

# Making Microsoft® Word 2010 Documents Accessible

*This document describes the basic steps in creating an accessible Word document in preparation for it being converted to a PDF file.*

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# Making Microsoft® Word 2010 Documents Accessible

It is a legal requirement under the Equality Act 2010 to produce documentation that is as accessible as possible. Failure to do this is a disciplinary offence under the University's Code of Practice: Web Based Materials. See:

[www.bradford.ac.uk/webid](http://www.bradford.ac.uk/webid).

Accessibility means making something usable by as many people as possible including those with a disability. You should be aware however, that you are not just creating an accessible document for someone who is blind or who has a visual disability. Other disabilities, such as hearing, cognitive and mobility impairments have an impact on what we produce.

To be accessible, documentation should be available in both Microsoft Word and PDF formats. This document has been written to assist authors in creating a structured Microsoft Word document, which can then be saved as a PDF file.

Creating an accessible document is not as awesome as it first appears. Many of the techniques help you to produce a structured, professional looking document and with practice, will help you to work more efficiently.

## TYPES OF DISABILITY

Vision	May use a screen reader, Microsoft Magnifier or a Braille device.
Hearing	Requires any information conveyed by sound to have a text description as well.
Mobility	May not use a keyboard and / or mouse. Might use assistive technology such as a sip and puff input device. Position hyperlinks with the most important one first.
Cognitive or language (e.g. dyslexia, understanding, problem solving)	Benefit from clear, uncluttered pages with lots of white space around blocks of text. Avoid "busy" pages. Use a precise, uncomplicated sentence structure. Bullets or numbered lists are easier to comprehend than dense paragraphs. Do not use justified text or Serif fonts.
Seizure	Avoid flashing or blinking elements, e.g. animated text, which can trigger seizures in those with photosensitive epilepsy.

## THE IMPORTANCE OF STRUCTURING DOCUMENTS

To create an accessible PDF file, your Word document must have a defined structure, i.e. the title, headings, sub-headings, and any numbered or ordinary bullet points should be created using "styles". During conversion to PDF, Adobe Acrobat creates tags and bookmarks from the style elements. The tags describe the layout of the document to assistive technology, such as a screen reader, enabling it to navigate and read the document correctly; bookmarks also allow the reader to navigate easily through the document.

Structuring a document this way also means you can generate a Table of Contents automatically, quickly reorder your work using Outline view, or export the Outline to generate a PowerPoint presentation. An accessible PDF can then be generated where the headings automatically appear as clickable links in the bookmarks pane.

### A Well Structured Document

A few simple changes to a badly structured document can make it much easier to read and look more professional.

More importantly, it is also accessible because:

- The headings have had "**styles**" applied to them, so that headings and bookmarks are created.
- Important points are marked with **bullets**.
- There is plenty of "**white**" **space** between the paragraphs, so they do not look to cluttered or busy.
- There is plenty of "**white**" **space** around the graphics, so they are easy to see and are more likely to be recognised in the PDF conversion.
- The instructions which need to be followed have been **numbered**.
- **Note:** Screen readers can announce the type of style used before speaking the text, (e.g. "Heading style 1") and therefore alert the listener to the importance of the following text. They can also convey how many bullets / numbered bullets are included in a list.

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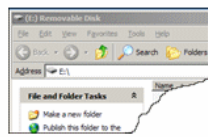
### USB Memory Sticks

USB memory sticks (also known as Flash Drives, or Mass Storage Devices) have capacities ranging from a few megabytes to over 2 GB, and are a convenient way of carrying files around. They are connected to a computer's USB port, and when correctly recognised by Microsoft® Windows®, appear in My Computer as a "Removable Drive" from where you can access them as any other disk drive.

You are strongly advised however, to use them only as a method of transportation, and to keep a backup of important files elsewhere. You should also be aware of the following important points:

- While all the PC cluster computers are equipped with USB ports into which you can plug one of these devices; some memory sticks require additional software installing in order to be recognised by the Windows operating system. If you have one of these, your device will not work.
- Never work directly on a removal drive; always copy your file(s) onto the hard disk.
- Learning Support Services are unable to recover lost or corrupt files if your memory stick becomes damaged in any way.
- We cannot guarantee that these devices will continue to work on our equipment in the future.

#### RECOGNISING THE DRIVE

1. Insert the memory stick in the USB socket; these are generally situated on the front of the system unit at the base.  
Once the memory stick is recognised, a Safely Remove Hardware icon will be visible in the Windows notification area at the foot of the screen.  
After a few moments, Windows Explorer will open the drive assigned to the memory stick. (The drive letter may not be the same on all PCs.)  
  
  
Note: On some staff PCs you may not see any drive allocated to the device, in which case you should follow the instructions for "Changing the Drive".
2. You can now transfer your file(s) in the normal way.  
**DO NOT WORK DIRECTLY ON THE DRIVE ASSIGNED TO THE MEMORY STICK.**
3. When you wish to remove the memory stick, ensure you follow the specific instructions for "Unplugging a Memory Stick" overleaf. **Failure to do this may result in loss of data, or damage to the device.**

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## REQUIREMENTS FOR GOOD STRUCTURE

### Styles

While working on a document it may be easier to open the styles pane, rather than having to scroll through the gallery every time a style is to be applied.

1. On the **Home** tab, in the Styles section, click on the expand icon in the bottom right hand corner.
2. The Styles pane will appear listing all current styles for the document.

Use Styles for titles, sub titles and headings – these will be converted to bookmarks in the PDF file and enable easier navigation.


1. Select the heading, and then in the Styles pane click on the heading you wish to apply.

**Note:** Use styles logically – i.e. Heading 1 style for the most important heading, Heading 2 for sub headings, Heading 3 for sub-sub headings, etc. Using a heading style out of sequence will cause the reader or screen reader difficulty in navigating and understanding the document.

### Bullets

Use bullets to mark important points. Some screen readers announce these before reading the topic.

To add bullets:

1. Select the paragraph(s) to which bullets are to be added.
2. On the **Home** tab, in the Paragraph group, click on the **Bullets**  icon.


Alternatively, if the document includes a bullet "style", select it from the Styles pane.

To remove a bullet, click in the paragraph, then select the **Normal** style from the Styles pane.

**Note:** While more elaborate bullet designs are available from the Bullets drop down list many do not convert into accessible characters. It is therefore advisable to use the standard round bullet shape.

### Numbered Bullets

These should be used for all instructions.

1. Select the paragraph(s) to which numbering is to be added.
2. On the **Home** tab, in the Paragraph group, click on the **Numbering**  icon.

Alternatively, if the document includes a numbered bullet "style", select it from the Styles pane.

To remove a numbered bullet, click in the paragraph, then select the **Normal** style from the Styles pane.

## Table of Contents

Always create a Table of Contents when producing a large document (generally documents with more than 6 pages). This can be formed quickly and is very easy to update if necessary.

1. Position the cursor in the document where you want the Table of Contents to be included.
2. On the **References tab**, in the Table of Contents group, click on **Table of Contents**.
3. Click on **Insert Table of Contents** at the bottom.

To update a table of contents:

1. Right click on the Table of Contents.
2. From the pop up menu select **Update Field**.
3. Select **Update entire table** from the Update Table of Contents dialog box.

## Text

### Font

Text as a rule should be no smaller than 12 point. The font should also comply with the University's corporate style while maintaining accessibility requirements.

**Note:** Corporate ID currently stipulates Arial 12 pt.

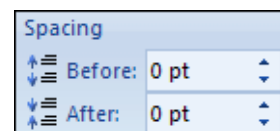
Avoid using large portions of underlined text or capitals, as these can decrease the readability. Italics should be used sparingly.

**Note:** Some Screen readers announce character attributes, e.g. italic, underlined.

## Paragraph Spacing

Be aware that dense paragraphs of text are difficult for anyone to read, but particularly so for people with cognitive disabilities. Ensure you use plenty of white space between paragraphs, to spread out the information. Do not press the Enter key between paragraphs to add space. Instead use the "Spacing Before" and "Spacing After" paragraph feature.

1. Select the paragraph(s), and then click the **Page Layout** tab.
2. In the Paragraph group, enter values in the **Before:** and **After:** Spacing boxes.



**Note:** If you need to use the Enter key to create a new paragraph, ensure the style is Normal.

## Alignment

Justified layout should also be avoided as the varying gaps between words can cause problems for people with dyslexia, or those using a screen magnifier (which then increases the gaps further). Justified text can also create "rivers" of white space making it difficult to comprehend.

## Tables

While tables can be a useful way to lay out text and graphics, anything other than a simple table can create particular challenges for screen readers and assistive technology. Always bear in mind that a complex table may be too intricate for a screen reader to interpret, and when this happens you will need to consider an alternative method of conveying the information to someone with a disability.

**Note:** Never use tabs and spaces to create tables – use the Insert Table feature. Do not use tables to create long columns of text. See section on: **Columns.**

Screen readers and Braille displays read tables row by row across columns, so the table should make sense when read from left to right.

1. Always design tables so they can be read row by row i.e. horizontally.

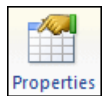
A4 black and white	single sided	5p	double sided	4p
A4 colour	single sided	10p	double sided	8p

2. To create a table, on the **Insert tab**, in the Tables group, click on the **Table** icon.

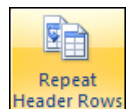
3. Drag over the grid to select cells or click on **Quick Tables** and choose one.

Whenever you click in a table, the "contextual" **Table Tools** tab appears on the ribbon, beneath which are the **Design** and **Layout** tabs. These contain many options for changing your table.

4. It is recommended that you do not allow table rows to break across a page. To prevent this, select the table and on the **Table Tool - Layout tab** click on **Properties**. Choose the **Row tab**, and deselect the **Allow row to break across pages** option.



5. In tables which span more than one page, make sure the table headers are repeated on subsequent pages to help readers follow the flow of information. To do this, select the header row, then on the **Table Tools - Layout tab**, in the Data group, click on **Repeat Header Rows**.



### Alternative (ALT) Text

To ensure a table is accessible add a brief and meaningful description as Alt text, which may be read by a screen reader.

1. Right click on the table.
2. Select the Alt Text tab. Type a brief description of the table in the title field and duplicated it in the description field, e.g. Table of survey results.

## Table Headers

Tables can be made even more accessible by "marking" the row and / or column headings. This enables anyone using a screen reader to tab through the table and associate the table cells with the header(s).

### For tables with both row and column headings:

1. Click in the cell where the row and column headings intersect.
2. On the **Insert tab**, in the Links group, click on **Bookmark**.
3. Under Bookmark Name: type: `Title`, and then click on **Add**.

### For tables with only row headings:

1. Click in any cell within the column containing the headings.
2. On the **Insert tab**, in the Links group, click on **Bookmark**.
3. Under Bookmark Name: type: `RowTitle`, and then click on **Add**.

### For tables with only column headings:

1. Click in any cell within a row containing the headings.
2. On the **Insert tab**, in the Links group, click on **Bookmark**.
3. Under Bookmark Name: type: `ColumnTitle`, and then click on **Add**.

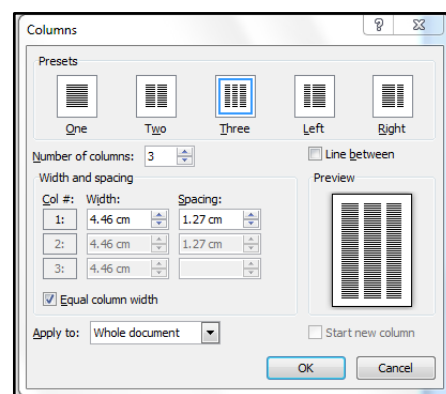
**Note:** Do not place a bookmark in each cell that contains a heading. Screen readers recognise all cells in the marked row and / or column as a heading.

## Columns

Columns of text are easy to read and convert well to PDF, provided there is plenty space between the columns. To create text in columns, don't press the tab key to space out the text. Use the column feature.

1. Select the text which needs to be formatted into columns, and then on the **Page Layout tab**, in the Page Setup group, click on **Columns**.
2. Choose the required number of columns from the drop down list. The Left or Right options create one narrow and one wide column.

Clicking on **More Columns** at the bottom of the list gives further options to adjust the column widths, and / or add lines between them.



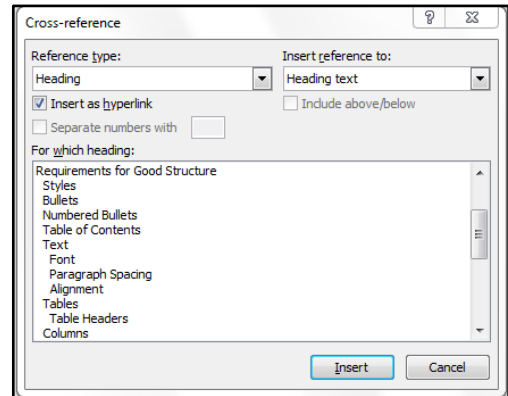
## Cross References

Use the cross-reference facility in Word to create links between items in the same document. Anyone using a screen reader can then automatically jump to the relevant section.

1. Type the introductory text (followed by a space), e.g.:

For further information, see:

2. On the **References** tab, in the Captions group, click on **Cross-reference**.
3. In the Cross-reference window, drop down the **Reference type:** list and select the item to which you want to refer.
4. In the **For which** box, select the specific item.
5. Ensure **Insert as hyperlink** is selected and click on **Insert**.



## Captions

Use Word's caption facility to add a label or figure number to diagrams, tables, equations or figures.

1. Select the item that will have the caption added to it. On the **References** tab, in the Captions group, click on **Insert Caption**.
2. Choose an option from the label list, or click on the **New Label** button and type an alternative name.
3. Click on **OK**.



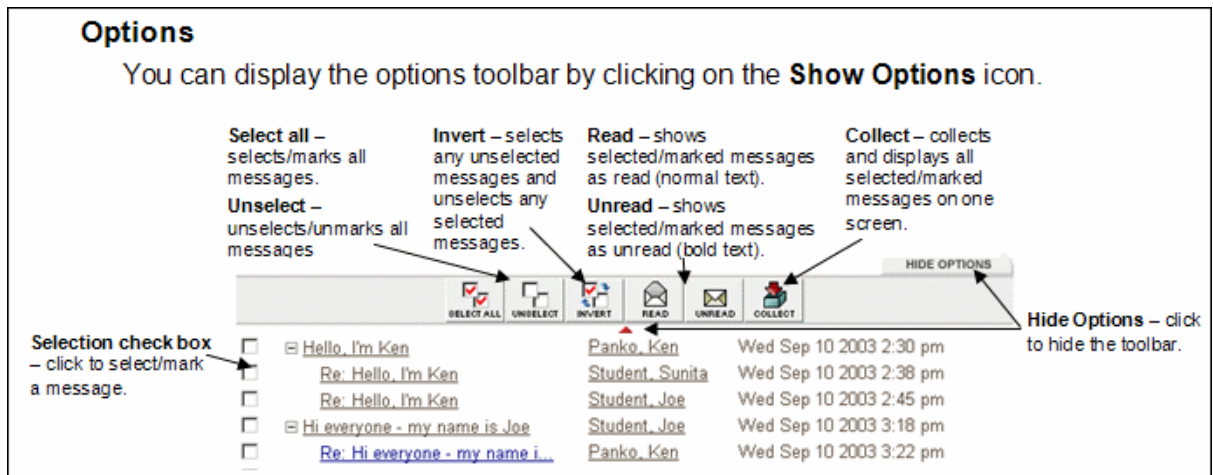
## Colours

Never put two similar colours next to each other. The greater the contrast the easier it will be to read the text. Use patterns to differential between coloured objects, (e.g. in charts) which may look similar if the reader prints the document in monochrome. Do not rely on colour alone to convey information e.g. See the red text below.

## Images

Images enhance the written word and may be more meaningful than large amounts of text, especially for those with poorer English skills or someone with print related problems. However, they can be a barrier to those with limited or no vision and the information in the image must be conveyed in an alternative format.

One of the major problems in making a document accessible is when an image contains several overlapping elements such as text boxes and arrows.



The overall image can look cramped and "busy", and will be difficult for people with cognitive disabilities to decipher.

**Options**

You can display the options toolbar by clicking on the **Show Options** icon.

	<b>Select all</b> – selects/marks all messages.
	<b>Unselect</b> – unselect/unmarks all messages.
	<b>Invert</b> – selects any unselected messages and unselects any selected messages.
	<b>Read</b> – shows selected/marked messages as read (normal text).
	<b>Unread</b> – shows selected/marked messages as unread (bold text).
	<b>Collect</b> – collects and displays all selected/marked messages on one screen.
	<b>Selection check box</b> – click to select/mark a message.
	<b>Hide Options</b> – click to hide the toolbar.

A more accessible method of displaying information may be to put it in a table.

## Positioning Images

Always ensure that images have plenty of "white space" between them and the surrounding text.

Images inserted with the 'In Line with Text' wrapping style have limited manoeuvrability, but convert well to PDF. They are ideal if you want a single image in a paragraph with no text wrapping.

Floating Images (e.g. those with the Square Wrapping style) can be grouped with other objects on the Drawing Canvas and moved as a whole item within text.

1. To create white space, right-click on the image, and select **Text Wrapping** then **More Layout Options**.
2. Click on the Text wrapping tab and select the **Square, Tight** or **Through** Wrapping style.
3. Select the **Wrap** option and adjust the distance of the image from the text.

## Text Boxes

Text Boxes are floating objects which have no fixed position. When converted to a PDF, they are placed behind other objects, which can result in the text in the box being ignored by a screen reader, or read in the wrong place. Because of the unpredictable behaviour of them, it is recommended that you avoid using text boxes and lay out the information in a table instead. See section on: **Tables**.

If text boxes are absolutely essential, then all the objects must be carefully grouped together (see section on: **Grouping**) and a description of the whole image added as ALT text (see section on: **Alternative (ALT) Text**).

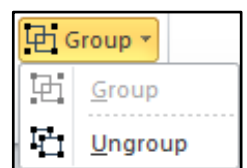
**Note:** Information in text boxes must also be conveyed in the body of the document.

## Grouping

When an image comprises numerous objects, these should be "grouped" together to form one unit. This prevents the individual components from moving around, or disappearing behind other objects. It also makes it possible to add an ALT text description to the image as a whole.

Note: images must have a square or tight wrapping style to be grouped together.

1. On the **Insert Tab**, click on **Shapes** and then **New Drawing Canvas**.
2. Insert and arrange on the Drawing Canvas all the objects to be grouped.
3. Select all the objects. (Hold down CTRL while clicking each one. Where selecting text boxes and arrows, hover the mouse over the line of the shape until a small + sign appears before clicking.)
4. On the **Drawing Tools- Format tab**, click on **Group**.
5. From the menu choose **Group**.



To ungroup a grouped selection, click on **Ungroup**.

## Alternative (ALT) Text

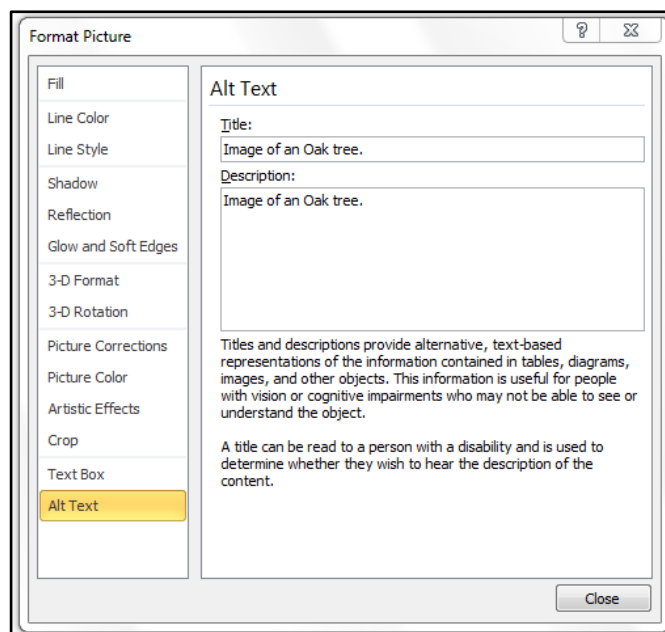
Screen readers and Braille displays can generally only translate text, so you must add alternative text to all graphics and images so that anyone with visual difficulties knows what a sighted person can see. (Non-essential content however, such as decorative page borders or logos, should be marked as such e.g. University of Bradford logo, or decorative image only.)

1. Right click on the image and from the sub-menu choose **Format Picture...**
2. Select the **Alt Text** from the list.

Type in a brief and accurate description of what the image portrays in the both Title and description fields to ensure it will be read out by the screen reader.

**Note:** Extremely complicated images may warrant a one-to-one discussion between the author and a blind or severely impaired user, to see how best to fully convey the concept described. An alternative transcript may be required.

3. Use correct punctuation and ensure each sentence finishes in a full stop.

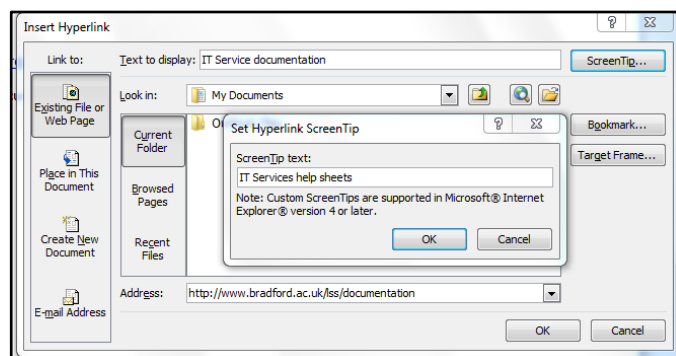


## Hyperlinks and ScreenTips

Hyperlinks should always be positioned with the most important one first and should be typed in full so that when the document is printed, users can see what to type into an internet browser's address bar, e.g. <http://bbc.co.uk>. Add a screen tip to describe the linked resource if desired.

1. Type the hyperlink in full.
2. Highlight the hyperlink and then on the **Insert** tab, in the links group click on **Hyperlink**.
3. Click on the **ScreenTip** button.
4. Add a description of the resource being linked to.
5. Click on **OK** and then **OK** again.

Hover over the link to see the screen tip displayed.



## SPELLING CHECKER

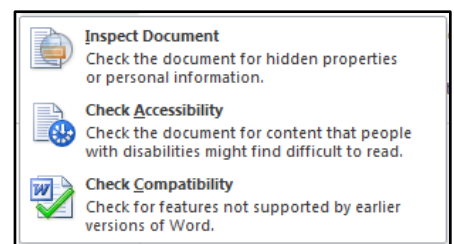
Always spell check documents to avoid problems with screen readers mispronouncing words. To check the document, on the **Review tab**, in the Proofing group click on **Spelling & Grammar**.



## ACCESSIBILITY CHECKER

Word 2010 has an inbuilt accessibility checker. This allows a document to be checked for any potential issues which may make it less accessible, before it is converted to a PDF file. The report lists any potential issues and gives guidance on how they may be corrected.

1. Click on the **File** tab, and in the Preparing for Sharing section, click on **Check for Issues**.
2. From the drop down list select **Check Accessibility**.



3. An Accessibility Checker pane will appear on screen.

The pane is split into section, Errors and Warnings.

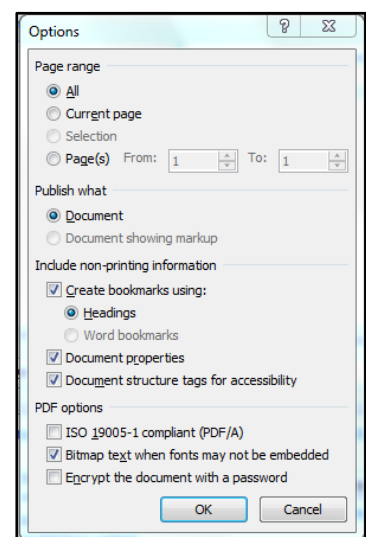
Errors must be corrected and Warnings may need correcting if necessary.

4. Click on one of the listed errors. In the Additional Information section information on why an issue should be corrected and step by step instructions on how to correct it will appear.
5. As each issue is corrected it disappears from the list.
6. When all errors are corrected close the Accessibility Checker pane.

## CONVERTING A WORD DOCUMENT TO A PDF FILE

To convert a Word document to a PDF file:

1. Click on the **File** tab.
2. Click on **Save As**.
3. Ensure the file name is correct, then drop down the Save as type list and select **PDF**.
4. Click on the options button. Ensure the **Create bookmarks using:** is checked and **Headings** selected.
5. Click on **OK** and **Save**.



## SCREEN READERS

To listen to your document when used with a screen reader, convert it into PDF format (see section on: **Converting a Word Document to a PDF File**), then open it in Adobe Acrobat and click on **View - Read Out Loud**.

Alternatively, a free demonstration version of Jaws can be downloaded from:

[www.freedomsscientific.com/](http://www.freedomsscientific.com/).

## WORD TEMPLATES FOR STAFF

Some staff may find the readymade University Word templates useful. These are available at: [www.bradford.ac.uk/lss/documentation/templates/](http://www.bradford.ac.uk/lss/documentation/templates/).

## FURTHER HELP

- **IT Services Documentation**, including help sheets on Accessibility and more advanced features in Word: [www.bradford.ac.uk/lss/documentation](http://www.bradford.ac.uk/lss/documentation).
- **Staff training courses** for Make Your Documents Accessible or Microsoft Word in general: [www.bradford.ac.uk/dev-prog/index.php?section=it](http://www.bradford.ac.uk/dev-prog/index.php?section=it).
- **Customised accessibility courses** (minimum number 6) for individual departments can be arranged. For details contact: [training@bradford.ac.uk](mailto:training@bradford.ac.uk).
- **TechDis** - An educational advisory service working across the UK, in the fields of accessibility and inclusion. See: [www.jsctechdis.ac.uk/](http://www.jsctechdis.ac.uk/).
- **Microsoft® Accessibility** - A wide range of information including Tutorials, Training, Guides and Case Studies. See: [www.microsoft.com/enable/](http://www.microsoft.com/enable/).
- **Adobe Acrobat Training Resources** - [www.adobe.com/enterprise/accessibility/training.html](http://www.adobe.com/enterprise/accessibility/training.html).