**Accessibility Essentials:**

**Streamlined Accessibility Guidance for Associate Fellows and Staff**

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# **Abstract**

**Objective:** This project aims to make Section 508 compliance easier for NLM staff by sharing streamlined guidance for commonly used Microsoft products in a Wiki Resource. The resource explains what additional steps to take after running the Microsoft Accessibility Checker in these products and gives additional guidance about accessibility principles in an easy-to-understand format.

**Methods:** The Associate Fellowreviewed 508 compliance requirements for Word, PowerPoint, and Excel and researched which of these requirements are discoverable by the Microsoft Accessibility Checker, noting the gaps. She then met with subject-matter experts to compile easy-to-understand accessible design principles and presentation recommendations. Novice and expert review and feedback ensured the information compiled was accurate and easy to understand.

**Outcomes:** The Associate Fellow discovered no existing resources that address what the Microsoft Accessibility Checker misses for Section 508 compliance. She created a new wiki resource which explains the extra steps needed for compliance after using the tool. The page also includes general accessibility principles, including best practices for design, what the Microsoft Accessibility Checker rules are (the things it looks for), best practices for delivering presentations, and additional resources.

**Conclusion:** The Microsoft Accessibility Checker is an effective tool for checking materials for 508 compliance; however, it is not comprehensive and misses key 508 requirements. The new resource outlines the steps to take after using the Accessibility Checker.

# **Objective**

Section 508 of the Rehabilitation Act of 1973 requires all Federal agencies to make their information accessible to those who have disabilities in a similar manner to those without disabilities. 508 compliance is important for federal products not only legally but also for maximizing access to all the things we produce and communicate.  This law eliminates barriers to information so everyone can access it. However, the law is 57 pages long[[1]](#footnote-2) and includes legal and technical jargon that can be difficult to understand. Training about 508 compliance is primarily focused on web publishing or is challenging to find and is often time-consuming. Regardless, NLM staff, including NLM Associate Fellows, must make their products easily accessible for internal and public use.

This project sought to discover and streamline 508 compliance methods for commonly used software at NLM: Microsoft Word, Excel, and PowerPoint. It resulted in a Wiki resource that details what additional steps to take after running the Microsoft Accessibility Checker. Additionally, it gives guidance about general accessibility principles in an easy-to-understand format.

# **Method**

To become familiar with accessibility principles, I researched guidance from government resources such as the NLM Office of Communications and Public Liaison (OCPL), Health and Human Services (HHS) Checklists[[2]](#footnote-3), the National Training Office at the Network of the National Library of Medicine, and section508.gov. I also researched guidance from non-government sites such as Microsoft Support, ncdae.org, and Web Accessibility in Mind.[[3]](#footnote-4)

In my research, I was unable to find a definitive list of what accessibility requirements the Microsoft Accessibility Checker misses. While the HHS Checklists were detailed, they were difficult to understand. Instead, I used the checklists from section508.gov and compared them to the Microsoft Accessibility Checker Rules from Microsoft Support. This approach allowed me to identify gaps, which I validated by intentionally making mistakes in each software application to see what the Accessibility Checker would miss.

My research and subsequent validation showed that the Accessibility Checker is a valuable tool when used with built-in structure. However, it has limitations. For instance, it won’t catch manually formatted content, evaluate alt-text or URLs for readability, check file names, identify all inaccessible color combinations, or detect a serif font. It also won’t prompt you to include vital information in a footer or watermark, such as “do not copy,” in the main text of the page, preferably on the first page. Understanding these limitations allows users to take the additional steps necessary to ensure accessibility compliance.

There are other considerations for individual software programs as well. In Word, users need to turn off track changes, delete comments, and manually check the order and hierarchy of their headings. It catches every additional thing in PowerPoint, but presenters will want to create companion documents for their slides if there’s any necessary information in the notes that isn’t on the slides, share slides or links in advance, and avoid automatic slide transitions. Excel is tricky because only standard tables can meet 508 compliance requirements. Users will also need to make a sheet summary in cell A1, define names for their table headers, expand rows and columns so there is no overlapping text, and remove blank sheets from the spreadsheet.

My project sponsors and I decided to include principles in the resource to help staff understand the why behind what they were doing. General accessibility principles include using plain language, avoiding flashing text or background images, and being judicious with color. Color contrast between background and foreground colors must be at least a 4.5 to one ratio, and color should never be used alone to convey information. I also learned sound Principles for Presentation Delivery from Kate Majewski and OCPL sources. These include where you can find information about captioning and getting sign interpretation at NIH, pacing, minimizing text on screen, describing the reason for your graphics, and summarizing your main points at the end.

# **Outcomes**

I created a new wiki resource that explains the extra steps needed for compliance in Word, PowerPoint, and Excel after using the Accessibility Checker tool. This Wiki page also describes basic principles for accessibility and provides guidance for delivering presentations. By creating a Wiki page, more NLM employees can access this information. The Wiki page has a checklist that involves first using the Accessibility Checker and then fixing the remaining issues it misses. It also includes general accessibility principles, including best practices for design, what the Microsoft Accessibility Checker rules are (the things it looks for), best practices for delivering presentations, and additional resources.

Once I had compiled all the information I learned into one place, I sought feedback from Associate Fellows and selected NLM staff who were not accessibility experts and incorporated their feedback. I noted that many were excited to have a list of what the accessibility checker misses. Then, I sought reviews from staff experts who knew about accessibility principles and compliance requirements. My project sponsors and I contacted OCPL, and the NLM Insider featured the Wiki page in their June 13th edition.

# **Discussion**

This project focused on materials produced by NLM using Microsoft products. However, it could be expanded to include how we work with others. With our work increasingly shifting to a virtual environment, it's essential to have training or reminders on maintaining accessibility in this area. This training could cover areas such as accessible online collaboration with efficient file sharing and organization. It could also provide insights on maintaining accessibility during virtual videoconferencing and tips for working effectively with neurodivergent individuals. By considering accessibility in all our communications, our work remains relevant and inclusive.

# **Conclusion**

Making materials accessible means taking reasonable steps to anticipate and accommodate circumstances that can make some information difficult to access. Section 508 eliminates barriers to information so everyone can access it. 508 compliance is important not only legally for federal products but also for maximizing access to all the things we produce and communicate. This project gave simplified instructions for accessibility compliance by using the Microsoft Accessibility Checker and then fixing what it misses. The Microsoft Accessibility Checker is an effective tool for checking materials for 508 compliance; however, it is not comprehensive and misses essential 508 requirements. The new resource addresses the steps to take after using the Accessibility Checker so NLM staff can achieve compliance in a more streamlined process.

# **Appendix: Sustainability Plan**

As technology changes, so will the rules around accessibility. It will be important to maintain and update the Wiki, so it remains usable. Anyone updating it should have a good understanding of 508 guidelines and be familiar with the training on sectio508.gov. Looking for updates should be done at least once a year and will likely not take longer than 30 minutes.  The time to update will depend on any changes made to 508 compliance or Microsoft Updates.

Keep in mind that this Wiki page is intended to be simplified guidance and it should not give any instructions beyond what the Accessibility Checker misses. Plain language (an eighth grade reading level or lower) should always be used.

1. Check the Microsoft Rules for the Accessibility Checker from Microsoft Support. Are there any updates to what it looks for in Word, Excel, and PowerPoint? Or is there a new edition of Microsoft Office?
	1. Yes: Update the table on the Wiki titled “Rules for the Accessibility Checker”
		1. You will also need to compare these updates with the 508 checklists found at the links below. At the time of this writing, the checklists are for 2016 versions of Office.
			1. [Word](https://assets.section508.gov/files/MSWord2016-Printable-Accessiblility-Checklist.docx)
			2. [PowerPoint](https://assets.section508.gov/files/MS%20PowerPoint%202016%20Printable%20Accessibility%20Checklist-AED%20COP.docx)
			3. [Excel](https://assets.section508.gov/files/MS%20Excel%202016%20Printable%20Accessibility%20Checklist-AED%20COP.doc)
	2. No: move on to step 2
2. Are there any changes to the 508 compliance requirements (this is rare)?
	1. Yes
	2. No
3. Has Microsoft released another accessibility compliance tool? Copilot is an example.
	1. Once the tool is established (not in beta mode), this resource will likely need to be updated to include the new tool, or substantially changed if the Accessibility Checker is no longer available or ceases to be maintained by Microsoft.
4. Are there updates to accessibility community best practices?
	1. Suggested resources: NIAID and NCI accessibility staff, [Deque University](https://dequeuniversity.com/)
1. [ict-final-rule.pdf (access-board.gov)](https://www.access-board.gov/ict/ict-final-rule.pdf) [↑](#footnote-ref-2)
2. [HHS checklists](https://www.hhs.gov/web/section-508/accessibility-checklists/index.html) [↑](#footnote-ref-3)
3. [Web Accessibility in Mind](https://webaim.org/resources/contrastchecker/) [↑](#footnote-ref-4)