

**How to adjust a
Microsoft Windows
Computer
for people with
Low Vision**

Acknowledgements

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Introduction

For people with low vision, adjusting light, size and colour contrast can help them see detail when reading and using a computer.

To see detail on the computer screen, key adjustments to think about are:

Brighter: Is there enough close light? Can glare be reduced for better visibility?

Bigger: Can it be made bigger?

Bolder: Is there enough contrast? Do objects or text on the screen stand out from the background?

This booklet provides 'no cost' or 'low cost' options for using these bigger, bolder, brighter principles to see more details on a computer running Microsoft Windows operating system.

Everyone's sight varies. This booklet describes a number of different options that can assist people with low vision to use their computer. Not every option will suit every person. Try all of them and find out what best suits the individual's needs.

If a computer user still has difficulty seeing objects on the computer screen after adjusting lighting, magnification and contrast, it may be time to consider using a speech program. This booklet explains how to use a basic speech program.

More advanced software programs are available. Specialists in low vision may offer some guidance on the different options to suit individual needs.

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Setting up your work area

- Make yourself comfortable at the computer. Your monitor should be clean and positioned at eye level.
- Use a desk or task lamp to illuminate the keyboard or any reading material you may need to use.
- Close your curtains or blinds so there is no glare from your windows. You may also need to angle your screen to avoid glare from other light sources. Anti-glare screens that fit over the computer screen are available from computer suppliers. These can reduce the contrast so choose carefully.
- Don't eliminate all light in the room. You need to be able to see where you are going when you get up from the computer and walk around the room.

Remember to take regular breaks from the computer to avoid eye fatigue.

Computer keyboards

Keyboards designed for low vision are available or alternatively adjusting your existing keyboard with commercially available products such as ZoomCaps. These are adhesive labels for computer keys. The letters, numbers, and symbols have good colour contrast and are enlarged for easier viewing. Labels are available in black on ivory and white on black, customised for Windows or Macintosh keyboards.

Refer to: www.mtc-inc.com/Products/Zoomcaps.htm

Identifying your computer's operating system

You will need to identify your operating system to follow some of the tips in this booklet. Do this now for future reference.

1. Right click on the **My Computer** icon on your desktop.
2. Left click on **Properties**. The **General** page will tell you what system you have on your computer i.e. Windows 95 or 98 or XP.

The most common systems for home computers are Windows 98, Windows XP and most new computers purchased in 2008 now have Vista.

Microsoft Vista operating system looks quite different to 98 and XP. If the PC is running Vista you will find the **Computer** icon on your desktop (see below). Right click and follow step 2 as detailed above.



Microsoft Vista



Ease of
Acce...

The Vista operating system has improved accessibility options. Display settings can be changed in one window called **Ease of Access control centre** (See the Icon on the left).

Ease of Access gives you similar settings to XP and 98 but centralises all the options and provides a quick step by step process to set up features like magnifier, speech and visual display settings. (See diagram next page)

To open Ease of Access:

1. Left click on Start Menu;
2. Left click on Settings. Choose Control Panel
3. Find Ease of Access Icon and double click to open.

Desktop Settings: You can adjust the screen background mouse pointers and sound. Right click in any blank space in the desktop screen and select **Personalize** to bring up the following control centre options.

Personalize appearance and sounds



Window Color and Appearance

Fine tune the color and style of your windows.



Desktop Background

Choose from available backgrounds or colors or use one of your own pictures to decorate the desktop.



Screen Saver

Change your screen saver or adjust when it displays. A screen saver is a picture or animation that covers your screen and appears when your computer is idle for a set period of time.



Sounds

Change which sounds are heard when you do everything from getting e-mail to emptying your Recycle Bin.



Mouse Pointers

Pick a different mouse pointer. You can also change how the mouse pointer looks during such activities as clicking and selecting.



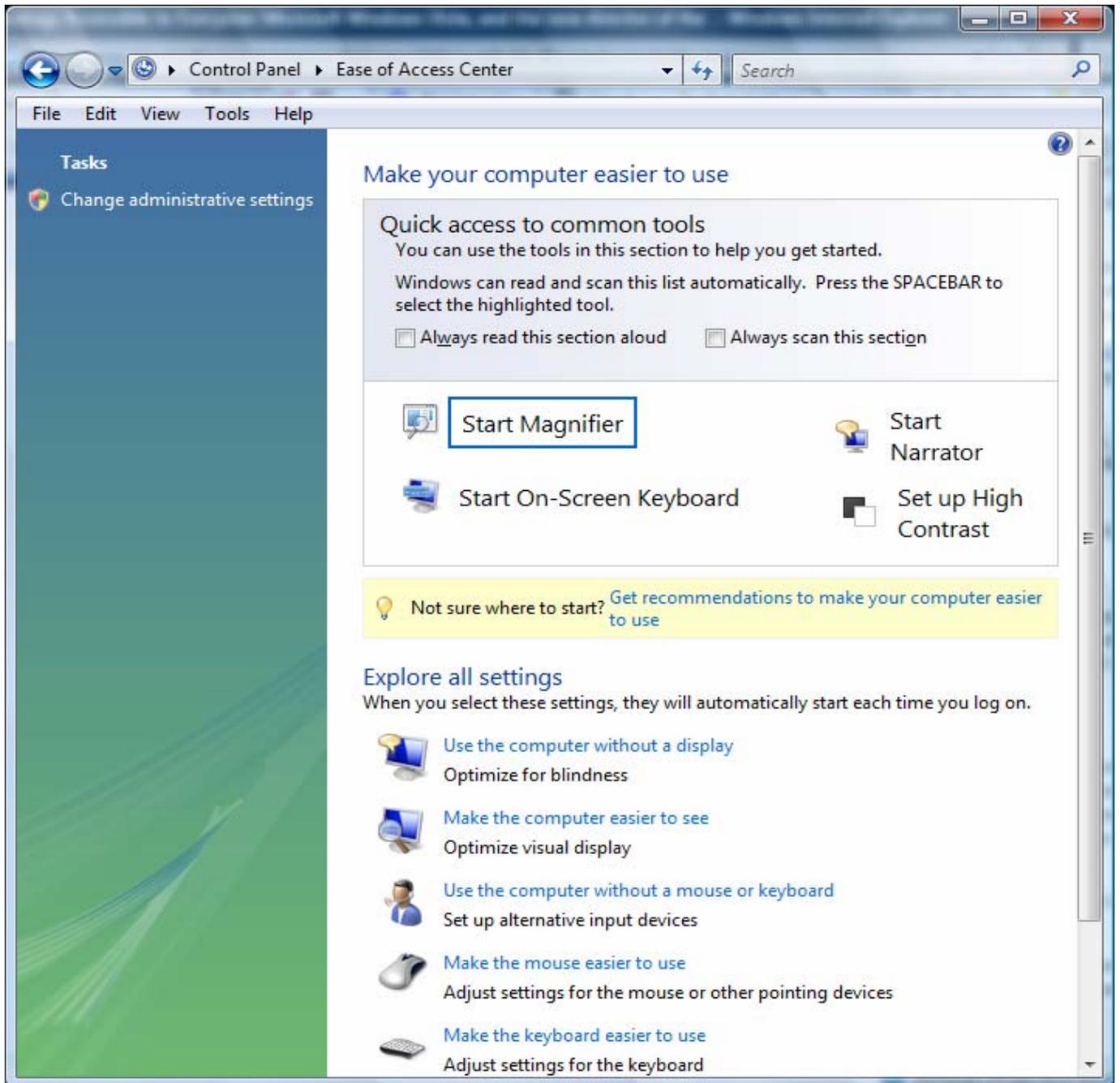
Theme

Change the theme. Themes can change a wide range of visual and auditory elements at one time including the appearance of menus, icons, backgrounds, screen savers, some computer sounds, and mouse pointers.



Display Settings

Adjust your monitor resolution, which changes the view so more or fewer items fit on the screen. You can also control monitor flicker (refresh rate).

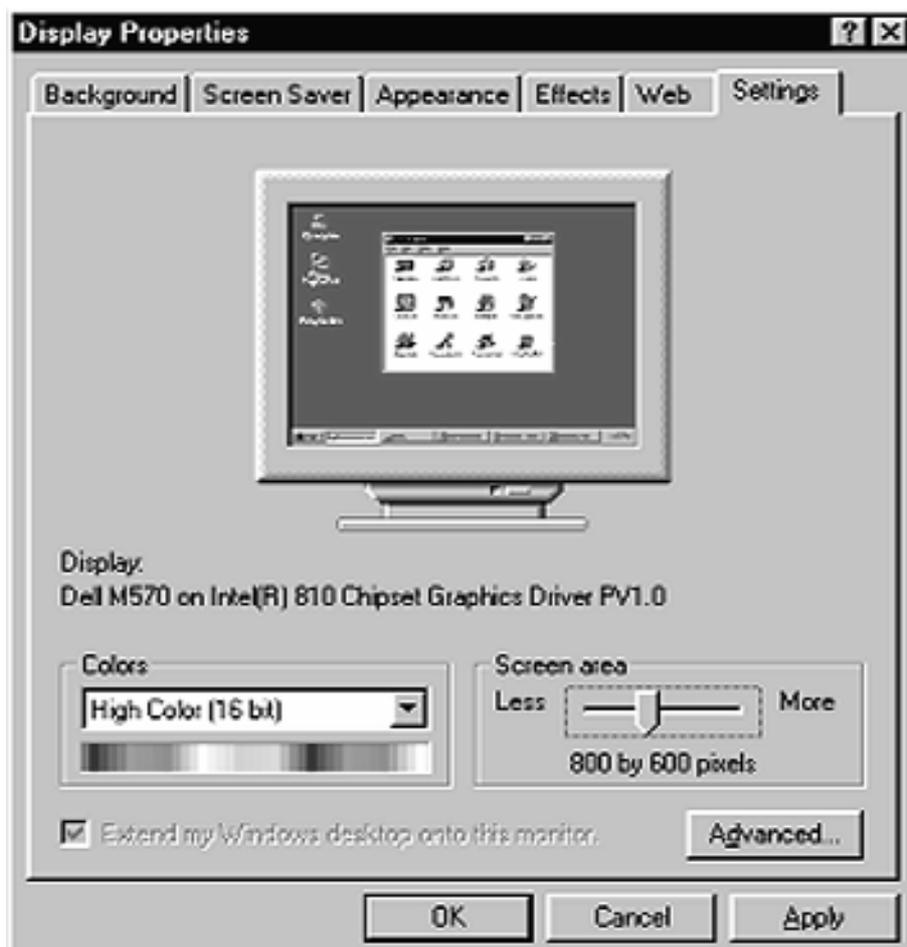


The **Ease of Access** and **Personalize** control centre panels provide direct links to similar menu options described in this booklet for Windows 98 and XP. If you are a Vista user, you can use the control centres to work through various options available to find what best suits you.

Adjusting the computer for large print and magnifying

The optimum resolution for large print and magnifying is **800 x 600 pixels**. You can change resolution by using the **Settings** tab in the **Display Properties** window.

1. Right click on the desktop.
2. Choose **Properties** from the pop-up menu. The **Display Properties** window will appear.
3. In the **Display Properties** window click on the **Settings** tab.
4. Change the **Screen Area** to 800 x 600 pixels.
5. Click **Apply**.



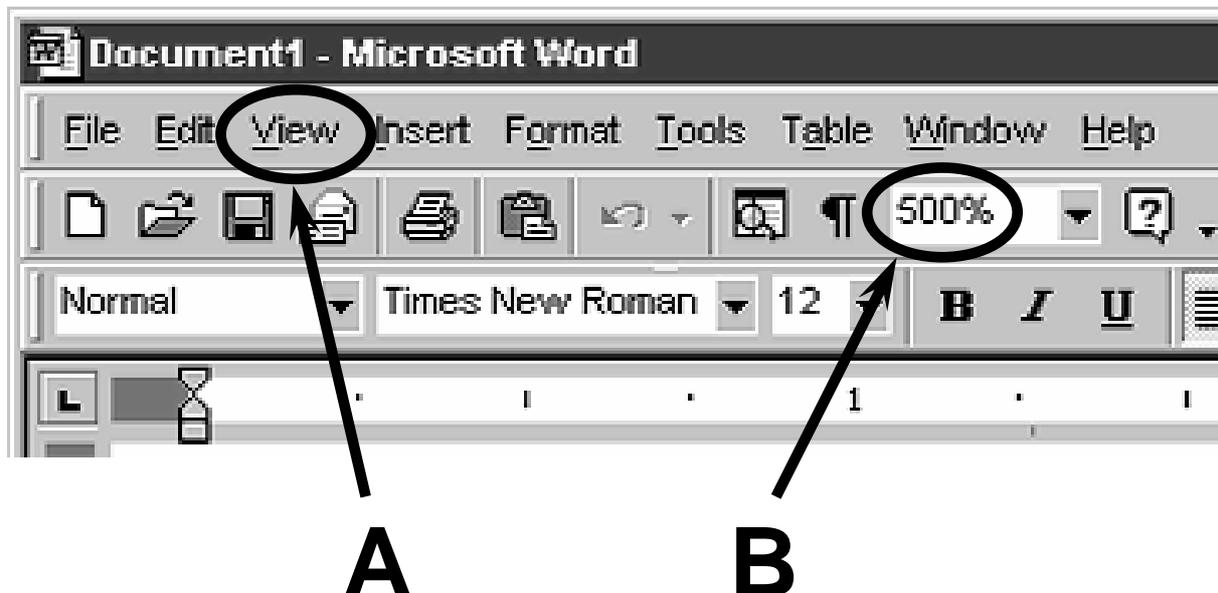
Enlarging the text on Microsoft Word and Excel documents using the Zoom feature

There are two ways to use this feature.

1. Left click on the **View** option (“A” on the diagram below). Try different percentages and pick one that suits you.

OR

2. Left click on the zoom box (“B” on the diagram below) to increase the size of a document. Try different percentages and pick one that suits you.



Alternative method:

If your computer has a mouse with a scroll wheel (Wheel Mouse), you can use the mouse to quickly zoom in or out on documents. Hold down the control key [Ctrl] on your keyboard and turn the scroll wheel to reduce or enlarge the screen view of document.

This Ctrl + wheel mouse method can be used to Zoom in or out on documents viewed in most Microsoft Office applications.

Enhancing contrast and/or enlarging text display in Microsoft Windows 95 and 98

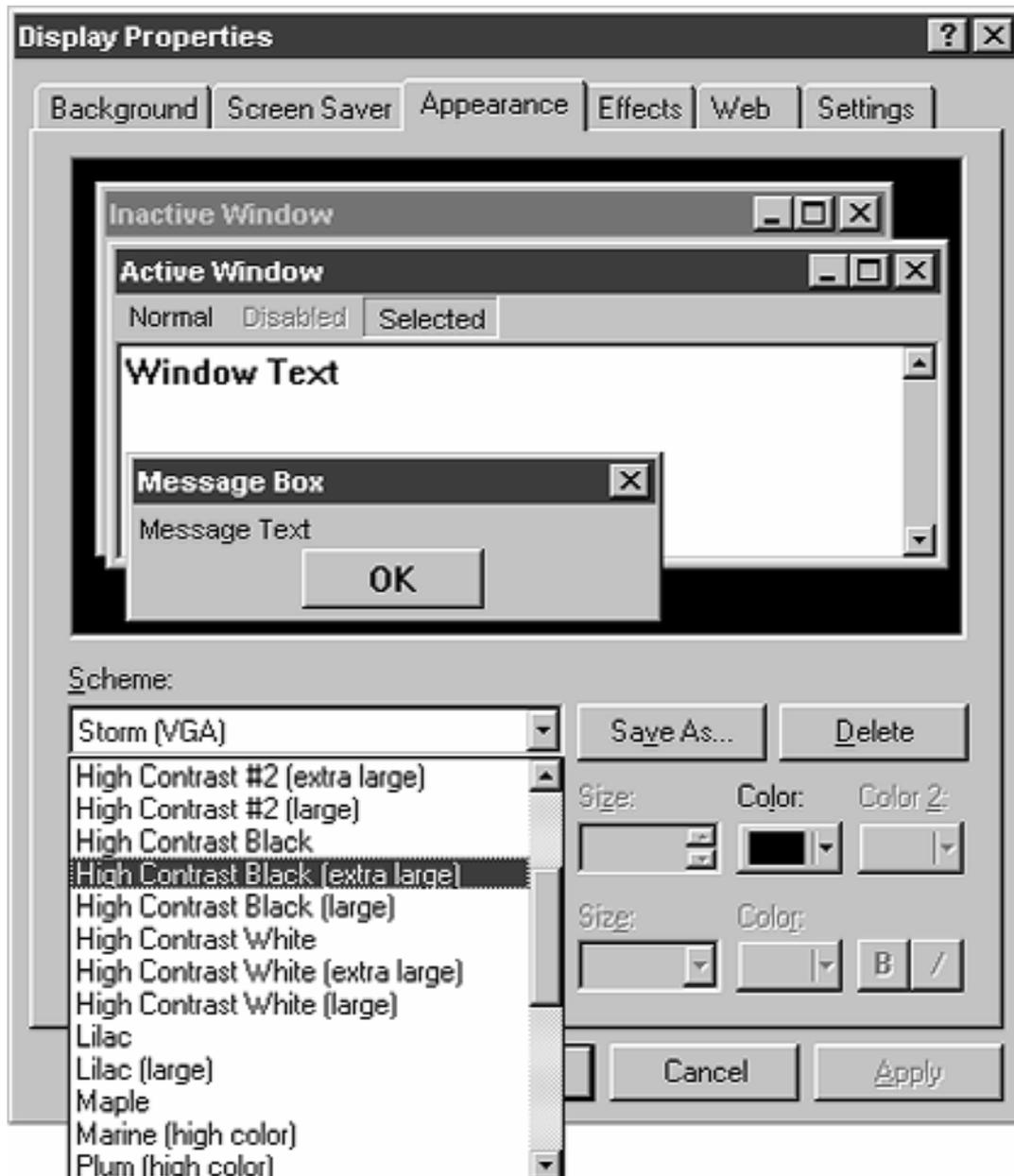
The colours on your computer screen can be changed to enhance the contrast. The sizes of the menus, window titles, cursors, dialogue boxes and the icons can also be increased. These changes are made using the **Appearance** tab in the **Display Properties** window.

1. Right click on the desktop.
2. Choose **Properties** from the pop-up menu. The **Display Properties** window will appear (diagram overleaf).
3. Click on the **Appearance** tab in the **Display Properties** window.

Then on the **Appearance** tab:

1. Click the arrow on the **Scheme** box to see a list of options.
2. As you click an option, a preview of what that colour scheme would look like appears in the window.
3. Select the scheme you want. This would usually be “High Contrast White (Large)” or “High Contrast Black (Large)” (diagram overleaf).
4. Click **OK**.

Vista users should refer to pages 8 and 9



If the automatic size change that occurred with the **Scheme** change is not large enough, increase it further by using the **Item** box on the **Appearance** tab.

1. Click the arrow on the **Item** box (bottom right) to see a list of options.
2. Select **Active Title Bar**.
3. Click the **Size** up arrow to increase the size of the bar. As you click, a preview of the size appears.
4. Click the **Font** arrow to select your preferred font, for example Arial.

5. Click the font **Size** up arrow to increase the size of the font. As you click, a preview of the font size appears.



The same steps are used to increase the sizes of the following items contained in the **Item** list: **Icon**, **Inactive Title Bar** and **Menu**.

Select these via the **Item** arrow following steps 1-2 above and follow steps 3-5 as required to increase the sizes and fonts on the display.

Saving your new display

You can save all the changes you have made by using the **Save As...** command in the **Appearance** tab.

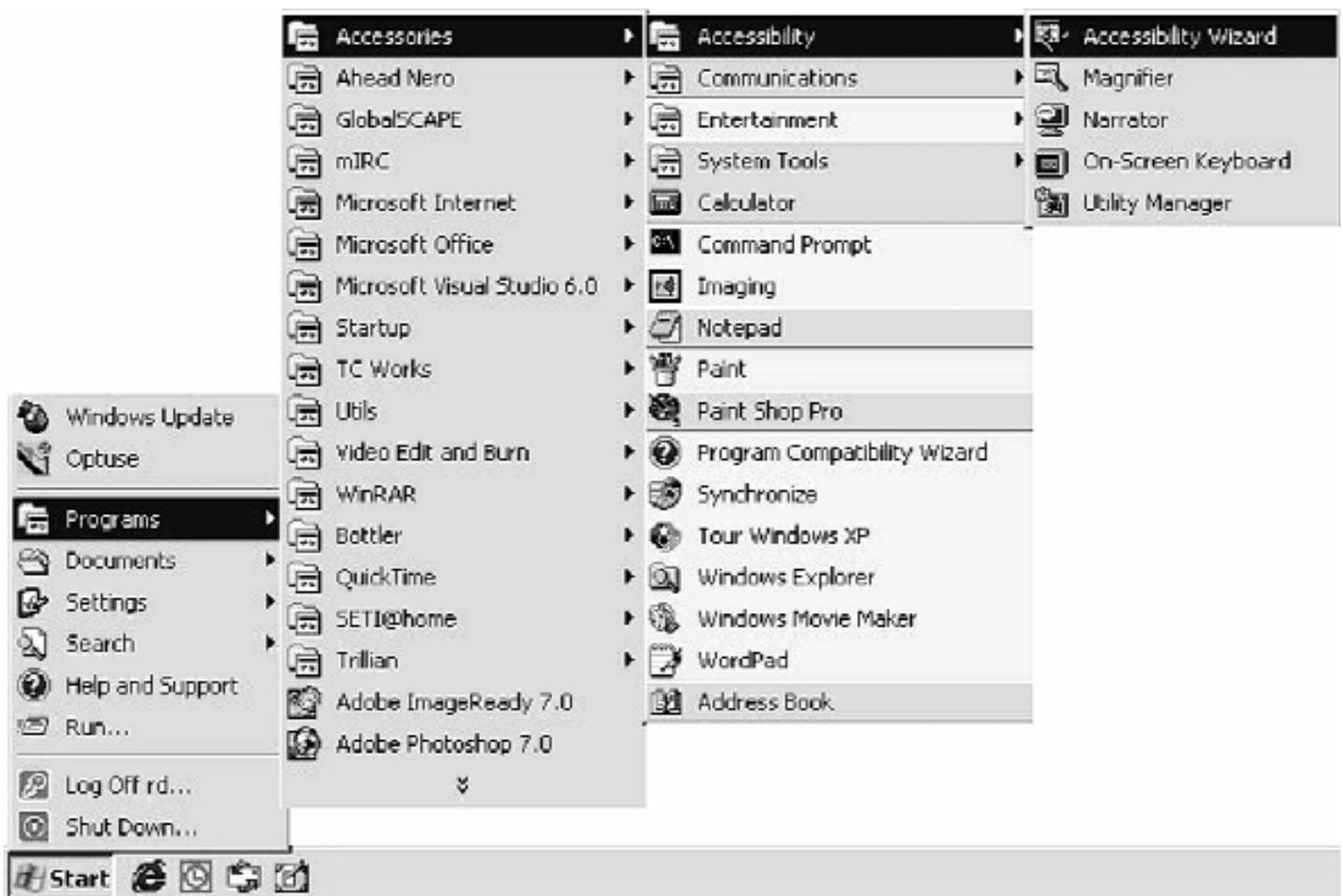
On the **Appearance** tab,

1. Click on **Save As...**
2. Type in the name you wish to give your scheme, for example your own name.
3. Click **OK**.

Enhancing contrast and/or enlarging text display in Microsoft Windows XP

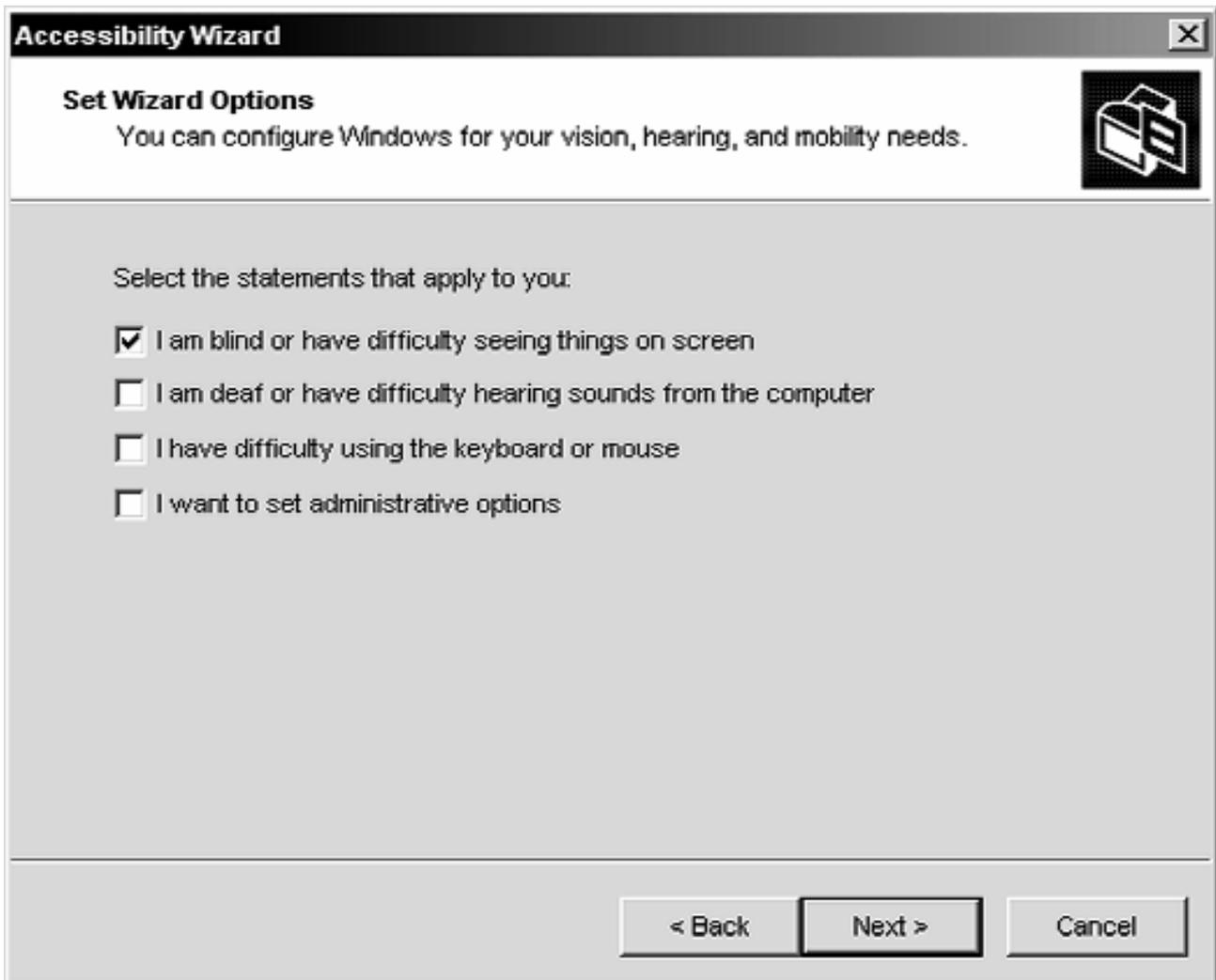
The colours on your computer screen can be changed to enhance the contrast. The sizes of the menus, window titles, cursors, dialogue boxes and the icons can also be increased. These changes are made using the **Accessibility Wizard**.

1. Left click on **Start**. Select **Programs**, then **Accessories**, then **Accessibility**, then **Accessibility Wizard** (diagram below).



2. Select **Next** in the **Welcome to the Accessibility Wizard** dialogue box.

3. In the **Text Size** dialogue box, select the smallest text you can read then press **Next**. Remember to choose a size you are comfortable with.
4. In the **Display Settings** dialogue box, ensure that the **Change the font size** check box is selected. If it is not, click on the check box. If you want to use Microsoft Magnifier (see magnifier section in this booklet), select the **Use Microsoft Magnifier** check box. **Select Next**.
5. In the **Set Wizard Options** dialogue box, select the 'I am blind or have difficulty seeing things on screen' check box (diagram below). Select **Next** to continue.



6. In the **Completing the Accessibility Wizard** dialogue box, select **Finish** to save your changes and exit the wizard.

At any stage, you can cancel your changes by selecting **Cancel**, and then **No**. To move back and change earlier screens, select the **Back** button.

Using Display Properties dialogue box

Most changes can be tweaked by going to the **Appearance** tab in the **Display Properties** window.

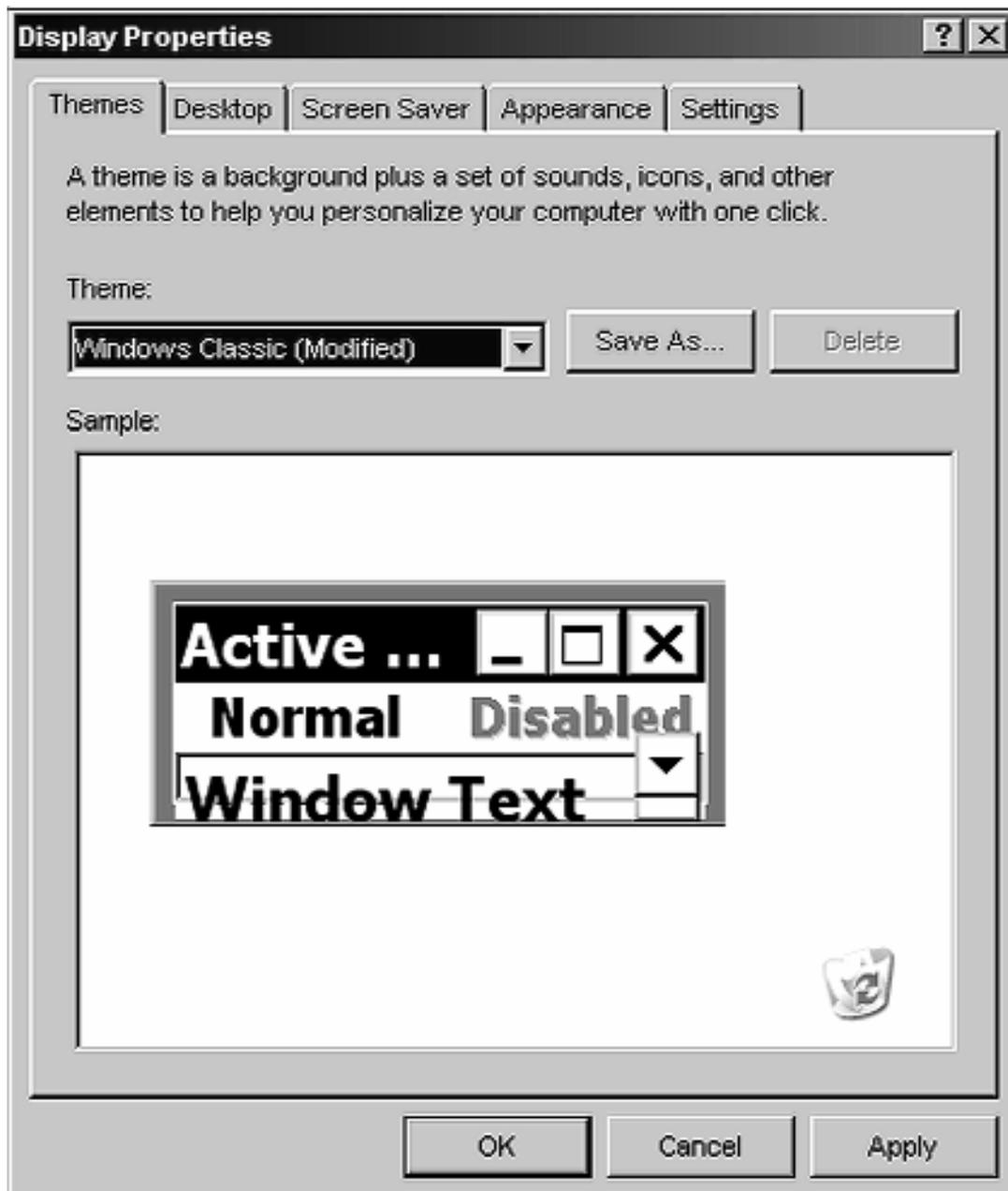
1. Right click in a blank area of the Windows desktop.
2. Choose **Properties** from the pop-up menu. The **Display Properties** window will appear (diagram overleaf).
3. Click on the **Appearance** tab in the **Display Properties** window.
4. If not already set, change the look to **Windows Classic**. This can be done by changing the **Windows and buttons** selection to **Windows Classic**. Click **Apply**.
5. Change the **Colour scheme** to “High Contrast (White)” or “High Contrast (Black)” depending on your personal preference. Click **Apply**.
6. Change the **Font size** to Large or Extra Large to suit your vision. Click **Apply**.



7. To make further changes, click on **Advanced**. This will open a dialogue box which allows you to make adjustments to other individual items such as desktop colour, title bar size etc. When changes are completed, click **OK** to close the **Advanced** dialogue box.
8. You may also wish to change **Effects**. This will stop menus from being animated or fading. When changes are completed, click **OK** to close the **Effects** dialogue box.

Saving your display scheme

You can save all of the changes you have made by using the **Save As...** command in the **Themes** tab.



1. On the **Themes** tab, click on **Save As...**
2. Type in the name you wish to give your scheme, for example your own name. Click **OK**.

Reducing the visual clutter on the desktop

Reducing the amount of clutter on the screen allows the items you use most to stand out and be seen more easily.

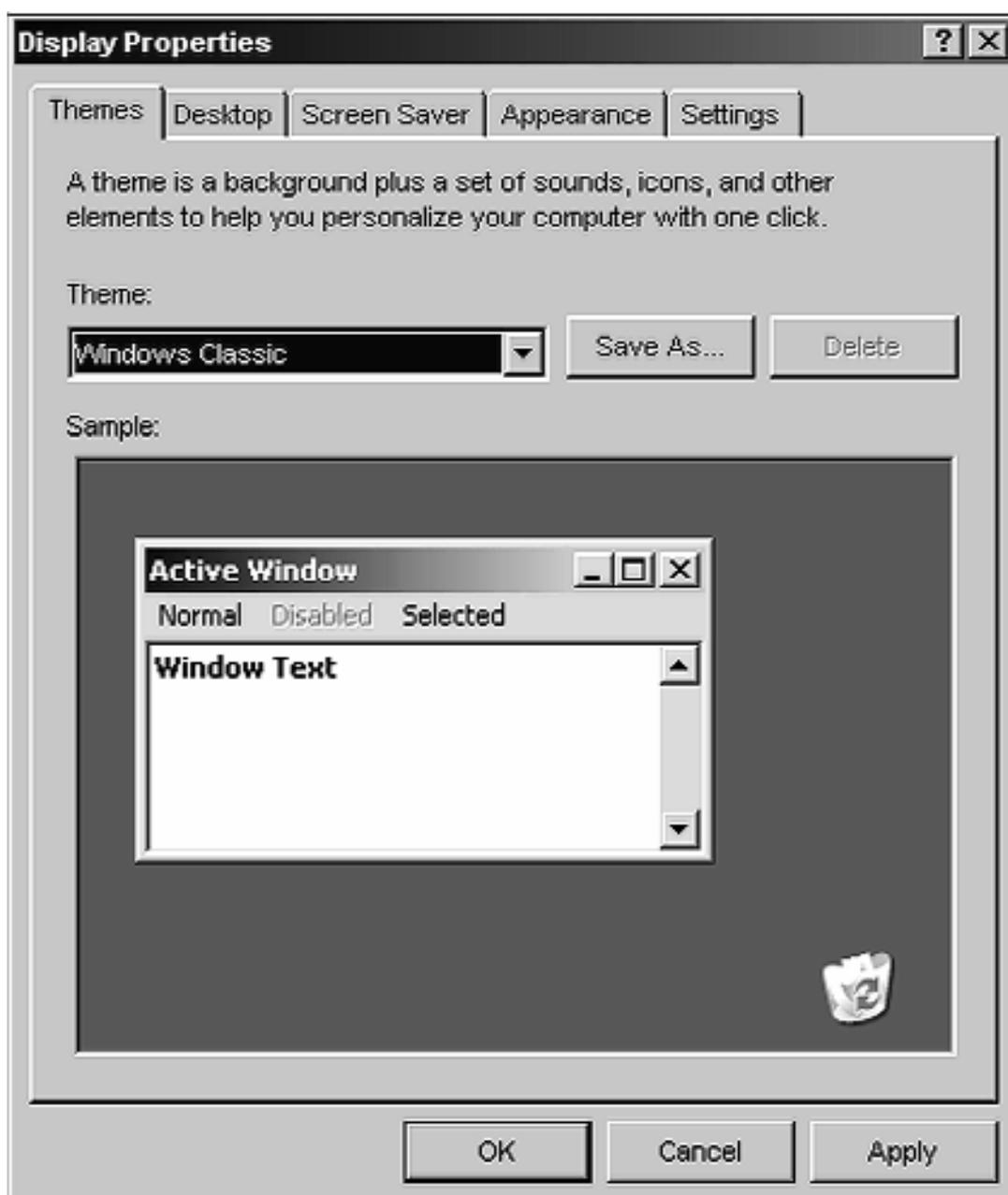
Start by using a plain coloured background so your icons and menus stand out better. Don't use patterns, pictures or photographs as your background as these can make icons harder to see.

The following six-step process can reduce clutter even more.

1. If you have Windows 98 or 2000 you can go straight to steps five and six to reduce your visual clutter.
2. If you have Windows XP you need to follow all six steps. The first few steps make your desktop look like a Windows 98 desktop. This is known as the Classic Look. Just follow each step and you'll get there!

Step 1 – Changing the Themes tab to Windows Classic (XP users only)

- a) Right click on an empty spot on the desktop and choose properties from the pop-up menu.
- b) In the display properties dialogue box, click the **Themes** tab if it is not already selected.
- c) From the **Themes** drop-down box, select **Windows Classic** and click **OK**.



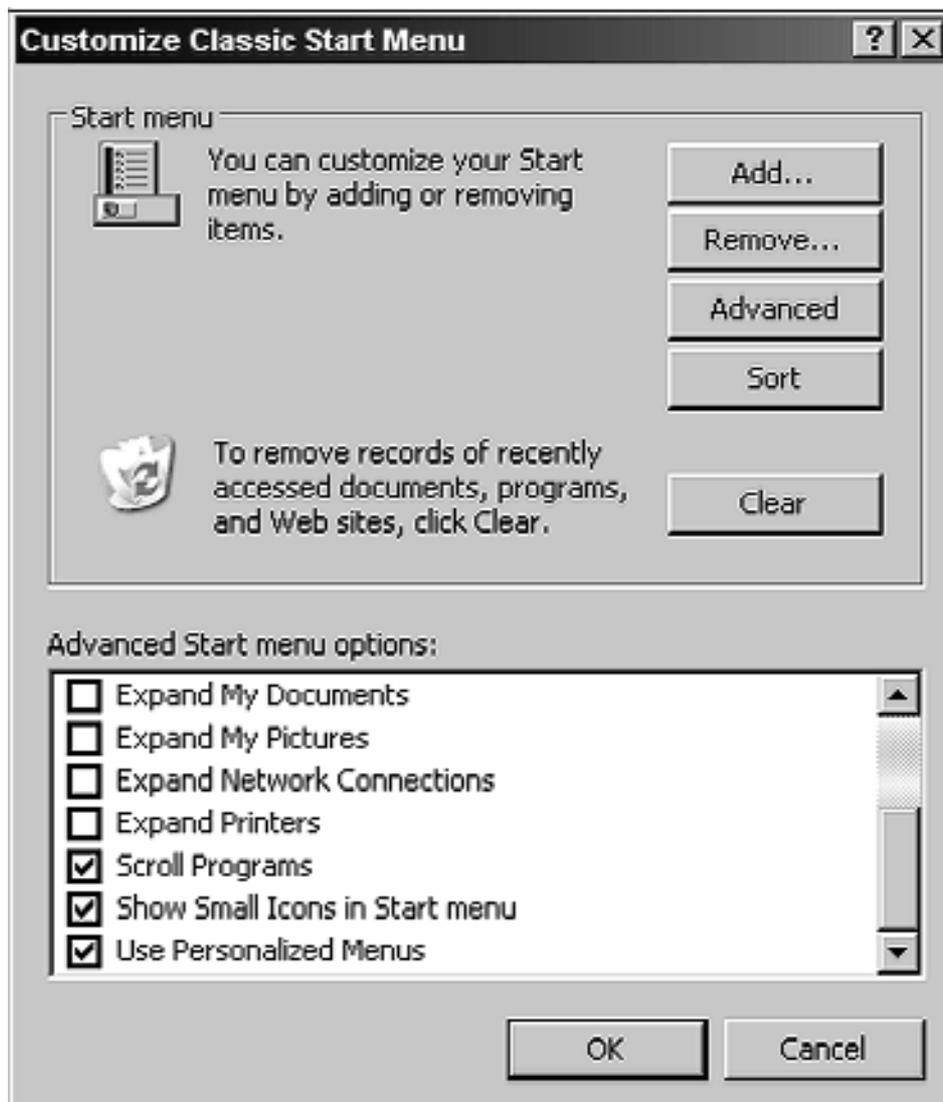
Step 2 – Changing the Start menu to Classic Start Menu (XP and Vista users only)

- a) Right click the **Start** button and select **Properties** from the pop-up menu to display the **Taskbar and Start Menu properties** dialogue box.
- b) On the **Start menu** tab, select **Classic Start Menu**.
Windows XP users **do not** click OK until after Step 3.



Step 3 – Customising menu items (XP users only)

- a) On the **Start Menu** tab you have just been using, click the bottom **customize** button (see diagram).

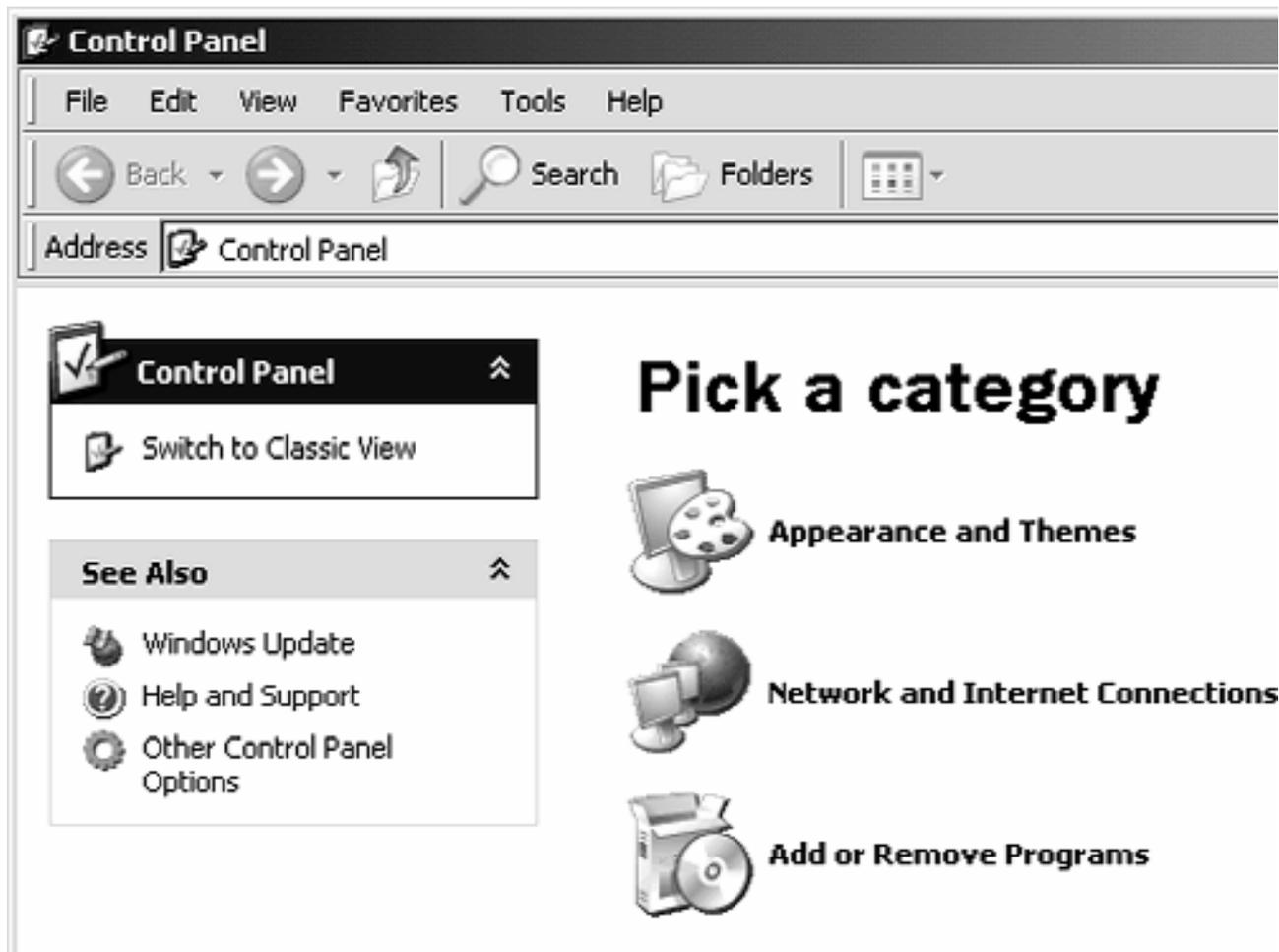


- b) You will find options that enable you to change what appears in the Start menu. Tick the options you want to use. For those who plan to use large fonts or magnifiers, we recommend that **Show Small Icons in Start menu** is selected.

Click **OK** on the **Customize Classic Start Menu** box. This returns you to the **Taskbar and Start Menu Properties**. Click **OK** to close this, then click **OK** on the **Taskbar and Start Menu Properties** screen which will become visible

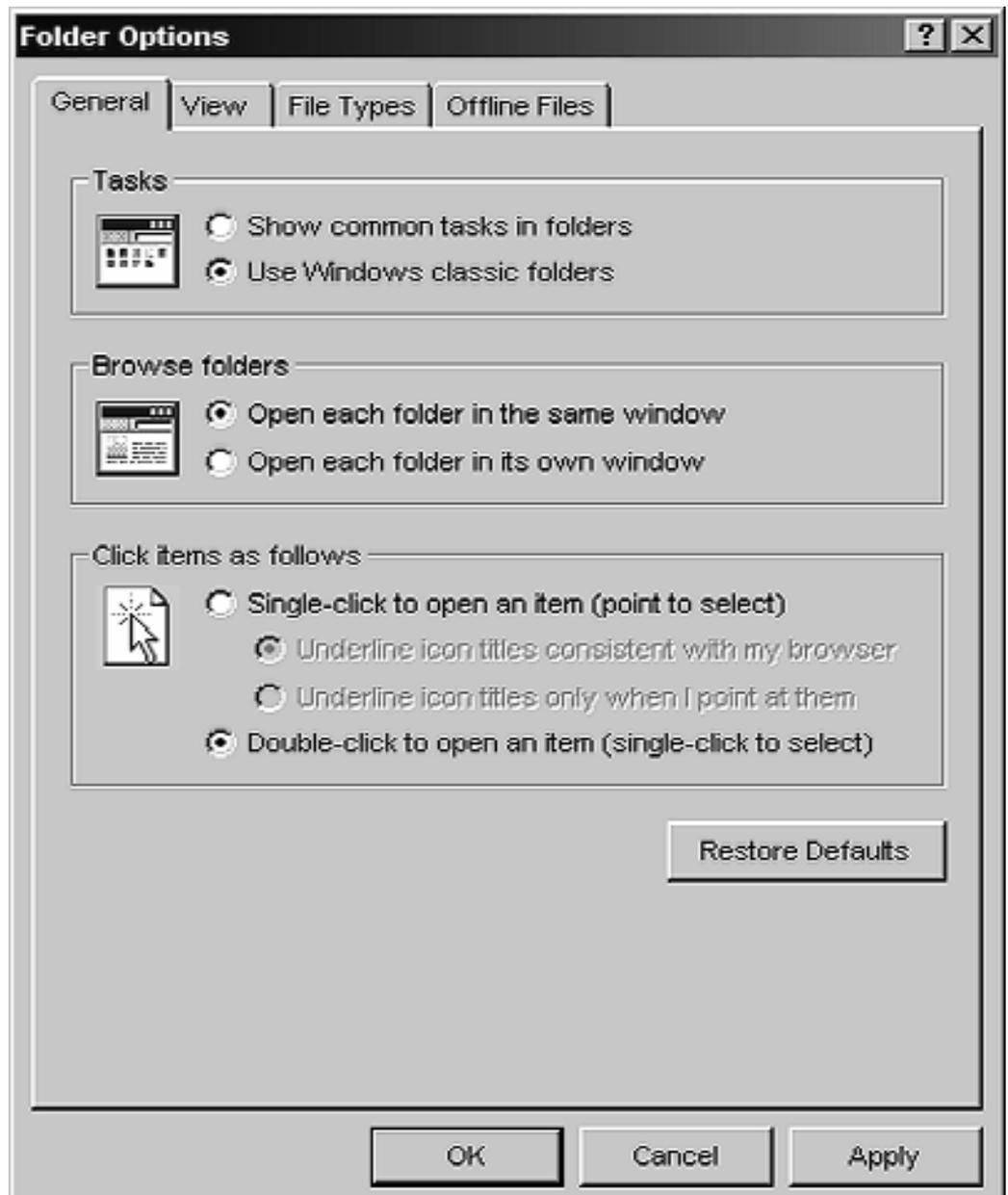
Step 4 – Changing the Control Panel to Switch to Classic View (XP users only)

- a) Left click on the **Start** button. Left click on **Settings** and click on **Control Panel**.
- b) Click **Switch to Classic View** in the Task Panel.

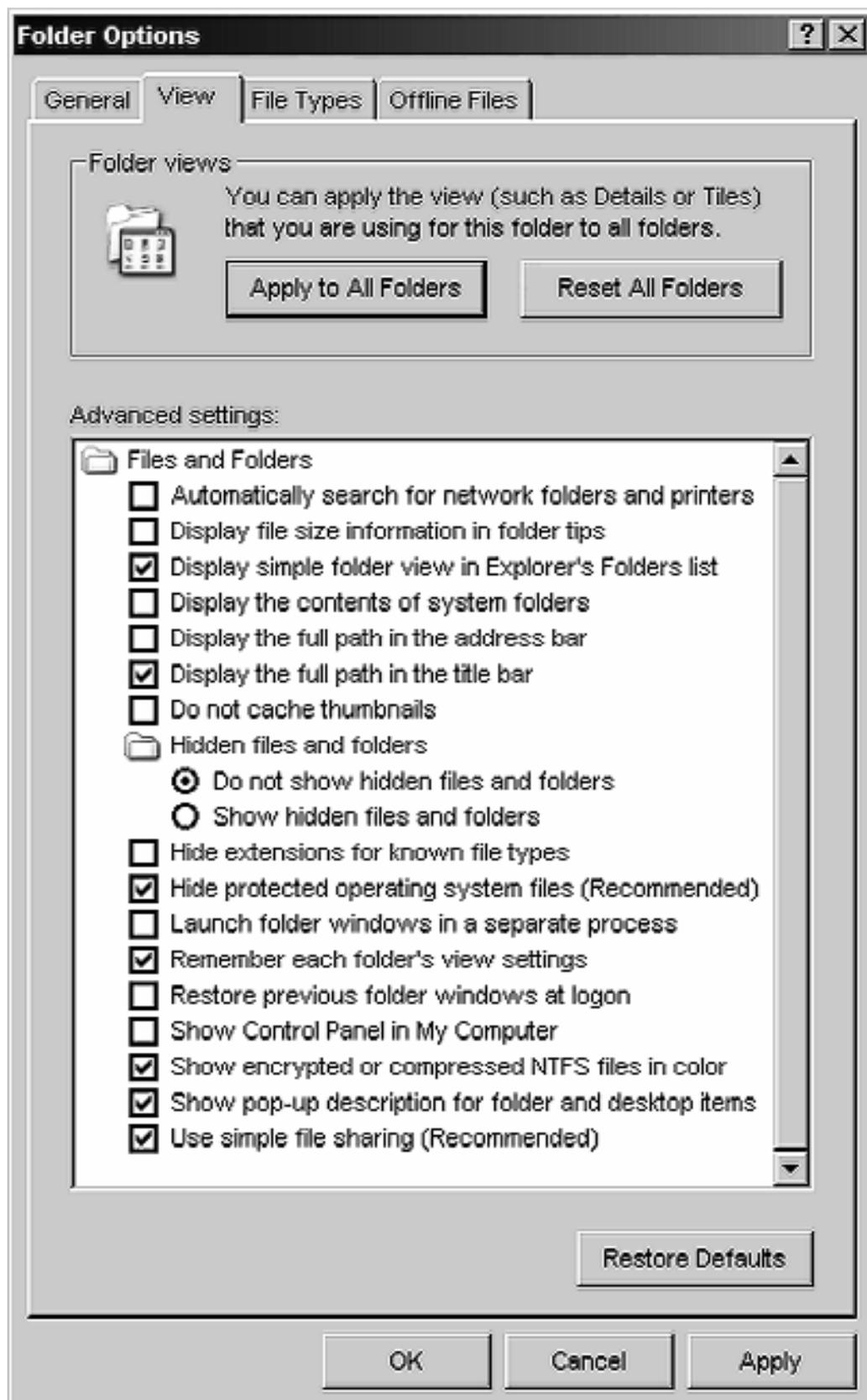


Step 5 – Adjusting Windows Explorer to Use Windows Classic Folders option (all users)

- a) Double click on the **My Computer** icon on the desktop.
- b) From the **View** menu, select **List** (or **Details** if you have enough space).
- c) From the **Tools** menu, select **Folder Options**.
- d) On the **General** tab, **Tasks** section, select **Use Windows Classic Folders** (diagram below).
- e) We also recommend that in the **Browse folders** section you select **Open each folder in the same window** (diagram below). This will reduce the number of windows that appear.
- f) Click **Apply**.



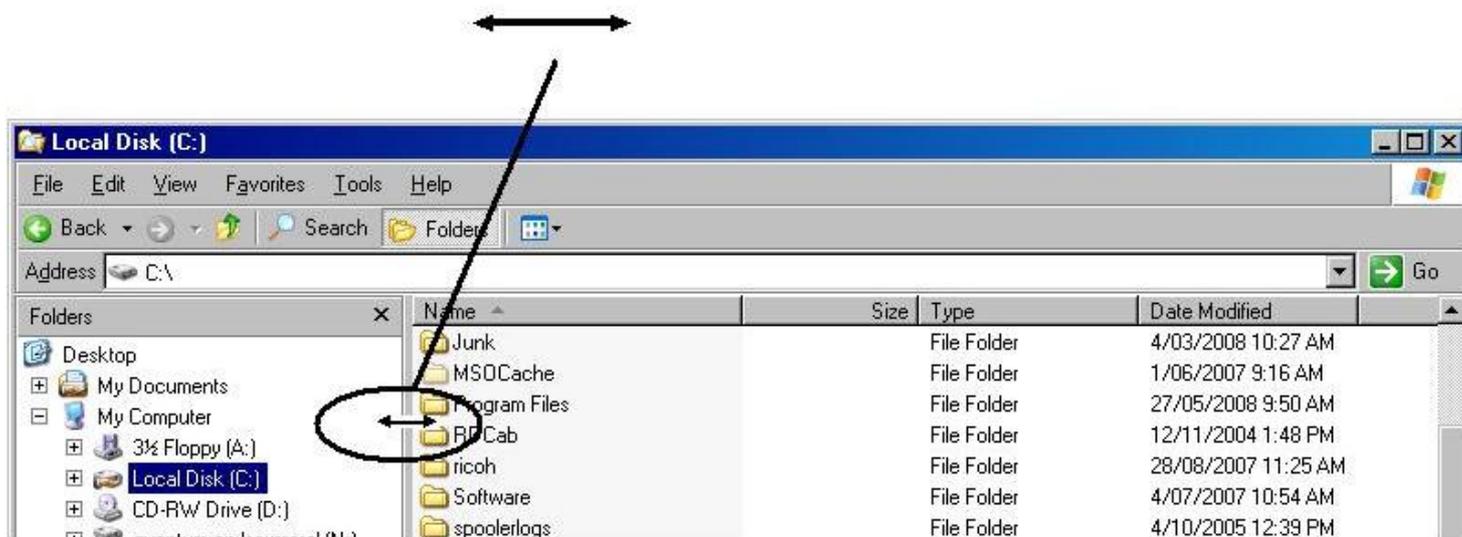
- g) On the **View** tab, change the options to suit your needs. We recommend ticking the following check boxes (note that some options may not be available on your computer):



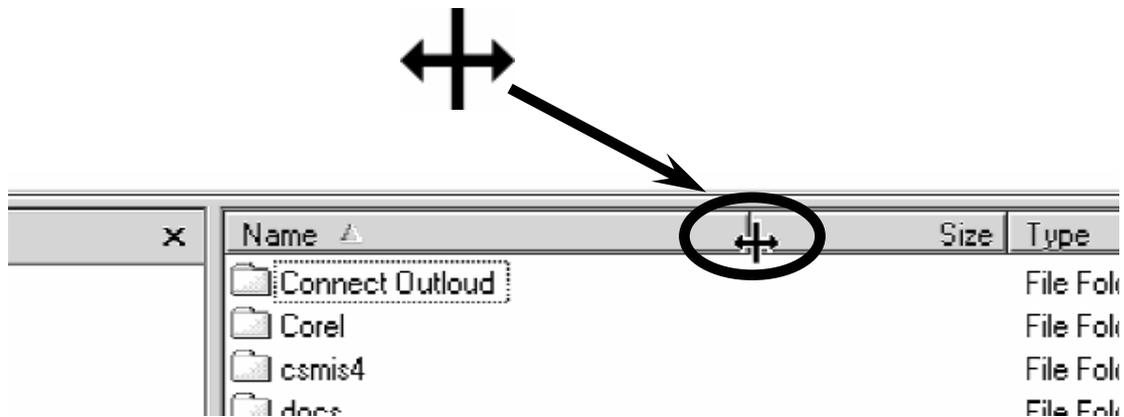
- h) Click **OK**.

- i) If folders are not visible on the left of Windows Explorer, select **View** menu, go to **Explorer Bar** and then **Folders**.
- j) **Optional step:** Make any adjustments to the layout of the Windows Explorer window. In the folders view (left hand side) highlight **(C:)**. You can now adjust the size of the folder window and the size of the columns.

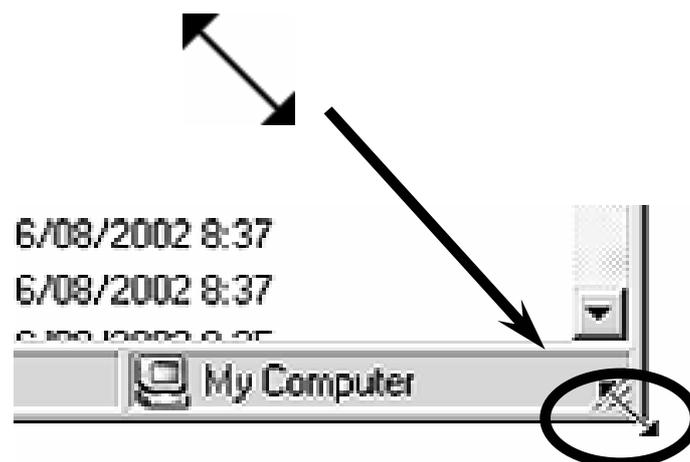
To change the **width of the folder window**, put the mouse pointer on the bar between the folder list on the left and the files on the right. The cursor will change to a two-headed arrow as shown below. While this cursor is showing, hold down the left mouse button and drag the bar to the desired location. Release the mouse button.



To change the **width of the columns**, put the mouse pointer on the line dividing the column headers. The cursor will change as shown. Click and drag as above to resize the columns.



To change the size of the entire window, put the mouse pointer on the bottom left or top right corner of the window. The mouse cursor will change as shown. Hold the mouse button, drag to resize the window and release the mouse button when complete.



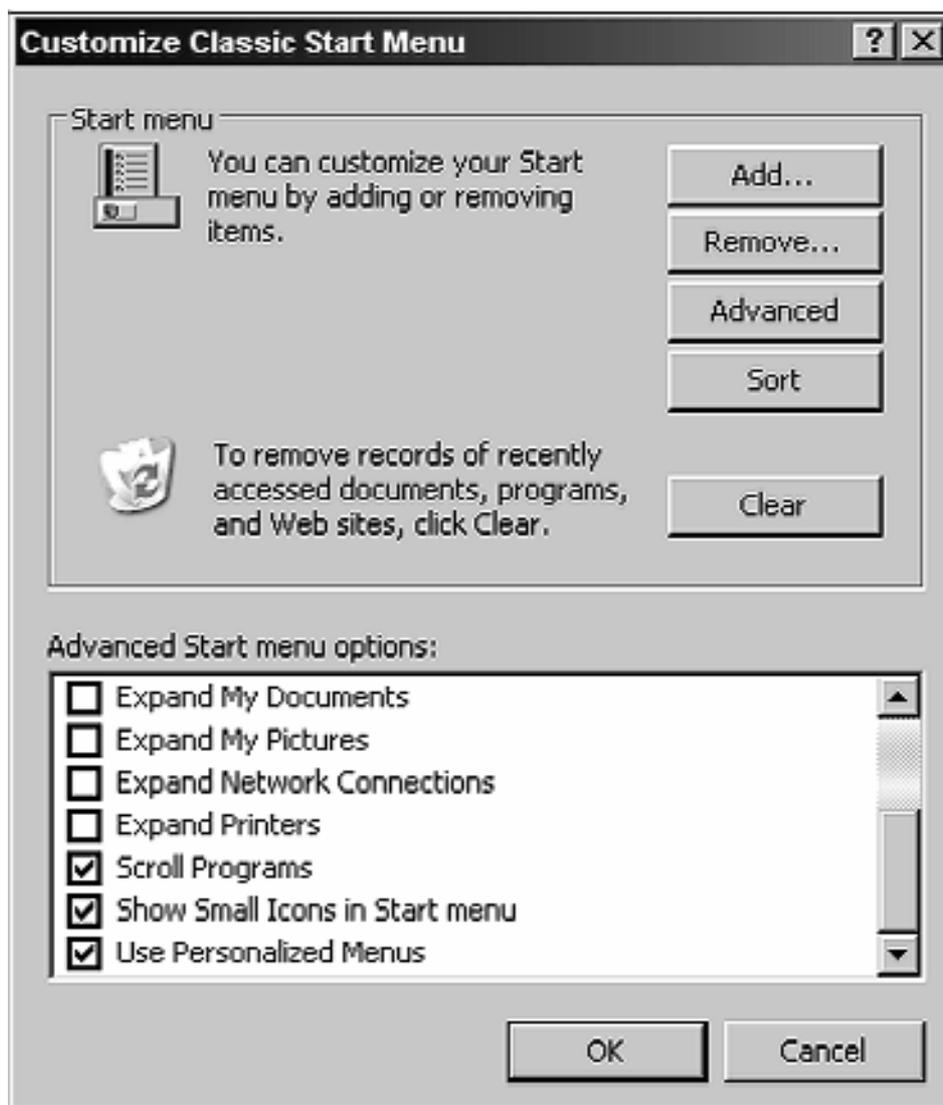
- k) From the **Tools** menu, select **Folder Options**. Go to the **View** tab and select **Apply to All Folders**. Click **OK**.

Step 6 – Tidying Up (all users)

Close down all the applications or programs on your computer. Locate any icon you don't want on your computer desktop and right click on it. Choose **Delete**.

This process will remove the icon from your desktop but doesn't affect the program or application. To go to this program again, left click on your **Start** menu and left click on **Programs**.

You can do a similar tidy up on your start menu but ask someone who knows your computer which items to delete.



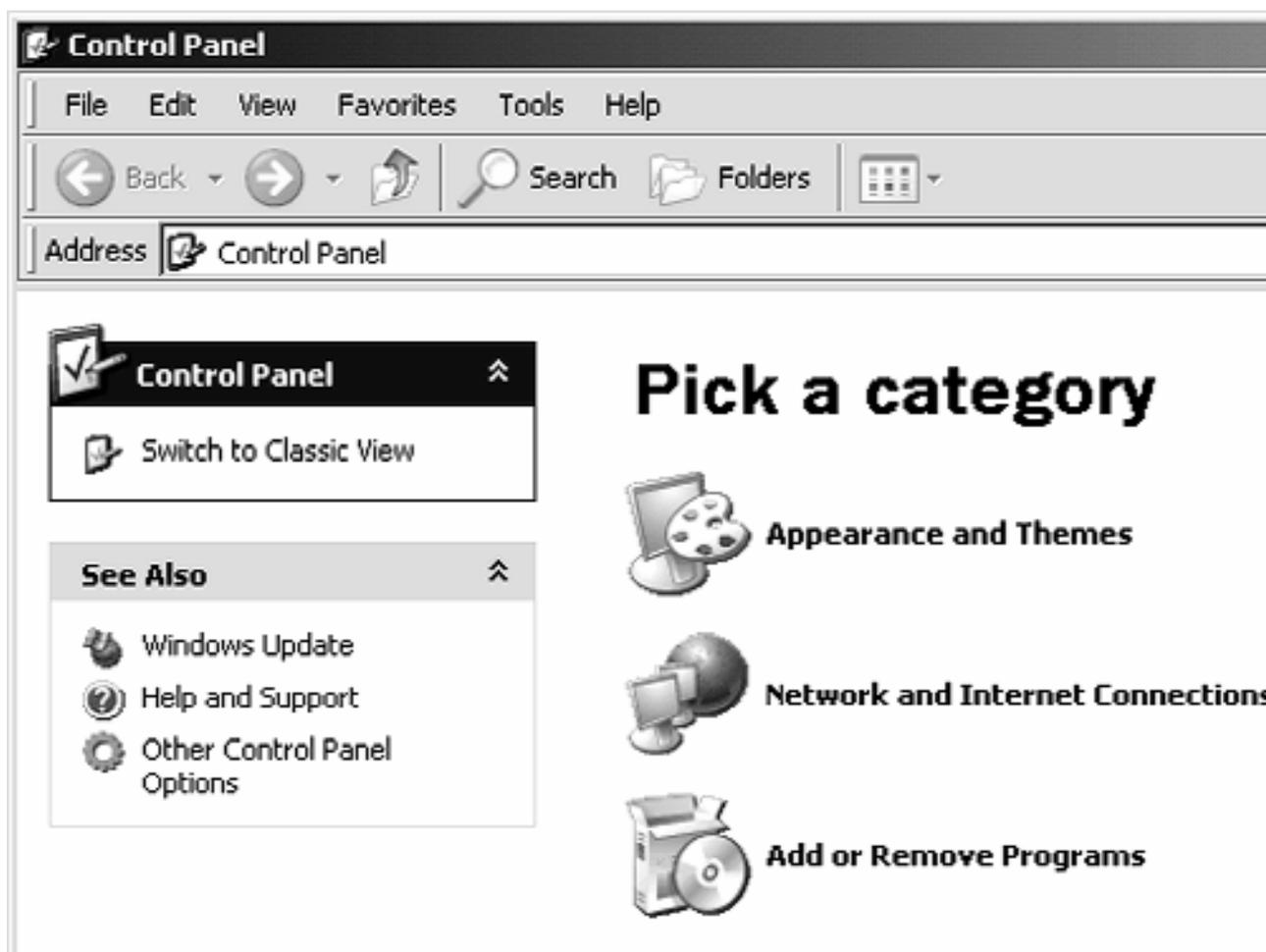
- c) You will find options that enable you to change what appears in the Start menu. Tick the options you want to use. For those who plan to use large fonts or magnifiers, we

recommend that **Show Small Icons in Start menu** is selected.

- d) Click **OK** on the **Customize Classic Start Menu** box. This returns you to the **Taskbar and Start Menu Properties**. Click **OK** to close this, then click **OK** on the **Taskbar and Start Menu Properties** screen which will become visible again.

Step 4 – Changing the Control Panel to Switch to Classic View (XP users only)

- c) Left click on the **Start** button. Left click on **Settings** and click on **Control Panel**.
- d) Click **Switch to Classic View** in the Task Panel.

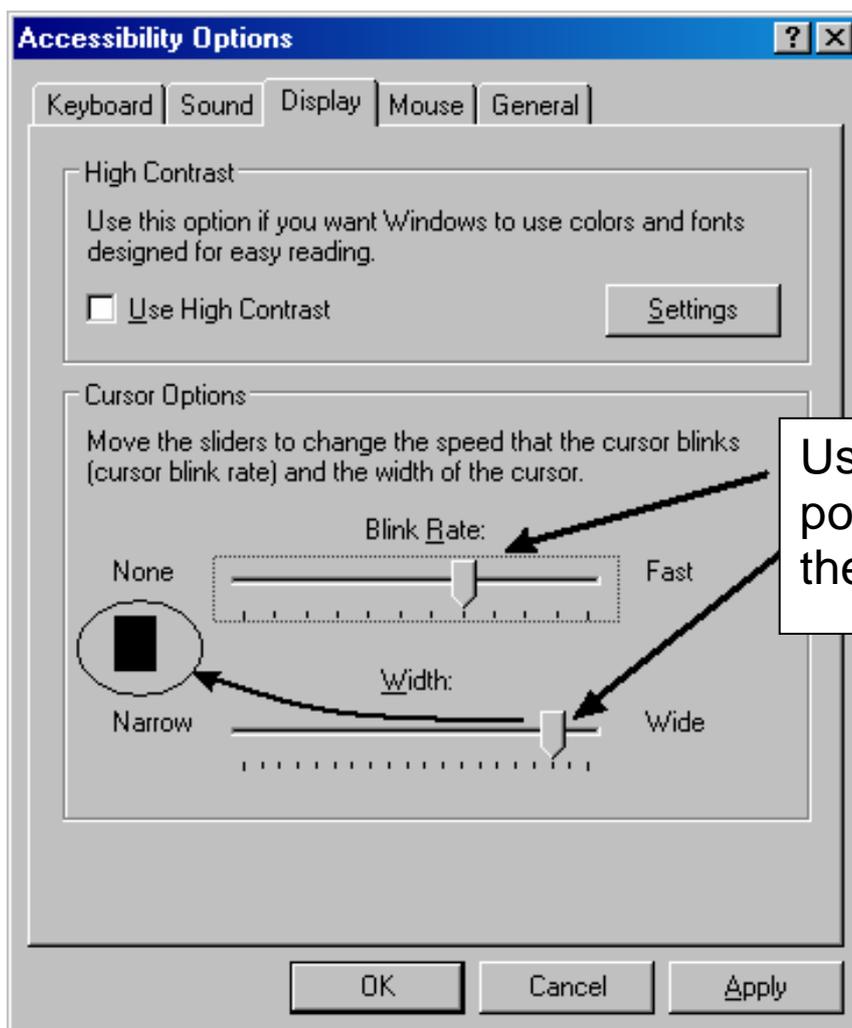


Adjust the cursor and mouse pointer

Visibility of the mouse pointer and cursor can be adjusted by changing the contrast or size and width.

You can adjust the width of the cursor bar and the blink rate.

1. Left click on the **Start** menu.
2. Left click on **Settings**. Choose **Control Panel** from the drop down menu.
3. Find the **Accessibility Options** and double click on this.
4. Using the **Display** tab box, (see diagram) select the Blink Rate and Width scale



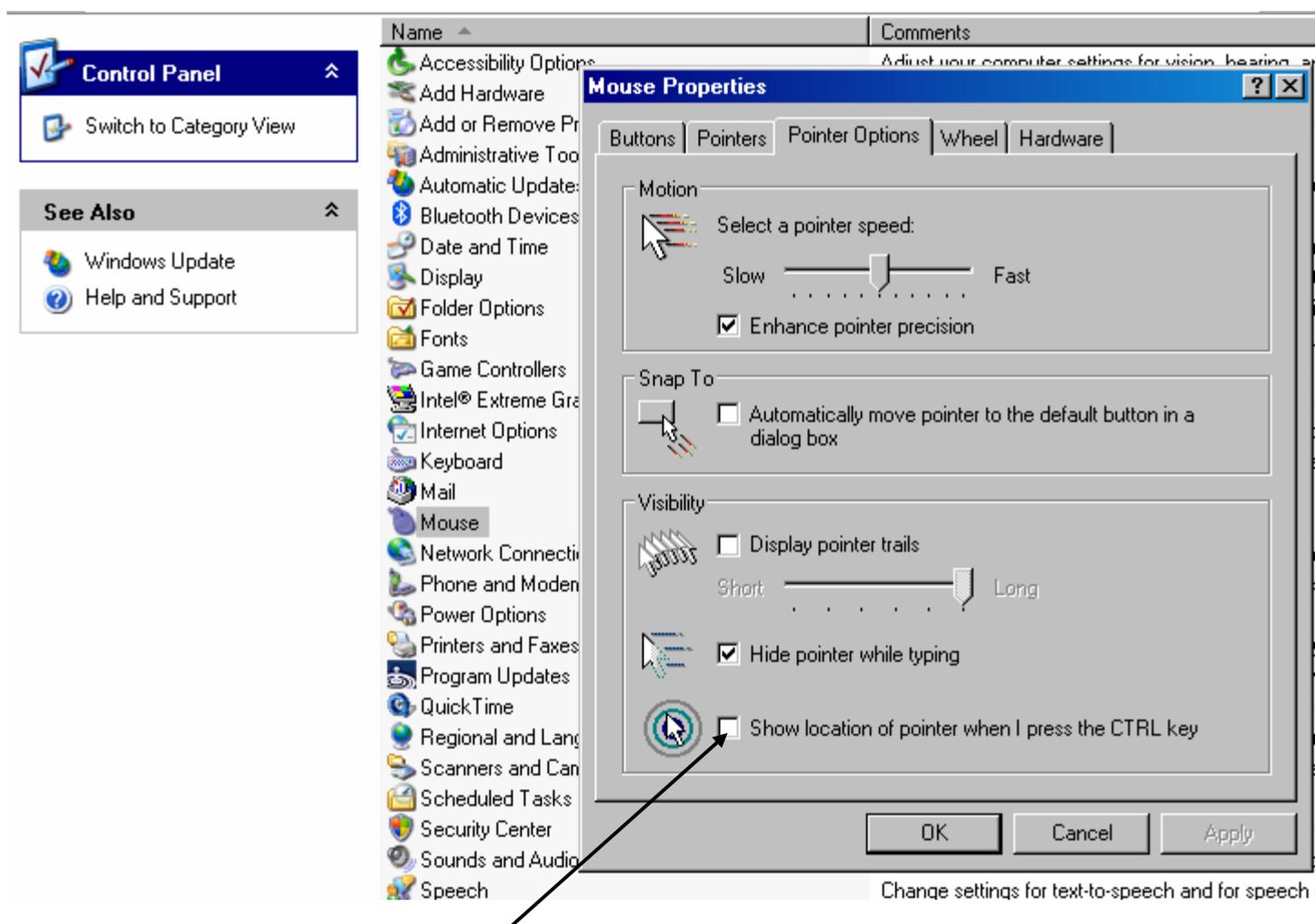
Use mouse pointer to slide the bar left or right

The mouse pointer can also be changed. Many options of mouse pointer can be downloaded and installed to your computer for free from the internet.

1. Left click on the **Start** menu.
2. Left click on **Settings**. Choose **Control Panel** from the drop down menu.
3. Find the **Mouse** option and double click on this. This opens the **Mouse Properties** box.
4. Left click on the **Pointers** tab.
5. Select the pointer you want to change.
6. Click **Browse**.
7. Choose a suitable pointer to change to.
8. Click **Open**.
9. If you want to change other pointers, go to step 4 and repeat the process.
10. Click **OK** when you have finished.

Putting a trail on the mouse to increase visibility

1. Left click on the **Start** menu.
2. Left click on **Settings**. Choose **Control Panel** from the drop down menu.
3. Find the **Mouse** option on the Control Panel and double click on this. This will open the **Mouse Properties** box.
4. Click on the tab that says **Motion** (see diagram) and tick the box that says **Show pointer trails**. You can then select how long you want the trail to be.



Select and apply “Show location of pointer when I press CTRL”

Another useful trick if you fail to see the mouse is to move it to the top left corner of the screen – you can’t lose it off the top left!

Low vision options for reading Internet pages

You can enlarge text or change the colour contrast on Internet (web) pages.

Option 1. Increasing text size

In Internet Explorer:

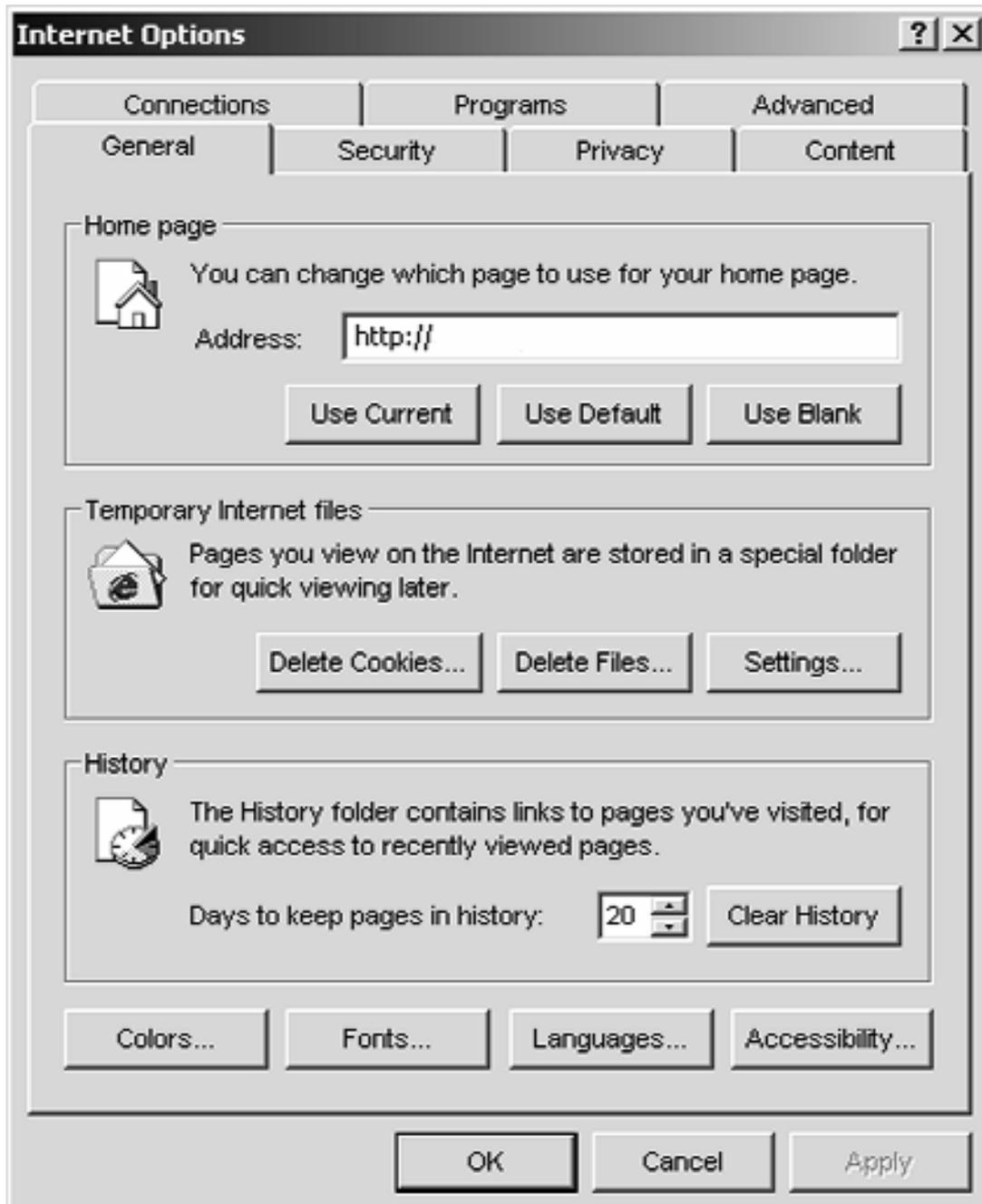
- Left click on the **View** menu.
- Left click on **Text Size** and **Largest**.

Option 2. Adjusting text size, colours and styles

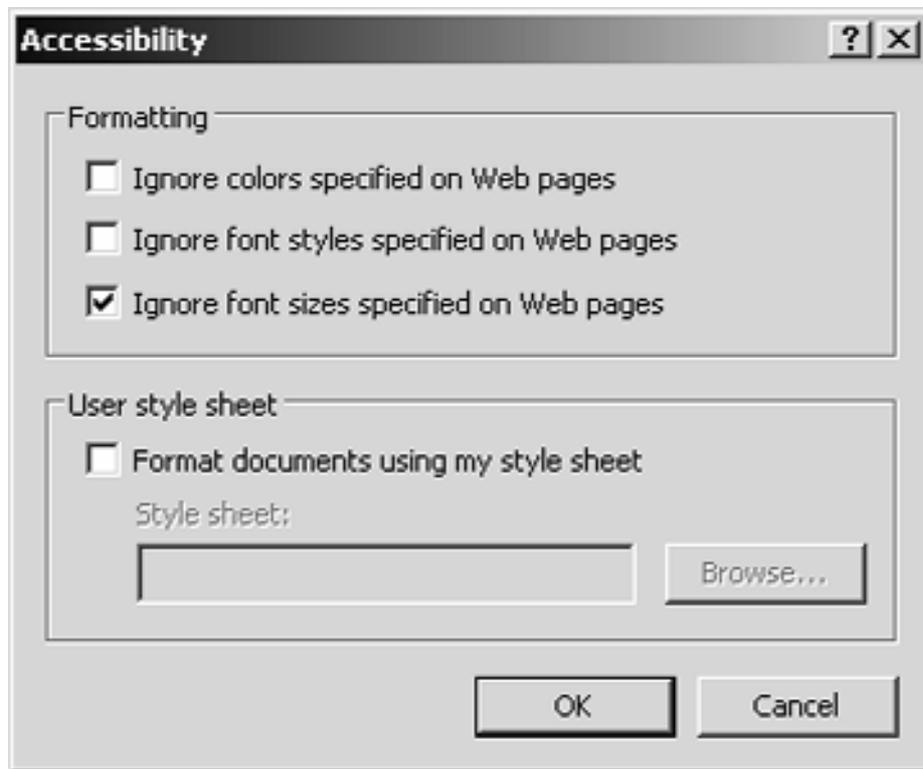
On the Internet Toolbar:

- Left click on **Tools**.
- Left click on **Internet Options**. (See diagram next page)

- On the **General tab**, left click on the **Accessibility** box in the bottom right hand corner (diagram below).



- In the **Accessibility** box, tick one box at a time then click OK twice and see what has changed. You may choose to use all three options or only one or two.



Different Internet sites will respond differently to these commands. Try them on the websites you use most often.

Also remember the alternative method outlined earlier (on Page 11). If your computer has a Wheel Mouse, you can use the mouse scroll wheel to quickly zoom in or out on documents.

- Hold down the control key [Ctrl] on your keyboard and turn the scroll wheel to reduce or enlarge the screen view of document.

Microsoft Short Cut Keys

As you become familiar with Microsoft Windows, you will find that there are often several ways to perform tasks or to access features within specific software applications and in the main Windows Control Panel.

There are many quick keyboard short cut key options you can use instead of using the mouse to search and select through the various menu options. (See the table below)

Description	Shortcut Key
Zoom in or out on the of text size view in Microsoft Office documents and web pages	Ctrl + Mouse Scroll Wheel (turn the mouse scroll wheel)
Copy files or selected text	Ctrl + C
Cut files or selected text	Ctrl + X
Paste files or selected text	Ctrl + V
Undo	Ctrl + Z
Highlight a block of text	Ctrl + Shift with any arrow key
Select more than one item in a window, on the desktop, or to select text within a document	Shift with any arrow keys
Select all	Ctrl + A
Make text Bold	Select and highlight text Ctrl + B
Make text Italic	Select and highlight text Ctrl + I
Underline text	Select and highlight text Ctrl + U

Create shortcut to selected file in Windows explorer	Ctrl + Shift while dragging an item
Rename selected item	F2
Move the insertion point to the beginning of the next word	Ctrl + Right Arrow
Move the insertion point to the beginning of the previous word	Ctrl + Left Arrow
Move the insertion point to the beginning of the next paragraph	Ctrl + Down Arrow
Move the insertion point to the beginning of the previous paragraph	Ctrl + Up Arrow
Open an item	Ctrl + O
Save a document	Ctrl + S
Print a document	Ctrl + P
Close the active item, or quit the active program	Alt + F4
Close the active document in programs that allow you to have multiple documents open simultaneously	Ctrl + F4
Switch between open items	Alt + Tab
Minimize all open items	Win + M
Undo Minimize all open items	Shift + Win + M

There are many more quick **Short Cut Key** options available. You can find these in Microsoft Help and can print them out.

If you get into the habit of using short cut keys you will be surprised at how many you will soon begin to recall

Using the Windows Magnifier

This feature will magnify everything on the screen from 2x to 9x magnification.

If you have Windows 98 or 2000 or Windows XP this feature should be on your computer.

1. Left click on the **Start** menu.
2. Left click on **Programs**.
3. Left click on **Accessories**.
4. Left click on **Accessibility** and then on **Magnifiers**. Choose a magnification level that suits you.

If you need to use a magnification of 5x or more, you may find the images on the screen too grainy. You may be better off using a commercial magnifier or a speech program.

Microsoft Vista Users

If you are using Microsoft Vista the magnifier option can be selected in the **Ease of Access control centre** as described on page 8.

Screen magnification software

Screen magnification software increases the size of the image displayed on the screen. Only some of the original screen image can be seen at one time.

Screen magnification software is useful if you need large magnification and if you are regularly using the computer for long periods of time or share a computer with other users.

Common features include:

- continuously magnifying an area of the screen.
- smoothing jagged edges of characters at larger magnifications.
- altering the colours/contrasts on the screen.
- changing the size and colour of the mouse pointer.
- changing the shape of the characters on the screen.

Some common screen magnification programs are:

- BigShot
- Zoomtext
- MAGic
- Big.Com (Free download for Internet Explorer 6 users
<http://www.big.com>)

Some of these also have a synthetic voice that reads out text on your screen to help you.

Free demonstration versions of screen magnification software can be downloaded from the Internet. You can find a range of software if you search the internet.

We would advise you to check with a local low vision support group to find out what solutions they recommend.

Screen reading programs

A screen reader uses a synthetic voice to read written text on the screen. You can change the pitch, rate and tone of the screen reader's voice as well as its pronunciation and accent. You can't use a mouse with screen readers. You need to learn to navigate around your screen using keystrokes.

A very basic screen reader is included with Microsoft Windows XP and Vista called "Windows Narrator".

To turn this on:

1. Left click on the **Start** button.
2. Left click on **Programs**.
3. Left click on **Accessories**.
4. Left click on **Accessibility**.
5. Left click on **Narrator**.

If you can't hear or understand the voice on Windows Narrator easily, you may need a more advanced commercially available speech program.

A demonstration version of a free speech program called "Read Me Please" is available. Demonstration versions of screen readers can also be downloaded from the Internet.

<http://www.readplease.com/english/downloads/>

Features to look for when purchasing a computer screen or monitor

You may feel a larger screen is all you need. But the features you need to decide on when choosing a computer screen or monitor include: type of screen, its size, accessibility of controls, image quality, resolution and the effect of the screen on eye fatigue. Test these features out on your monitor before you purchase it.

Type of screen: The older style (Cathode Ray Tube) CRT computer screens are large, heavy and bulky. CRT screens are the cheapest option, but these days they are being superseded by Liquid Crystal Display (LCD). LCD displays are more expensive but over time their cost is reducing and larger displays have become available. LCD displays appear to fade when looked at from an angle but they do reduce reflective glare and help reduce the effects of eye fatigue.

Size of Screen: Screen size is measured as the distance from the bottom left corner to the top right corner. The actual viewing distance is slightly smaller than this. In the past most computers were supplied with a 17-inch monitor. These days you generally have a choice. If you wish the screen to display large print consider using at least a 19-inch or 21-inch screen.

Brightness and Contrast Controls: Check that the contrast and brightness controls are easy to use. Some monitors have anti-glare and anti-reflection built in.

Quality of the Image: Older CRT screens have a slight curve. Newer technologies have flatter, squarer screens and are easier on the eye, with less reflection. Consider these monitors if you are using very large print or need a very clear image.

Resolution: The images on a computer monitor are made up of a series of small dots called pixels. Resolution refers to the maximum number of these pixels that the monitor can display. When the resolution increases, the writing on the screen becomes smaller.

Eye Fatigue: The smaller the size of the pixels (image dots), the easier the screen will be on the eye. The speed at which the pixels are refreshed (called the refresh rate) also affects eye fatigue. Choose a refresh rate of 72Hz or higher. This does not apply if you are using an LCD screen.

Remember that the best way to relieve eye fatigue is to take regular breaks.

Where to get further help

- Find a local **NZAO Optometrist** at:
www.nzao.co.nz/find_optometrist.html
Phone: 0800 439 322 (NZAO National Office -Wellington)
- Retina New Zealand support line
Phone: 0800 233 833
www.retina.org.nz
- Royal New Zealand Foundation of the Blind (for people that are eligible for membership)
Phone: 0800 24 33 33
www.rnzfb.org.nz