FOUR KITCHENS

Way more than websites.

Foundational Accessibility

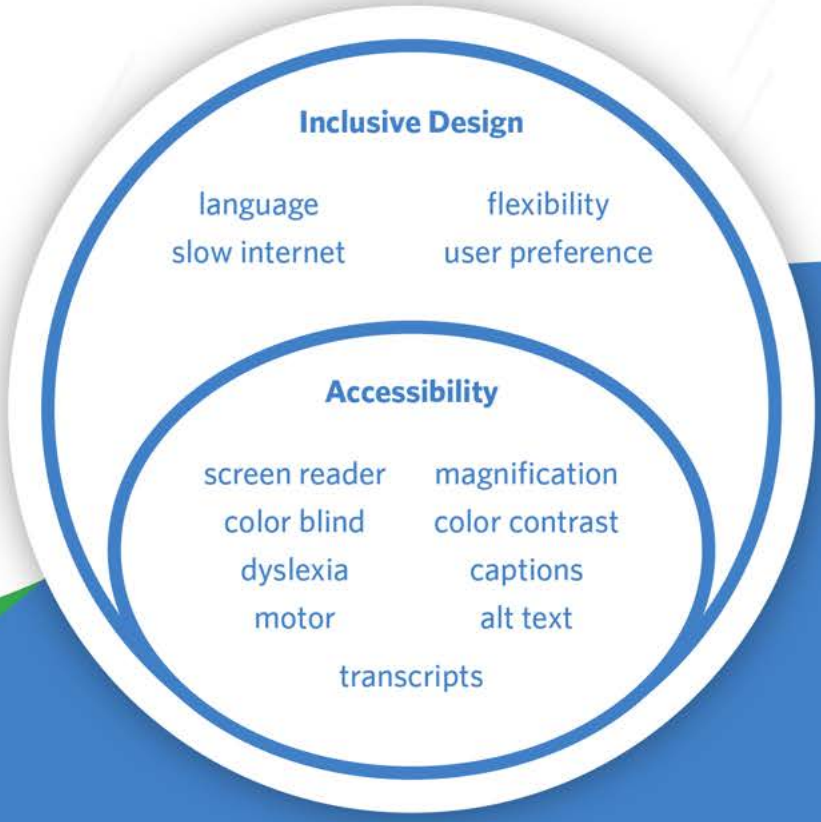
Understanding Disabilities and Their Role in the Digital World

We are passionate about accessibility. We work to **level the playing field of life** for people with disabilities.

Accessibility solves problems for everyone. It makes things possible that weren't before and gives people more independence. This requires leadership from IT, developers, designers, and digital strategists. Follow best practices and tear down barriers.

What is Accessibility?

Accessibility is the inclusive practice of removing barriers that prevent people with disabilities from interacting with or accessing websites. When sites are correctly designed, developed and edited, all users have equal access to information and functionality.



How is *accessibility* different from *inclusive* design?

"Inclusive design" is a broader term. Inclusive design is all about making websites friendly to all people. Accessibility is a subset of inclusive design. Accessibility makes websites user-friendly for people with various disabilities.

Inclusive design considerations:

- People who are not native speakers of the language used on the site
- Users with slower internet connections
- Users' preferences for light or dark backgrounds
- Viewers need flexibility in how they view a site and consume its content

Accessibility is specifically about how a user with a disability might use a site differently from the average users and making sure you don't put up barriers that would prevent them from using the site in their way.

Accessibility Statistics

So with all that in mind, let's look at some statistics around disabilities.

15%

The World Health Organization estimates that 15% percent of the world population has some type of disability.

26%

The Centers for Disease Control says 26%, or 1 in 4 American adults, has a disability.

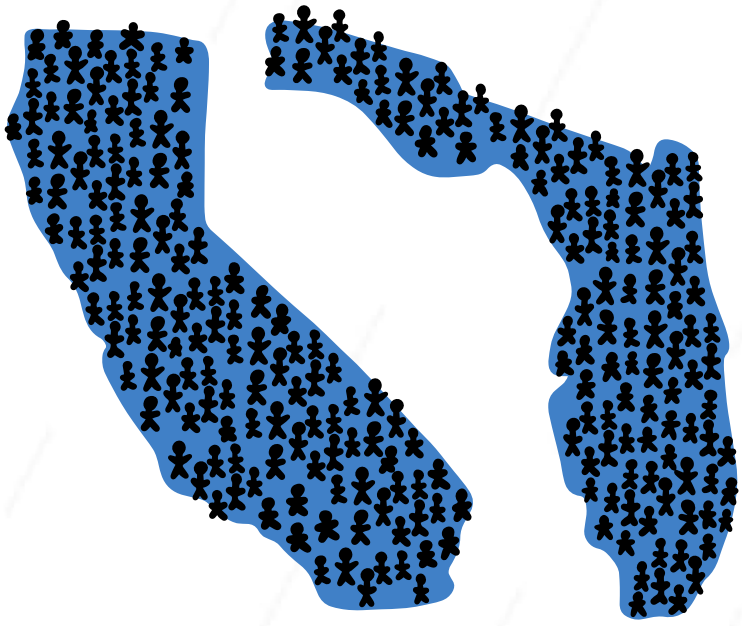
10-12%

The CDC also estimates that 10-12% of American adults have a disability that affects daily life or requires some sort of assistance.

Let's give this some context: The CDC estimates that 61 million adults—roughly the populations of California and Florida combined—across the country have a disability.

Are you really willing to exclude that much traffic from your site?

The potential loss of 61 million users (roughly the populations of California and Florida combined)



Browser Statistics

Now contrast that with browser statistics:

- As of March 2020, Edge and Internet Explorer had a total market share of about 3.4 percent with Edge having 2.4 percent, IE11 with 0.7 percent and <IE11 having 0.3 percent.
- Safari had about 3.4 percent of the market share.
- Firefox had approximately 8.7 percent.

Edge/IE	Safari	Firefox
Edge 2.4%	3.4%	8.7%
IE11 0.7%		
<IE11 =0.3%		
Total = 3.4%		

https://www.w3schools.com/browsers

Of course these can differ greatly from the analytics of a specific site because of audience demographics and other factors. In general, a savvy web team wouldn't think of launching a site without making sure it works in these mainstream browsers.

But how often is a site launched where accessibility is given little or no consideration because of lack of budget, limited skillset, or some other reason? Based on our experience, this happens all the time. Point being, you're almost certainly going to test site performance on sparsely used browsers. Why wouldn't you test for accessibility factors that affect a vastly larger portion of your audience?

Types of Disabilities and Their Corresponding Web Considerations

Now let's look at the different types of disabilities we've been talking about—that is, the disabilities that may affect how someone might use or interact with a website. There are many types of disabilities and not all affect how a website is used, so let's focus on those disabilities that do impact website use. We'll also briefly mention the design considerations required to make a website accessible for the various ways someone might interact with a site.

Blind

Considerations

- All content must be available in text or text equivalant (alt text, aria label).
- All functionality must be available via keyboard.
- Content must use good structures and semantics.
- Custom controls must convey name, role, value, and state.
- User must receive immediate feedback after actions.

Statistics
39 million people worldwide (0.5% of the world's population)

Assistive Technology
Screen reader

Low Vision

Considerations

- Don't disable pinch-to-zoom.
- Test your color contrasts.
- Optimize your visible focus and hover states.
- Ensure there is a clear distinction between text and links.

Statistics
246 million people (3.5% of the world's population)

Assistive Technology
Screen magnifiers
OS settings
Browser settings
Screen readers
Color enhancement
Cursor and mouse size/contrast
Invert colors

Color Blind

Considerations

- Don't rely on color alone to convey information.

Statistics
8% of males
0.4% of females

Types
Red/Green - most common
Blue/Yellow
Red/Black
Gray scale

Deaf

Considerations

- Videos must have captions.
- Audio-only (podcasts) must have transcripts.

Statistics
1,000,000 in U.S.

Assistive Technology
None

Hearing Impaired

Considerations

- Videos must have captions.
- Audio-only (podcasts) must have transcripts.

Statistics
15% of adults in U.S.

Assistive Technology
None

Deafblind

Considerations

- Follow the same considerations as are listed above for the blind and the deaf.
- Include transcripts for all audio and video.

Statistics
35,000-50,000 individuals in the U.S.

Assistive Technology
Screen reader with Braille output

Motor Disabilities

Considerations

- All functionality must be available via keyboard.
- Focusable elements (buttons, links, form elements) must have a visible focus.
- For timed events, users must have sufficient warning of session expiration.
- Make large click targets to improve click-through functionality.

Examples
ALS
Quadriplegia
Muscular dystrophy
Parkinson's

Assistive Technology
Adaptive mouse/keyboard
Mouth wand
Sip and puff
Eye tracking
Voice recognition

Speech Disabilities

Considerations

- Don't depend on voice input.

Examples
Stuttering
Motor speech disorder (resulting from stroke)
Mutism
Voice disorders

Cognitive Disabilities

Considerations

- Simplify your site UI as much as possible.
- Maintain consistent design across site pages and navigation.
- Simplify your content as much as possible.
- Keep your audio and video media short.
- Limit the number of user choices across the site.
- Provide help features that are easy to access.
- Design for ease of use.
- Eliminate distractions or elements that may cause confusion.

Fact
Most common type of disability

Examples
Difficulty understanding
Difficulty remembering

Reading Disabilities

Considerations

- Supplement text with illustrations, audio, or video.
- Always avoid the highest level of contrast.
- Select easy-to-read, common fonts that offer consistency across browsers.

Examples
Dyslexia
Never learned to read

Seizures	
Considerations • Avoid video/animations with flashing content.	**Examples** Pokemon Twilight - Breaking Dawn

People with seizure disorders can be triggered by flashing lights. If flashing content is absolutely necessary on your website, there are specific thresholds that are allowable. However, it's better to avoid flashing content if possible because it's not just about preventing barriers—this is about potentially causing physical harm to someone.

One well-documented case of flashing lights causing seizures: In 1997 a *Pokémon* cartoon sent 685 children to the hospital when they experienced seizures as a result of an intense scene with flashing lights.

A similar incident was caused by a scene in *The Twilight Saga: Breaking Dawn – Part 1* movie.

Other types of disabilities

- Multiple disabilities
- Aging
- Temporary disabilities

Non-disableds

Bots: Google is essentially a blind and deaf user with mobility and cognitive impairments. So, if things aren't in text and available from a keyboard and are difficult to make sense out of them, Google's likely going to have an issue as well.

Everyone! Everyone experiences some sort of environmental impairment at some time.

- 85 percent of Facebook videos are watched without sound.
- Ever tried to do something on your phone in bright sunlight? Having sufficient contrast between the text and background comes in handy.

Next Steps on Your Accessibility Journey

Now that you have a basic understanding of common disabilities and considerations to accommodate for them on your website, you may be eager to start a remediation process on your site or rebuild your site from scratch. But there are lots of things to consider before diving into implementation. Take a look at your site today and ask yourself, "How are we accommodating our users with disabilities?" and "Where are our areas that need the most attention?"

We'll address the following topics in our next Foundational Accessibility eBook:

- The benefits of accessibility. Spoiler alert: Accessibility doesn't only benefit people with disabilities.
- The various forms of accessibility in technology. Websites are only the tip of the iceberg.
- The myriad accessibility laws and guidelines that must be considered before you begin accessibility remediation or building with accessibility in mind.