



BSPH CENTER FOR  
TEACHING AND LEARNING

Teaching Toolkit



JOHNS HOPKINS  
BLOOMBERG SCHOOL  
of PUBLIC HEALTH

# Digital Accessibility in Our Classrooms



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# Goals

## GOALS:

- ▶ Have a base understanding of digital accessibility
  - ▶ Know the four principles
  - ▶ Have questions to consider for embracing the principles
  - ▶ Understand the benefits of making things accessible
- ▶ Understand our role in making things accessible
  - ▶ Implement strategies in the classroom that apply to each of the principles
  - ▶ Consider next steps

# Agenda

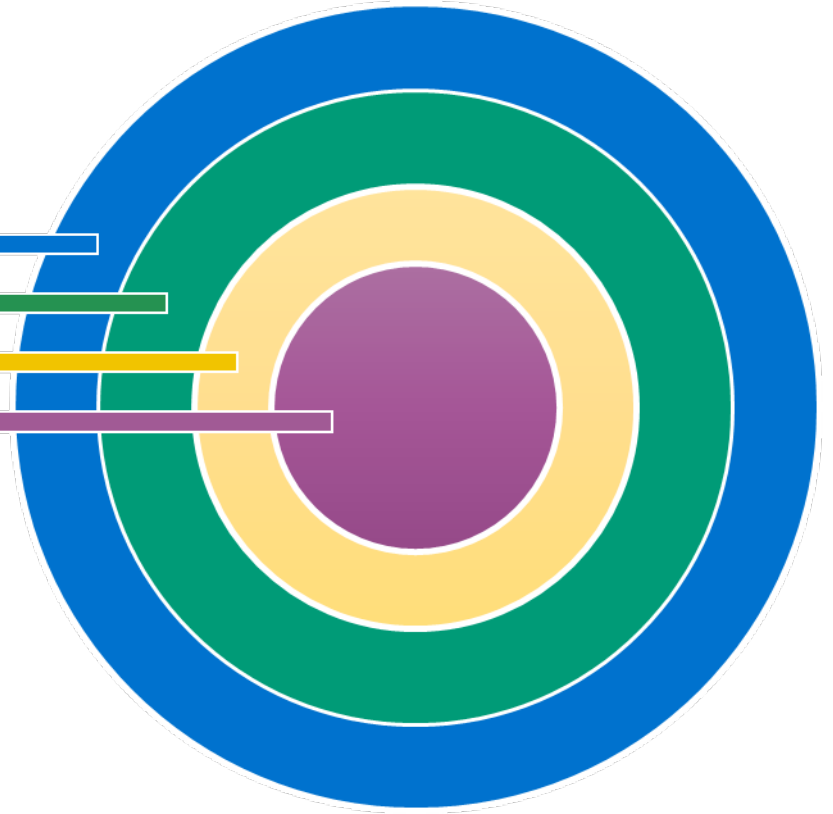
1. Review accessibility holistically
2. Discuss the four principles of digital accessibility
3. Persona & Scenario exercise matching individuals, barriers, and solutions
4. PowerPoint exercise [Word - On your own]
5. Discussion



# Accessibility

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- Universal, Inclusive Design
- Accessible Design
- Digital Accessibility
- Supporting Practices



# A Culture of Accessibility...

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- Affords multiple learning styles and intelligences
- Affords productivity and efficiency
- Is better for everyone
  
- .... And is required
  - US civil rights laws
    - ADA, Rehabilitation Act (504, 508)
  - International declarations and conventions
    - UN Convention on the Rights of Persons with Disabilities (2007)
    - Marrakesh Treaty (2013) – specific to printed materials



# The Path to Embrace Accessibility



- Choose Accessibility
- Design
- Build
- Maintain
- Involve Others
  - Learn together
  - Train others
  - Make time to review
- Lead by Example
  - Integrate it in workplace, classroom, and personal practices



# Understanding Digital Accessibility



# POUR: Principles of Accessibility

- **P**erceivable
- **O**perable
- **U**nderstandable
- **R**obust



Photo by [Alberto Bogo](#) on [Unsplash](#)



# P: Perceivable



Resources and tools can be accessed and presented in manners that reach multiple senses.

*See references list at end of presentation for source information.*



# P: Questions

- Can the information be perceived with more than one sense?
- Can we customize the display?
- Are there text alternatives to embedded media?
- Is text readable and legible?
- Are there accessible alternatives for special notations?

*See references list at end of presentation for source information.*



# P: Strategies

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- **P**erceivable
- **O**
- **U**
- **R**

## In Our Classrooms

- Color is never used alone to distinguish something
- Audio and video
  - have transcripts and captions
  - provide narration of all visuals
- Rich text editors and documents:
  - use styles (headings, lists, etc.) as structured elements
  - include alt text for all non-decorative images and other non-text elements
  - can be resized without losing information
  - have descriptions and/or alt text for complex charts and tables



# O: Operable

Resources and tools can be maneuvered, or navigated, and used by everyone with minimal effort, including those using assistive technologies.

*See references list at end of presentation for source information.*



# O: Questions

- Are there flexible options to control or respond to websites and materials?
- Is there a shortcut or aid to navigation so we know where we are?
- Do we know where a link will take us without having to click on it?
- Can we control timing and movement of media?
- Can we avoid inducing harm, such as seizures?

*See references list at end of presentation for source information.*



# O: Strategies

- **P**
- **O**perable
- **U**
- **R**

## In Our Classrooms

- All documents and websites are made keyboard accessible
- Page or slide numbers are included on documents
- Accurately labeled and nested headings (H1, H2, etc.) can be reflected in a table of contents
- Words and phrases linked to other resources are meaningful, indicating what to expect if we “click”
- Users are not punished for the time it takes them to interact with a tool
- Flashing content is avoided



# U: Understandable

Resources and tools are consistent and predictable, or intuitive, without distracting from the information being communicated.

*See references list at end of presentation for source information.*



# U: Questions

- Are the tone, style, words and phrases appropriate for the intended audience?
- Is the resource organized in a logical manner so that it is intuitive and consistent?
- Are interactive elements, including hyperlinks, understood without “clicking”, or interacting?
- Is there guidance to complete a task, including avoiding unnecessary errors?

*See references list at end of presentation for source information.*





# U: Strategies

- **P**
- **O**
- **U**nderstandable
- **R**

## In Our Classrooms

- Unfamiliar words and acronyms are defined the first time they are used
- There is consistent navigation on our course site and in our activities' instructions
- Guidance is provided for novel elements and activities
- Words and phrases linked to other resources are meaningful, indicating what to expect if we "click"
- Mandatory form fields are marked; if a specific data type is required, then its field is restricted to that type



# R: Robust

Resources and tools will work across platforms and technologies, including assistive technologies and future iterations of technologies.

*See references list at end of presentation for source information.*

# R: Questions

- Can the resource be saved or exported to a different format without losing structure and context?
- Does the resource work on different devices (laptop, phone)?
- Are there any restrictions to accessing and using the resource?

*See references list at end of presentation for source information.*



# R: Strategies

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- **P**
- **O**
- **U**
- **R**obust

## In Our Classrooms

- Proper structure is always used, including using Styles to designate headings and list items
- Accessible documents can be exported as PDFs or websites and retain their reading order
- The primary language and title properties (metadata) are saved with the document or website
- The resource's display can be customized by the user without losing information (brightness, hidden images, resized display, etc.)
- No passwords protect a document



# A Compiled List of Questions to Ask

Available from the CTL Teaching Toolkit Shelf:

## [POUR Questions for a Digitally Accessible Classroom](#)

**POUR** Questions for a Digitally Accessible Classroom

Digital accessibility is a measure of the absence of barriers to digital information. It is considered by four principles: is the information perceivable, operable, understandable, and robust? Together, these principles form the acronym, and mnemonic, POUR.

Here are some essential questions to ask when selecting and creating POUR materials for your class. Many were inspired by the document [Is It Accessible? Questions to Ask Before Selecting Educational Materials](#), by the National Center on Accessible Educational Materials.

Category 1	Category 2
Item 1	Detail 1
Item 2	Detail 2
Item 3	Detail 3

**P: Perceivable**

- Can the information be perceived with more than one sense?
- Can we customize the display, including enlarging it or changing its brightness?

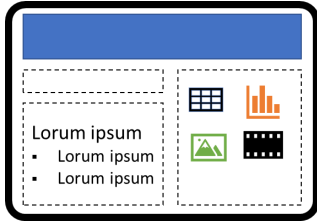
Icons: AaBbCc, list icon, table icon, color palette, play button, image icon, code icon, document icon, speech bubble, CC.

The Toolkit Shelf can be found at <https://www.ctltoolkit.com/toolkit-shelf>

# Getting things POUR



# Minimum Document Expectations: Part 1

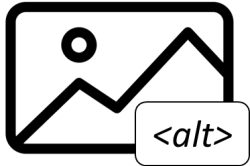


Category1	Category2
Item 1	Detail 1
Item 2	Detail 2
Item 3	Detail 3

Consider...	How to Achieve?
<b>Templates</b>	Use accessible templates, adhering to placeholders and maintaining reading order.
<b>Formatting</b>	Use built-in tools for styles (Heading 1, Heading 2, etc.) and layout (bullets, numbering, etc.).
<b>Tables</b>	Use tables only for organizing data (and never for layout). Make sure that tables have header rows and visible borders.

With the exception of templates, these expectations apply to websites as well.

# Minimum Document Expectations: Part 2



Consider...	How to Achieve?
Color	Avoid using color as the only means of distinguishing information.
Contrast	Be mindful of color contrast ratios of text against a background and when objects overlap.
Alt Text	Provide Alt Text (succinct, alternative description) for non-decorative images & complex non-text elements.

With the exception of templates, these expectations apply to websites as well.



# Minimum Document Expectations: Part 3

<http://www....>



Consider...	How to Achieve?
<b>Meaningful Hyperlinks</b>	Only link text or phrases that indicate the linked resource or destination. Only use full URLs when that is the meaningful text.
<b>PDFs</b>	Only use accessible, tagged PDFs and never scanned documents.
<b>Verify</b>	Use built-in accessibility checkers.
<b>Alternate Formats</b>	For video and audio files, provide alternate forms of the content, including transcripts and captioning.

With the exception of templates, these expectations apply to websites as well.

# One More Easy Lift: Document Properties

Consider...	How to Achieve?
<b>Title</b>	Include a title, different from the file name. Most often, this will match the top-most heading (H1).
<b>Tags</b>	Provide key words that give more context to topics or categories to which the document is related.
<b>Language</b>	Depending on file type (HTML, PDF), specify the document's language. This attribute is used by assistive technologies and web search engines.
<b>File Name</b>	Make the file name descriptive but try to avoid spaces and special characters while still keeping it succinct. Use camelCase to distinguish words.
<b>Restrictions</b>	Try to avoid password protection or any other attribute that requires extra effort to open the document

# Persona & Scenario Exercise



# Digital Accessibility Scenario Exercise



## Personas & Scenarios

- ▶ [\\_DigitalAccessibilityScenarioExercise.docx](#)
- ▶ For each persona, identify potential barriers
- ▶ For each scenario, provide strategies that might prevent unnecessary barriers



# Practice



# Now and Later: Practice PowerPoint & Word

## Microsoft PowerPoint

- ▶ [\\_PracticePowerPoint.pptx](#)
- ▶ [PracticePowerPoint-Solution.pptx](#)

## Microsoft Word

- ▶ [\\_PracticeDoc.docx](#)
- ▶ [PracticeDoc-Solution.docx](#)



# Regarding Testing for Accessibility

## Testing is a 3-tier approach:

- ▶ Automated
  - ▶ Manual (using tools)
  - ▶ True users that are part of the disability community
- ▶ Automated tools (including the built-in checkers) are not enough
  - ▶ Knowing an assistive technology tool exists doesn't mean it is intuitive to use
  - ▶ Knowing a tool exists doesn't mean it works alone (e.g. NVDA works with plug-ins)



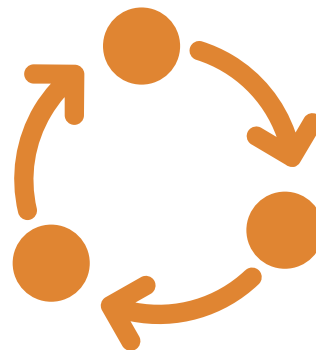
# Automated Testing

## ▶ DOCUMENTS:

- ▶ Built-in checkers: Microsoft, Adobe Acrobat
- ▶ PDF Accessibility Checker (PAC)\*
- ▶ Ally (for Canvas)

## ▶ WEBSITES:

- ▶ WAVE browser extension tool (Chrome or Firefox)
- ▶ AI Inspector for Firefox
- ▶ Sitelymprove (JHU subscription)
- ▶ Pope Tech





# References

BSPH Center for Teaching and Learning. 2023. *Best Practices in Accessibility*.  
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—. "Is It Accessible? Questions to Ask Before Selecting Educational Materials." 2023. *AEM Center: The National Center on Accessible Educational Materials for Learning at CAST*. PDF Document.  
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<<https://www.w3.org/WAI/fundamentals/accessibility-principles/>>.

—. "How People with Disabilities Use the Web." 2024. *Accessibility Fundamentals*. <  
<https://www.w3.org/WAI/people-use-web/>>

World Wide Web Consortium (W3C). 2023. *Introduction to Understanding WCAG 2.0*.  
<<https://www.w3.org/TR/UNDERSTANDING-WCAG20/intro.html>>.

# 2-minute Anonymous Workshop Evaluation Survey:

AY24-25: <https://forms.office.com/r/Gs1pzkrqSQ>

BSPH CTL Teaching Toolkit  
Workshop Evaluation AY24-25



**We value your feedback!**

Please complete the survey whether you attended this session synchronously or watched the recording asynchronously.

*Responses are **anonymous**.*

