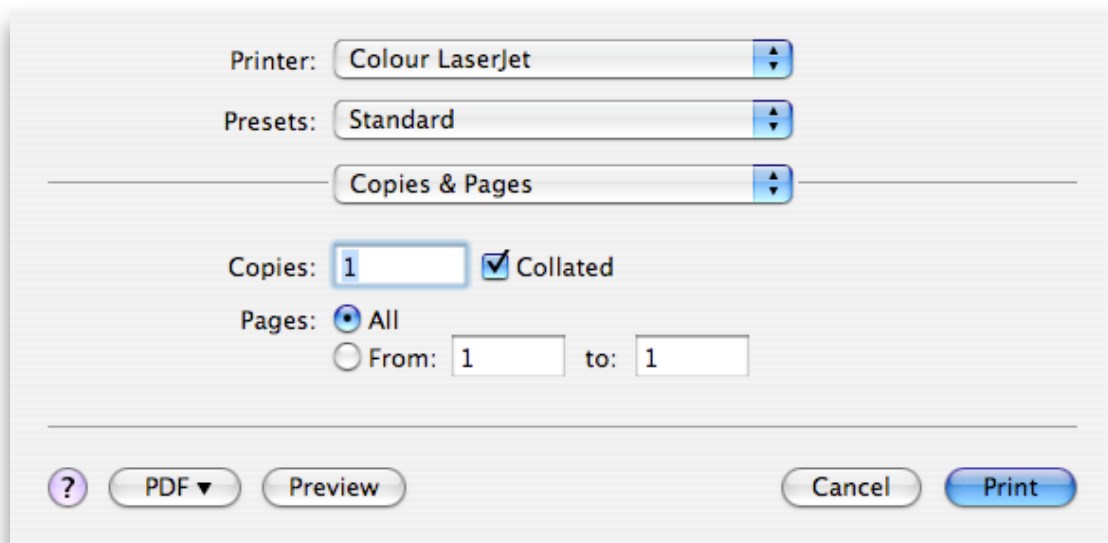
Printing

In order to print you must have a printer driver configured for your particular printer.

To print the chart either:

- Choose the item **File** > **Print…** from the menu bar or

- Click on the **Print** button the toolbar.

The print sheet will drop down from the main window:

- To print the chart click on the **Print** button.

If you wish to print to a printer which is not the default printer then you can choose another printer from the drop-down list.

More Advanced Features

Using the Clipboard (Copy and Paste)

Pictogram makes use of the clipboard for copying and pasting the chart as a picture file. This is really useful if you have created a chart in pictogram and then want to paste it into a word processor or DTP application. To do this we use the **Copy Chart to Clipboard** item in the **Chart** menu, as shown below:
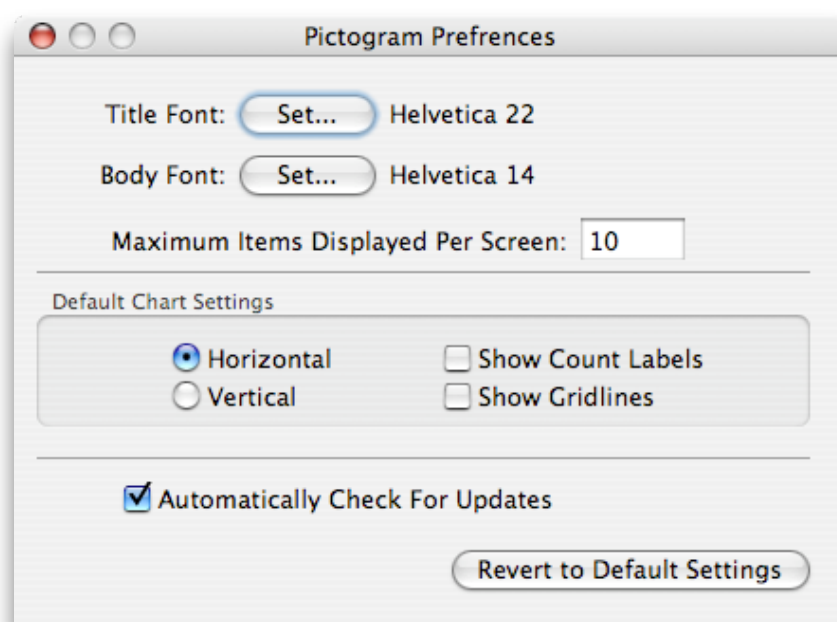
To copy your chart to the clipboard:

• Choose **Chart** > **Copy Chart to Clipboard** from the menu bar.

Preferences

Pictogram allows you to configure the appearance of the charts and some other settings too. To open the preferences window:

• Choose **Pictogram** > **Preferences…** from the menu bar.

Setting Different Fonts

You can configure different fonts and font sizes used in the charts.

• To do this click on the **Set…** button for either the **Title Font** or the **Body Font** and use the **Font** dialogue box to choose a new font.

Maximum Items Displayed Per Screen

This setting allows you to configure the maximum number of items that are displayed in the charts. By default this is set to 10. You can change this to any value between 10 and 20. The higher the setting the smaller the pictures will appear on screen but it does give you the option to display more pictures before the charts need to be re-scaled.

Default Chart Settings
These settings allow you to configure how the charts will appear by default when a new chart is created. Changing these settings do not affect any charts that are currently displayed or opened from a file.

Automatically Check For Updates
When this setting is checked, Pictogram will check to see if a new version is available for download from the Kudlian Soft web site. If there is a newer version then you will have the option to download it.
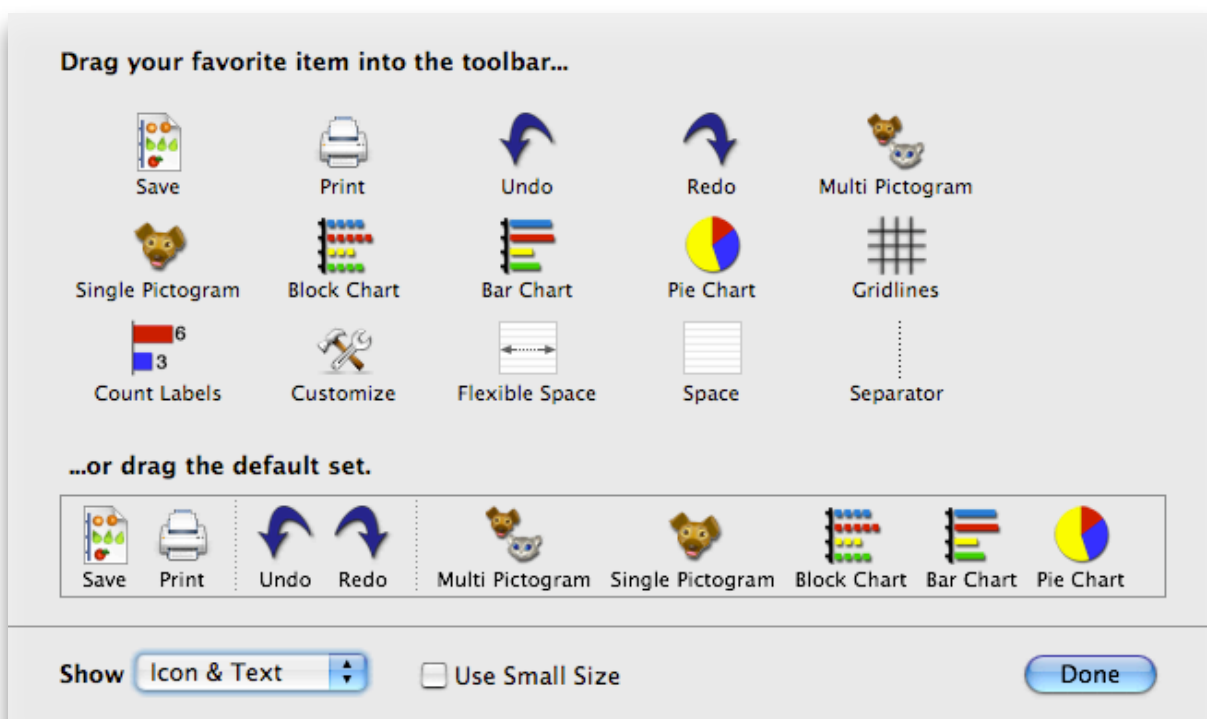
Revert to Default Settings
Click this button to restore all the preferences back to their default settings.

Customising the Toolbar

You can customise the toolbar in Pictogram to remove some of the pre-defined items or to rearrange them in a different order. To do this:

• Choose **View** > **Customize Toolbar…** from the menu bar. A sheet will drop down from the current Pictogram window:

This allows you to remove and add tools to the toolbar. You can also add separator bars and spaces.

If after using this feature you wish to restore all the tools back to their default state, then drag the default set up to the toolbar.

Note: The state of the toolbar is saved as a preference, and Pictogram will use your customised settings for the toolbar next time it is run.

Picture Sets Supplied with Pictogram

Picture Sets	Pictures						
Books	Fiction	Geography	History	Poetry	Religion	Science	
Buildings	Bungalow	Caravan	Detached House	Flat	Igloo	Semi-detached	Teepee	Terrace
Cars	Black Car	Blue Car	Green Car	Red Car	Silver Car	White Car	Yellow Car
Colours	Blue	Green	Indigo	Orange	Red	Violet	Yellow
Directions	East	North	South	West			
Eye Colours	Blue Eyes	Brown Eyes	Green Eyes	Grey Eyes			
Family	2 Members	3 Members	4 Members	5 Members	6 Members	7 Members	
Farm Animals	Chicken	Cow	Duck	Goat	Horse	Pig	Sheep
Feelings	Angry	Devious	Happy	Sad	Surprised	Tired	
Fruits	Apple	Banana	Cherries	Grapes	Lemon	Orange	Pear	Strawberry
Hair Colours	Black Hair	Blonde Hair	Brown Hair	Fair Hair	Ginger Hair	Grey Hair	
Houses	Bungalow	Caravan	Detached House	Flat	Semi-detached	Terrace	
Materials	Cardboard	Glass	Metal	Paper	Plastic	Wood	
Minibeasts	Ant	Bee	Butterfly	Dragonfly	Fly	Slug	Snail	Spider
Occupations	Building	Factory	Farm	Helping	Office or Shop	Other	
Pets	Bird	Cat	Dog	Fish	Other	Rabbit	
Programmes	Comedy	Documentary	Film	Game Show	New	Play or Drama	
Sides	3 Sides	4 Sides	5 Sides	6 Sides	8 Sides		
To School	Bicycle	Bus	Car	Train	Van	Walking	
Traffic	Bus	Car	Lorry	Motorcycle	Van		
Vegetables	Cabbage	Carrot	Cauliflower	Onion	Peas	Potato	
Weather	Bright	Cloudy	Overcast	Rain	Snow	Thunder	

Creating your own picture sets

You need to be logged on as an administrator in order to create folders and add files for all users to access.

Using the Finder, open the root folder of the hard disc, and then these successive folders, Library/Application Support/Pictogram/Picture Groups. Here you will find the folders that make up the picture groups. To add a new group simply create a new folder with the name you wish to give to the group. Then, inside your new folder, add any picture files that you wish to add to that group. It's as easy as that! Pictogram supports most graphic file formats, including JPEG, TIFF, GIF and PDF. The name of the picture will be taken from the name of the file, so you may wish to rename the file appropriately, the file's extension is ignored.

Next time you start a new pictogram, in the Pictures Group sheet you will see your new picture group in the list. These picture groups will be accessible by every user on the computer.

For system administrators that want to get a bit more involved…

Pictogram checks through all the domains that are defined on the Mac OS X system. In order of priority, they are: User, Local, Network and System. The Pictogram installer only uses the local domain. The picture groups must be located for each domain in

Library/Application Support/Pictogram/Picture Groups

This means that you could have a global set of pictures for all users in the local domain and bespoke picture groups for users in their own domain. You can also use the network domain too if you so wish. You should not create any such folder structure in the system domain as this is reserved for use by Apple.

If a picture group with the same name is found further down the domain search path then that will be used instead of the first one.

Data Handling in the Classroom

Using Information Handling Software with Children

The provision of prepared data files for data handling computer programs serves a very real need. This need is for giving an example to new users of the possibilities of the software and a chance to practice some of the procedures which need to be considered before beginning to use the program in earnest. The use of prepared files for INSET is extremely commonplace and has proved to be a good way for teachers new to the ideas of computer data handling of becoming familiar with what can and cannot be attempted. Frequently during INSET sessions extremely innovative ideas for the use of specific programs are developed.

It is important not to use computer programs simply because they exist, and this should always be a consideration when work which could involve data collecting and processing is being planned.

Collecting and processing information is and has been common in the education of our children for a very long time. The advent of the computer did not herald the advent of data collection, the drawing of charts and the analysis of the tables and so on. What the microcomputer in the classroom has meant is the easy access to, and use of, powerful means of processing information and the opportunity to allow time to dwell on the meaning behind the analysis of the collected information. When children collect information it should be with some definite aim in mind, or with some definite questions to which answers are sought. For example, "Is there a pattern in the likes and dislikes of children?" or "Which colour of eyes occurs most frequently in our class?" and "How do our results compare with that of another class?"

The collection of information by children is normally aimed at giving them a greater level of understanding of their surroundings. There are other aims involved, naturally, and these will alter from situation to situation. The process of gaining a greater understanding of the environment depends on the completion of a set of processes which begin with the identification of a need, the purpose for making the data collection in the first place, the next step is to decide precisely what information is required and the format in which it will be collected. Following this, the processing of the information takes place, this is where the power and sophistication of a computer program may be of use. Lastly and most importantly, is the stage of presenting and interpreting findings. This may mean the drawing of charts, not the laborious process of the "pre-micro" days, although children do benefit from drawing axes with a pencil choosing scales and so on, and the close examination of the results of searches and other processes carried out by the computer at the request of

the user. At this stage it is obvious that the answers to questions can only be comprehensible if the initial queries were correctly and sensibly formed.

In brief then, the process follows this course:

• Decide on purpose for collection of information.

• Collect information in a sensible, usable format.

• Process the information, often by the use of a computer.

• Test hypothesis and seek answers to questions.

If children are to be in a position to make decisions for themselves eventually, about the particular piece of software to use for particular application in the course of their work, then it is important that they have been in at least reasonably close contact with some of the programs available to them. One way of ensuring this familiarity is to work towards a gradual progression in the use and the variety of software which the children encounter. The other, and possibly an important means of giving awareness to children at "short notice", is to demonstrate software with the use of prepared files. This is really the only use for prepared files which can be recommended in the early stages of data handling. The exception to this rule is perhaps the use of files which are commercially available which hold very large amounts of information on such topics as census returns.

In general children gain very much more from information processing work if the information which is being processed has a special meaning for them. This can be achieved if the children have been responsible for the gathering and structuring of the information at all stages of the activity. This notion of involvement adheres very closely to the thoughts of many primary educationalists who believe that good primary practice must include a good deal of work based around children's first hand experiences.

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