

Accessible Educational Materials (AEM)

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Learning Intention


The goal today is to gain a better understanding of accessibility within the context of creating Accessible Educational Materials (AEM).


Four Corners

- Stand in the corner that best represents where you are right now.
- Discuss: What experiences shaped where you're standing?

 I'm confident about accessible educational materials.

 I know a little.

 I've heard the term but don't have experience using them.

 This is brand new.

Accessibility and The Law

- Universal Declaration of Human Rights (1948)
- Canadian Charter of Rights and Freedoms (1982)
- Nova Scotia Human Rights Act (1989)
- United Nations Convention on the Rights of Persons with Disabilities (2006)
- Nova Scotia Accessibility Act (2017)



Table Talk

““ What does this mean for a classroom teacher — tomorrow? ””

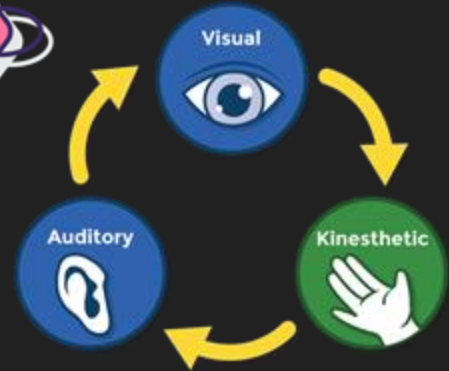
Why

How

“ Ensuring accessibility is not just a matter of legal compliance. Accessible design improves people’s quality of life. ”

Accessible Educational Materials (AEM)

AEM include both print and technology based educational materials that are designed or enhanced in a way that makes them usable across the widest range of learner variability, regardless of format (e.g., print, digital, graphic, audio, video).





Accessible Learning Across the Lifespan

Intro to Accessibility

YouTube: https://www.youtube.com/watch?v=XXcQC_hGH5k&t=619s



In order for learners ~~with disabilities~~ to have equal opportunities, what we need is for materials and technology to work for them just as well as they work for everybody else.

It's about changing
the ~~environment.~~
curriculum

Accessible Formats

An alternative presentation of content that provides equal access for a learner with a disability when the original format is not usable to them.

Accessible formats include:

- Audio
- Braille
- Large print
- Tactile graphics
- Digital text



Designing for Accessibility

Contrary to common
assumption...

**Digital does not
mean accessible.**

Some of your audience might not be able to:

- see well or at all,
- hear well or at all,
- move well or at all,
- speak well or at all, or
- understand information presented in some ways well or at all.

Making Digital Accessible through OCR



Readiris™ PDF
standard



Teachers Pay Teachers

Choosing the Right Media

Consider Print

- The user can rely on eyesight for reading.
- A digital device is not available.
- The user has difficulty accessing digital technology.
- The document must be handwritten on.

Consider Digital

- The user cannot rely on eyesight to read.
- The user requires AT to read.
- The document needs to be searchable.
- The user needs to increase font size, alternative font, adjust colour contrast, etc ...

Text and Fonts

Typeface, Part I

- Typeface: Sans-serif fonts are rated most readable
- Font size: 12 pt for body of text* and 14-16 pt for headings
- Simple background /w a high contrast colour font
- No more than 1-2 font styles per page

*higher (12-24 pt) for those with low vision

Arial, Calibri, Deca, Franklin Gothic, Helvetica, Lexend, Lucida Sans, Tahoma

x Red on black Blue on orange

Red on green

✓ White on black Yellow on black

Black on orange

Typeface, Part II

The IL1 test.

If the letter i, letter l and number 1 are easy to differentiate, then the font is likely easy to read.

“Some fonts are easier to read than others.”

Tracking

Highly legible typefaces have looser than average tracking.

Default Tracking	Expanded Tracking	
Gotham City	Gotham City	+10
Gotham City	Gotham City	+20
GOTHAM CITY	GOTHAM CITY	+30
Gotham City	Gotham City	+5
Gotham City	Gotham City	+10
GOTHAM CITY	GOTHAM CITY	+35
Gotham City	Gotham City	+20
Gotham City	Gotham City	+35
GOTHAM CITY	GOTHAM CITY	+45
Gotham City	Gotham City	+15
Gotham City	Gotham City	+25
GOTHAM CITY	GOTHAM CITY	+45

Specialist Typefaces

- Dyslexia: Sassoon, Sylexiad, Read Regular, **Lexie Readable**, Dyslexie, **OpenDyslexic**
- Low Vision: APHont, Tioga, Tiresias
- Learning Disabilities: FS Me, **Bionic Reading**



The font for people with dyslexia

This font is especially designed for people with dyslexia. When they use it, they make fewer errors whilst they are reading. It makes reading easier for them and it takes less effort. The Dyslexia font is used by several schools, universities, speech therapists and remedial teachers.

FS Me Regular / Italic

Weight 94pt

Regular

Talk to me... 16pt/21pt

Sample Text English/French 11/16pt

FS Me sets a new benchmark in typographic accessibility. It has been designed to support people with a learning disability to access written information by exceeding government standards.

Pack my box with five dozen liquor jugs. Waltz, nymph, for quick jigs vex Bud. Sphinx of black quartz judge my vow. Crazy Fredericka bought many very exquisite opal

Emballer ma boîte avec cinq douzaines de cruches d'alcool. La valse, la nymphe, pour les gigues rapides vexent le Bourgeois. Le sphinx de quartz noir juge mon

Bionic Reading

Bionic Reading is a new method facilitating the reading process by guiding the eyes through text with artificial fixation points. As a result, the reader is only focusing on the highlighted initial letters and lets the brain center complete the word. In a digital world

Typographic Formatting to Avoid



- ALL CAPITAL LETTERS
- **Bold**
- *Italics*
- Underline
- Superscript A¹
- Subscript A₂
- Hyphenating lines of text (bald-
ing may be read as “he is bald
dash ing”)
- Background images

Colour and Contrast

Colour Contrast

Colour Contrast Ratio of 4.5:1 for most text and 3:1 for large-scale text.

For example, black text on a white background is 21:1.

Many people prefer black text on a cream-coloured background. Others prefer off-white text on a black background.

The screenshot shows the 'Accessible Web Contrast Checker' interface. It displays the foreground color as #000000 (black) and the background color as #ffffff (white). The resulting contrast ratio is 21.00:1, shown in large green text. Below this, the 'WCAG Compliance Results' section shows a 'REVERSE COLORS' button and a 'Disclaimer and Additional Info' link. Three sample boxes are provided: 'SMALL sample text (18.5px)' with 'Small Text' results (AA: Pass, AAA: Pass), 'LARGE sample text (24px)' with 'Large Text' results (AA: Pass, AAA: Pass), and a 'UI Component' with icons (AA: Pass, AAA: Pass).

Sample	WCAG Level	Result
SMALL sample text (18.5px)	AA	Pass
	AAA	Pass
LARGE sample text (24px)	AA	Pass
	AAA	Pass
UI Component	AA	Pass
	AAA	Pass

Check it.

Switch display to greyscale or print in black and white.

[WCAG Color Contrast Checker](#)

[WebAIM Contrast Checker](#)


[TPGI Colour Contrast Analyser](#)
(Colour Blindless Simulator)



Line Up

What would make this move
towards accessible?

 Left = Accessible

 Right = Not
accessible

 Middle = It
depends

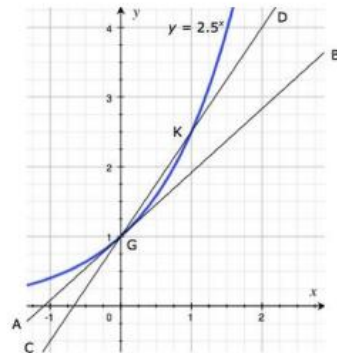




Readiris™ PDF
standard

Questions

1. Look carefully at the graph and at the definition of m .



$$m = \lim_{h \rightarrow 0} \frac{2.5^h - 1}{h}.$$

Which of the following are true?

- (i) The slope of the curve $y = 2.5^x$ at K is m .
 - (ii) The slope of the curve $y = 2.5^x$ at G is m .
 - (iii) The slope of the line CD is m .
 - (iv) The slope of the line AB is m .
- a) Both (i) and (iii).
 - b) Both (ii) and (iv).
 - c) Both (ii) and (iii).
 - d) Both (iii) and (iv).

Answer: _____





STAR TREK: STARFLEET ACADEMY

**FIRST LOOK
TEASER**

Paramount+



Document Structure

Spacing

- Left align, use centered text sparingly
- Avoid justified and right aligned
- Use a minimum of 1.15 line spacing
- Line spacing of 1.5 – 2.0 improves readability
- Line lengths should be b/w 45 – 90 characters
- Avoid using indent to indicate paragraphs
- Spaces b/w columns should be noticeably different than paragraphs (use sparingly)
- Spaces b/w paragraphs should be noticeably different than lines
- Ensure adequate margins

Document Landmarks

- Ensure the file name is clear.
- Set the language of the document or slide deck.
- Use page numbers / headers / footers (at least 2 of the above for larger docs).
- Use numbers or bullets for lists.
- Always use built in features to create tables, charts and graphs.
- Provide a clear hierarchical structure
- Chunk information (use smaller sections /w meaningful headings).
- Use built-in features to create headings (do not use Title, use Heading 1, etc ...)
- Create a Table of Contents

Screen Readers

Test the Structure

- Keyboard users use the Tab and navigation keys to move around a website or slides.
- Test with a screen reader, such as [Non-visual Desktop Access \(NVDA\)](#), ChromeVox or Windows Narrator



About Tables

- Avoid images w/in tables
- Screen Readers read one cell at a time
- Do not merge cells
- Use a heading row
- Use built-in tools to
- Screen readers do not read Title during continuous reading, but will read Heading 1, Heading 2, etc ...

Links

Informative Links

Avoid phrases such as:

- Click here
- Here
- More
- Read more
- Info
- Link to [...]

✓ Create links with information and use the title of the page as the linked text.

✓ Learn more about accessibility by visiting [WebAim](#).

✓ Think about the Goldilocks of links: not too long and not too short.

✓ Use automated formatting for colour and underline.

Language

Writing for Accessibility

- Make it scannable
- Write for Google Translate
- Avoid idioms, homonyms (all/awl) and heteronyms (wind/wind)
- Avoid insider knowledge and pop culture references
- If an abbreviation, acronym, jargon or scientific term cannot be avoided, explain it
- Use one language at a time
- Replace longer words with shorter words
- Reduce the number of words

“Make everything
as simple as
possible, but not
simpler.”

Albert Einstein



AMBULATORY PERSONS
SHOULD CONTINUE TO
EXIT THE BUILDING.
NON-AMBULATORY
PERSONS SHOULD
PROCEED TO THE
NEAREST ACCESSIBLE
MEANS OF EGRESS.

INTERNATIONAL SYMBOL OF ACCESS
REGISTERED TRADEMARK OF THE INTERNATIONAL ORGANIZATION OF
PHYSICALLY HANDICAPPED PERSONS

Writing for Inclusion

Tailor the message to your recipients.



[Government of Canada \(2022\) Inclusive Writing: A Quick Reference Sheet.](#)

1. Use gender inclusive nouns: The child was picked up by a **sibling** (not “brother” or “sister”).
2. Replace or omit a gendered pronoun: **A student** must complete all the required courses (not “his”) by year end.
3. Respect individual wishes: If you don't know the pronoun or courtesy title, use the person's name.
4. Consider translation: A person who uses the gender-inclusive pronoun “iel” in French may **not always** be translated by the singular “they” in English.

Make the content understandable



Create an intuitive experience and reduce cognitive load.

- Provide clear directions.
- Be consistent (pages are laid out the same way).
- Use plain language.
- Identify which language is being used.
- Group information together in a way that clarifies understanding

Images and Graphics

Visual Presentation, Part I

- Use many visual examples.
- Anchor images (inline object).
- Avoid content that flashes (can cause seizures or migraines).
- Consider animation: Can users pause / stop or hide the animations ?
- A grid structure provides additional consistency and predictability for the user.
- Provide sufficient colour contrast by using complementary colours.
- Do not use colour alone to convey meaning, indicate an action, prompt a response or distinguish a visual element.

Visual Presentation, Part II

Don't rely on visual formatting alone to give text emphasis.

- font colour
- **bold**
- *italicized*
- underline
- highlights

Give text emphasis by using repetition, strategic placement and by stating directly.

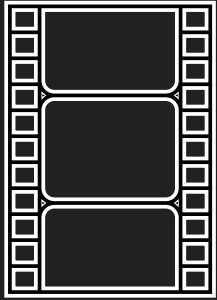
- ✓ This is important ...
- ✓ Write this down ...
- ✓ Please note ...
- ✓ The key takeaway is ...

Can you think of words you've used, to denote emphasis, or words that your own teachers have used in the past?

ALT Text, Part I

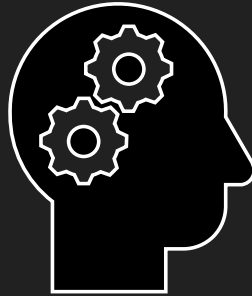
- Avoid using image / icon / picture / link to / video of ...
- Include media if important, i.e. Photo of Loch Ness Monster emerging from the water.
- Be concise. Respect user's time.
- Mention most important details first.
- If the image contains text, provide the same text
- End description with a period.
- Provide the same information that a person looking at the image would get.
- Images used as links should specify where the user will be directed.
- Provide a separate description for charts and graphs
- EquatIO automatically adds the ALT text for mathematics.

Alt Text, Part II



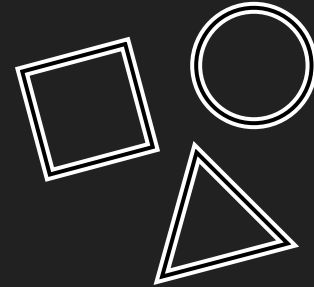
Action

What is it doing?



Context

What is surrounding it?



Object

What is it?
What does it look like?

Ask: If the image were deleted, would important content be lost? If not, mark as decorative.

Decorative Images

Do not need ALT text.

- Do not convey useful information.
- Do not affect meaning.
- Are purely decorative.
- May contain redundant information.

ALT Text Relay

Groups of 2 or more.
(switch roles as time permits)

Hint: Think of yourself as an objective and neutral journalist.

Person 1:

- 1) Choose a random picture on your phone. Important: Do not show your partner at this point.
- 2) Say the ALT text for this image (no more than 1-2 sentences).
- 3) Give your partner a moment to visualize, then show the image.

Person 2:

How did they do? Did the ALT text address the action, context and object? Provide feedback.

Closed Captioning and Subtitles as Universal Design for Learning

Individuals with ADHD report better retention of information.

Students reportedly enjoy captioned media over print and uncaptioned media.

Increased understanding and context for individuals with Autism.

ELL and struggling readers benefit from increased:

- ✓ reading speed and fluency- decoding
- ✓ vocabulary acquisition- word recognition
- ✓ reading comprehension
- ✓ oral reading rates

Presentations and Spreadsheets

Presentations

- Provide verbal descriptions of slides and images
- Identify yourself when you speak
- Provide opportunities to ask questions (verbal discussion, chat box, email)
- Include closed captions and transcripts
- Use multiple modalities
- Avoid slide transitions, animations
- Offer a copy of the slide deck, in a shared accessible PDF format or physical copy
- Use built-in tools to format your presentation
- Consider reading order
- Use minimum font size of 28
- Use slide layouts with content containers

Spreadsheets

Define / Format Cells

- title, header and any other cell with a special function

Learn more about accessible spreadsheets:

- [Microsoft Excel](#)
- [Google Sheets](#)

Add a brief plain language description to cell A₁ provide context to users.

“This spreadsheet contains two data tables. The first begins at cell A3 and lists types of Assistive Technology. The second begins at cell A17 and lists vendors.”

Conclusion

What makes material accessible?

- Timeliness: Materials are available when instruction begins.
- Privacy: Students don't share credentials or rely on others.
- Independence: Students use on their own, without aid.
- Ease of use: Materials work seamlessly with AT.

Why AEM Matters?

- Provides access to the same information.
- Eliminates learning barriers.
- Promotes student independence and engagement.
- Required by law.



**Do the best you can until you
know better. Then when you
know better, do better.**

— Maya Angelou, American poet

Word Cloud

Type one thing you learned
about Accessibility



menti.com

6504 0256

<https://www.mentimeter.com/app/presentation/almmfgxkdq7ay3p7petcyfuazbphqxt9/edit?question=1pv81vj1j3kv>