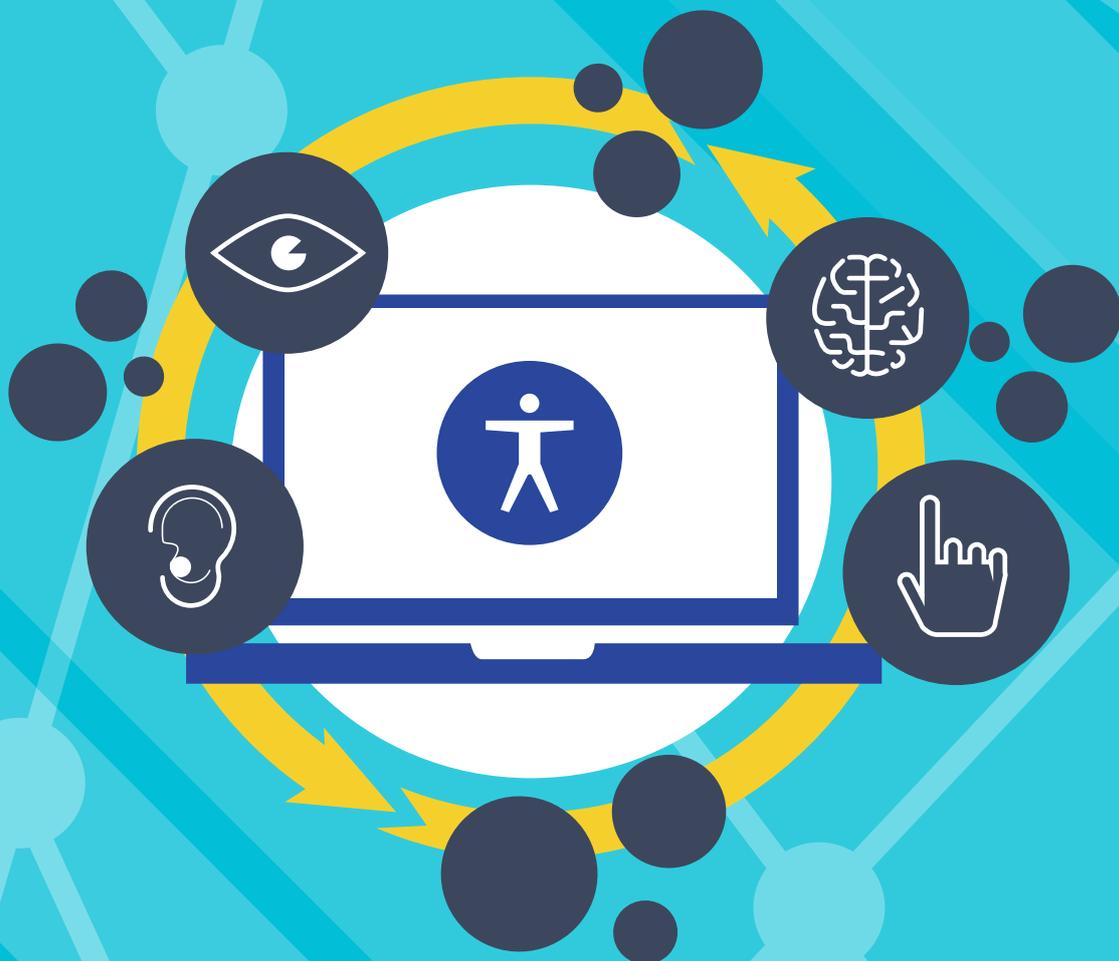# The All-In-One Digital Accessibility E-Book

## Your Guide to Web Accessibility Success
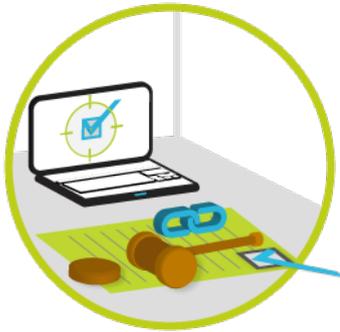
## Siteimprove

# **Accessibility Topics**
## Covered in This E-Book

# The Basics of Web Accessibility

As more web professionals recognize the importance of accessibility, the demand for basic accessibility knowledge grows.

## What Is Web Accessibility and Why Is It Important to the Success of My Website?

Web accessibility refers to the inclusive practice of making websites usable by people of all abilities and disabilities. When sites are correctly designed, developed, and edited, all users can have equal access to information and functionality.

## Which Standards Should I Use?

Depending on your location, there may be various sets of accessibility standards you will need to follow. Fortunately, the World Wide Web Consortium (W3C) has a comprehensive list called WCAG 2.0, which has been widely adopted and is the base set of guidelines for most other standards. Below are a few examples of location-specific standards to look at:

- The European Commission's Web Accessibility Policy
- Web Standards for the Government of Canada

## What Are the Benefits of Website Accessible Coding Standards?

There are quite a few benefits to coding accessibility into your website that go beyond just meeting the minimum accessibility laws:

### Social Responsibility

Accessibility is about allowing people with and without disabilities to have access to the information they want and need. As our population changes, the people responsible for generating communication channels must be aware of all users.

### A Larger Customer Base

With reports of one in five Web users claiming some sort of disability, 20% of the population is just too large of a group to ignore. If you go the extra steps to accommodate this group, you will be certain of a loyal group of customers.

### Efficient Code

Once you've developed a clean, accessible code base, you will be amazed at the benefits. Efficient code can help improve:

- Website maintenance
- Device compatibility
- Faster page loading
- Search engine optimization (SEO)

## What Are the "Nuts And Bolts" of Web Accessibility?

We receive many accessibility questions that are more technical in nature, because the standards can get pretty complex. Some of the most important coding practices are quite simple to control in your different coding environments, for example:

- Semantic Markup
- Page Titles
- Headings
- Graphics
- Links
- Tables and Forms

Addressing these areas adds an immense amount of usability to your overall site and provides a solid framework to build upon.

## What Is Assistive Technology?

When optimizing your website to accommodate When optimizing your website for users with disabilities, it is important to understand what kind of issues they may encounter depending on the type of assistive technology they may be using.

When talking about assistive devices that aid visitors with disabilities, the first—and sometimes only—device that comes to people's mind is a screen reader. (It is a tool that reads pages aloud to people with low vision or severe dyslexia). While screen readers are an extremely important assistive device, it is by no means the only device. Other assistive technologies that support a wide range of disabilities include:

- Screen readers
- Windows and Mac Accessibility features
- Color contrast analyzers
- Toolbars/extensions/plugins
- Mobile devices

# Why Web Accessibility Should Be a Priority Now: 3 Stats to Prove It

Aside from the potential costs of waiting to implement accessibility on your website, there are many other reasons why web teams should get started on accessibility initiatives now. Web accessibility refers to the inclusive practice of making websites available to people of all abilities and disabilities.

Whether web accessibility has been on your mind for a while or is completely new to you, here are three stats to prove why it should be a top priority:

## 1. The Aging Population Is Predicted to Triple to 1.5 Billion by 2050

As the population ages through 2050, it will only become more challenging for people to access what they need on the internet, making web accessibility even more important. In fact, around 80 million people in the European Union (EU) currently have a disability. As the EU's population ages, the number of people with disabilities or age-related internet access difficulties is expected to increase to 120 million by 2020. In the U.S., there are currently about 56.7 million Americans with a disability, and by 2060 the number of people 65 or older is expected to double to 98 million. In the Australia, approximately 20% of people have a disability, and by 2042, the number of people age 65 or older is expected to reach 6.2 million (about 25% of the population).

So what does this all mean? It means if your website is inaccessible, you are potentially excluding 20% of the population from the conversation on your site. This percentage is only going to grow. Between being accessible for your visitors now and thinking about your future audience, implementing web accessibility initiatives should be a priority now.

## 2. 23% of Web Accessibility-Related Litigation and Settlements Since 2000 Happened in the Past Three Years

While this stat is specific to U.S.-related litigation and settlements through the end of 2015, it doesn't mean that accessibility-related legislation isn't on the rise throughout the world.

From the European Commission and the Equality Act 2010 in the UK to the Americans with Disabilities Act (ADA) and Accessibility for Ontarians with Disabilities Act (AODA), legislation and government web accessibility initiatives are most likely going to become increasingly important and more stringent over time.

And while not all web accessibility-related incidents end up in lawsuits, it's better to be safe than sorry.

## 3. Mobile Screen Reader Usage Has Increased by 70%

From 2009 to 2014, mobile screen reader usage increased from 12% to 82%, a huge increase in just five years. There is a lot of talk about optimizing content for mobile and providing the best user experience possible as mobile device usage increases. The same holds true for mobile accessibility.

If the mobile screen reader usage has increased this much, it will likely continue to rise. That's why optimizing your content for mobile accessibility and a good user experience matters now.

For example, if you create a landing page with a form, you should test the content on a mobile device. If the form is on the right-hand side of the page on a desktop, it most likely is going to be above or below the content on a mobile device. Regardless of whether someone is using a screen reader, it could be confusing to state "fill out the form on the right" when it may be above or below. You should focus on ensuring the content and form is easy to find and fill out, regardless of device or disability.

# Cognitive Disabilities and Web Accessibility

While sight and hearing disabilities are talked about most often when it comes to web accessibility, those with cognitive disabilities actually represent the largest number of computer users with disabilities, according to the National Center on Disability and Access to Education.

So why aren't we more aware of cognitive disabilities? Because these types of disabilities contain a wide range of nuanced conditions and an even wider range of severity, so it's difficult to present a comprehensive set of standards to which web developers should comply.

Let's break down some of the different aspects of cognitive disorders. First:

## What Are Cognitive Disabilities?

Simply put, cognitive disabilities are any and all conditions or impairments that inhibit a person's mental process. The variations in type and severity are too great to list here, but many of these conditions are ones that we see and experience on a daily basis.

## Functional vs. Clinical Cognitive Disorders

Cognitive disorders may be classified in two different ways: functional or clinical. Functional disorders focus more on a person's abilities and which trials they face in their day-to-day lives. Some examples of functional disabilities affect the following:

- Memory
- Attention
- Comprehension

Clinical disorders vary widely in severity and how an individual may function. Examples of clinical disorders include:

- Autism
- Traumatic Brain Injury (TBI)
- Dyslexia

As web developers, it's better to think about cognitive disorders from a purely functional standpoint. Why? For one simple reason: developers can focus on the barriers, not the diagnosis. By thinking about and presenting solutions, they can focus on improving our user's experience.

## Ideas for Cognitive Web Accessibility

By following good design, content, and coding practices, you can improve the user experience for many people with cognitive disorders. We often talk about coding and specific things like semantic markup, and while you need to continue to think about these techniques, you should also think about what is showing up on the screen.

When considering visual styles as well as content organization, you can improve the user experience by:

- Using proper headings and lists
- Using more white space in your design
- "Chunking" content into more manageable pieces
- Making forms manageable by breaking them into multiple, sequential steps
- Providing a logical reading order
- Being consistent with fonts, colors, and locations of page elements
- Offering keyboard access
- Consider offering content in multiple formats

# 3 Easy Ways to Improve Your Website's Accessibility
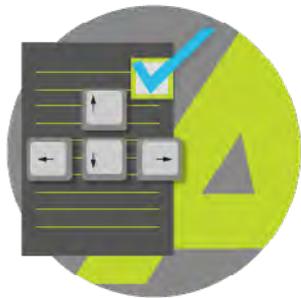
It can be difficult to know where to start if you have not implemented web accessibility before. Where do you begin and how do you finish? Some areas require time and a targeted effort whilst there are some ways in which you can improve your website accessibility right away, and at the same time conform with three important criteria in the WCAG (Web Content Accessibility Guidelines) . Here follow three easy website accessibility fixes:

## 1. Give Your Web Pages Meaningful Titles

The first thing a screen reader encounters when a web page is opened is the page title. The title is an important element on a page for screen reader users, because it informs them of the content they can expect to find on the page. By providing your web pages with meaningful titles you are in conformance with WCAG success criterion 2.4.2.

By providing all your web pages with a meaningful page title, you help both users and search engines. Use an automated tool that can easily identify pages with missing titles for you. Make sure to provide these pages with a title, and also go through a selection of your existing page titles to assess whether they are descriptive enough for the content on the page.

## 2. Provide Support for Users Who Cannot Use a Computer Mouse

Create a link that is present on all your web Create a "Skip to Main Content" link on all your web pages as the first element on the page to skip repeating elements such as a global menu. This way users with visual impairments, motor impairments, and other types of users using a screen reader or who navigate from the keyboard alone can skip repeated blocks of information.

You can hide the link visually on the page if you like, as long as it's still visible when it receives focus. (e.g. highlighted when a user presses the "Tab" button). By helping users who cannot use a computer mouse, you are in conformance with WCAG success criterion 2.4.1.

## 3. Review the Images on Your Main Pages

Go through your main page and template pages and assess whether the images should have alternative texts. The code for alternative text (alt="") must always be present for any image. However, if the image is decorative, the alt text field can be left empty. If the image conveys information that you would not know without seeing the image, then this information should be written as the alternative text. If the image is a link, then describe the destination where the link takes you. When working on alternative texts for images, you are conforming with an essential part of WCAG success criterion 1.1.1.

# Why "Click Here" Is a Bad Thing

When it comes to directing visitors on your website, one of the most persistent accessibility issues is the dreaded "Click Here" or "Read More" link. In fact, telling users to "Read More" can often result in less clicks for assistive technology users.

So how does this happen? Why are "Click Here" and "Read More" such a problem? Accessibility consultants, content strategists, and SEO experts all agree that there is a better way.

## Context Is Key

There is a concept that gets to the heart of this issue. It's context. Context should allow your user to determine the intent of the link is as it stands alone. Think of your link text as a signpost on the information highway. If all the signs read the same, they will not be helpful.

Let's think of an exit sign. After veering off the road a couple of times and not actually reaching your destination, you'll return to the road and keep trying only for so long. Then you'll be upset, confused, or even angry the rest of your trip. Needless to say, you won't ever travel that route again.

Back to your pages. Now visually, "Click Here" text usually might make sense; there are clues that allow your visitors to understand where the link will take them. But let's take this a step further. A user who relies on screen reading technology can navigate a web page by generating a list of links, then scanning that list to determine where they want to go next. What if all those signposts read the same? That leads to one confused visitor.

## Know the Rule

You can see that the intent of this particular Web Content Accessibility Guidelines criterion is based on the concept of context. 2.4.4 Link Purpose (In Context): The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.

# 13 Tips for Improving Your Website for Mobile Users While Ensuring Accessibility

One of the main principles of accessibility optimization is to ensure platform independence, which makes the website usable on many different platforms. If your website is conforming to Web Content Accessibility Guidelines, you will find that your accessibility for mobile devices is established to a large extent as well.

A number of principles are relevant when using best practices for web accessibility on mobile platforms. Here are 13 tips on how to fix the most common problems faced by mobile web users.

## Design

### 1. Layout
Design in a way that makes the website work when users can only see a small part of the screen at a time, when they are browsing with mobile units. Some disabled users use zooming software to help them read the page, which creates the same issues imposed by the small screen on many smart phones. Avoid a situation where the user has to scroll both vertically and horizontally, and avoid images that are larger than the screen.

### 2. Use of Color
It is important to avoid creating features or giving information solely based on the user's ability to see colors. Some users are unable to see or differentiate between certain colors. It's also important to make sure the contrast between the background and the text is sufficiently high.

## Development

### 3. Following standards
Make sure to follow the standards of the format you publish in. Having clean, validated code helps ensure that the content is shown in a consistent manner across different platforms and enables assistive technologies to render content in a meaningful way to users.

### 4. Order of Content
Make sure content is wrapped in a sensible way and that content makes sense from the document order and when linearized. This ensures the content order is meaningful regardless of how the user accesses it and how much their device supports the CSS. Tables don't usually work well on small screens. Consider alternative ways to give tabular content.

### 5. Navigation
Make sure links and forms are navigable when tabbing through content.

### 6. Plugins
Avoid requiring users to install plugins to be able to use content. There might be situations where these are not supported or do not work with certain types of assistive technologies.

### 7. Sound and Warnings
Avoid giving warnings and other significant information by the use of sound. Some users are not able to hear this, either due to a hearing impairment or because they are in a location with too much background noise.

### 8. Entering Data
It may be difficult for some users to enter information by the use of the limited keyboard available on a mobile unit. Make sure to use radio buttons, checkboxes, and combo boxes when user input is needed. This way, users have to enter as little text as possible via the keyboard.

When users are entering data, make sure to prompt them and help them when they make mistakes. Make sure to program this in a way that allows it to work with voice-to-text.

### 9. Page Titles

Give each web page a short and descriptive title. This helps users know that they are on the right page.

## Communications

### 10. Links

Make sure all links have a text or description that make sense when read out of context. Some users navigate between links, and for this reason they are dependent on the link text indicating what the link is for.

### 11. Words and Sentences

Avoid complicated words and long sentences. These are not well suited to mobile units, and they hinder comprehension for people with reading difficulties.

### 12. Subtitles

Multimedia content such as video and audio must be provided with subtitles so people who cannot hear or people with lots of background noise can still understand the content.

### 13. Images and Alternatives

Make sure that when content is non-text, such as images, it has a text alternative. This way users who cannot see and users who have disabled images on their mobile devices can still use the content. Avoid using CSS image replacement and make sure not to use images of text.

## More Information

The World Wide Web Consortium has developed a set of documents describing how to best create units and apps for mobile units. You can also read more on how these are connected to the Web Content Accessibility Guidelines. They are connected from two different starting points: If you would like to learn or if your starting point is web accessibility and you need to learn more on mobile units.

# How to Code Accessible Tables

There are many appropriate uses for tables on websites, but the problem lies in understanding the proper way to make those tables accessible for all users. With some careful planning and a better understanding of different table elements and attributes, you too can add usable data tables to your web pages.

## Layout Tables vs. Data Tables

Tables have been used for page layout since the early days of the Web. Due to advancements in both World Wide Web Consortium recommendations and coding capabilities, table layouts are becoming another distant memory, as they may cause considerable accessibility problems. The presentation and layout of web page elements can and should be controlled through appropriate cascading style sheets (CSS), and tables should be used to display data only.

## Use the Simplest Table Possible

### Simple Tables
A simple table means that there is only one header row and one header column in the table. A header specifies the type of information in the row/column. There are no merged cells within a simple table. Once we have merged cells, we need to approach the table as a complex table, which have different coding considerations. It may be preferable to create more than one simple table instead of using a complex table.

### Complex Tables
Sometimes, complex tables are required. Some data tables may require more than one level of row and/or column heading. Most people will not find this a problem; visually, the table is logical. However, assistive technology like screen readers will need very specific instructions to correlate these extra levels of headings to the information contained in the data cells.

## Marking Up Tables

The very first step toward creating an accessible data table is to define row and column headers. In the markup, the tag <td> is used for table data cells and the tag <th> is used for table header cells. Simply changing the appropriate tags to tags signifies that the information within the cell is different from the information that still sits in a <td> cell. The location of the cell does not change. Before you say, "That was easy," be aware that this is just the first part of making that simple table accessible. It gets a little more complicated, but not too complicated.

## Associate Data Cells With Appropriate Headers

Now that we've created headers, we need to associate the cells with the appropriate headers. There are two ways to associate data cells with their headers.

### The Scope Attribute
The scope attribute tells the browser and screen reader that everything under the column is related to the header at the top, and everything to the right of the row header is related to that header. By specifying the "col" or "row" attribute in addition to the scope attribute, you've tied that column or row to the correct header. A screen reader now has the instructions it needs to present the table correctly.

### Headers and ID Attributes
Another way to accomplish this is to use the headers and ID attributes. This method is NOT recommended for simple tables, but may be useful in complex tables. The headers and ID method should only be used when there is more 12 than two headers with a data cell. Stick with the scope attribute unless your table is more complex and the scope attribute will not do the trick.

## Proportional Sizing

Use proportional table sizing rather than absolute or fixed-pixel sizing. Let the browser window determine the width of the table whenever possible. By establishing a fixed width on a table, you are not allowing the table to flow into the viewport area available. Luckily, this is becoming a more standard practice now that we are planning and implementing responsive website layouts.

## Other Table Markups

### Tags

Tables should have some sort of identifying title or caption to them. Using the tag can do this, and you can add the tag right after the opening tag. It is not absolutely necessary to have

tags on every data table for the sake of accessibility, but it is still a good practice. And of course all of these additional attributes and tags can be styled appropriately with your cascading style sheets.

### Summary Attribute

The summary attribute is not a requirement for simple tables, but can increase the comprehension of more complex tables for people using screen readers. A good summary can highlight the important elements of a table, and help the user to know what data can be found in the table. A good practice is to only use table summaries when they do what they were designed to do: summarize complex data.

# How to Navigate the Challenges of Color and Web Accessibility

It probably comes as no surprise that color, branding, and visual elements can be quite challenging when it comes to digital accessibility. It doesn't mean it's impossible to have a beautiful, colorful website that's accessible—it just means there will be some effort and research on your end.

There are a lot of reasons for the challenges, ranging from types of vision conditions to the difference between Level AA and AAA compliance. The end goal, of course, is to make your website inclusive for users with varying levels of sight. Depending on brand guidelines already in place, this may be easier for some organizations than others.

But, there is hope to be successful with color and web accessibility. Let's take a look at some of the WCAG 2.0 criteria, types of vision conditions, and how you can find out if your website is accessible with colors:

## The WCAG Color Contrast Criteria

### 1.4.1 Use of Color
The reason for the use of color success criterion is "to ensure that all users can access information that is conveyed by color differences, that is, by the use of color where each color has a meaning assigned to it." This applies to things such as forms, form elements, etc.

For example, if you have a form on your website and some fields are required while others are not, color cannot be the only way to differentiate required from non-required fields. If your required fields have red text or boxes in red, then there should also be alternative text that says "required" so those who cannot see red know it is a required field.

### 1.4.3 Contrast (Minimum) – Color Contrast
To meet AA requirements for color contrast, the foreground and background colors need to have a 4.5:1 contrast ratio.



According to WCAG guidelines, the contrast ratio of 3:1 is the minimum level recommended for standard text and vision, while "the 4.5:1 is used in this provision to account for the loss in contrast that results from moderately low visual acuity, congenital or acquired color deficiencies, or the loss of contrast sensitivity that typically accompanies aging."



Meeting these requirements means your color options are limited for page and link colors. See an example below in our table of accessible and non-accessible color contrast, and visit Penn State's color contrast accessibility page to see more examples of what passes and fails the WCAG AA color contrast guidelines.

## Branding and Accessibility

This may be the biggest challenge you run into with color and digital accessibility. Whether you've been at your organization for more than 10 years or just started, there is likely a brand style guide in place. And if there is a brand style

guide in place, it's likely that color contrast and accessibility were not a consideration.

**What to do?**
First, start by working with multimedia managers, graphic designers, and others on your team to evaluate the colors on your website. You could split up different web pages and test against guidelines by using a free color contrast checking tool, such as the Snook Color Contrast (there are many other free extensions out there as well), and see how well your brand holds up against the guidelines.

For any pages that don't check out, approach your manager and other brand stakeholders in the company with your results. It's possible to tweak brand colors slightly to make them accessible online.

If people within your organization disagree with tweaking brand colors, just make your case stronger. Create a preview blog post or a graphic using slightly different colors that pass the WCAG 2.0 color contrast test and present this to brand stakeholders. This might be the easiest way to demonstrate that slight color changes won't affect the overall branding.

Let's be honest about something: Branding is one of those sticky subjects at all organizations. There's always someone who is attached to the name, the logo, the colors. So approach with caution, but also be your organization's accessibility advocate. The same people who might push back are the ones who will thank you in a few years when web accessibility guidelines are even more important (remember there is a cost associated with waiting to implement accessibility practices).

Also, in 2010, 524 million people were age 65 or older, equaling 8% of the world's population. By 2050, the number is predicted to triple to 1.5 billion, representing 16% of the world's population. Between being accessible for your web visitors now and thinking about the future of your audience, maintaining an accessible website is important.

## Vision Conditions to Consider

The other consideration with color, branding, and web accessibility is to think about the various vision conditions that affect people who may be interacting with your website.

○ **Macular degeneration**
Age-related macular degeneration is a condition that involves the loss of the person's central field of vision. Globally, AMD ranks third as a cause of blindness. People with macular degeneration will have a blurred/cloudy view centrally on your web pages.
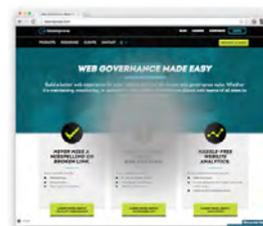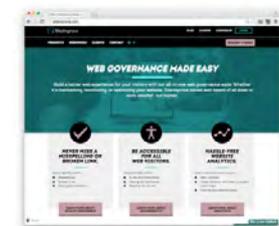


Normal     Protanopia



Cataracts     Deuteranopia



Macular Degeneration     Tritanopia

○ **Diabetic retinopathy**
In people with diabetes, this condition affects blood vessels in the light-sensitive tissue and is the most common cause of vision loss among people with diabetes. People with diabetic retinopathy will see large spots and slightly blurred text on your web pages.

○ **Cataracts**
Cataracts clouds the lens of the eye. Adults with diabetes are two to five times more likely to develop cataract than those without diabetes. Depending on the severity, someone with cataracts will have a slightly to very clouded view of your website.

- **Protanopia**

  This is a condition where people are less sensitive to red light. The affect is similar to deuteranopia but red will look even darker to someone with protanopia.

- **Deuteranopia**

  This is a condition where people are less sensitive to green light. If you use red on your website, a person with deuteranopia will see reds darker than normal.

- **Tritanopia**

  This is a reduced sensitivity to blue light, but not very common. If you use green or blue on your website, someone with tritanopia will have a hard time distinguishing between the two. If you use yellow, they may not see it or see a light shade of red instead.

- **Achromatopsia**

  People with this condition cannot see color at all, but it is not very common. For people with achromatopsia, their world is black, white, and shades of gray. They will not be able to distinguish color on your website.

Why does it matter to consider all of these issues? Because it gives you perspective on the types of challenges people encounter when interacting on your website. According to the World Health Organization, there are 285 million people around the world who have some type of visual impairment, with 39 million being blind. That's a lot of people, and you want to ensure that everyone, regardless of vision condition or disability, can access your website's information.

## Color Contrast Accessibility Tools

Want to know if your website, branding, and digital colors are living up to the WCAG guidelines? Check out these great resources that can help test colors on your website (some are Google Chrome extensions)

- NoCoffee Simulator (Extension)
- Juicy Studios
- Snook Color Contrast Check
- Gray Scale Extension
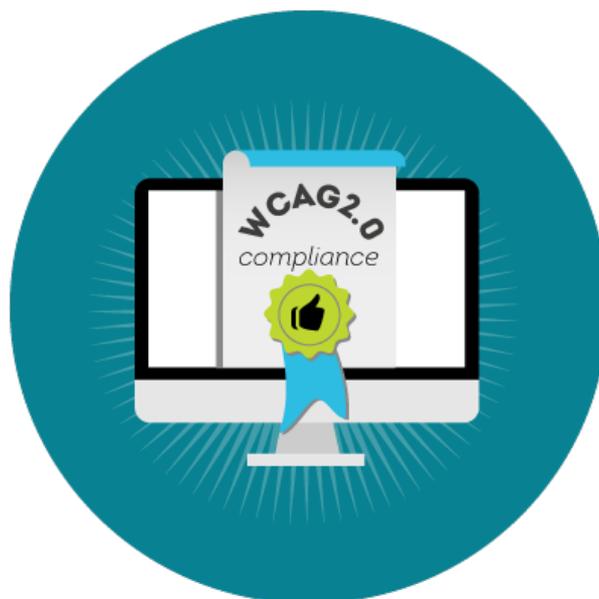
# Guide to Accessible Website Multimedia

According to HubSpot, multimedia content is more engaging and shareable than its text-only counterparts. Making this content more accessible for your users is a simple process, so long as you take web accessibility guidelines into account while adding this kind of content to your website. With improvements in bandwidth, as well as browsers and media players, you have an opportunity to deliver an engaging, rich media experience to your visitors. Unfortunately, if you don't prepare properly, the experience will be less accessible and more frustrating to your visitors.

## WCAG Time-Based Media Criteria

Guideline 1.2 Time-Based Media: This guideline says to provide alternatives for time-based media; the purpose is to offer equal access to multimedia content. Time-based media represents different formats of content that purposely changes or flows over time. Examples may include:

- Movies
- Audio clips
- Animations

Let's try to keep this simple. If you are using pre-recorded or live media (video or audio), you must be sure there are transcripts, captions, or audio descriptions available.

- Offer a transcript or audio description for pre-recorded video content or prerecorded audio (WCAG 1.2.1, A)
- Provide captions for pre-recorded multimedia (WCAG 1.2.2, A)
- Offer captions for live multimedia (WCAG 1.2.4, AA)

Pro tip No. 1: Captions and transcripts are good for searchability and SEO.

## Keyboard Traps

What is a keyboard trap? A trap is when you are able to use the keyboard to navigate to a component or feature of a page, but then unable to navigate away from that feature.

**Media Player Accessibility**
A common example of a keyboard trap is a media player. Just be sure your users are able to navigate through or past the player with the keyboard.

Pro tip No. 2: Be sure to design focus states so the keyboard user can see the active component on the screen.

## Video Delivery Systems

**YouTube**
Using YouTube for video delivery is a good idea for a variety of reasons. Not only is it a free service, but it also has global reach and is incredibly reliable. YouTube has done a pretty good job of providing accessible accommodations, too. That said, there are a few problems to consider. Keyboard traps can be a problem with embedded players, so be careful when developing your video delivery system. Be sure to use the HTML5 version of the YouTube player instead of the Flash player; it is much more accessible.

With a quick Google search for YouTube and accessibility, you will see a variety of resources for screen reader users, captioning services, and accessible player APIs/scripts. With such a large community offering accessible solutions, you should be able to offer accessible YouTube videos on your website. If you are unsure if your videos are accessible, you will want to rely on a screen reader user to fully test your video player.

**Vimeo**

In January 2014, Vimeo updated its web-based video player with an HTML5 version, which greatly improved video delivery and accessibility. While there may still be room for improvement, the Vimeo player has good keyboard and screen reader support, and also supports captions and subtitles. You can consider Vimeo as a solid video delivery solution, especially as they continue to consider accessibility in future updates.

**HTML5**

Before HTML5, online videos could only be played using a plugin like Flash. The element of HTML5 offered a better, standard way to add video to a website. Cross-browser support and an almost unlimited library of scripts have allowed HTML5 to become the de facto method for online video. Mobile devices also offer excellent support for HTML5 <video>.

# Guide to Accessible Semantic Markup
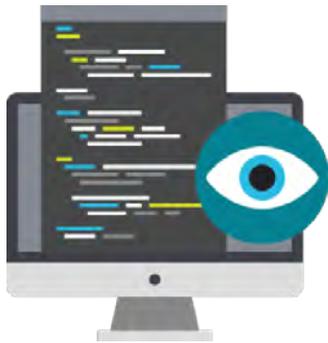
[Web Content Accessibility Guideline 1.3, "Adaptable"](#) is defined as: Creating content that can be presented in different ways (for example simpler layout) without losing information or structure.

HTML was originally designed to deliver documents with a structure that represented the importance and order of information. The creators of HTML were scientists who wanted a way to share technical documents. They didn't really care about the visual look of the document as viewed on a screen—it just needed to correctly convey the information.

Semantics and accessibility are a part of HTML by design. Still, they are not useful unless used appropriately. Understanding how to write semantic code properly means knowing how that code works, and how users and machines will read it.

Semantic markup is a fancy term for commonsense HTML usage: if you write a headline or section heading, mark it with a heading tag (<h1>, <h2>). If you write paragraph text, place the text between paragraph tags (<p>...</p>) If you wish to emphasize an important phrase, mark it with strong emphasis (<strong>...</strong>) Never choose a HTML tag based on how it looks in a web browser. You can adjust the visual presentation of your content later with CSS to get the look you want for headlines, quotations, emphasized text, and other typography.

HTML also contains semantic code elements that are not visible but are extremely useful behind the scenes. There are code cues that make "reading" the page with assistive technology not only possible, but also efficient. Remember: We are simply providing good instructions with our HTML, and those instructions need to work well with assistive technology, too.

## Semantic HTML Structure

**Content, Presentation, and Behavior**
Separating the content from the presentation and from the behavior allows us more efficient control over different elements that make up a web page. For example, by keeping the presentational elements (styles) isolated in a separate CSS file, we can quickly change the look of a single element or restyle the entire site without ever having to touch the content.

**Semantic vs. Non-Semantic (Presentational) Tags**
By using semantic tags and styles instead of using presentational tags, which are only visual, the meaning is not carried through by a technology that only reads the code.

**Deprecated Presentation Tags**
For every presentational tag that has been deprecated, there is a CSS equivalent: <center> tags can use a text-align property, <bold> tags can use a font-weight property, and so on.

## The Web Standards Model

**Structural Semantics**
We've discussed semantic elements that affect our text many times; elements like <h1> - <h6>, <p>, and <li>. Table-based layouts were slowly replaced by containers called <div>s and <span>s.

These elements are considered generic and don't really offer any semantic value. But now we have HTML5.

**HTML5**

There are elements introduced in HTML5 that help considerably with structure and truly give us meaning to our web page containers. A partial list includes:

- <header>
- <main>
- <article>
- <aside>
- <footer>

**Text-Level Semantics**

Let's stick to the basics and think about a few of the text-level elements as replacements for the deprecated presentation tags we talked about earlier. In fact, some of those tags are available for use within the HTML5 specification. The key here is that the tags have a purpose; there is meaning behind them. Examples include:

- <strong>
- <em>
- <small>
- <code>
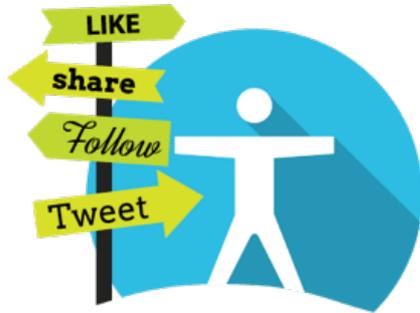
**WAI-ARIA**

WAI-ARIA is a specification that has been added specifically to add accessibility and semantic value to a web page. An example would be to specify a list of links as a navigation menu. WAI-ARIA roles may be helpful with scripting, dynamic content, and advanced user controls. Examples of WAI-ARIA roles include:

- <alert>
- <checkbox>
- <slider>
- <tab>
- <tabpanel>
- <treeitem>

# How to Be More Accessible on Social Media



Digital accessibility is important in all facets of your organization. While many organizations are on the right track to making their websites and company-owned digital presence accessible, the potential issue is with many social media platforms that are not up to accessibility standards.

This is a tricky accessibility issue. There is only so much you can do in terms of how accessible you can be; your organization is confined to how accessible the platform is.

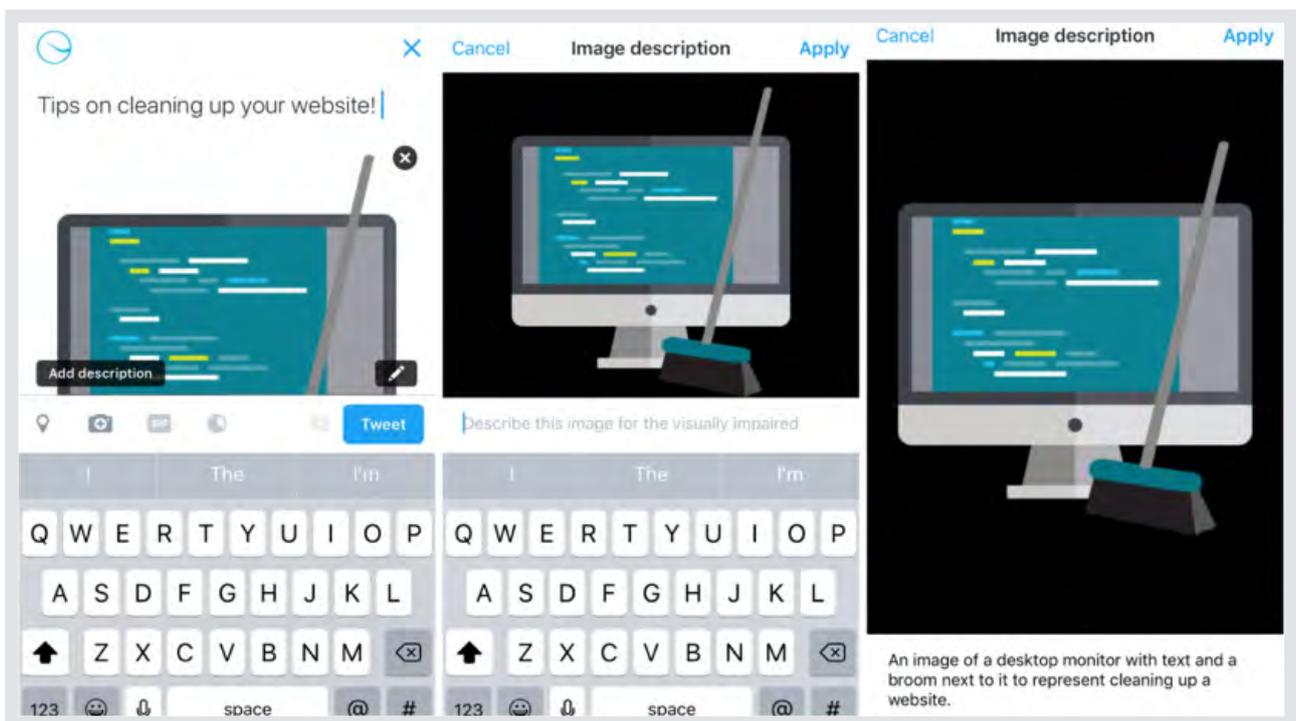What do you do? How can you become accessible on social media? Let's take a look at several popular social media platforms that many organizations use and discuss possible ways to improve accessibility on these social channels. With so many recent updates, we too at Siteimprove are learning how we can be more accessible on our social channels!

## How to Be More Accessible on Twitter

Twitter just made a new change that allows users to caption images posted through the mobile app. Since research shows that tweets with images receive 150% more retweets than tweets without images, many organizations are taking advantage of tweeting with images.

While this new update is only for mobile, it is still possible for your organization to take advantage of it. Just as with applications like Instagram and Snapchat, your social media gurus are posting from their phones. Twitter makes it easy to switch between profiles, so your employees could add the organization's profile to their mobile app and post images for your company from there.

All you have to do is go to the Settings menu on your account, tap on Display and Sound under General, then tap on Accessibility and turn on "Compose Image Descriptions." Then, when someone from your team uploads a photo, it is possible to add a description in the bottom left



An image of a desktop monitor with text and a broom next to it to represent cleaning up a website.

corner. While this isn't ideal for organizations using social media automation or marketing automation tools, it is a way to make images more accessible on Twitter for now.

Another great resource is EasyChirp, which allows you to tweet an image with a caption and long description from your desktop or laptop computer as well as mobile devices.

## How to Be More Accessible on Facebook

Another major social player, Facebook, just released new technology: automatic alternative text. This could revolutionize the way the world's 285 million visually impaired people interact with Facebook. Automatic alternative text recognizes content of certain images and those with screen readers will hear a description of basic image categories such as cars, airplanes, trees, water, and people smiling. In addition to the new alt text technology, there are still some things you can do as an organization to be more accessible. You should think through a good user experience and share useful information on videos or images:

- Add captions to your videos by clicking "Edit" after posting it so you can add a .SRT file, the caption text file
- Describe your posts to provide an alt text to images your organization is sharing, or add a comment to a post with a description of the image/video
- Follow the Facebook Accessibility page on Facebook to be the first to know about new updates

## How to Be More Accessible on Instagram

Overall, Instagram provides a good experience for users with disabilities. Since it is an image-sharing social media platform, when people provide detailed descriptions of what there are posting, then the image has, in a sense, alt text.

Both Android and Apple mobile phones have general settings where people with disabilities can update accessibility preferences. The Zoom

In feature can help those who have a hard time seeing the photos in the size of the application. So what's the best approach as an organization? Ensure you add descriptive text to the images you're posting. Instagram gives you a good platform to be as accessible as you can, because you have no character limit. So be descriptive, but also keep the message easy to understand and concise.

## How to Be More Accessible on Snapchat

DigitalGov recently made a step-by-step guide on how to be as accessible as possible with Snapchat stories. They recommend storyboarding your Snapchat story, just like you would with videos you post on Vimeo and YouTube so that you take accessibility into account up front.

That way, you can download each file of your Snapchat story and record audio for each snap. Uploading the snap screenshot images with audio on one of your video channels, YouTube or Vimeo, can provide a more accessible version of your Snapchat stories.

## How to Be More Accessible on YouTube and Vimeo

Videos are an area where your organization has a huge opportunity to be accessible. Both YouTube and Vimeo are widely used by organizations and offer ways to be more accessible. It is important to mention keyboard traps in reference to online video players. A keyboard trap "occurs when a person who uses a keyboard cannot move focus away from an interactive element or control using the keyboard alone." In other words, a user can enter a video player using a keyboard, but cannot get back to the original page. That's why your team should test and eliminate keyboard traps.

**For YouTube:**
Ensure all videos have closed captions, an audio description, and a full transcript (when possible, because a transcript is useful for both those with hearing and visual impairments). While YouTube provides a feature that automatically captions

videos less than 10 minutes in length, you should be cautious to make sure the transcript is accurate.

**For Vimeo:**

Vimeo partnered with Amara at the end of 2014 to help users make accessible videos for all. So now, in the same sense as YouTube, your organization can include closed captions and subtitles by utilizing the Amara editor, which is available to all Vimeo creators for free.

At the end of the day, many of the same accessibility best practices for your website should be considered on social media. You want to provide the best user experience for all your web visitors, whether they have a disability or not. We can all take the same approach with social media.

# Emoji Marketing Could Be Excluding People From Your Conversation



In November 2015, Oxford Dictionaries made history by not naming their "Word of the Year" after a word at all. For the first time ever, an emoji character known as "Face with Tears of Joy" was named "Word of the Year."

Why? Oxford Dictionaries explained that the "Face with Tears of Joy" emoji was chosen because as a form of communication, it's particularly unique due to its overwhelming use worldwide. Emojis can extend beyond language barriers to be used as a "nuanced form of expression."

That's pretty powerful stuff. A smile used to be universal, but now, you may have a better chance with emojis. Have emojis affected our day-to-day interactions to the degree of breaking down language barriers? Absolutely. Are they the new shorthand method of communicating; the golden egg to cracking the millennial demographic?

Maybe so… But not for everyone.

Major brands are all aboard the emoji craze, from Chevy disseminating an entire press release in emojis to Coca-Cola sponsoring a special soft drink emoji on Twitter. Thanks to Domino's Pizza, you can now have a delicious slice at your fingertips simply by tweeting a pizzamoji. But while marketers everywhere are embracing emojis, they may be excluding a large portion of their audience.

## "Why Did You Send Me 'House With a Yard'?"

BBC Radio recently hosted a podcast on how smartphone users with disabilities interpret emojis. The main interview featured a blind media professional using the iPhone VoiceOver software. To demonstrate, he asked his colleagues to text him emojis they use in everyday conversation. The podcast hosts quickly found themselves trying to explain the greater significance of several emojis, breaking down jokes and relating emojis' acceptable uses in pop culture. Like in the case of our "Word of the Year," the "Face with Tears of Joy" wasn't always used to convey that literal reaction. It could often be used in a "laughing until I cry" scenario, or "this is so good, it cracks me up."

Wired explored this phenomenon more in-depth, noting that "Emoji is like any other language. It changes. It evolves. It reflects the times and the people using it." Although Unicode chooses which emojis to include on the Emoji keyboard and dictates their standards, emojis are constantly expanding beyond their definitions.

As the BBC Radio podcast hosts discovered, screen readers can say what an emoji practically is by relaying the Unicode definition; in one of their examples, iPhone VoiceOver interprets an emoji as "a house with a yard." But how is a house with a yard relevant to the conversation? Is there a deeper meaning? Is there a greater social reference taking place that users with disabilities aren't able to interpret because they can't see it in its original form—a visual object? On the flipside, many screen readers are getting better and better at interpreting emojis. The BBC Radio interview went on, and the VoiceOver user was able to get the gist of an emoji conversation with occasional context from the hosts. However, there isn't much support when an emoji doesn't work, either when the context is missing or it just shows up as the dreaded "image."

## "Image Not Found"

That's where things get even murkier: Remember Chevy's emoji press release mentioned above? If you examine the press release page's source code, the entire press release is just a picture of a string of

emojis—without any alt text. If a screen reader attempted to interpret it, a blind user would likely just hear one word: "image." No context, no further information. An entire marketing campaign now unreachable to them.

Dove also recently introduced "curly hair" emoji, yet when the iPhone deciphers them in VoiceOver mode, the emoji is again read as "image," with no description of what appears on the screen. And Dove and Chevy aren't the only ones—KitKat is even petitioning to get the word "break" recognized as an official emoji of two KitKat bars snapping in half. But if the Unicode description for the emoji is "break," a blind user has no context for the emoji. Break what? Why? They have no way of knowing the greater social relevance or its evolving significance—that the emoji is actually of a KitKat bar—if it can't be properly interpreted by a screen reader.

## Why It Matters

At Siteimprove, creating an accessible web for all is one of our most important values. It's not only an ethical responsibility, but in many countries, a legal responsibility. Higher education institutions in the U.S. frequently face off with the Department of Justice due to lack of accessibility on their websites. The State of California recently audited their government websites for accessibility compliance and discovered that the state's official marketplace for healthcare coverage was completely unusable by people with disabilities who relied on their keyboards to navigate the site. In Canada, the clock is ticking down on the Accessibility for Ontarians with Disabilities Act (AODA), requiring all provincial websites to be fully accessible.

Emojis may seem less pressing in comparison, but for a user with disabilities, they can be another reminder of a web not built for them. Technology has come a long way, and many screen readers can interpret emojis to some degree. Yet it isn't always a guarantee, and what can seem like a creative marketing approach can end up excluding an entire audience. A smiley face isn't just a picture of a smiley face anymore; it conveys a mood, a pun, or now, social references.

# Reap SEO Bonuses by Making Your Website Accessible

Best practices for search engine optimization and web accessibility have many overlaps, and with a little consideration, you can make your website more searchable and more accessible. By prioritizing the following areas of overlap, you can manage these website efforts more efficiently.

Accessibility aims to make web content available and usable for as many visitors as possible, including those who are limited in their digital activities by a disability. Search engines are, in a sense, blind, for they cannot "see" images, video content, and JavaScript. The ability to have web page content interpreted and rendered mechanically is therefore of great importance to both search engines and users of assistive technologies.

Fix accessibility issues and boost your SEO by establishing the following:

## 1. Pages That Clearly Communicate Their Topic

The page title is the most important on-page SEO element. Therefore, the page title should describe the page content accurately, include important keywords, and be unique for every page. At the same time, the page title is the first thing a screen reader renders to the user. For this reason, it is important that the page title provides a good description of the page content.

## 2. Content That Is Structured in a Reader-Friendly Way

Headings must be real headings with tags—and not just styled to look like one—in order for search engines to recognize them as headings. Every page must have one H1 heading (the most important heading) where important keywords should be included. To make the page more readable, you can divide it into sub sections with H2 sub headings, ideally including important keywords as well. If you have a visual impairment and are unable to get an overview of a web page

visually, you need to have an overview another way. This can be done by pulling out a list of headings on a page, which is why it is important that these are coded as headings and are used to divide content into logical sections.

## 3. Informative Images

Alternative (alt) texts were originally created to provide a text alternative to users that are unable to see an image. Search engines use the alternative text to understand what the image is showing and what its function is. Therefore, an alt text must describe the contents of an image. Make sure to include important keywords, but only if it makes sense in the context of the image. If a visually impaired user is not able to see an image, it is often of vital importance that an image be supplied with an alt text that reflects the purpose of the image. For example: "View of Manhattan and the Empire State Building".



## 4. Meaningful Links

A link text, or anchor text, should describe the page it links to. Generic texts such as "Click here" and "Read more" do not provide any information to the search engine about the destination page. The same applies to users of screen readers when they try to get an overview of a web page. Often they either pull out a list of links on a page or tab between links, so it's important that the link text makes sense when read out of context.

"Click here" or "Read more" = Bad Link Text

"Read more about SEO and web accessibility in this blog post." = Good Link Text

## 5. Sensible Navigation

If ou refer the user to a certain area or element on a web page, make sure you do it in a way that enables all users to find it. A screen reader renders content to the user in one long sequence. In other words, there are no design or columns when a user of screen reader receives content, which is why you should avoid stand-alone sensory instructions. For example, avoid saying: "You can find more information in the box to your right." Instead, combine it with some text saying: "You can find more information in the box to your right with the heading 'Information about...'" Search engines also do not understand sensory characteristics, so you aren't gaining anything by saying "in the box to your right." Instead use sensible search terms explaining what you are referring to.

## Extra Things You Can Do:

### 1. Transcribe Video Content
Search engines and visually impaired users are unable to see video. Therefore, it is a good idea to make a transcript of the content so that screen readers and search engines can read the text, thereby making it available for search engines.

### 2. Avoid Images of Text
Text in an image is still just an image. To make sure search engines and read-aloud tools are capable of reading the text, it must be actual text and not an image of text.

### 3. Be Careful With JavaScript in Menus
Search engines are not always able to understand JavaScript, which makes it a bad idea to use JavaScript in menus. Worst case scenario is that the search engines only access the front page, while all other pages are not found in search results. Always use ordinary text links in menus. Another issue is that menus and other content made with JavaScript can often only be activated by mouse-over and not via keyboard focus. This makes the web page work poorly, or not at all, if you are navigating by keyboard alone and cannot use a computer mouse.

### 4. Provide the Most Important Information First
Search engines, and usually users too, read a page from top to bottom. Therefore, make sure important content is given first.

# Including People With Disabilities in User Testing

The benefits of involving people with disabilities in your web projects will far outweigh any extra work. You'll gain a much deeper understanding of how users with disabilities navigate the internet, how efficient your website may be, and how effectively your visitors use your site.

## Accessibility or Usability?

So much of what you do to improve usability has a positive effect on accessibility. For example, a clean, well-designed navigation system makes it easier for all of your users to find the information they are looking for. Usability is concerned with effectiveness, efficiency, and satisfaction—and accessibility is considered a subset of usability—so a website can't be considered usable unless it's accessible.

## Accessibility Covers a Range of Issues

Many people still see accessibility issues as affecting only a small group of people. In fact, accessibility covers a broad range of disabilities. On one end of the spectrum, there are those with mental or physical disabilities. What about the other end? What about people who wear glasses? People who are color-blind? Those who have dyslexia? What about those people who prefer using a keyboard instead of a mouse? Do they fall within the range of disabilities (yes!) and how do you address the issues they may have?

## Finding People With Disabilities

You've made the wise decision to include people with disabilities in your project. What next? There are numerous ways to involve people with disabilities, and the ease of finding a willing collaborator may vary according to your industry and type of organization. There are many great resources available.

For example, if you are working in a higher education environment, check with your campus disability services office. There are students and even faculty or staff members who are willing to participate and can give you excellent feedback.

## When Do I Involve People With Disabilities?

From a planning point, be sure to get them involved as quickly as possible. They may not actually sit down and test your site until later in the process, but if you are not planning for their involvement from the beginning of the project, you will run into barriers that you should have already addressed.

## Range of Disabilities and the Needs of Your Tester

Be sure you understand the range of disabilities you will be planning and testing for. You may need to address different kinds of disabilities in your user testing, so a variety of software and hardware may need to be assembled before you get started. Your testers can give you specific recommendations based on their experience. You may need to gather hardware or software for:

- Keyboard accessibility
- Screen reader accessibility
- Cognitive accessibility

## Working With People With Disabilities

A little planning and knowledge of working with people with disabilities will make your web project flow quite smoothly. Considerations may include how you plan your testing location, what conclusions you hope to gain, and a few matters of etiquette.

It's possible that you already have a suitable test environment already set up. Just be sure your accommodations are really no different than you normally plan: a comfortable environment, which allows your tester to concentrate on the tasks you give them. That said, never make assumptions, speak normally, and always be aware of personal space. Given the proper setting, you will be amazed at the conclusions your testers provide. Be sure to carefully consider all feedback and avoid assuming that feedback from one person with a disability applies to all people with disabilities. A person with a disability does not necessarily know how other people with the same disability interact with the web, nor know enough about other disabilities to provide valid guidance on other accessibility issues.

## Overwhelmed?
## Don't worry!

You can easily automate these best practices. Siteimprove Accessibility helps you prioritize and manage your digital accessibility by highlighting errors directly on page and in the source code. Reference WCAG 2.0 standards alongside detailed explanations and recommendations on your journey to accessibility compliance.

### Get a
## Free Demo
go.siteimprove.com/demo

## Act With Digital Certainty

Siteimprove transforms the way organizations manage and deliver their digital presence. With the Siteimprove Intelligence Platform, you gain complete visibility and deep insights into what matters, empowering you and your team to outperform the status quo with certainty every day.

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