

Creating an accessible website

Creating an accessible website involves understanding and implementing a wide range of best practices and guidelines. This guide, produced in conjunction with the Digital Accessibility Centre, will walk you through some of the basic steps in the process, providing links to relevant [Web Content Accessibility Guidelines \(WCAG\) 2.2](#) and success criteria for a deeper understanding.

Understanding WCAG

WCAG 2.2 overview

The Web Content Accessibility Guidelines 2.2, developed by the W3C, are an internationally recognised set of recommendations for improving web accessibility. They define how to make websites, web and mobile applications more accessible to everyone, including people with impairments to their:

- vision - severely sight impaired (blind), sight impaired (partially sighted) or colourblind people,
- hearing - people who are deaf or hard of hearing,
- mobility - those who find it difficult to use a mouse or keyboard,
- thinking and understanding - people with dyslexia, autism or learning difficulties.

Compliance levels

There are 3 levels of compliance, these are:

- **Level A:** Basic web accessibility features that address the most urgent accessibility barriers. For Level A conformance (the minimum standard), the website **must** meet all [Level A Success Criteria](#), or offer a [conforming alternate version](#).
- **Level AA:** Deals with the biggest and most common barriers for disabled users. Most organisations aim for this level. For Level AA conformance, the website **should** meet both Level A and [Level AA Success Criteria](#) or offer a [conforming alternate version](#) at Level AA.
- **Level AAA:** The highest and most complex level of web accessibility. For Level AAA conformance, the website meets all Level A, Level AA, and [Level AAA Success Criteria](#) or provides a [conforming alternate version](#) at Level AAA. Most organisations do not aspire to comply with Level AAA requirements.

WCAG 2.2 design principles

WCAG 2.2 guidelines are organised around four principles: Perceivable, Operable, Understandable, and Robust (POUR). These are further supported by thirteen guidelines, with each guideline being broken down into success criteria.

By concentrating on fundamental principles rather than technology, they highlight the importance of thinking about the various ways people engage with content. For example, a user might:

- Navigate with a keyboard instead of a mouse,
- Change their browser settings to make content easier to read,
- Use a screen reader to read the content on a webpage,
- Use a screen magnifier,
- Use voice commands to navigate a website.

Principle 1: Perceivable

To meet [WCAG 2.2 Principle 1: Perceivable](#), ensure that users can recognise and interact with a website using the senses available to them. To do this, you will need to:

- Provide text alternatives (alt text) for non-text content.
- Offer transcripts for audio and video.
- Include captions for video content.
- Ensure content is logically structured and can be navigated and read by a screen reader, which also helps when stylesheets are disabled.
- Use appropriate markup for each feature (e.g., forms and data tables) to properly define relationships between content.
- Avoid using colour as the sole method to convey information or make distinctions.
- Choose text colours that contrast clearly with the background colour.
- Ensure all features remain usable when text size is increased by 200%, and that content reflows to a single column at a 400% increase.
- Avoid using images of text.
- Make your website responsive to different devices, page orientations, and preferred font sizes.
- Ensure compatibility with assistive technologies, such as marking important messages in a way that screen readers can recognise them.

Principle 2: Operable

To comply with [WCAG 2.2 Principle 2: Operable](#), you must ensure that users can access and interact with webpage content, regardless of how they choose to do so (e.g., using a keyboard or voice commands). This involves actions such as:

- Ensuring all functionality is accessible to keyboard-only users.
- Allowing users to play, pause, and stop any moving content.
- Avoiding blinking or flashing content or providing an option to disable animations.
- Providing a 'skip to content' link or equivalent navigation option.
- Using descriptive titles for pages and frames.
- Ensuring users can navigate through content in a logical order.
- Creating descriptive links so users understand where a link leads to or what downloadable content it references.
- Using meaningful headings and labels, ensuring that accessible labels match or closely resemble those used in the interface.
- Making it easy for keyboard users to see the item currently in focus, known as 'active focus.'
- Restricting the use of mouse events or dynamic interactions (like swiping or dragging) to when they are necessary or allowing users to disable them and interact differently.
- Providing options for users to disable and customise shortcut keys.
- Ensuring that interactive elements, such as buttons, are large enough and spaced adequately to make selection easy and accurate.

Principle 3: Understandable

To meet [WCAG 2.2 Principle 3: Understandable](#), you must ensure that users can comprehend content and navigate webpages successfully. This involves actions such as:

- Clearly indicating the language of the content and noting any changes in language.
- Ensuring features are consistent in appearance and behaviour, including help mechanisms.
- Providing visible and meaningful labels for all form fields, which are properly marked up.

- Making it easy for users to identify and correct errors in forms.
- Facilitating the re-entry of previously entered information into forms.
- Simplifying the login process so users don't need to remember complex information or solve problems.

Principle 4: Robust

To comply with [WCAG 2.2 Principle 4: Robust](#), you need to ensure that webpage content can be reliably interpreted by a wide range of user agents, including assistive technologies. This involves:

- Writing code that allows assistive technologies to understand the purpose of each user interface component, its current state, and any changes to it.
- Properly marking up important status messages or modal dialogs so that users are informed of their presence and purpose and can interact with them using their assistive technology.

Developing with accessibility in mind

Consider accessibility at every stage of development; having your website tested from an early stage, i.e. design reviews, wireframe reviews and/or template testing will save time and money further down the line.

Testing and continuous improvement

Testing

Carrying out your own QA testing during development will help to catch and rectify issues early on, with a more formal independent accessibility audit being carried out at the appropriate stage.

Automated Testing Tools

There are a range of single-page, free tools available for automated testing, including:

- [WAVE](#)
- [Axe](#)
- [ARC Toolkit](#)

Automated testing is quick and is helpful to identify common issues, but the accuracy of the software is limited as it:

- Will lack the ability to understand context. For example, it may not accurately assess whether alt text for an image is meaningful.
- Can generate false positives and negatives.
- Can't assess the usability of a website for people with disabilities. For instance, a tool might miss issues related to keyboard navigation, screen reader compatibility, or the ease of use for people with cognitive impairments.

Automatic accessibility checkers are valuable for quickly identifying obvious issues and for ongoing monitoring, but they should be complemented with manual testing and ideally should include user testing with people with disabilities, to ensure a truly accessible experience. For a comprehensive accessibility audit, human expertise is essential.

Manual Testing

Simple manual testing can include testing for common accessibility issues such as:

- Non-descriptive links.
- Lack of colour contrast.
- A lack of keyboard accessibility.
- Forms not marked up correctly.
- Images without meaningful alt text.

An accessibility audit should include a WCAG technical compliance audit and testing with users, who will also use assistive technologies including:

- **Screen Reader software:** Testing with popular screen readers like JAWS, NVDA, Narrator, VoiceOver, and TalkBack to ensure compatibility.
- **Keyboard Navigation:** Navigate through your site using only a keyboard to ensure all functions are accessible.
- **Speech recognition software:** Test with speech recognition software such as Dragon Naturally Speaking.
- **Screen magnifier software:** Using Windows Magnifier, Apple Zoom, or Zoomtext.

Auditing a website in full against the WCAG guidelines requires a large amount of technical expertise and is best to be carried out by an accessibility expert.

User Feedback and Engagement

Accessibility statement: Publish an accessibility statement that details your commitment to accessibility and your ongoing efforts towards compliance. [How to Write an Accessibility Statement](#)

User feedback: Regularly collect and act on feedback from users with disabilities.

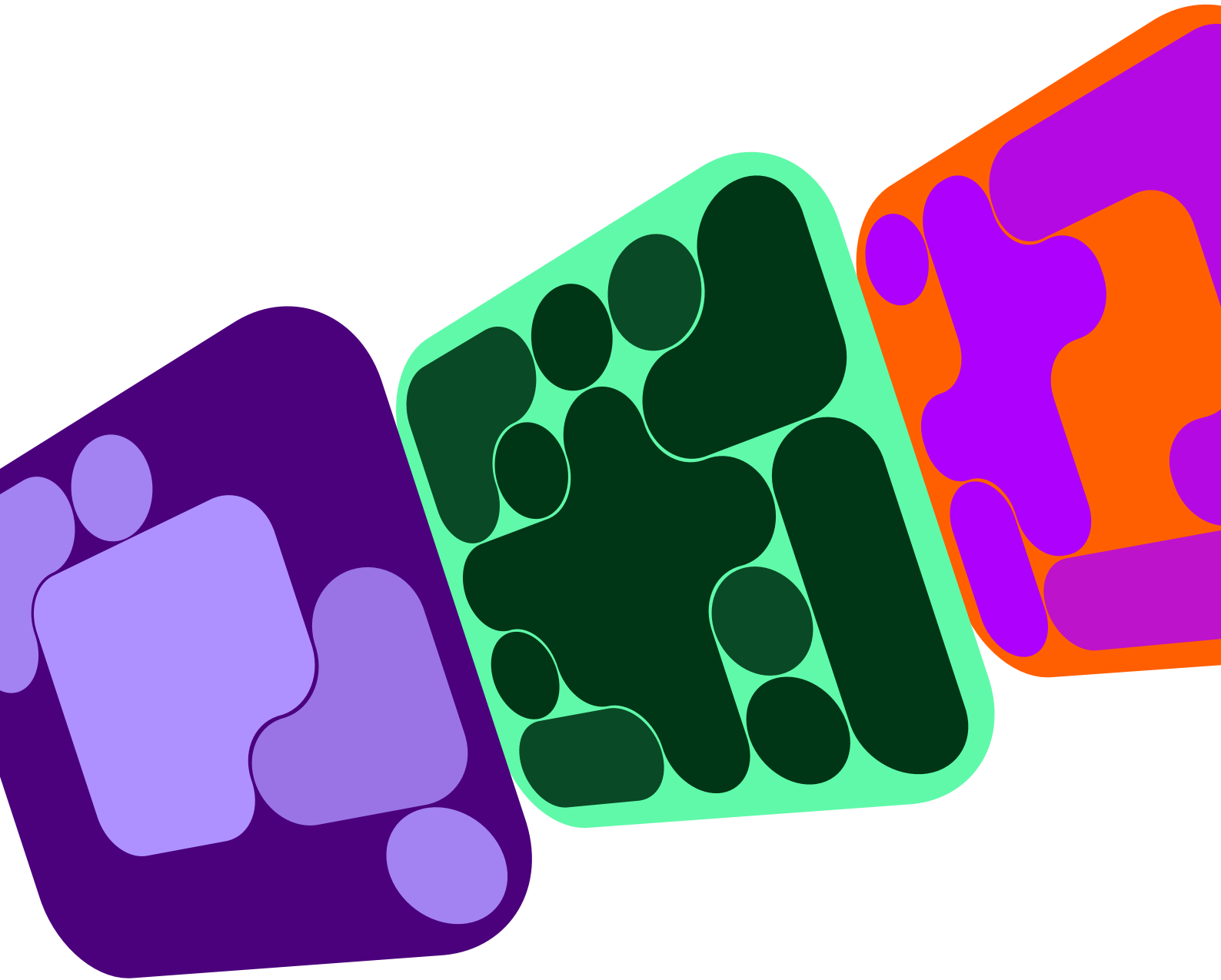
Training

Role-based accessibility training for your developers, designers, content authors, or QA testing teams to further their accessibility knowledge.

Conclusion

Building an accessible website is an ongoing process that requires dedication and continuous learning. Following these guidelines and referring to the [WCAG 2.2 success criteria](#) can help you to ensure your website is inclusive and usable for everyone. This not only helps you comply with legal requirements but also improves the user experience, reaching a broader audience.

Regular testing, user feedback, and updates are essential to maintain and improve accessibility as technology and user needs evolve.



References:

Web Content Accessibility Guidelines (WCAG) 2.2 <https://www.w3.org/TR/WCAG22/>

Government Digital Services (testing for accessibility) <https://www.gov.uk/service-manual/helping-people-to-use-your-service/testing-for-accessibility>