

Accessibility in digital content

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Accessibility in digital content

Accessibility in digital content

In recent years the removal of barriers in online learning has become a key factor for anyone developing digital learning material.

Typical barriers include:

- Auditory – deafness, hearing impairments;
- Visual – blindness, partially sighted;
- Cognitive/intellectual/developmental - dyslexia, memory impairment;
- Physical – muscular dystrophy.

Jisc guidelines

When developing learning material under Scottish Funding Council (SFC) funding you should employ the Jisc guidelines on [Reasonable Adjustments](#).



[‘Barriers’](#) by colinloganremuz [Jack The Ripper]
from Flickr, used under an [CC BY-NC-SA 2.0](#).

The next sections provide information on how you might make reasonable adjustments to your teaching resources.

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Animation

Animation can distract people with learning disabilities and may make it very difficult for them to concentrate on other parts of the screen.

Screen readers and Braille displays cannot read information that is animated.

Topic/issue	Action	Comment
1. Using animation	Think about the purpose of your animation.	Is the animation central to the content? If not, it may only serve to distract. On the other hand, it may be that something is better demonstrated by an animation than by text.
2. Provide a description	Provide a description of the animation using text.	Note: if the animation contains key information (for example, an animation of a process) consider providing a written version.
3. Strobe/flicker effects	Avoid these as they may cause seizures in some people.	
4. Optical illusion images	Avoid using optical illusion images where the lines appear to be in motion.	

Further information

- [Flash accessibility guidelines, Adobe](#)
- [IBM software checklist – Checkpoint 4.6: Animation](#)
- [Web AIM Animation](#)

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Audio

Audio files can:

- Help personalise the learning environment;
- Add interest and variety;
- Be used to provide feedback;
- Convey more than can be conveyed by text alone (intonation etc).

Information that is only provided in audio format is a barrier to learning for those who cannot hear the audio content. You must therefore ensure that you provide the audio information in an alternative format.

Topic/issue	Action	Comment
Size	Compress audio files to reduce their size.	This makes files easier to download.
Transcript	Provide a transcript–this may be word-for-word or a summary of content as appropriate.	Include a description of the purpose of the audio file.

Further information

- [Excellence Gateway : Defining Hearing Difficulties](#)
- [WebAIM : Auditory Disabilities](#)

Colour and contrast

Users who have a colour deficit are unable to distinguish between specific colours. As we age, our eyes are also not so easily able to differentiate between colours and we need higher levels of visual contrast.

Colour

Topic/issue	Action	Comment
Use of colour in documents	Ensure that you do not use colour alone to convey meaning. For example, you	See the Vischeck and SimDis links below to see the effects of visual impairments.

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	might use a specific colour with a specific shape to convey meaning.	
Colour blindness	Use colours that can be distinguished by those with colour blindness.	

Contrast

Topic	Action	Comment
Text and background colours	Ensure that there is sufficient contrast between text and background colour.	To check if the colour contrast is sufficient for those with colour deficiencies or for those working with low resolution monitors, print your pages in 'grayscale'. See the web links below for more information and good examples for effective colour contrast in digital content.

Further information

- [Colour contrast checker](#)
- [WebAIM: Visual Disabilities](#)
- [Type and Colour: Chapter 9 of Building Accessible Web Sites \(Joe Clark\)](#)
- [Vischeck: Color vision simulator examples](#)

Images

Images can be used to convey information that is difficult to convey by text alone. They can assist those with dyslexia and others who have problems processing written information. Images can also add interest to learning materials. For those who have difficulty reading images, however, you need to ensure the same, or similar, information is conveyed in, for example, a text file and that this is easily accessible to someone using a screen reader.

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What constitutes an image?

Photographs, drawings, paintings, diagrams, equations, formulae, notations and symbols are all examples of images.

Topic/issue	Action	Comment
Size	<ol style="list-style-type: none">1. Resize to an appropriate physical size.2. Compress to reduce the file size.	
Alt text	Add alt text to all images.	Ensure that the text describes the purpose of the image clearly and succinctly.
Long descriptions	Add a long description for images conveying complex information.	Use when it would be difficult to describe an image in a few words. These can be read by screen readers.
Captions	Use in Word, PowerPoint etc.	
Charts and diagrams	Ensure you have a good colour contrast.	Check by printing in 'grayscale'/black and white.
Colour and contrast		See section on colour and contrast.

Further information

- [WebAIM: Creating Accessible Images](#)

PDFs

A PDF file is a type of file format that enables a document to be presented in the same format as the original. It can be read by anyone who has Adobe Acrobat Reader installed on their computer.

Downloading Adobe Acrobat Reader

Note: you can install Adobe Acrobat Reader by going to: [Adobe Downloads](#)

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It is possible to save a Word file as a PDF file. If you do this, make sure that your document is properly formatted in Word first (see the section on Word on the left hand menu bar). See the section on PDF creation for more information on how to create learning materials in PDF format.

Topic/issue	Action	Comment
Styles in your Word document	Ensure you have followed the checklist guidelines for Word	<p>If the original document is properly formatted in Word, formatting should be carried over to the PDF.</p> <p>If it is not properly formatted, in Word, clear the existing formatting and apply heading styles etc before saving in PDF format.</p>
In your Word document select to save it as a pdf file	Save the file as a PDF file.	<p>In the 'Save as ...' window select Options and then the following:</p> <ul style="list-style-type: none"> • Create bookmarks using headings; • Document structure tags for accessibility; • ISO 19005-compliant (PDF/A) – under PDF options.
Graphics and images	See the section on images.	
Navigation	Use bookmarks as required.	Bookmarks help users navigate a document.
Tables	See the section on tables.	
Document Properties settings	Set:	

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	<ul style="list-style-type: none">• language specification;• reading order.	
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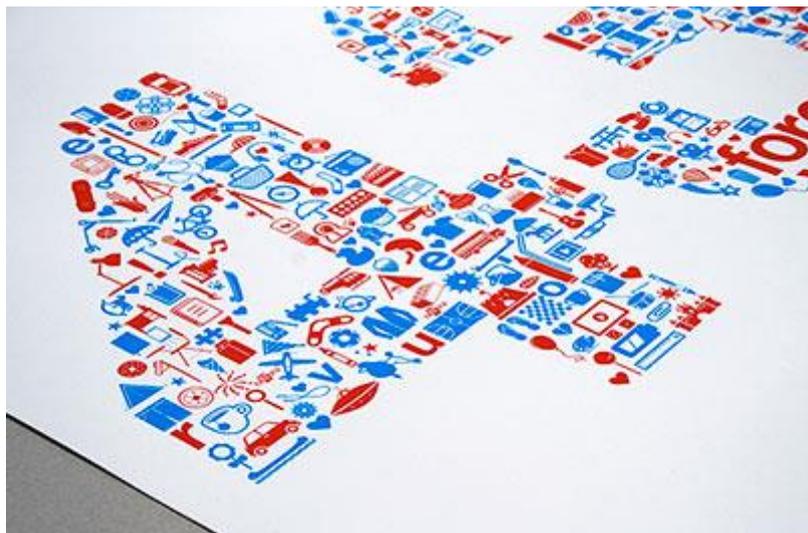
Further information

- Guide to the essentials of [creating accessible PDFs](#) with Microsoft Word and Acrobat Professional 8.
- Lexids [Ideas for e-Learning](#): Adobe PDF Accessibility
- WebAIM: [PDF Accessibility](#)

Pictograms

These are often used in online and printed materials as they may:

- be useful to convey key information in a simple, comprehensible pictorial format;
- be used in mathematical and scientific subjects;
- be part of the navigation structure of a Web site;
- indicate the nature of content in materials (for example, a large ‘i’ symbol is often used to convey the fact that additional information is being provided).



Giffoni Film Festival Poster from Flickr, [CC BY-NC-SA](#)

Topic/issue	Action	Comment
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Using pictograms, icons and symbols	Check the appropriateness of your symbols.	Symbols should be appropriate, readily comprehensible and used sparingly.
Scalability	Check that you can enlarge your symbols without losing too much clarity.	Users should be able to enlarge the symbols and they will still remain readable.
Colour and contrast	Ensure that you are meeting accessibility requirements for colour and contrast.	See section on colour and contrast.

Further information

- [WebAIM: Creating Accessible Images](#)

PowerPoint

PowerPoint is one of the most popular means of creating a slide show as they can be easily structured and can also contain multimedia. They are not, however, as accessible for people using screen readers.

Topic/issue	Action	Comment
Slide layout	Choose an appropriate slide template.	This ensures headings are used appropriately and are displayed in outline view.
Styles	Use PowerPoint styles and formatting.	Use a minimum point size of 30 and never less than 20.
Slide content	Keep text short and concise. Use bullet points and lists where appropriate.	
Video and audio files	Add a clear description and transcript for video. Add a transcript for audio.	

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Background colours	Ensure there is adequate contrast to text colour. Avoid background images/effects.	See section on colour and contrast.
Animation	Use sparingly and where appropriate only.	
Images	Check your images comply with accessibility requirements.	See section on images.
Notes field	Use for additional information / exemplification. Use for descriptions of meaningful visual content such as graphs and diagrams. Use to add useful hyperlinks to references.	PowerPoint slides which make good use of the notes field can be exported to Word. This enables a screen reader to read the content, especially in relation to images. Provide a Word version of your PowerPoint (In 2013—File > Export > Create Handouts).

Further information

- [WebAIM: PowerPoint Accessibility](#)

Tables

Tables that are used simply to lay out information are unlikely to cause accessibility problems. Where they are used to convey specific information, however, you will need to ensure that they do not cause accessibility problems for screen readers, Braille printers and for those who have learning difficulties or who may find a tabular layout difficult to follow.

Topic	Action	Comment
Row and column headers	Insert these in data tables.	The titles should be clear and concise. Tables should be structured so as to

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		be meaningful and logical, especially for screen readers.
Table/figure numbers, captions and summaries	Add these to all tables and figures.	These can be read by screen readers and will help those with visual disabilities and those who have problems deciphering tables and diagrams.
Merged cells	Avoid these.	Merged cells can be difficult to read using a screen reader.

Further information

- PWS web editorial services: [PDF accessibility – data tables](#)
- WebAIM: [Creating Accessible Tables](#)

Table of contents

A table of contents can be easily created in Word documents if you format your headings using the Word styles formatting options.

Including a correctly formatted table of contents will help all users navigate your document more easily. If created using Word heading styles, it will also help those with screen readers navigate your document more easily.

Topic/issue	Action	Comment
Table of contents present	Insert this at the beginning of Word and PDF documents. Accessed from the References ribbon (2007) and the References tab (2013).	A table of contents greatly improves usability and navigation.
Table of contents created using Word heading styles	Word heading styles can be accessed from the Home ribbon > Styles box (2007) or Home tab > Styles box (2013).	Using Word heading styles adds hyperlinks in the table of contents. Users can then easily 'jump' to the relevant part of the document from the table of contents.

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Video

Much information can be conveyed using video. It is also extremely useful for demonstrating dangerous activities, showing processes (especially close-ups etc) and adding interest to your courses.

Those with visual or hearing impairments will need a transcript of the video to ensure that they understand what is happening.

Topic/issue	Action	Comment
Size	<ol style="list-style-type: none">1. Check resolution and format and resize to an appropriate physical size if necessary.2. Compress files to reduce the file size.	Large files may be difficult/impossible to download.
Transcript or description	Ensure your videos are accompanied by transcripts and/or descriptions – this could be an audio description.	Where descriptions are needed, be concise and clear. If there is something happening in the video that is not accompanied by any sound, be sure to describe this for those with visual impairments.
Format	Select a format that can be used on the majority of computers.	If you are putting your video in a VLE, make sure it will play.

Further information

- University of Washington: [Creating Accessible Videos](#)

Microsoft Word

Microsoft Word (text) documents are one of the most widely used formats for learning materials. To ensure that you are providing equity of experience for all your learners, it is essential that you follow the accessibility guidelines below.

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Following the guidelines will also make it easier for you to create a table of contents and convert your document into an accessible PDF format.

Topic/issue	Action	Comment
Title, headings and document formatting.	Use the Word styles and formatting toolbar to format headings.	This helps those with disabilities to navigate your document.
Page numbers	Number all pages.	
Font	Use a clear font style. Avoid underlining and italics (bold is preferable). Avoid italics and block capitals. Ensure text is left-aligned. Ensure good contrast between font and background colours.	WebAIM: Fonts has a good Web page on using fonts.
Table of contents	Insert this based on Word heading styles.	This provides content information and enables users to move quickly to relevant areas.
Bullet points and numbering	Use to lay out information clearly.	
Images		See section on images.
Hyperlinks	Avoid 'Click here' – this may be incomprehensible to those using a screen reader.	The nature of the link should be meaningful when read out of context. This is especially important for those who use a screen reader, who could then browse by hyperlink title. For example: The most

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		widely used search engine on the internet is Google .
	<p>If the document is to be printed, also include the full hyperlink in brackets.</p> <p>Add a screen tip with explanatory text.</p>	<p>Example: The most widely used search engine on the internet is Google. (http://www.google.co.uk/)</p> <p>This assists those using a screen reader.</p>
Figures	Include figure numbers and captions.	See section on tables and figures.
Tables	Include table numbers and captions.	See section on tables and figures.
Charts and diagrams	Provide a content summary.	This should describe key information.
Symbols	Where appropriate, use words rather than symbols.	For example: copyright rather than ©.

Further information

- WebAIM: [Microsoft Word](#)