The Internet is for Everyone
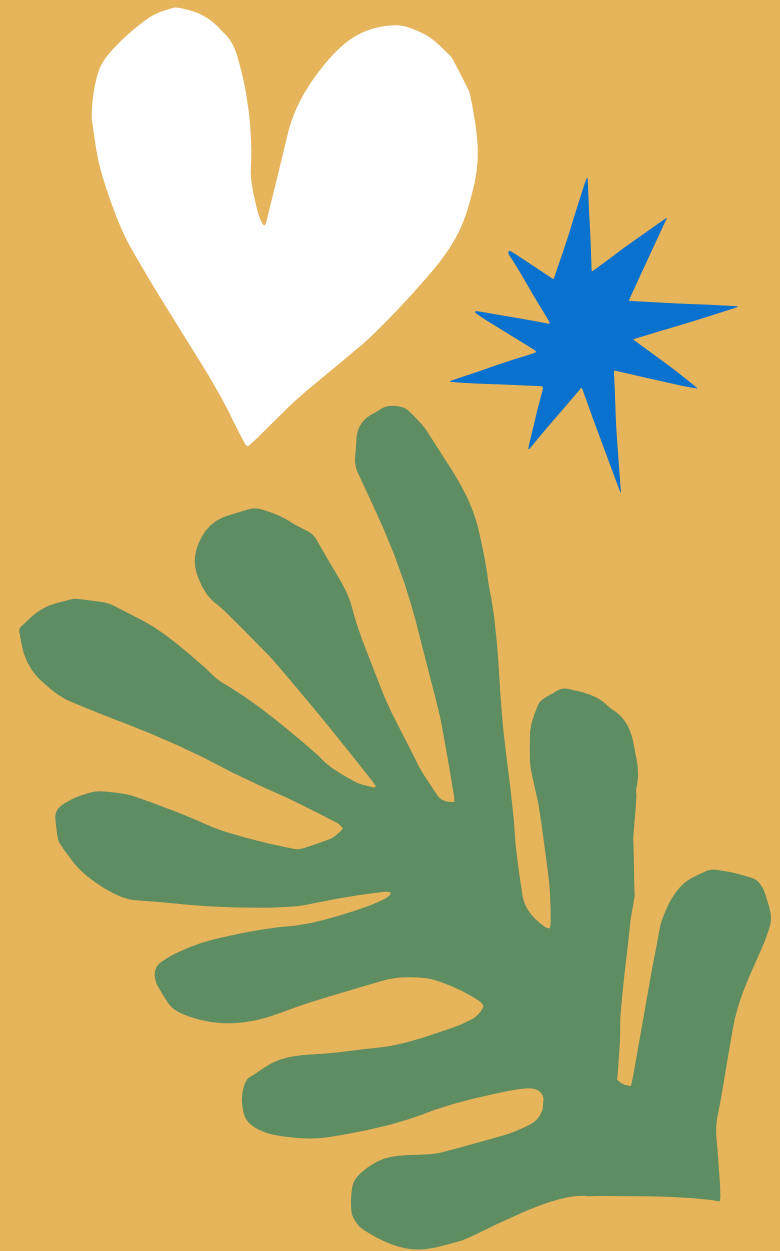
Why and how to make your website accessible

Freerange Future

Creating for cause & culture

Certified B Corporation

Who is this document for?

Anyone involved in creating, managing or setting strategy for websites.

Contents

"The power of the Web is in its universality.

Access by everyone regardless of disability is an essential aspect."

Tim Berners-Lee
W3C Director and inventor of the World Wide Web

What is website accessibility?

Often when people think about accessibility, they picture wheelchair ramps and disabled toilets but with today's digital lifestyles, online accessibility is a crucial aspect that can't be overlooked.

If you have read our [Cause Driven Website eBook](#), you would know that accessibility benefits everyone. Not just people with disability but also younger and older people as well as those from diverse linguistic and cultural backgrounds.

Any Australian organisation that offers good or services on their website is subject to the Disability Discrimination Act 1992[1]. This act requires that people with disability have the same functional access as any other person within our communities.

An accessible website is a purposeful reminder for people to uphold their values of social and cultural inclusion. Websites, digital tools, technologies and products should be developed and designed so that people from all backgrounds can use them[2].

Just over half of Australians aged 65 and over live with a disability[3]

1. Australian Network on Disability 2018,
https://www.and.org.au/pages/disability-discrimination-act-1992.html

2. W3C 2018,
https://www.w3.org/WAI/intro/accessibility.php

3. W3C 2018,
https://www.w3.org/WAI/intro/accessibility.php

"We are disabled by what society does to us."

Gaelle Mellis
Disability Advocate

The Social Model of Disability[4]

Disability is a social construct. We create social barriers when the requirements of people with impairments are not taken into account.

Disability is not caused by impairment, but rather, exclusion from access and opportunities to participate as an equal in society because of barriers.

Impairments come in many forms, stemming from physical injuries, age-related issues, health conditions, situational barriers and more.

People with disability are not objects of charity. They are people with rights and are able to make decisions towards how they live their lives based on their free and informed consent and be active contributing members of society.

The problem is not the individual. The issue involves everyone in finding a solution towards accessibility for all.

Impairment is a medical condition which leads to disability. Disability is the result of interaction, physical communication and social environment.
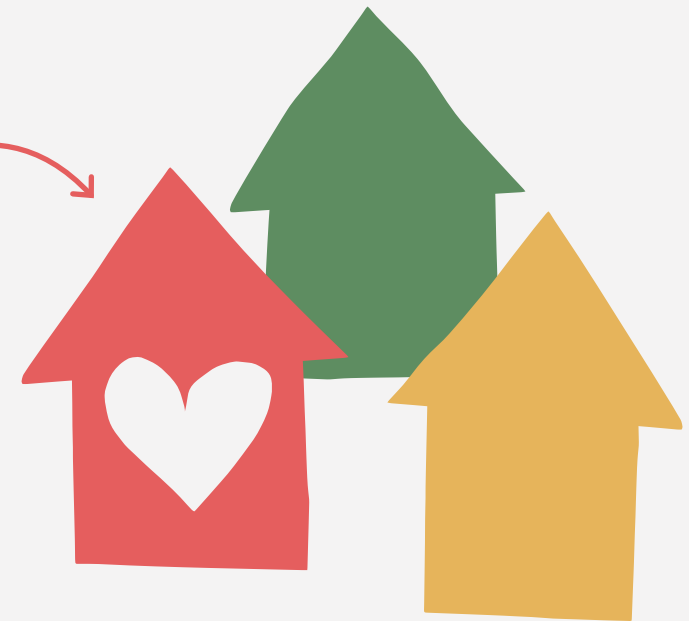
4. People with Disability Australia 2017,
http://www.pwd.org.au/student-section/the-social-model-of-disability.html

How people with disability access the web

People with disability face many barriers accessing the web.

1 in 5 people in Australia live with a disability[5]. Each individual has their own method, tools and preferences that impact their interactions with the web. While most people take their access to the web for granted, understanding the barriers that currently exclude people with disability will create opportunities towards building an inclusive online environment.

Around one-third of Australian households include a person with disability[6]

5. Australian Network on Disability 2018,
https://www.and.org.au/pages/disability-statistics.html

6. Australian Bureau of Statistics 2015,
http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4430.0Main%20Features12015

Benefits of having an accessible website

### It's vital for equal opportunity

By giving access to people with disability, we greatly increase opportunities for social interactions and active participation in community activities.

It's profitable to organisations

15% of the world's population (that's 1 billion people!) are living with some form of disability — making it the world's largest minority group. By making websites accessible, you can reach into untapped markets, opening more business opportunities in the process.

It's cost-effective

Incorporating universally accessible design during the early stages of web development saves significant costs. It is better to build a simple and easy to navigate website from the get go rather than spending effort and energy later on making improvements to the website.
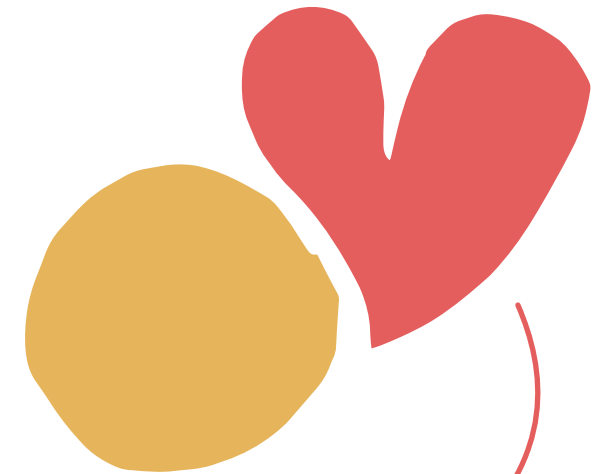
People appreciate user-friendly websites. After all they are used in every aspect of our lives!

Sensory impairments

Barriers for people with vision impairments & blind users

People who are blind or vision impaired cannot depend on accessing information visually, and must rely on web content being presented in forms that are usable for their specific needs.

Web content that lacks clear headings and structure are not easily readable.

### Accessible tools for people who are blind and those with vision impairments

- Screen readers that speak text content
- Text and images that can be resized
- Listening to audio descriptions of video in multimedia
- Listening to text-to-speech synthesis of the content
- Reading text using refreshable Braille
- Clearly legible fonts, colours and spacings
- JAWS (Job Access With Speech) screen reader provides speech and Braille output for the most popular computer applications on your computer

Barriers for people who are Deaf & hard of hearing

A person with a hearing impairment cannot access information through audio. Unless transcripts and sign language are provided, a website delivering information with audio and video formats serves little or no value to audio impaired people and the Deaf community.

Accessible tools for Deaf people and those hard of hearing

- Audio transcripts
- Open and closed captions
- Auslan interpretation for Deaf users
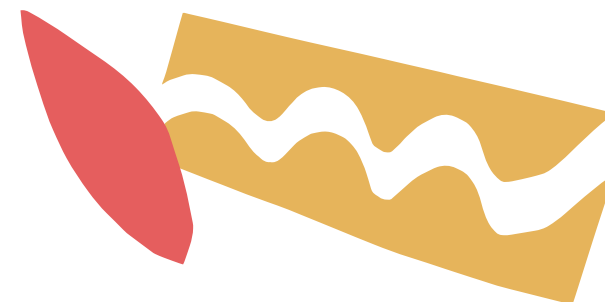
Learning disability

Barriers for people with learning disability

Complex web designs, user interfaces and content that cannot be adapted reduces a person's control over their website experience.

Depending on the individual's specific requirements, people with a learning disability use different strategies to browse the web. For example, some people use text-to-speech software to hear information at the same time as reading it visually. Some people use tools that resize text and spacing, some customise fonts and colours (for instance black & white or high contrast) to assist reading while others use grammar and spelling tools to support writing.

People with learning disability face many barriers:

- **Attention deficit hyperactivity disorder (ADHD)** involves having difficulties focusing on a single task in a specific time frame

- **Autism spectrum disorder (ASD)** causes impairments of social communication and interaction abilities, and sometimes restricted habits and interests

- **Epilepsy** can cause seizures due to flashes and blinking images

- **Dyslexia** causes difficulties with reading, writing and spelling

Accessible tools for people with learning disability

- Text to speech software that highlights text on the screen as it reads it aloud

- Word prediction that makes suggestions for mistyped and misspelled words
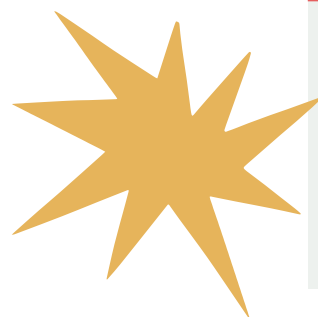
Physical impairment

Barriers for people with physical impairment

A website with complex designs and complicated navigation mechanisms can be hard to use for a person with some physical impairments.

Providing large click areas and unlimited time for clicking, typing and inputting information must be considered as crucial aspects of a design.

Some people with physical impairment rely on specialised hardware and software for support to activate certain functions provided on web pages. They need extra time to click and type on a keyboard and use shortcut keys to activate commands.

Accessible tools for people with physical impairments

- Resizable text on screen and screen magnification software
- Split keyboard to reduce strain on wrist
- Keyboard controls to minimise arm movements
- Mouse with non-scrolling functions for people with hand tremors

The likelihood of living with disability increases with age. 2 in 5 people with disability are aged 65 years and older[7]

7. Australian Network on Disability 2018, https://www.and.org.au/pages/disability-statistics.html

There is a strong business case for accessibility. Fundamentally, accessibility is good business. Accessible websites can have better search results, increase audience reach and proven corporate social responsibility (CSR).[8]

8. Introduction to Web Accessibility 2018,
   https://www.w3.org/WAI/fundamentals/accessibility-intro/#important

Web Content Accessibility Guidelines

The World Wide Web Consortium (W3C) is the governing body for web standards. It sets the international standards for website accessibility. The Web Content Accessibility Guidelines (WCAG) have three levels, which categorise the extent of accessibility on a given website or page. The guidelines range in complexity and are named from A to AAA.
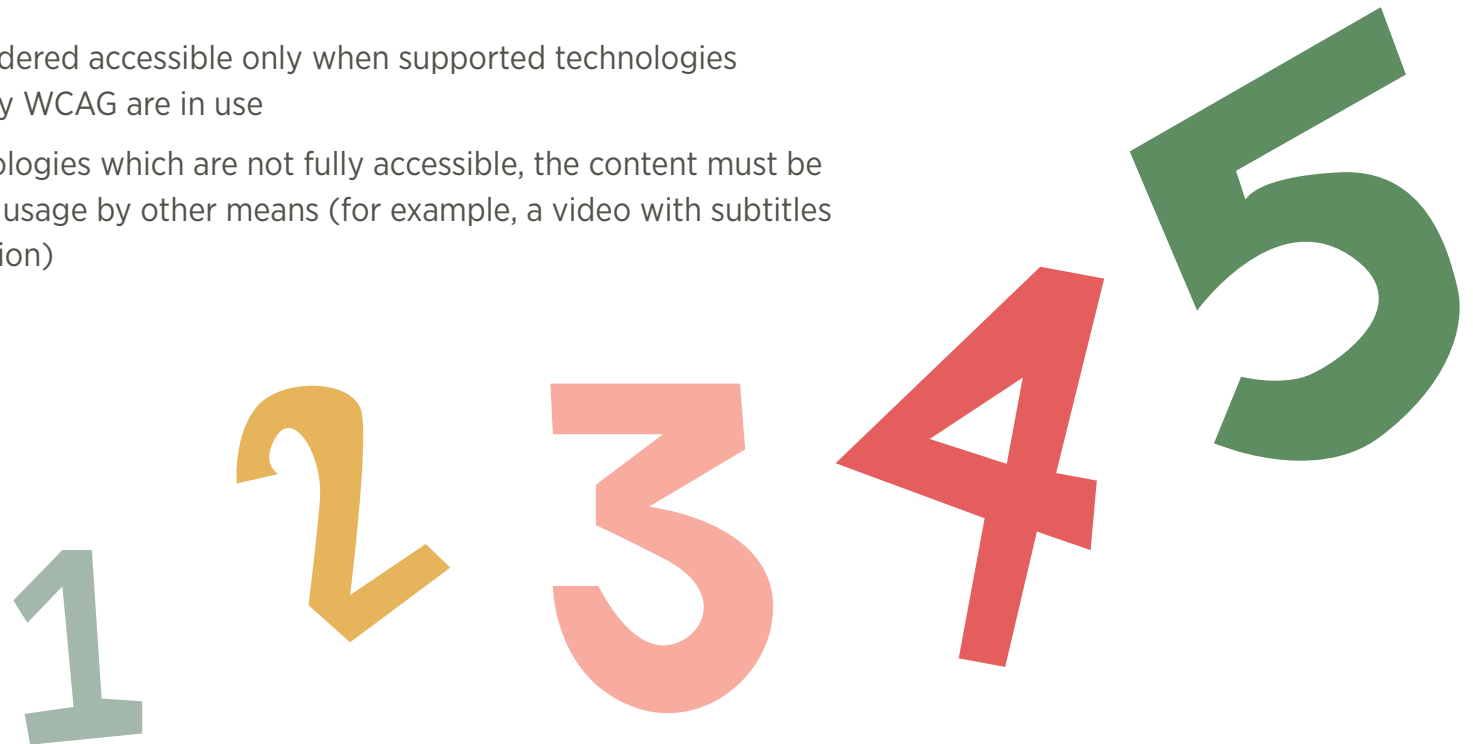
Most websites are expected to meet the Level A standard. Websites owned and funded by the government must reach the WCAG Level AA standard to be accessible by all members of the community. Not complying with accessibility regulations can open up your organisation to legal issues, so it is crucial for you to know the standards and requirements needed.

How does WCAG work?

The WCAG ratings are designed to define a website's overall success in relation to the five traits of an accessible website:

1. Websites must meet a grading level of either A, AA or AAA

2. Website conformance must include all parts of the website, not just a single web page

3. Related pages must have similar ratings or higher for a website to be accessible

4. Websites are considered accessible only when supported technologies deemed credible by WCAG are in use

5. When using technologies which are not fully accessible, the content must be open to accessible usage by other means (for example, a video with subtitles and audio description)

WCAG at a glance

	Level A	Level AA	Level AAA
Support for keyboard navigation	The website is accessible to a keyboard-only user		All content is operable through a keyboard interface without requiring specific time limitations for each keystroke
Tolerance for errors	A text prompt is given to users when an error is detected	Users are given prompts to reduce errors when submitting forms	Context sensitive assistance is available
Time usage	Users have sufficient time to read and use content	Time limit is adjustable when inputting information into the web	No timing is required when inputting information online
Meaningful sequence and clear presentation	Arrange content in a meaningful order	Use consistent web navigation landmarks	Use section headings to organise content
	Labels and instructions are provided when content requires user input	Descriptive headings and labels with clear explanation	
Design	Create content that can be presented using different layouts within guidelines	Text is resizable up to 200% without loss of content functionality (not including images of text and captions)	Visual presentation (images, background and foreground colours) are customisable to user requirements
	Colour and text are distinguishable, audio is easily audible	Text and images of text have a contrast ratio of at least 4.5:1 (large scale; 3:1)	Text and images of text have a contrast ratio of at least 7:1 (large scale; 4.5:1)
Use inclusive language	Use plain language when describing content (not including names & technical terms)		Provide a glossary for people to understand technical terms, jargon, and abbreviation
Use captions and video descriptions	Synchronised captions are available for live media. Synchronised audio description are available for pre-recorded media		Media alternatives (e.g. sign language and audio-only) are available for live and pre-recorded content
Applying dynamic elements	Users can pause, stop or hide content that blinks and flashes persistently		Web pages do not contain elements that flashes more than three times in a one-second period

Making your website accessible

When websites are properly designed and developed, they offer accessible usage to everyone, regardless of the browser that is being used.

The secret to getting started in accessibility is understanding the four primary principles, POUR, that guide the industry's standard for web content accessibility.

POUR
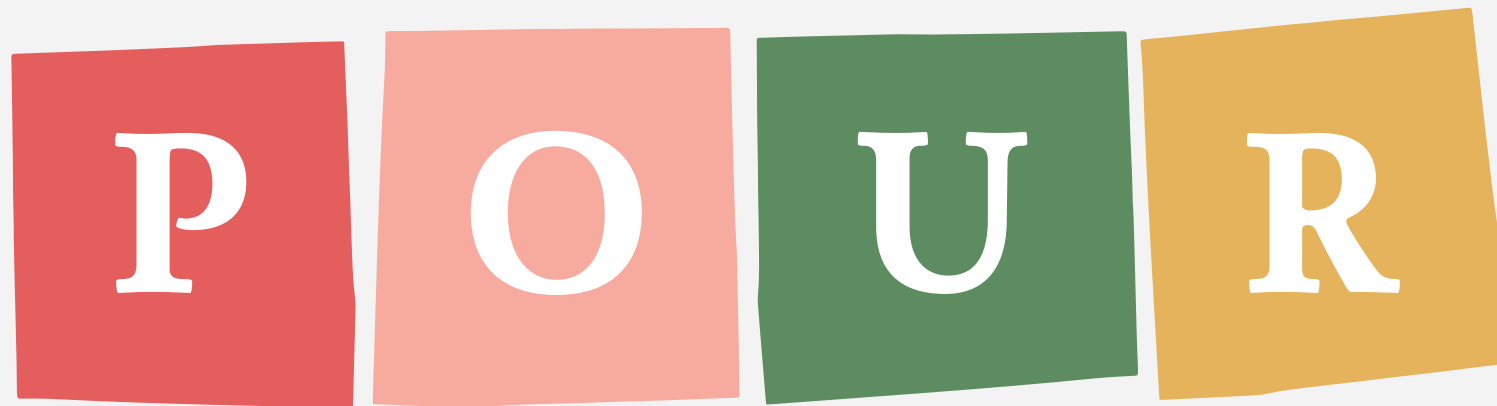
Perceivable **Operable** **Understandable** **Robust**

Perceivable

At the basic level, web-based content needs to be presented in a way that is comprehended easily. This means providing text for people who cannot hear, audio for people who cannot see and content that is consumable by people who use assistive technology.

Operable

For a website or digital application to be accessible, it should be operable regardless of the tools people use to view it. Animations and rich media should be configurable, and time limits for specific online tasks should be generous. As we all make mistakes, websites and applications need to be forgiving, patient and act as an extension of our digital capabilities.

Understandable

Websites must be designed in a way that they are easily understood, including by people with cognitive, physical, cultural and linguistic differences. Provide clear guidance for all users. They can use this to navigate specific online processes (i.e., event registration, online purchases).

Robust

Within limitations, it is important for websites to be functional across various platforms. While users cannot expect websites to work on an outdated web browser, they should work across web, mobile and on assistive technologies. The best way to ensure digital compatibility is to follow internationally recognised standards and restrictions regulated by the W3C.

POUR

"Universal design seeks to encourage attractive, marketable products that are more usable by everyone. It is design for the built environment and consumer products for a very broad definition of user."

Ron Mace
Founder and program director of
The Centre of Universal Design

Key features of an accessible website

The Principles of Universal Design[9] state that basic design is created for all users. This includes your family, friends, employees, colleagues and people from all walks of life.

There are many ways of building an accessible website. Here are some practical steps to implement in your website.

9. Horton, S & Quesenbery, W 2013,
A Web for Everyone: *Designing Accessible User Experiences*, Rosenfield Media, NY

Visual design

Simple designs that are free from clutter and noise are easier for users to comprehend. They are also better suited to being responsive across different devices. This helps to ensure user's have the best experience possible.

Tips for accessible visual design

- Ensure foreground and background colours have significant contrast

- Provide generous spacing between text

- Avoid tiny or emotive fonts (Papyrus, Comic Sans, etc) that are hard to see and decipher

- Use universal common symbols for iconography

Page structure

Having well-structured content creates flow and direction. Correct implementation of headings offers the same type of efficient navigation to individuals living with vision disability as they do to the general population.

effective structures

- Use correctly ordered HTML to separate content and presentation. Clear heading styles ensure users can scan content effectively

- Ensure key navigational elements maintain a consistent location in the page structure. This may include content on navigation menus and links to content pages

Tip: Don't use only visual design to communicate meaning. Provide descriptive text and avoid relying on visual cues to convey meaning

Forms

When we talk about accessible forms, we refer to their accessibility to screen reader and keyboard users. Make sure forms are specific and only used when really required.

Tips for accessible forms

- Ensure forms can be navigated by keyboard
- Avoid using JavaScript to manipulate form data, element changes and form submission
- Organise form layouts in a logical and easy-to-use manner
- Assign labels to form controls. People with sensory impairments read and identify information using these attributes

Forms should be as clear as possible

Broadband Payment Form A

Jane	Surname

Broadband account number

Credit card number

Expiry date

Broadband Payment Form B

Your broadband account

First name

Jane

Surname

Enter your surname

Broadband account number (XXX XXX XXX)

Your account number

Your payment details

Credit card number (XXXX XXXX XXXX XXXX)

Enter your card number

Expiry date (DD/MM/YYY)

DD/MM/YYYY

Navigation

Location matters in any form of web design. Think about it, we identify objects on a page by their headings. A survey conducted by WebAIM[10] in 2017 revealed that 67.5% of screen reader users scan headings using the navigation tools on their assistive technology.

Tips for navigation

- Encode the page's purpose and function. This enables people with disability to navigate easily from one heading to another with their disability support tools

- Place page content into the code before the top and side navigation for assistive technology to read first

- Enable keyboard shortcuts for page navigation. Tabs are used to navigate and should be placed in the right order
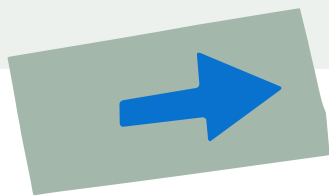
Language

Using accessible language means using language that includes everyone. People feel excluded when jargon and complex words are not understood.

Tips for plain language

- Write in simple, descriptive and plain English that is easy to understand

- Use specific link text (i.e. RSVP to Freerange Future events, watch our analytics webinar) instead of vague statements (i.e. Book here, Read more)

- Use respectful and neutral language when communicating with people with disability

- Write sentences and paragraphs made for scanning and understanding

10. WebAIM 2017, Screen Reader User Survey #7 Results, Utah, https://webaim.org/projects/screenreadersurvey7/

Video

Tips for video

- Embed audio transcripts into webinars, video podcasts and films

- Use audio descriptions for relevant visuals that are not covered in the existing audio

- Include open or closed captions in your videos for people who can or cannot hear well

- Captions include descriptions for words & sounds

Mobile sites and apps

The mobile web needs to be accessible to all people. There is a worrying trend for designers to create mobile interfaces that are slick and snappy, even if this requires sacrificing web standards and accessibility principles.

Tips for effective mobile applications

- Have straight to the point content

- Allow accessible features such as resizable dynamic text, and pinch-to-zoom function to work on mobile

- Design for customisation of the display

Example of a video with open captions:

Access2Arts: Article #1 - Purpose

https://vimeo.com/113246916/

Data tables

Data tables are used to present information in a grid or matrix structure. Sighted individuals can visually scan a table and make associations at a glance. People who are blind or vision impaired are unable to make this association and will need screen readers to navigate data tables.

Tips for accessible data tables

- Use HTML markup to assign headings to specific rows and columns. A screen reader is capable of figuring out what a column header and row header is. Assigning headings to rows and columns eliminates ambiguity

- Add table captions so screen readers can read the table as a whole and not just the content in each cell
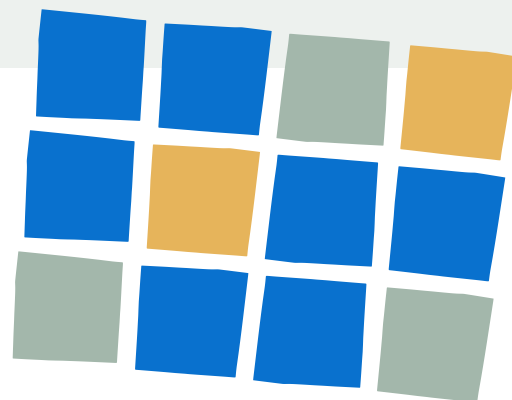
PDF/Microsoft Office

PDFs are not accessible by default but can be made accessible when built correctly.

Accessible PDFs are needed for people with vision impairment. Microsoft Word documents are by default more accessible than PDFs, given that Word is well supported by assistive technologies.

Tips for accessible PDFs

- Use markup to indicate reading directions, table structures, captions for images and ensuring the page is presented as a 'single page'

- Make sure your word processing file is set up correctly before exporting to PDF (i.e. correctly and logically structuring headings, footers and chapters.)

- Add accessibility tags to your PDFs. Screen readers use tags to navigate a document with alt text, bookmarks, Table of Contents, hyperlinks and so forth. You can add tags automatically when saving Word documents for Windows, Mac and Word Online documents to PDF format. Likewise InDesign has accessibility tools

Geospatial information

Geospatial information refers to data with a geographic aspect to it. This includes information with coordinates, zip codes and location addresses (i.e. weather reports, road maps and Uber).

Tips for accessible geospatial information

- Ensure mapping functions are navigable via keyboard access

- Ensure keyboard arrow keys allow people to zoom and pan in any direction, use plus/minus keys and cardinal/ordinal functions (north, south, east and west)

- Allow keyboard input to select specific places, features of interest and present the results back to users without the use of a mouse or pointer

HTML

Writing accessible HTML has its perks, especially when it's been done consistently from the start of the project. It is easier to develop, and has better mobile responsiveness and SEO capabilities, enabling more users to find your documents online.

Tips for accessible HTML

- Use a validator to ensure markup is correct
- Create markup that flows logically to readers. Use styling to change the layout as you need
- Write semantic code with modern HTML5

```
<article>
  <header>
    <h1>Most important heading here</h1>
    <h2>Less important heading here</h2>
    <p>Some additional information here</p>
  </header>
  <p>Lorem Ipsum dolor set amet....</p>
</article>
```

Example of HTML heading markup

Javascript

Scripting languages are programming languages that run in the browser – they add more complex functionality to web pages such as popup windows, animations, calculators, form validation, etc. Javascript is by far the most popular scripting language.

While scripting adds rich functionality to a page it is sometimes at the expense of accessibility – making content difficult to navigate or functionality that is challenging to use with assistive technology.

Tips for accessible scripting

- Ensure pages are still usable when scripting is turned off or unsupported
- Provide an alternative presentation or page when scripting is required

ARIA

More complex programming (such as the logic behind an eCommerce store or membership system) is usually performed on a web server with the results then displayed in the web browser.

In the past, when information changed the whole page would be reloaded from the server. In modern web applications, little pieces of a web page can be updated individually (such as updating a shopping cart or viewing more information in a database). This makes the system faster and more polished for some users but poses a significant challenge for accessibility as assistive technology struggles to track and communicate which content has updated.

Accessible Rich Internet Applications (ARIA) are the solutions to this problem. It's a set of attributes that enables dynamic web content to become more accessible to people with a disability. ARIA provides hooks for assistive technology to better communicate dynamic functionality. ARIA is relatively easy for developers to implement and while it's invisible to many users it's invaluable for accessibility.

Accessibility symbols

Universal Access Symbols identify accessible events for visitors, audiences and staff members. These symbols are used in promotional content, signage, floor plans and membership forms. For example, having a wheelchair accessible sign tells your audience that your event is accessible to all - not only wheelchair users - but those who use prams, walking frames and have other mobility issues.

Accessibility testing

Accessibility testing is conducted to ensure that software and websites comply with industry standards and are usable by people from various backgrounds using different assistive technologies.

Testing approach

The key to creating an accessible website is to follow the guidelines provided by W3C in design and development. As you follow through each specific step, make sure they are actioned and applied throughout your website, not just on the home page.

How to do it

1. Check colour contrast - For AA compliance, text should have a ratio of at least 4.5:1 (larger text, at least 3:1). For AAA compliance, text should have a ratio of at least 7:1 (larger text, at least 4.5:1).

2. Check fonts and font sizes - http://webaim.org/techniques/fonts/

3. Pay attention to content hierarchy, ensure the content is still readable if the CSS styling is removed.

4. The site must validate 100%. There are to be no errors, warnings are ok but should be fixed as well. https://validator.w3.org/

5. Make sure the content order makes sense when no stylesheets are applied.

6. Make sure the site will still function without JavaScript.
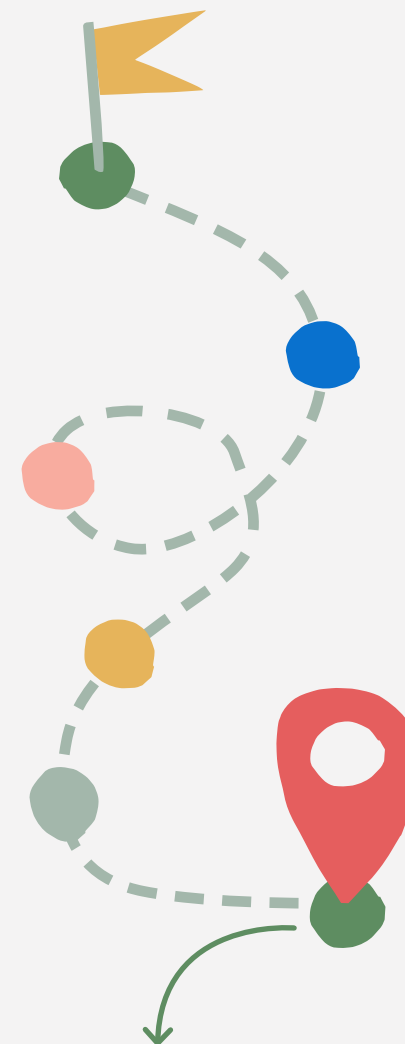
Tip: Conduct accessibility evaluations from the beginning of the design process through the end of the delivery process. This ensures your work is consistent and maintains quality

Conclusion

Accessibility is important. It's not a 'nice to have' or a luxury. It's crucial in ensuring that your whole community can connect effectively with your organisation. For some it is a shift in mindset to think in terms of accessibility and there are costs associated with implementing it. However, the costs are offset by financial and intangible benefits. As a business owner or manager, a designer, marketer or developer, it's your responsibility to strive for websites and apps that are accessible to all.

Accessibility Statement

Freerange Future is committed to ensure our websites are available to a broad range of audiences, including people using assistive technology and accessible tools.

Glossary

ARIA: Accessible Rich Internet Applications

Closed caption: Captions that can be turned off

CSR: Corporate Social Responsibility

HTML: Hypertext Markup Language

JavaScript: A common programming language that runs inside a web browser

Open captions: Captions that are always visible

PDF: Portable Document Format

SEO: Search Engine Optimisation

WCAG: Web Content Accessibility Guidelines

W3C: World Wide Web Consortium

Resources

A beginner's guide to accessible content
https://www.and.org.au/pages/a-beginners-guide-to-accessible-content.html

Accessibility Guidelines
http://accessibility.voxmedia.com

A Web for Everyone
https://rosenfeldmedia.com/books/a-web-for-everyone/

Just Ask, Integrating Accessibility through Design
http://www.uiaccess.com/accessucd/index.html

Introduction to web accessibility
https://www.w3.org/WAI/fundamentals/accessibility-intro/

Gov.au Content Guide
https://guides.service.gov.au/content-guide/accessibility-inclusivity/

HTML5 Accessibility
http://html5accessibility.com

What is Universal Design
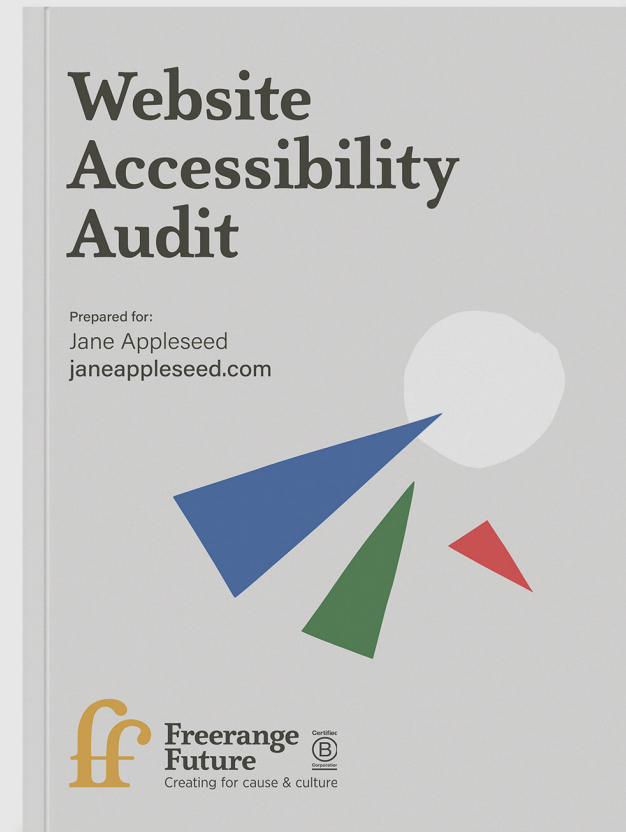http://universaldesign.ie/What-is-Universal-Design/

How accessible is your website?

The Freerange Web Accessibility Audit is a thorough and detailed review of your website's accessibility.

Based on the practical experience of many years designing and developing accessible websites, our user experience team look at accessibility through a human lens, thoroughly reviewing your site and providing actionable ways for you to improve.

Find out more

Website Accessibility Audit

Prepared for:
Jane Appleseed
janeappleseed.com

ff

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Thanks for reading our eBook! We hope you've found it valuable.

Have another topic you'd like us to cover?
Email frontdoor@freerangefuture.com

You might also like:

The Complete Cause Driven Website

Five Steps To Nonprofit Brand Brilliance

Personalising Cause Marketing

Contact us about taking the next steps.
freerangefuture.com
frontdoor@freerangefuture.com

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