Accessible Publications Guide

June 2018

# What makes a document accessible?

If we focus on accessibility at the content level, there are three fundamental principles which, if implemented when documents are created and edited, make content accessible.

## Principle 1: structure

The idea is to use structural elements (tags) such as headings to properly structure documents and therefore identify clearly the various elements which compose the document. These structural elements are often referred to as ‘styles’ in word processors.

1. Does the document have a title?
2. Are proper Headings (of part, chapter, sessions, subsections, etc.) used and do they impose proper hierarchical order e.g. do Heading 2s define subsections of Heading 1s, Heading 3s define subsections of Heading 2s and so on?
3. Lists: are true numbered and/or bulleted lists used?
4. Is presentation separate from structure? For example, there should be no additional blank lines inserted, whose purpose is to put spaces between paragraphs. Set the “space before/after” attribute for paragraphs instead. Also do not insert blank lines to move onto a new page. Insert a page break instead.
5. Similarly, formatting should not be used to mimic headings. View some Examples of document structure in PDF format.

## Principle 2: give alternatives

Every non textual element, such as an image must have a textual alternative. In all cases this alternative needs to take the context into account. For instance, a single picture might have a different description whether it is used in a context or just as decoration.

1. Images: Do all images have an appropriate alternative text?
2. Audio: is there a text transcription containing all the text said in the sound (if any), and all the meaningful other sounds?
3. Videos: Is a text transcription and subtitles available?

## Principle 3: identify

1. Has the document metadata in the document properties been filled in. This includes metadata like title, author, description, etc.
2. Have abstracts for substantial document components like chapters and major sections, been provided?
3. Does link anchor text make sense?
4. Is the main language of the document specified? Are there other languages used and are these indicated?

## Other Considerations

1. Is there any presentation feature such as colour, bold, italics, alignment, etc. used to provide information that is not present explicitly in the text. For example, are there important items in the document highlighted using a colour like red but their significance is not stated in the text.
2. Is the language used clear and simple?
3. Are paragraphs short?
4. Are abbreviations and acronyms expanded at the first occurrence?
5. Are tables simple – Do they have a header row and do they read correctly row by row, column by column?
6. Is the “Repeat headings on each page” option for tables set?
7. Improve layout for people with print difficulties?
8. Is font size 12 points used or more?
9. Is a sans serif font used?
10. Is text left aligned? (if the language used requires reading from left to right)
11. Is there sufficient contrast between background and foreground colours?
12. Is the page background colour a non-white colour e.g. a light pastel colour? (particularly for digital documents)
13. Are there any animated effects such as blinking text? Can they be switched off?

# Designing for screenreader technologies

## Designing documents & publications for screenreaders

Documents should be made available in electronic format which can be read by screen reading software:

* Word files are the easiest for individual viewing preferences and for listening.
* Portable Document Format (PDF) files keep the presentation better than Word files, but are not as easy to use for screenreaders, unless quite a bit of work has gone into making them accessible.
* Offer both the source Word files and derived PDF files where possible.
* Publicise availability of accessible formats.

Preparing a document for text-reading software:

* Listening to a document using a text reader will take longer than visual reading.
* Put full stops after headings to make the voice drop and pause; they can be in the background colour.
* Put semi-colons, commas, or full stops after bullet points to make a pause.
* Use Styles in Word to organise headings and formatting.
* Avoid automatic numbering as some text readers will not read these. Use manual.
* Contents Page listings should be hyperlinked to the relevant section to aid navigation. Number menu items.
* Use internal and external hyperlinks for ease of navigation.
* Avoid text in capital letters in mid-line, as they may be read as single letters.
* Include as few signs and symbols as are absolutely necessary, e.g. asterisks or dashes (both short and long), as these will be spoken.
* Long dashes should be avoided: use colons to make the voice pause.
* Use straight quotation marks. Curly or slanting ones may be read out as ‘back quote’ by some screen readers.
* Avoid Roman Numerals and No. for number.
* Consider whether abbreviations and acronyms need full stops.
* Text readers may have difficulty with tables in Word and may not automatically move on to the next cell without manual use of the Tab key.
* Avoid text in images. Listeners cannot hear it. Repeat in the main text.
* Use hyphens in compound words to aid text reading pronunciation.
* Chunk phone numbers to avoid being read as millions or hundreds of thousands.

## Webpage design for screenreaders

* Offer alternate download pages in a text reader friendly style.
* Where possible design web pages which can be downloaded and read off-line.
* Encourage the use of hyperlinks at the end of sentences.

## Alternative text for image descriptions

Use of alternative text is very important for digital documents and webpages. Alternative text is useful for: users who are blind, users with visual impairment, very slow computers.

Alternative text should:

* describe the information, reflect the role, specify the function, indicate the target of the link or in the case of charts convey the data represented by the images
* be accurate and equivalent

Alternative text should not:

* be redundant, repeating the same information that is already available in the text content of the page

There are three broad categories of images:

1. Decorative images are typically used for layout or visual aesthetic purposes. They do not provide information content on the page. They also do not represent links, for example to the home page or important site functionality, such as settings or save file. Alternative text can be left blank for decorative images.
2. Functional images represent functions or links within a page. Examples of functional images are those that appear on the ribbons of word processors representing formatting functions, such as bold and italics, and pictures of printers representing print functions. The text alternative for these functional images should use one word related to the function. The alternative text for a printer image should be (alt=“Print”).
3. Informative images are images that graphically represent concepts and information. Pictures, photos and illustrations are typical examples of informative images: the text alternative should be at least a short description conveying the essential information presented by the image.

Images of text: Readable text is sometimes presented within an image. If the image is not a logo, text in images should be avoided. However, if images of text are used, the text alternative should contain the same words as found in the image. Be aware of character limits.

Complex images such as graphs and diagrams: To convey data or detailed information, the text alternative should be a full text equivalent of the data or information provided in the image. It may have to be on another page, linked to the original image. Short tutorials are available: [W3C Web Accessibility Initiative tutorial on Complex Images](http://www.w3.org/WAI/tutorials/images/complex/) or the [Web Accessibility in Mind (WEBAIM) Tutorial on Complex Images](http://webaim.org/techniques/alttext/#complex)

Other things to note when working with alternative text:

* Groups of images: If multiple images convey a single piece of information (e.g. a five star rating represented by five pictures of stars) the text alternative for one image should convey the information conveyed by the entire group.
* Image maps: The text alternative for an image that contains multiple ‘clickable’ areas, (e.g. a map with different areas) should provide an overall context for the set of links and each individual ‘clickable’ area should have alternative text that describes the purpose or destination of the link.

# Designing for readability

## General notes on text & fonts

Font and justification affect a large number of people who have minor or other print impairments and don’t use specialist software. These include older people whose visual acuity naturally decreases with age and those who have colour deficiencies, people with low vision or visual stress and reading difficulties. Note that:

* When text is fully justified it distributes spaces between words unevenly. This places an extra cognitive load on those that have print difficulties. Left justified text is preferable.
* Serif vs sans serif fonts: The jury is out as to whether serif based fonts make reading harder for everyone, but when magnified and for those with visual stress and certain reading difficulties, the extra decoration can cause problems. Simple sans serif fonts can be more helpful.

# Designing for Dyslexia

## Design for dyslexia should:

* Be aware of contrast: higher contrast text to background is generally more readable. Use dark text on light (preferably not white) background (many digital devices and web browsers now allow colours and contrast to be adjusted by the user to individual preference)
* For web & digital documents black on white text can cause too much glare: a soft colour as the background might be preferable
* Use plain, evenly spaced sans serif fonts (Arial, Verdana, Tahoma, Century Gothic, Trebuchet) or free fonts designed for dyslexia (Lexia Readable, Open-Dyslexic, Dyslexie). See *Dyslexia Suitable Typefaces.pdf* for more detail
* Font size should be 12 to 14 point (many digital devices now allow the user to adjust font size to their own preference)
* Avoid fancy or distracting backgrounds
* For emphasis & headings:
	+ Avoid underlining and italics: these tend to make the text appear to run together. Use bold instead
	+ AVOID TEXT IN BLOCK CAPITALS: it is much slower to read for everyone and particularly hard for people with dyslexia
	+ For Headings, use larger font size in bold, lower case
	+ Boxes and borders can be used for effective emphasis
* For text layout:
	+ Use left-justified with ragged right edge
	+ Avoid narrow columns such as in newspapers
	+ Shorter line lengths are preferable: 70 - 80 characters is good
	+ Avoid cramping material and using long, dense paragraphs: space it out
	+ Line spacing of 1.5 is preferable
	+ Avoid starting a sentence at the end of a line
	+ Use bullet points and numbering rather than continuous prose
* Writing style & presentation:
	+ Use short, simple sentences in a direct style
	+ Keep paragraphs short
	+ Give instructions clearly. Avoid long sentences of explanation
	+ Use active rather than passive voice
	+ Avoid double negatives
	+ Flow charts are ideal for explaining procedures
	+ Pictograms and graphics help to locate information
	+ Lists of 'do's and 'don'ts' are more useful than continuous text to highlight aspects of good practice
	+ Avoid abbreviations if possible or provide a glossary of abbreviations and jargon
	+ For long documents include a contents page at the beginning and an index at end

## Media

* Paper should be thick enough to prevent the other side showing through.
* Use matt paper rather than glossy. Avoid digital print processing which tends to leave paper shiny.
* If possible, avoid white backgrounds for paper, computer and visual aids. White can appear too dazzling. Use cream or a soft pastel colours. Some dyslexic people will have their own colour preference.

# Designing for colour vision deficiency

Colour vision deficiency (CVD) affects approximately 1 in 12 men (8%) and 1 in 200 women in the world. Most people with color vision deficiency can see colors, but they have difficulty differentiating between the following colors:

* particular shades of reds and greens (most common)
* blues and yellows (less common)
* People who are totally color blind, a condition called achromatopsia, can only see things as black and white or in shades of gray (much less common)

Worldwide around 8% of men and 0.5% of women have a colour vision deficiency. The 8% of colour blind men can be divided approximately into 1% deuteranopes, 1% protanopes, 1% protanomalous and 5% deuteranomalous. Approximately half of colour blind people will have a mild anomalous deficiency, the other 50% have moderate or severe anomalous conditions.

Numbers of tritanopes/tritanomalous people and achromats is very small, perhaps 1 in 30-50,000 people. Color vision deficiency can range from mild to severe, depending on the cause.

Remember to use symbols, text or other distinguishing features in addition to distinguishing by colour. For example, when colour only is used to distinguish different things on a chart, map or image, these differences could remain indistinguishable for some people. Use symbols or text as well as coloured lines and areas.

# Designing for autism spectrum disorder

## Sensory issues

Autistic people often have heightened sensory awareness, and so can find busy pages overwhelming. It is particularly important to:

* have a clean and uncluttered design
* avoid movement unless the moving elements can be frozen by the user.

## Consistency

As autistic people tend to need consistency:

* ensure that navigation mechanisms are consistent in appearance and behaviour
* ensure that the relative importance of different sections (across the site and within pages) is indicated in a consistent way
* make links obvious – don't make the user wonder what may or may not be a link.

## Communication

Autistic people are more likely to take things literally and to benefit from visual material. It can be helpful to:

* provide visual alternatives to textual material
* avoid the use of metaphors, exaggeration, ambiguous language or turns of phrase that may have more than one meaning.

## Use plain English

A few things to keep in mind for writing in English that is easy to understand, taken from this guide: [How to write in plain English](http://www.plainenglish.co.uk/files/howto.pdf).

* Keep sentences short – an average length of 15 to 20 words
* Prefer active verbs, sentences/phrases which follow this order (subject) (verb) (object), for example:
	+ “This matter will be considered by us shortly” (Passive)
	+ “We will consider this matter shortly” (Active)
* Use passive verbs when necessary, and use them well, consider the following guidelines:
	+ To make something less hostile − 'this bill has not been paid' (passive) is softer than 'you have not paid this bill' (active).
	+ To avoid taking the blame − 'a mistake was made' (passive) rather than 'we made a mistake' (active).
	+ When you don't know who or what the doer is − 'the England team has been picked'.
	+ When it simply sounds better
* Use 'you' and 'we'
* In general, keep to everyday English whenever possible. And imagine talking to your reader across a table.
* Don’t be afraid to give instructions: The most common fault is putting 'customers should do this' or 'you should do this' instead of just 'do this'. Perhaps people worry that commands sound too harsh. But you can often solve this by putting the word 'please' in front.
* Avoid nominalisations which are the names of something that isn't a physical object, such as a process, technique or emotion. Eg. use ‘complete’ instead of ‘completion’.

# Website & digital document design

Research shows that readers access text at a 25% slower rate on a computer. Website design must consider all the above factors together with the following points.

* Navigation should be easy. A site map is helpful.
* Use graphics, images, and pictures to break up text.
* Where possible design web pages which can be downloaded and read off-line.
* Moving text creates problems for people with visual difficulties. Text reading software is unable to read moving text.
* Contents links should show which pages have been accessed.
* Encourage the use of hyperlinks at the end of sentences.

Provide digital documents in alternative formats. MS Word or a similar format are preferable because it takes a lot of work to restructure a pdf file to make it accessible. Additionally, for people with vision deficiency: “pdf files are a nightmare because you can’t customise anything. Not being able to enlarge fonts means you have to zoom in on the whole document and scroll around to read it. All that movement on screen is guaranteed to make me feel ill. With open document formats you can set background and text colours to suit, but that’s not possible in pdfs” – From [Accessibility and me: Marian Foley](https://accessibility.blog.gov.uk/2016/05/26/accessibility-and-me-marian-foley/).

## Accessible web content guidelines

The Web Content Accessibility Guidelines [WCAG 2.0](https://www.w3.org/TR/WCAG20/) were developed by W3C and they explain how to make what is seen and heard on a web page accessible.

Alongside the guidelines, WCAG 2.0 defines conformance requirements that you have to meet if you claim to comply with WCAG, for instance:

* One conformance level (A, AA, AAA) must be met.
* Conformance must be achieved for the full page. No part of a page must be excluded from conformance checking.

There are 12 guidelines that are grouped in four principles for creating accessible web content:

* Perceivable
* Operable
* Understandable
* Robust

For each of these guidelines, success criteria and techniques were developed. Using the criteria and techniques web developers can check the level of conformance of their content to WCAG 2.0. See *Appendix 2: Selected WCAG 2.0 guidelines* for an overview of the guidelines that might be relevant to consider for our work.

Links & Resources

# Automatic accessibility checking

To check text colour contrast for web: <http://accessible-colors.com/>

To check colour contrast when using text over an image: <http://www.brandwood.com/a11y/>

To check colour contrast/difference for various colour vision deficiencies: There is a free program for Mac called Sim Daltonism available [here](https://michelf.ca/projects/sim-daltonism/).

Microsoft have included an Accessibility Checker tool in [MS Word, Excel and PowerPoint](https://support.office.com/en-gb/article/Check-for-accessibility-issues-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f). This in-built accessibility checker will scan through the document and report accessibility violations.

[Adobe provides an Accessibility checker](https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html) with Acrobat Pro. Note that when you either ‘export’ the document to PDF or ‘save as … PDF’, it is important that you select the “export Tags” option if it is available to you.

Automatic checkers are useful for quick accessibility checks but there are many things they cannot do. They will not tell you if the language is clear and simple, if links going to web pages or other parts of a document make sense or if alternative text for images is useful.

There are many automatic tools for web accessibility. Here are two that are relatively easy to use and can both check conformance online. By typing in the web page address, the tools will output a set of errors and warnings:

* [WAVE (Web Accessibility Evaluation Tool)](http://wave.webaim.org/). Currently WAVE covers WCAG 2.0 (level A and AA) and US standard Section 508.
* [AChecker](http://achecker.ca). AChecker covers WCAG 1.0 and 2.0 (level A, AA, and AAA), Section 508, German standard BITV level 2.0, and Italian accessibility law Stanca Act.

# Automatic readability checking

To set your spell checker in Word to automatically check readability, go to *Spelling and Grammar* and click *Options*. Under *Grammar*, select *Show readability statistics* check box. Click on *Settings* to customize. There are even options for things like passive voice and gender specific language.

Word will show you the following scores:

* Flesch Reading Ease score: Rates text on a 100-point scale; the higher the score, the easier it is to understand the document. For most standard documents, aim for a score of approximately 70 to 80.
* Flesch-Kincaid Grade Level score: Rates text on a U.S. grade-school level. For example, a score of 5.0 means that a fifth grader, average 10 year old, can understand the document. For most standard documents, aim for a score of approximately 5.0, by using short sentences, not by dumbing down vocabulary.

Check long documents in sections, so that you know which parts are too hard.

# Built in accessibility features for mobile devices

Mobile phones and devices have many built in features that can help make digital content more accessible for a variety of needs. See Appendix 1 for an overview of the common features available.

# Designing for Dyslexia

* Dyslexia and web design case study: <https://www.distilled.net/blog/distilled/usability-versus-dyslexia/>
* See *Dyslexia Suitable Typefaces.pdf* for more detail on suitable fonts for dyslexia

# Designing for the web

* BBC accessibility guidelines: <http://www.bbc.co.uk/guidelines/futuremedia/accessibility/>
* Designing for autism: <http://www.autism.org.uk/professionals/others/website-design.aspx>
* Case study – a user with aspergers: <https://www.gov.uk/government/publications/understanding-disabilities-and-impairments-user-profiles/pawel-user-with-aspergers>

# Using Indesign to make accessible PDFs

Some resources for making accessible pdf documents:

* <http://www.adobe.com/accessibility.html>
* <http://www.adobe.com/content/dam/acom/en/accessibility/pdfs/accessing-pdf-sr.pdf>

It seems to be a bit of work to make an accessible pdf from an Indesign file, and will require a bit more research. For longer documents it is much easier to make a MS Word version rather than an accessible pdf.

# Writing style & writing content for the web

# A guide for writing in plain English:

<http://www.plainenglish.co.uk/files/howto.pdf>

# This article has good info on planning, writing and managing content for the web: <https://www.gov.uk/guidance/content-design/writing-for-gov-uk>

This research explains how people read web pages:

<https://www.nngroup.com/articles/how-users-read-on-the-web/>

<https://www.nngroup.com/articles/writing-links/>

# Other links and resources

* Gov.uk poster series: <https://accessibility.blog.gov.uk/2016/09/02/dos-and-donts-on-designing-for-accessibility/>

# Appendix 1: Built-in accessibility features on mobile devices

**Vision**

**Screen readers**

Today’s major operating systems for mobile devices like Android or iOS have a built in screenreader that allows blind people to operate the device with simple touches and gestures.

People can touch the screen to hear what’s under their finger, can use gestures to explore the screen by manoeuvring from one element to another and to activate elements using a double tap gesture.

To get feedback on what is happening speech synthesis and vibrations are used.

Using these methods blind people can operate a smartphone with some skill and where applications are accessible, without any problems. A more in-depth description about the functionalities of a screenreader will be given in the next step.

**Screen magnifiers**

This function magnifies a part of the screen so that people with low vision like [Maria](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155542) can read the content of the screen. This tools offer different modes, either magnifying the whole screen or allowing the user to see a zoomed area in a separate window while keeping the rest of the screen at its original size.

**Speech synthesis**

For people with low vision like Maria, this function allows users to select parts of the screen or the whole page and have it read it back out aloud.

The user is able to adjust the voice’s dialect and speaking rate and have words highlighted as they are being read. This is also a valuable tool for people that have problems reading the content of the screen as well as those doing something else while they listen!

**Speech recognition**

This function recognises the voice of the user allowing words and numbers to be converted into text that are entered in text fields and text areas.

The user is also able to ask questions that the operating system tries to answer, send messages, place phone calls, and schedule meetings with just the use of their voice.

**Font adjustments**

This function allows users like Maria to adjust the font size of the text that is displayed into a larger, easier to read size.

**Greyscale and inverted colours / high contrast mode**

For people with colour vision deficiency like [Alexander](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155555) a higher contrast or a lack of colour helps the user to see what is on the display of the mobile device. High contrast levels between the text colour and the background can also help some individuals with low vision or poor visual acuity.

**Hearing**

**Video call**

For deaf people like [Lars](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155524) or hard of hearing people like [Susan](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155524) a video call can help them to understand the conversation as they can catch every gesture and facial expression. Also communication with sign language is possible.

**Visible and vibrating alerts**

Visual and vibrating alerts for incoming phone calls and messages are ideal for people who have hearing problems.

**Physical- and motor-skills**

**Gesture replacement**

People like [Mary](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155554) have problems performing certain gestures like a pinch or a swipe gestures on the mobile device. Those gestures can be replaced with other gestures that the user can perform, for example a single tap. However, there are limitations, especially when users have to drag an item to a certain location on the screen which can be complicated.

**Touch configuration**

Users are able to configure how long they need to touch the screen until the system recognises the action or whether repeated touches, caused for example by the trembling of the hand, should be ignored. Those with physical disabilities or dexterity difficulties can then put the finger anywhere on the screen and move to the item without mistakenly performing other actions.

**Switch access scanning**

This technology allows people who are only able to operate one or more switches due to severe physical or dexterity difficulties to use mobile devices. Users can move sequentially over each item on the screen and when they want to perform an action on the item - like a touch on the icon - then they simply press the switch. By this method very complex user interfaces can be operated with a single switch alone.

Further information on this input method will be given in the next step.

**Cognitive**

There are not that many built in tools on smartphones that are specifically available for those with cognitive disabilities. However, for those who have difficulties reading text or writing messages there are some options available. The alarms, timers and calendars can all help with time keeping and different colour settings can help with some visual stress issues.

Here are some other features that can be used:

* Speech Recognition: to operate the mobile device, make calls, find numbers and dictate text into browsers to search or write messages etc
* Speech Synthesis or Text to Speech: some people may find it easier to focus on the understanding of information as it is read aloud rather than reading
* Touch Configuration: those supporting individuals who press some buttons inappropriately or accidentally, can disable them for example the home button so that users do not inadvertently exit an app.
* Screen brightness: this can be dulled if the glare of black text on a white background is too much for some users such as [Anna](https://www.futurelearn.com/courses/digital-accessibility/2/steps/155522) who has dyslexia and likes brown text on a sepia background.

# Appendix 2: Selected WCAG 2.0 guidelines

Below are some of the WCAG guidelines that might be relevant for our work:

* [1 Perceivable](https://www.w3.org/TR/WCAG20/#perceivable)
	+ 1.1 [Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.](https://www.w3.org/TR/WCAG20/#text-equiv)
		- **1.1.1 Non-text Content:** All [non-text content](https://www.w3.org/TR/WCAG20/#non-text-contentdef) that is presented to the user has a [text alternative](https://www.w3.org/TR/WCAG20/#text-altdef) that serves the equivalent purpose, except for the situations listed below. (Level A)
			* **Controls, Input:**If non-text content is a control or accepts user input, then it has a [name](https://www.w3.org/TR/WCAG20/#namedef) that describes its purpose. (Refer to [Guideline 4.1](https://www.w3.org/TR/WCAG20/#ensure-compat) for additional requirements for controls and content that accepts user input.)
			* **Time-Based Media:**If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content. (Refer to [Guideline 1.2](https://www.w3.org/TR/WCAG20/#media-equiv) for additional requirements for media.)
			* **Test:**If non-text content is a test or exercise that would be invalid if presented in [text](https://www.w3.org/TR/WCAG20/#textdef), then text alternatives at least provide descriptive identification of the non-text content.
			* **Sensory:**If non-text content is primarily intended to create a [specific sensory experience](https://www.w3.org/TR/WCAG20/#sensoryexpdef), then text alternatives at least provide descriptive identification of the non-text content.
			* [**CAPTCHA**](https://www.w3.org/TR/WCAG20/#CAPTCHAdef)**:**If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.
			* **Decoration, Formatting, Invisible:**If non-text content is [pure decoration](https://www.w3.org/TR/WCAG20/#puredecdef), is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by [assistive technology](https://www.w3.org/TR/WCAG20/#atdef).
	+ 1.2 [Provide alternatives for time-based media.](https://www.w3.org/TR/WCAG20/#media-equiv)
	+ 1.3 [Create content that can be presented in different ways (for example simpler layout) without losing information or structure.](https://www.w3.org/TR/WCAG20/#content-structure-separation)
	+ 1.4 [Make it easier for users to see and hear content including separating foreground from background.](https://www.w3.org/TR/WCAG20/#visual-audio-contrast)
		- **1.4.3 Contrast (Minimum, Level AA):** The visual presentation of [text](https://www.w3.org/TR/WCAG20/#textdef) and [images of text](https://www.w3.org/TR/WCAG20/#images-of-textdef) has a [contrast ratio](https://www.w3.org/TR/WCAG20/#contrast-ratiodef) of at least 4.5:1, except for the following:
			* **Large Text:**[Large-scale](https://www.w3.org/TR/WCAG20/#larger-scaledef) text and images of large-scale text have a contrast ratio of at least 3:1;
			* **Incidental:**Text or images of text that are part of an inactive [user interface component](https://www.w3.org/TR/WCAG20/#user-interface-componentdef), that are [pure decoration](https://www.w3.org/TR/WCAG20/#puredecdef), that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
			* **Logotypes:**Text that is part of a logo or brand name has no minimum contrast requirement.
		- **1.4.4 Resize text:** Except for [captions](https://www.w3.org/TR/WCAG20/#captionsdef) and [images of text](https://www.w3.org/TR/WCAG20/#images-of-textdef), [text](https://www.w3.org/TR/WCAG20/#textdef) can be resized without [assistive technology](https://www.w3.org/TR/WCAG20/#atdef) up to 200 percent without loss of content or functionality. (Level AA)
* [2 Operable](https://www.w3.org/TR/WCAG20/#operable)
	+ 2.1 [Make all functionality available from a keyboard.](https://www.w3.org/TR/WCAG20/#keyboard-operation)
	+ 2.2 [Provide users enough time to read and use content.](https://www.w3.org/TR/WCAG20/#time-limits)
	+ 2.3 [Do not design content in a way that is known to cause seizures.](https://www.w3.org/TR/WCAG20/#seizure)
	+ 2.4 [Provide ways to help users navigate, find content, and determine where they are.](https://www.w3.org/TR/WCAG20/#navigation-mechanisms)
		- **2.4.4 Link Purpose (In Context):** The [purpose of each link](https://www.w3.org/TR/WCAG20/#linkpurposedef) can be determined from the link text alone or from the link text together with its context, except where the purpose of the link would be [ambiguous to users in general](https://www.w3.org/TR/WCAG20/#ambiguouslinkdef).
		- **2.4.5 Multiple Ways:** More than one way is available to locate a [Web page](https://www.w3.org/TR/WCAG20/#webpagedef) within a [set of Web pages](https://www.w3.org/TR/WCAG20/#set-of-web-pagesdef) except where the Web Page is the result of, or a step in, a [process](https://www.w3.org/TR/WCAG20/#processdef).
		- **2.4.6 Headings and Labels:** Headings and [labels](https://www.w3.org/TR/WCAG20/#labeldef) describe topic or purpose. (Level AA)
* [3 Understandable](https://www.w3.org/TR/WCAG20/#understandable)
	+ 3.1 [Make text content readable and understandable.](https://www.w3.org/TR/WCAG20/#meaning)
		- **3.1.3 Unusual Words:** A [mechanism](https://www.w3.org/TR/WCAG20/#mechanismdef) is available for identifying specific definitions of words or phrases [used in an unusual or restricted way](https://www.w3.org/TR/WCAG20/#unusual-restricteddef), including [idioms](https://www.w3.org/TR/WCAG20/#idiomsdef) and [jargon](https://www.w3.org/TR/WCAG20/#jargondef). (Level AAA)
		- **3.1.4 Abbreviations:** A [mechanism](https://www.w3.org/TR/WCAG20/#mechanismdef) for identifying the expanded form or meaning of [abbreviations](https://www.w3.org/TR/WCAG20/#abbreviationsdef) is available. (Level AAA)
		- **3.1.5 Reading Level:** When text requires reading ability more advanced than the [lower secondary education level](https://www.w3.org/TR/WCAG20/#lowseceddef) after removal of proper names and titles, [supplemental content](https://www.w3.org/TR/WCAG20/#suppcontentdef), or a version that does not require reading ability more advanced than the lower secondary education level, is available. (Level AAA)
	+ 3.2 [Make Web pages appear and operate in predictable ways.](https://www.w3.org/TR/WCAG20/#consistent-behavior)
		- **3.2.3 Consistent Navigation:** Navigational mechanisms that are repeated on multiple [Web pages](https://www.w3.org/TR/WCAG20/#webpagedef) within a [set of Web pages](https://www.w3.org/TR/WCAG20/#set-of-web-pagesdef) occur in the [same relative order](https://www.w3.org/TR/WCAG20/#samerelorderdef) each time they are repeated, unless a change is initiated by the user. (Level AA)
		- [How to Meet 3.2.3](http://www.w3.org/WAI/WCAG20/quickref/#qr-consistent-behavior-consistent-locations) | [Understanding 3.2.3](http://www.w3.org/TR/UNDERSTANDING-WCAG20/consistent-behavior-consistent-locations.html)
		- **3.2.4 Consistent Identification:** Components that have the [same functionality](https://www.w3.org/TR/WCAG20/#samefunctionalitydef) within a set of [Web pages](https://www.w3.org/TR/WCAG20/#webpagedef) are identified consistently. (Level AA)
	+ 3.3 [Help users avoid and correct mistakes.](https://www.w3.org/TR/WCAG20/#minimize-error)
* [4 Robust](https://www.w3.org/TR/WCAG20/#robust)
	+ 4.1 [Maximize compatibility with current and future user agents, including assistive technologies.](https://www.w3.org/TR/WCAG20/#ensure-compat)