UserZoom

EBOOK

# Accessibility for digital experiences 101

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# Introduction

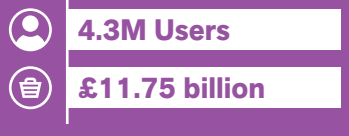
**More than 20% of people in both the UK and US have some form of disability, and these disabilities often mean that they are not fully able to use digital products.**

Despite this, accessibility tends to be overlooked when designing online experiences.

Perhaps businesses feel this adds unnecessary cost and complexity to projects--failing to consider the needs of all their users or to realize how many users may find their sites difficult to use.

From a business perspective, the failure to design for all users comes with the cost of lost opportunity. **Around one in five potential customers are being excluded if accessibility is not considered.**

Purple refers to the spending power of disabled households as the 'Purple Pound' and estimates that, in the UK, **the 4.3m users who click away from inaccessible websites have a combined spending power of £11.75 billion**.




Covid-19 is another key factor that will drive more awareness to the importance of accessibility. The impact of social distancing measures and the restrictions or closures imposed on physical spaces and services is having a profound impact on people with disabilities.

This restriction of physical spaces has forced people of all abilities online and to use digital products they've never used before. This means designers need to develop and improve digital experiences with accessibility for all at the front of their minds.

**Many of the improvements needed to make websites more accessible are simply about good UX,** which is essentially designing with the user in mind. Elements such as readable text, clear labeling and signposting, and pages that load quickly help every user of a digital product.

In this guide, we'll look at building a business case for accessibility, and we'll gather together some practical tips for designing digital products for users with a range of disabilities.

# How to get stakeholders on board with accessibility

**Accessibility has been overlooked in the past and can be an afterthought during product development. One key step is to get buy-in from key stakeholders so they understand the importance of accessibility and are prepared to allocate time and resources to it.**

As Elizabeth Chesters explains, many people simply don't understand what accessibility means:

> ***"Without a face to the problem, it's very difficult to have empathy for something you don't understand and when everything else is a priority--monetization, security, feature parity--then accessibility is usually left to be tackled once it becomes a problem, not before."***

Beyond management, it's also important that everyone working on digital projects understands the importance of accessibility and the extra effort that is sometimes required to design for all.

When they realize the impact that key changes can have on some users, this can give them the extra motivation needed to do any extra work required.

Elizabeth also advises that teams need to change their strategies to account for accessibility:

> ***"I would definitely start tackling the first problem - break down what accessibility is. Understand your users: are they mostly keyboard-only users? Are they mostly deaf users? Tackling every WCAG guideline at once or every impairment and then combinations of impairments at once is no easy task. So, prioritize just like every other piece of work."***

Here are some recommendations on what to highlight when talking to stakeholders about accessibility

# Show the size of the potential market

People with disabilities represent a large portion of the potential web audience - **around 20% of the population of the US and UK, with a spending power that can be measured in the billions.**

If your site fails to optimize for these users then you're missing out on perhaps one in five potential customers. In addition, being more accessible than your close rivals can give you a competitive advantage.

# Show the benefits of accessibility for all users


Accessibility projects don't just benefit users with disabilities, **they can improve the user experience for everyone who uses your products.**

Many accessibility improvements will make websites more usable for all. For example, content in plain English and readable text will help every visitor find key information and navigate your site with ease.

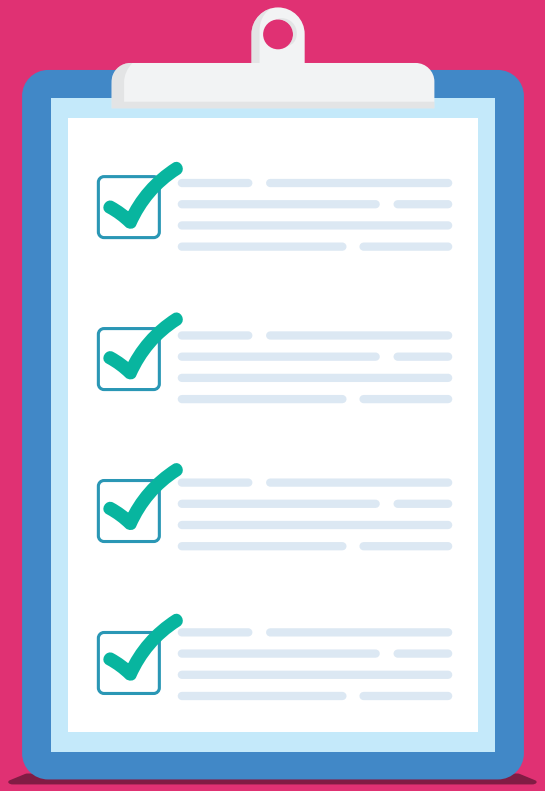
# Show the ROI of accessibility

The more you plan ahead of time to ensure that your digital product is accessible, the more money you can save by not having to fix things you thought were great, but ended up being an accessibility issue.

You want to increase your customer value and save more money than you spend on retaining those customers. **Since so many sites are inaccessible, having an accessible site already gives you a competitive edge.**

Proactively building accessibility into your process means **you don't need to spend time and money fixing problems after products have launched.**

# Show the timeframe for improvements



If you are still early in the development process, accessibility can be seamlessly built into your current roadmap, which shouldn't add too much extra time.

For larger sites that need accessibility work re-done, this can be time-consuming. However **there are tools that can help you audit your site quickly, and some accessibility fixes don't have to be complicated.** There are about 50 specific 'success criteria' to meet to be AA compliant (the medium level of accessibility), which is the industry standard recommendation.

You can take this in stages, reaching the minimum requirements of level A issues first, before moving on to the stricter level AA issues to meet industry standards for best practices.

**Once you make your site accessible, you will have far less work to do in the future** and this helps maintain its accessibility in response to future changes in tech and research.

# How to make your digital experience accessible

**First of all, it's important to consider the range of disabilities that exist, and the different user needs to account for.**

Some disabilities are temporary, others are permanent. Temporary disabilities may include users who have broken an arm and have trouble with using a mouse as they normally would.

Permanent disabilities vary widely. There are auditory, cognitive, neurological, or physical disabilities that need to be considered, and they can require different solutions.

**Accessibility needs to be included in the planning and design phase so that it's considered throughout the development lifecycle.** Mindset is also important, rather than seeing accessibility as a constraint on creativity when designing, instead think of it as creating a broader experience that all users can enjoy.

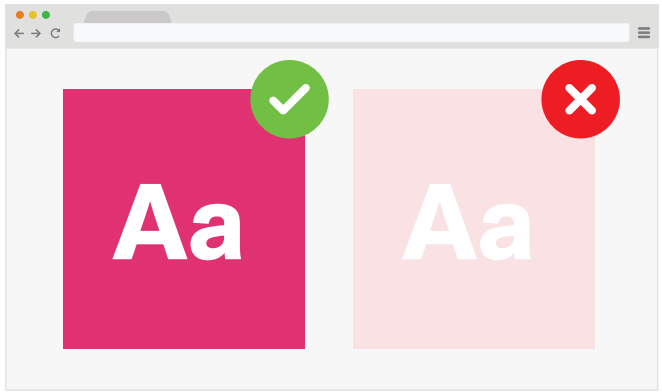
Here are some key considerations to think about right from the beginning of the design process.

1

## Contrast

Poor color contrast in design is one of the most common accessibility issues.

Users need to be able to pick out key elements on pages. For disabled users, certain color schemes and layouts can make pages harder to understand, so it's essential that colors pass the contrast check.

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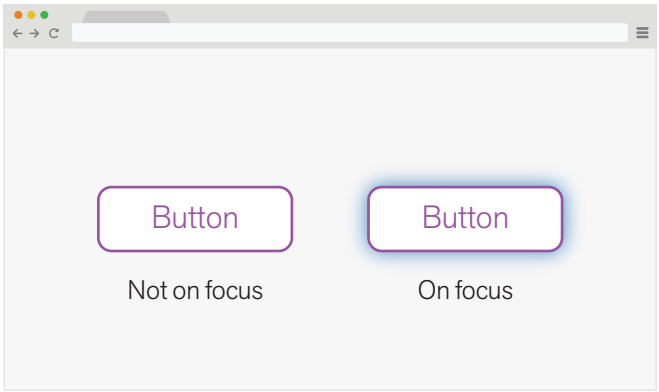
## Focus state

A focus state, such as a blue outline on a selected form field, needs to be noticeable so that users can see where they are on a page.

This can be designed differently for users, but it's important that if you replace the blue outlines, the focus state needs to stand out clearly.



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## Content hierarchy

It's important to use semantic HTML5 markup. This may not be in every UX designer's job description, but a working knowledge of this will help even if you're not working directly with the HTML.

When a screen reader scans a web page, it gets information about the content and page structure. JavaScript is often used, but keep in mind that CSS styling and JavaScript are ignored by a screen reader. It's going in page order as it reads to the user.


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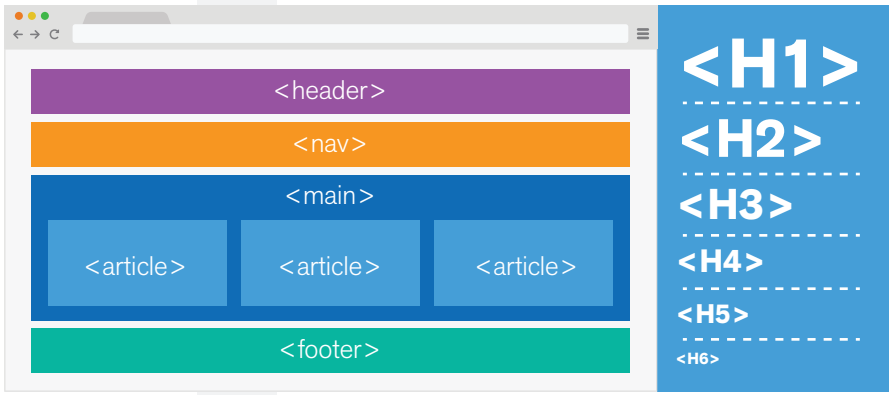
## HTML markup

It can be best to stick to the default HTML tags and headings. When you inspect web pages, you see tags like <header>, <nav>, <main>, <article>, <footer>, and more. Tables should contain actual table data, not used as a way to layout a page.

Using tags improperly will confuse both the user and screen reader because it follows a particular way to read the elements on a web page.

Headings are very important as well. There are six header tags, and this range gives the user an idea of the content hierarchy. You may find that It helps to indicate this in your mockups.




Use just one H1 per page, which should mainly match the page title. This tells the user what the content is about. It's important to be consistent with heading levels, so H2 should be more important than H3, and so on.

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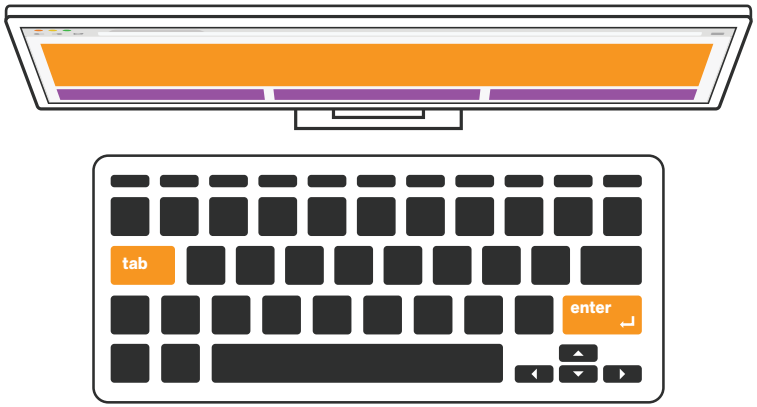
## Tabbing and keyboard navigation

While many users navigate through mouses and touchpads, by default all actions users may need to perform on your site should be able to be carried out by keyboard only.

Users with motor disabilities will navigate with the Tab key. Links and buttons will be accessed using the Enter key, which is why the focus state is important - the user will need to see where they currently are.

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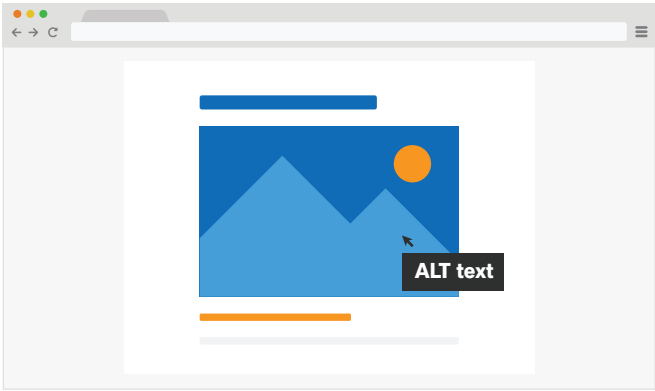
## ALT text

For visually impaired users, images that are important to the page need ALT text that explains to the user the content of the image.

It's important to note that if there is missing ALT text, the screen reader will read the image's URL, which isn't a good experience.



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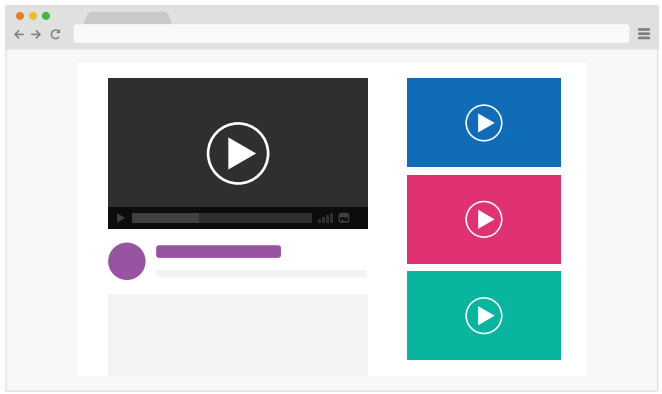
## Accessible video

Users need a way to quickly pause videos and animations and for those who rely on reading, closed captioning is necessary for them to get the full experience. If a transcript is available, that's a great feature to have.

Videos that play automatically can be problematic to some users, so it's important to give the user controls for the video.



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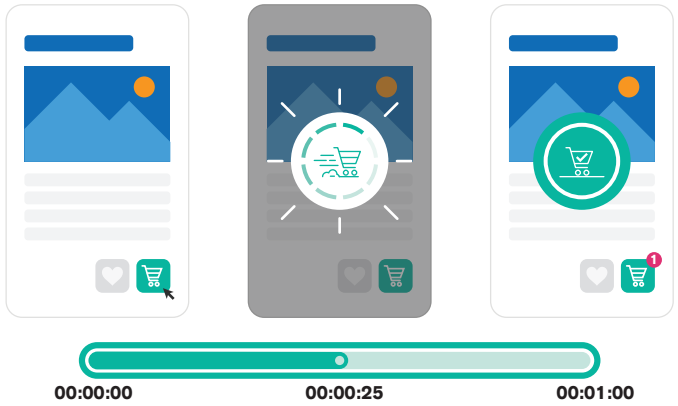
## Animations

Animations can be designed to be accessible and can even enhance the experience and benefit accessibility. For example, they can help convey that an action was successful, such as adding items to the cart.

Care should be taken when designing animations - it's important to think about the relative size of movement to the screen, across different device sizes. Bold animations that cover a larger portion of the screen may be an unpleasant experience for some users.



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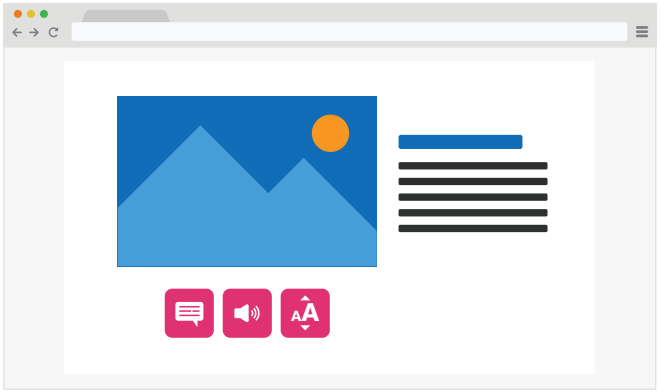
## Provide text alternatives

There should be a text-based alternative for any visual content, which means including alt text to describe images and including transcripts for videos.

This allows users with screen readers to parse through the information and read what is on the page out loud, which is essential to visually impaired users. It also means users can adjust the font size to make it easier to read or convert text into another format entirely, such as braille.



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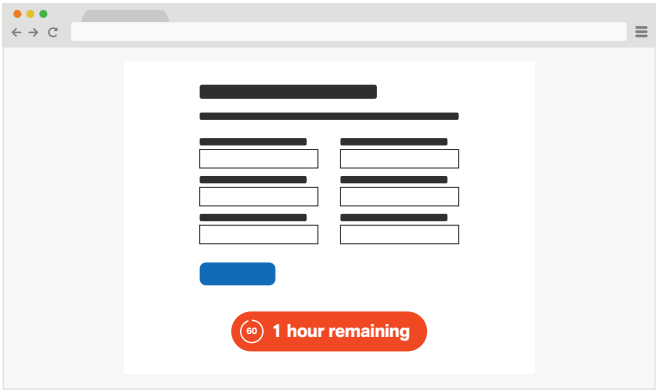
## Give users time to complete tasks

It takes different people different amounts of time to complete a task, so let users extend the time limit, or don't have a limit at all for time-sensitive content unless it is absolutely necessary.

Time-sensitive content could be automatic browser updates, or timers while you book hotels or concert tickets. Research suggests that providing 10 times the normal time to respond is enough time for most users.



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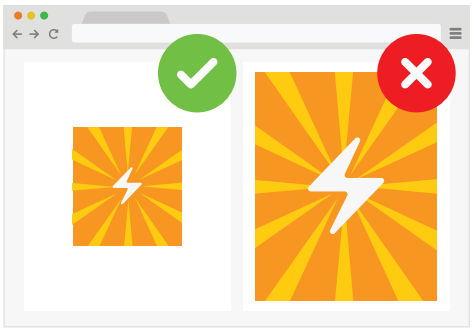
## Be careful with flashing visuals

People can be sensitive to flashing visuals, even if it's just for one or two seconds. The general rule of thumb is to not introduce visuals that flash more than three times in a second or take up a 10-degree angle of viewing.

Reducing the size of the flashing content can help reduce this, as well as providing a warning and a way to control the flashing content before it starts.



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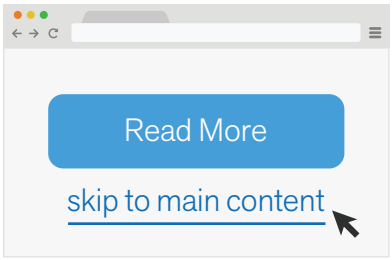
## Labeling

The user should be able to tell their location on your website at any given time. The best way to achieve this is to properly label your code for page titles, headings, labels, input fields, and to make the purpose of links clear.

A common problem, as Elizabeth Chesters explains, is that sites often use the same labels for links, such as 'click here' or 'read more':

***"If I can't see which text the 'read more' refers to, then I have no idea what I'm reading more about! If I'm a screen reader user I can navigate a page quickly through a list of links, meaning I will see a list of 'read more' links. Clicking on any of these is basically a game of link roulette!"***

Screen readers go through content in a linear way, so include a 'skip to main content' link so the user doesn't need to hear the entire menu read out at the top of every page.



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## Input modalities

In addition to having your site accessible by a keyboard, it should also be accessible by a pointer device, like a touch screen with a stylus.

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## Ensure your site remains compatible

Technology is always changing, and you need to try and keep up with conventions and standards to ensure your website remains accessible.

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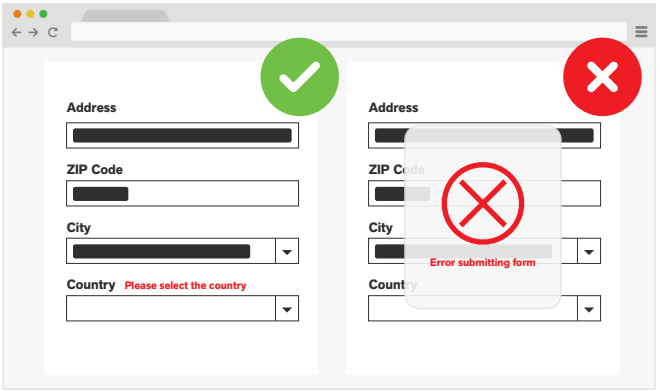
## Input assistance

If you're giving users an error, make sure they know what it means and how to fix it. Error messages should be specific, such as 'Please select a country' instead of 'Error submitting form'.

When you highlight the fields that had errors, use visual cues like icons and written instructions instead of just color to show where the error was and how to fix it. Most importantly, if the user does encounter an error, make sure they can recover from it.



# Accessibility compliance guidelines

**Ready-made accessibility guidelines provide a useful structure for accessibility improvements and provide a roadmap towards being truly accessible.**

In the US, government and federally funded websites are required to be Section 508 Compliant. The rest of the world follows the Web Content Accessibility Guidelines (WCAG) 2.1 which is a detailed list of accessibility issues to look for, and how to fix them.

The WCAG has 13 guidelines, and three different levels of accessibility, A, AA, and AAA compliance, and have a clear set of goals to aim for.

Many potential issues can be scanned automatically, such as missing alt text on images, but **it's important to have human input and to test your site with disabled users to achieve the higher levels of accessibility.**

# Testing your website for accessibility

**First, you need to consider what disabilities to include in your usability testing.**

The web is inherently visual so you need to have some participants with visual disabilities – blind, low vision, color blind, etc.

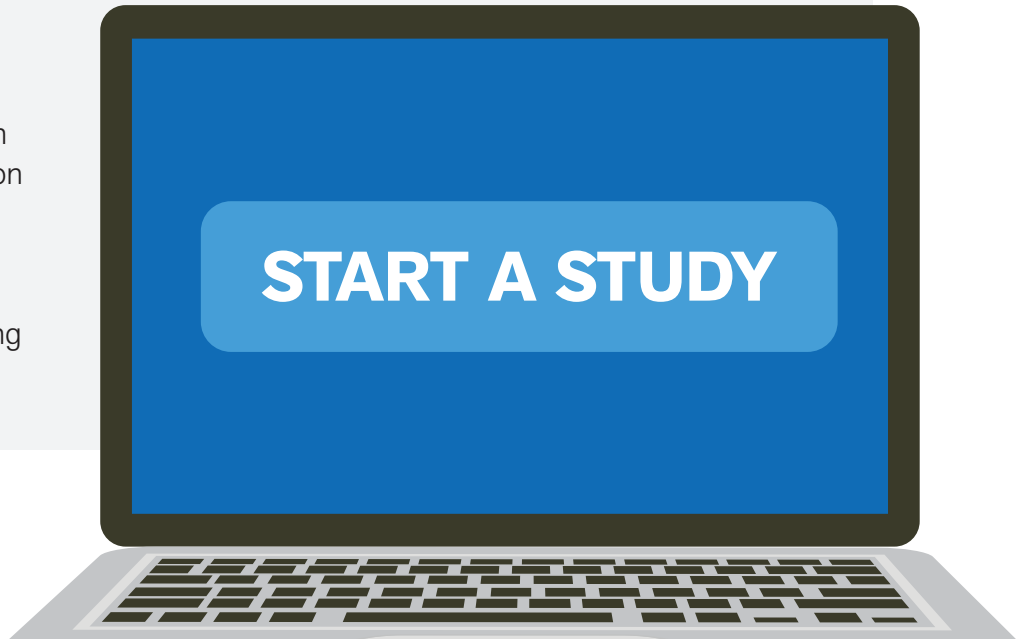
Since websites require user interaction in the form of linking, scrolling, and filling in forms, it's important to include some people who have difficulty with fine motor control and/or those who cannot use a mouse or other input device. You'll want to learn how they use your site, including all navigation and form entry using only their keyboard.

Other disabilities you might want to consider are hearing impaired, especially if your site uses audio, and people with cognitive impairments that can tax perception and short-term memory.

The broad categories of disabilities are:

- Vision (blindness, low vision, color blindness)
- Hearing (deaf or hard of hearing)
- Speech and voice-related
- Manual dexterity (e.g. unable to use a mouse)
- Mobility (wheelchair users)
- Cognitive (dyslexia and autism)

The examples we look at here are focused mainly on blind and low vision participants, but many lessons are applicable to accessibility testing as a whole.



# Remote moderated accessibility testing

If you can conduct in-person moderated research with people with disabilities, that's great, but this involves logistical challenges. Navigating the physical world can be difficult for participants with disabilities and is further complicated by Covid-19.

This means **remote 1:1 sessions, where participants are using their own computers and their own assistive technology, can offer valuable insights.**

Remote accessibility task-based studies are similar to the usual remote studies, but with some additional considerations.

Here are some best practices for conducting accessibility tests

## 1 Use smaller sample sizes

Smaller sample sizes are more cost-effective and efficient. It can also be difficult to find many people who fit your test criteria.

## 2 Use a two-person team

A two-person team helps increase efficiency and productivity. One person can act as the moderator whose main role is to focus on the participant. The second can act as tech support and should be someone who understands, oversees and supports the technology used during the session.

## 3 Use fewer tasks

It can help to really focus on a few key tasks, as people who rely on assistive technologies, such as a screen reader often require more time to complete the tasks.

## 4 Carefully define your audience

The user profiles or personas you create for testing also apply to people with disabilities, but you need to give some consideration to the types of disabilities you need to test for (e.g. not all vision-impaired users are blind).

## 5 Get help with recruiting

It can help to find a recruiting partner that specializes in recruiting participants with disabilities, as trying to find participants through regular channels can be timely and inefficient.

## 6 Allocate time for two meetings

Allocate budget and project timeline to include two separate meetings with the participants: a tech check and the actual test session. This will reduce the likelihood that significant technical issues will occur during the main test session.

# Tips for designing for older users

According to the World Health Organization, by 2050, nearly two billion people across the world are expected to be over 60 years old. Older users haven't grown up with the internet and web technology, though many have become regular web adopters.

There isn't a one size fits all approach since aging is different for everyone, but there are some common things to design for.

## 1 Content is key

Make sure that your content is well understood by everyone. Certain age groups may not be familiar with certain terms and acronyms. Be mindful of unnecessary jargon that could potentially confuse users.

## 2 Make it click (and scroll) for your users

To make sure the experience is as seamless as possible, make sure that clickable links and elements have enough padding and have a large enough minimum size.

Scrollbars can cause issues with users that have a motor skill impairment so they should be easy to interact with. The option to click the arrows, click within the draggable portion of the page or area, scroll wheel (if applicable), or use the up and down arrow keys on the keyboard.

## 3 Enjoy the longer attention span

Older users have a long attention span, persistence, and are thorough when exploring your website or product, so provide them with the most efficient way to explore the content.

Keep in mind that the pace of completing a task might be longer. Things like timeouts should be planned out accordingly. You don't want to timeout on a user that is actually interacting with the page content.

## 4 Typography

Text readability will help the web experience. Make sure your content is broken into shorter sections with whitespace so there is contrast and so users aren't overwhelmed. It needs to be readable and easy to interact with.

Testing how things look on a lower resolution monitor also helps. Users have different preferences and access, not all will have the latest and greatest display.

## 5 Color considerations

Color vision changes over time. Because of this, it's important to pay attention to contrast ratios with the text color and the background. Some may find that they have a hard time distinguishing between similar colors.

Remind your users where they have been. Make sure there is a clear distinction between links and visited links.

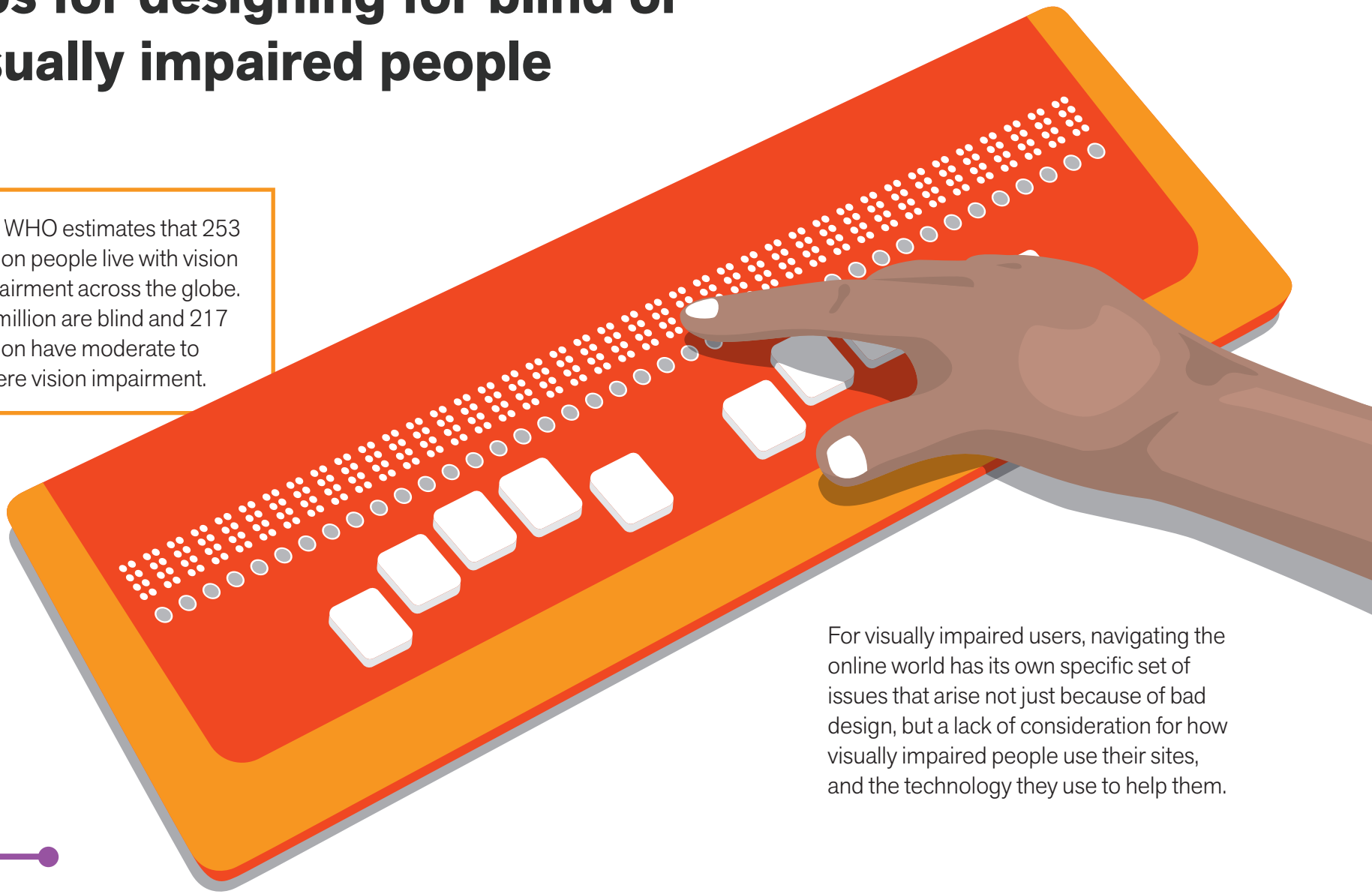
## 6 Audio considerations

A large proportion of people over 65 have some form of hearing loss, and there's wide variability among audio limitations and this impacts how users consume audio content.

It's important to think about audio content. If you're designing a UI, think about volume control and the settings that go along with it. Most users with hearing loss know how to accommodate, but it's important to provide subtitles/transcripts with your audio content.

# Tips for designing for blind or visually impaired people

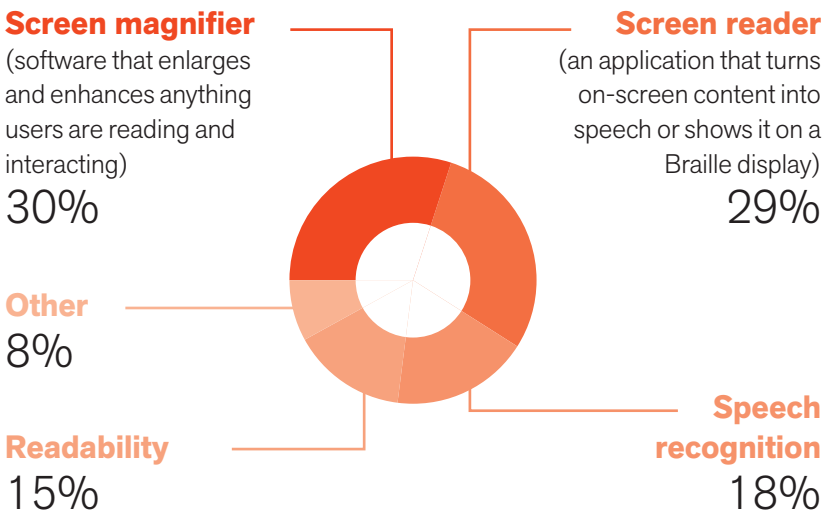
The WHO estimates that 253 million people live with vision impairment across the globe. 36 million are blind and 217 million have moderate to severe vision impairment.



For visually impaired users, navigating the online world has its own specific set of issues that arise not just because of bad design, but a lack of consideration for how visually impaired people use their sites, and the technology they use to help them.

## 1 Be aware of assistive technology

Many blind or visually impaired people will use assistive technology, with the following the most popular according to a 2016 survey:




The survey also found that users are browsing with various combinations of browsers and assistive technology, so this presents designers looking to optimize for accessibility with a range of tools to explore when testing.

## 2 Understand the common issues for visually impaired web users

According to Andreas Savva, an accessibility consultant at a leading charity, the most common issues for blind and partially sighted people are:

- Areas not accessible via the screen reader
- Page content not structured with headings
- Headings do not follow a logical sequence
- Images without ALT text
- Inputs without associated labels
- Links without accessible description
- Buttons without accessible description
- Interactive elements not properly marked using the appropriate HTML element

## 3 Design for people with color blindness

There are a few approaches that can be used to avoid problems for people with color blindness on the web.

- Avoid color combinations that cause avoidable problems (e.g. green with red).
- Ensure that information conveyed by colors is available in other visual ways
- Use high contrast between the background color and text.
- Ensure that information conveyed by colors is available in other visual ways
- Interactive elements, such as links, should not be identified relying on color only
- Form messages (success or error) should not rely on color only
- Required form elements being marked in red can be problematic. Instead, mark the required field with an asterisk (*) and have a message at the top of the form indicating that fields marked with an asterisk are required
- Graphs can be filled using color and texture
- Text over background images can be problematic, as part of the image or the entire image may not have sufficient contrast in relation to the text color

## 4 Write content that works best with screen readers

The same principles that apply to writing clear and concise copy for the web also apply to writing content that can easily be translated by a screen reader.

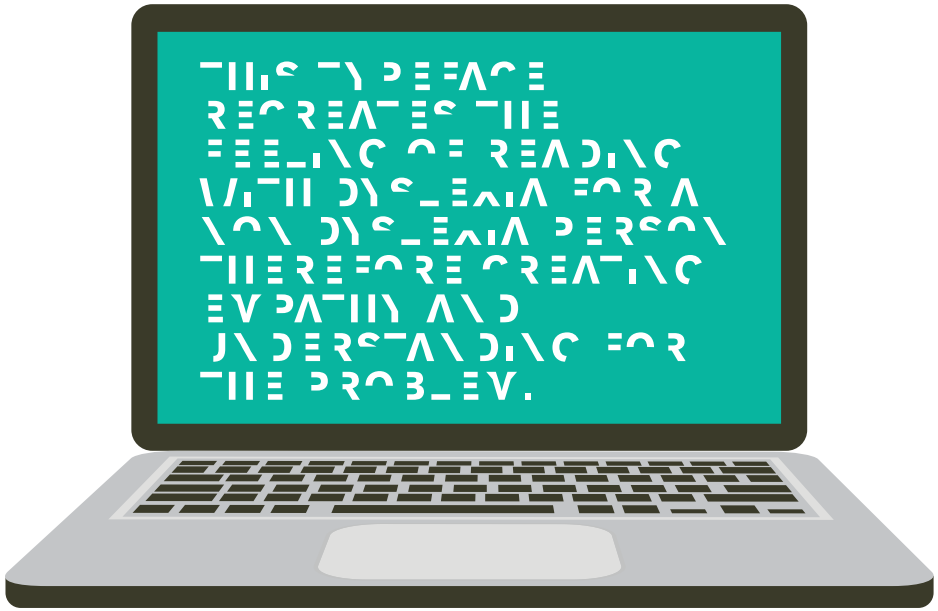
Some issues relate to words that have the same spelling but different pronunciations. For example, we tie a bow or take a bow. However, the more you make your content accessible for people with visual impairments, the less accessible you may be making it for other people. The key is to write content that works well for everyone.

Use correct punctuation, spelling, and grammar, use standard conventions for acronyms and abbreviations, and use words that are appropriate for your audience.

# Tips for designing for people with dyslexia

Dyslexia is a condition that affects people's ability to learn, read, and spell. There are quite a few aids available to help with dyslexia, including text-to-speech and screen reader software. There are also tools to help people with creating documents, such as voice recognition software.

Here are a few ways to make your website more usable for people with dyslexia, whether they're using a digital aid or not.



## 1 Structure your website properly

Here are some general tips on structure:

- Use a sans serif typeface (such as Arial) as these font types have fewer squiggly bits to create problems
- Text size should be between 12pt and 14pt
- Italics are best avoided, as this makes words run together. Use bold for emphasis instead. Use left-justified text
- Aim to have 60-70 characters per line
- Ensure the site navigation is easy to use. If your navigation relies on a search tool, the navigation structure is too complex
- Include a site map as a safety net for people who would rather not use search
- Icons can be very useful in providing complementary visual signposts for text navigation and section headings

## 2 Make your content readable

As we've outlined in previous sections of this report, the formatting and presentation of content help people with dyslexia, and many other disabilities.

Also, a reader with dyslexia is more likely to recognize the shape of a familiar word. Double negatives often need a double-take from everyone and are best avoided when writing with dyslexia in mind.

## 3 Choose your color scheme carefully

Colour schemes can make a big difference for people with dyslexia. A white background can be too dazzling, so an off-white, pale blue or cream background is usually recommended, along with dark-colored text to provide good contrast.

Everyone has different preferences though. Given that no one size fits all, providing a style sheet selector tool with several options can be a tactic to satisfy everyone.

## 4 Time and motion

It takes longer for a person with dyslexia to decode words and to understand the content, so the speed they read at is generally going to be slower. If there is content on a screen that changes automatically, such as a carousel, then you must allow enough time for someone to read it. Alternatively, let users change the display manually when they have had enough time to read the content.

## 5 Provide alternative formats

One myth around accessibility is that content needs to be delivered as plain, boring text with no bells or whistles. That is an outdated idea, but especially for people with dyslexia, nothing could be further from the truth.

Given the choice, many would rather have content like audio, video, or even simple infographics rather than text. If you have the resources to deliver content in multiple formats, it is recommended.

# Tools and resources for improving online accessibility

Here is a range of useful tools, resources, and guides to help you understand accessibility issues and improve the accessibility of your digital product.


## Accessibility guidelines

### WCAG 2.0

The Web Content Accessibility Guidelines, published by W3C, are the most notable and comprehensive set of web accessibility guidelines. Some countries, including Canada, Australia and the EU, have a legal requirement for websites to meet WCAG guidelines. The WCAG 2.0 checklist can help in making sure that your website meets all of the requirements, and is a useful reference point.

### BS 8878

The British Standard 8878 is an accessibility code of practice designed to help web developers, project managers and production teams develop accessible products.

## Accessibility spot-check tools

There's a wide range of automated tools available online that will help you quickly check specific elements of your website for accessibility.

**WAVE web accessibility evaluation tool**
This tool will detect potential accessibility issues across your site as a whole, as well as highlighting the areas where it does well.

**WebAIM quick reference**
A quick reference list of checklists, tools, and simple tests you can carry out yourself.

**Colour contrast check**
Check the contrast between any two colors for its accessibility to visually impaired and color-blind users.

**Accessibility viewer**
An inspection tool that displays the accessibility API information that your browser conveys to assistive technology such as screen readers.

**SortSite Desktop**
A downloadable website testing tool that will check your site for issues such as compliance with W3C standards, accessibility, and usability red flags.

As a general rule, these tools should be used for a quick, surface-level check, and **they are no substitute for proper accessibility testing with users.**

UserZoom

# Learn more about creating accessible experiences for everyone

Get in touch