

Author Guidelines for Preparing Accessible Mathematics Content – Joint Project from AMS, EMS, LMS, and SIAM

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Mandate 1 – European Accessibility Act

- ▶ From June 28, 2025
 - ▶ Frontlist e-books need an accessible format
 - ▶ E-commerce interface must be accessible
- ▶ By 2030 backlist titles will also need an accessible format
- ▶ EAA includes an exception if this will cause a “disproportionate burden” e.g. financial, but it remains to be seen how that will be defined in practice
- ▶ Accessibility of some backlist titles may be handled in an on-demand way by publishers

Mandate 2 – Update to Title II of the Americans with Disabilities Act (ADA)

- ▶ US publicly funded entities in US must comply by April 24, 2026
- ▶ Prohibits “nondiscrimination on the basis of disability in State and local government services”
 - ▶ Useful link: [ADA Title II regulations: implications for libraries](#)
- ▶ May 2023 ‘Dear Colleague Letter on Online Accessibility at Postsecondary Institutions’ letter from the US Justice Department and the Department of Education
- ▶ Federal agencies covered by Section 508 of the Rehabilitation Act of 1973 (29 U.S.C § 794 d).

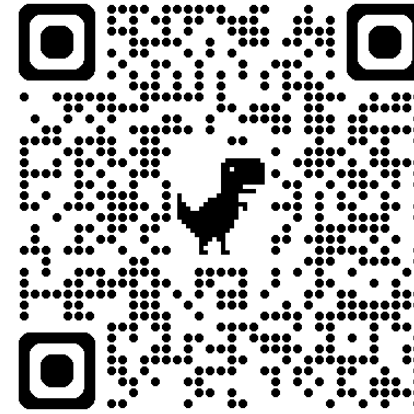
WCAG standards

- ▶ Web Content Accessibility Guidelines form the standard for digital accessibility
- ▶ Meeting [WCAG 2.1 AA](#) will ensure compliance with EAA and [ADA Title II](#)
- ▶ The math societies, along with many other publishers, working on roadmap to [WCAG 2.2](#) compliance
- ▶ While we work towards frontlist and backlist compliance, users will be able to request a title be prioritized for an accessible version

POUR - Four Principles of Accessibility

- 1. Perceivable** - Information and user interface components must be presentable to users in ways they can perceive.
- 2. Operable** - User interface components and navigation must be operable.
- 3. Understandable** - Information and the operation of user interface must be understandable.
- 4. Robust** - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

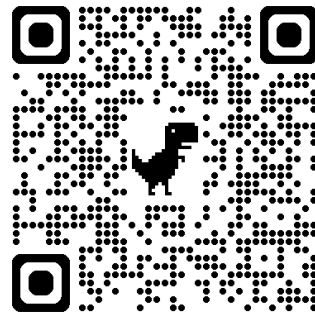
Author Guidelines for Preparing Accessible Mathematics Content



- ▶ Author and faculty engagement is critical
- ▶ Unified guidelines to make the life of math authors easier:
 - How to write born-accessible publications.
 - Unified to eliminate confusion and increase efficiency cross-publisher.
 - Math societies uniquely situated to marry mathematical conventions with needs of mathematicians with disabilities.
- ▶ Launched Jan 5, 2026 – https://epubs.siam.org/pb-assets/author_guidelines_accessible_mathematics

Author Guidelines for Preparing Accessible Mathematics Content

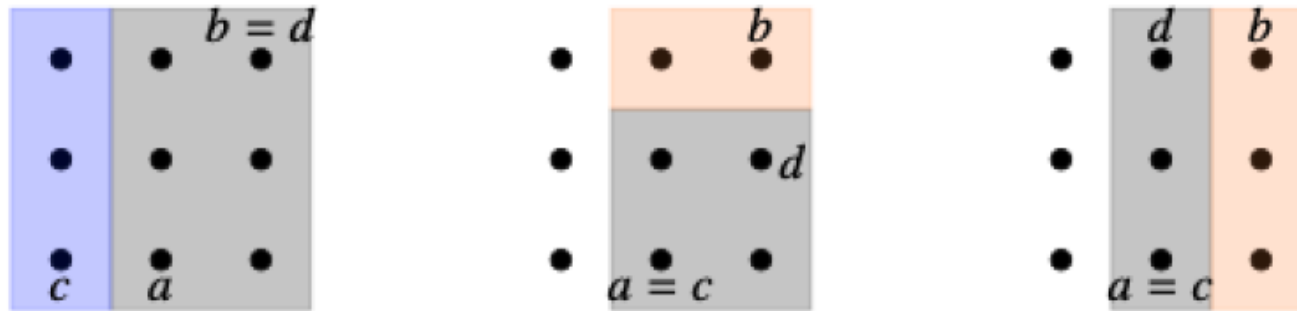
- ▶ Concise guidance to help authors prepare born-accessible mathematical content for books, journals, and other scholarly outputs
- ▶ Addresses areas such as **color contrast and selection**, **alt text** for figures and equations, and links to **useful resources**
- ▶ Includes **comprehensive examples** of alt text as well as a before-and-after example of accessible figures



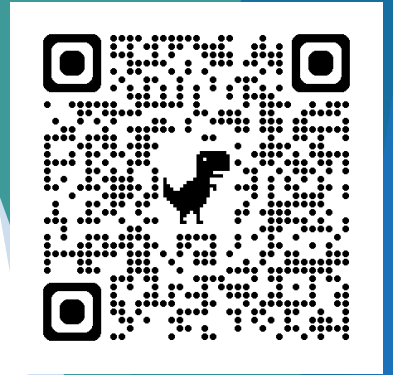
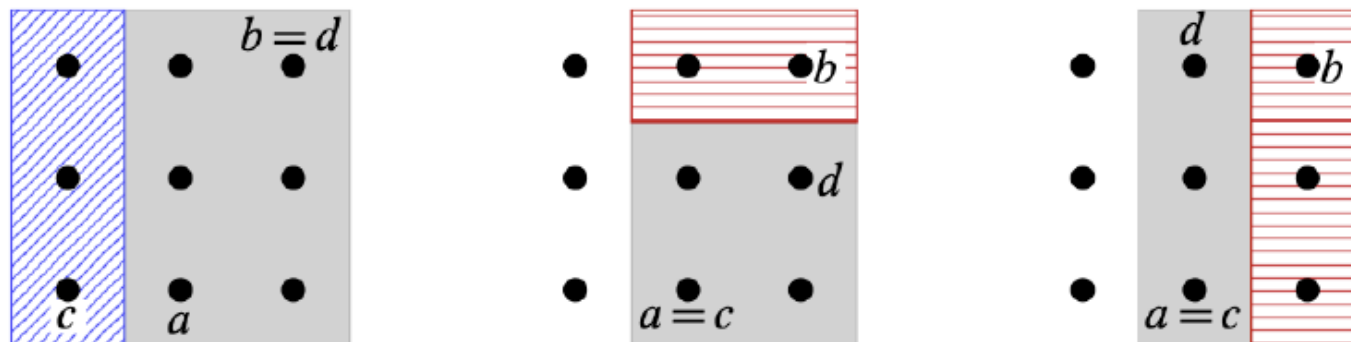
Never rely on color alone

- ▶ **Never rely on color alone to communicate key information in the figure.** Instead, pair colors with easily distinguishable textures, labels, shapes, and/or dash patterns

Original version:



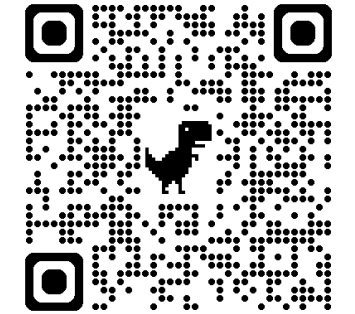
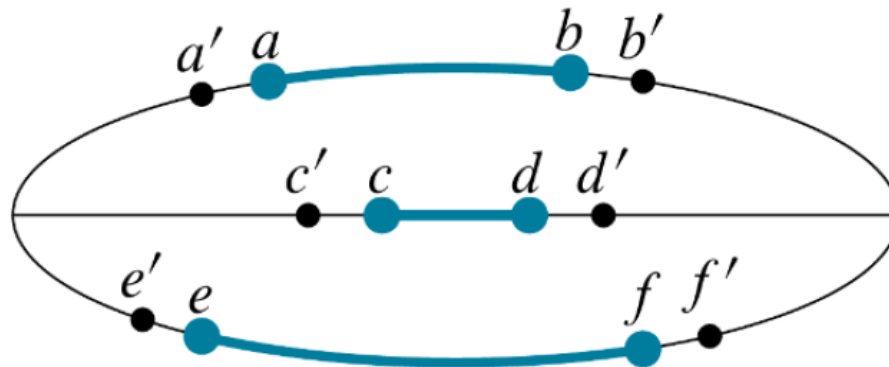
Revised accessible version:



Check color contrast

- ▶ **Check color contrast of** figure elements against adjacent color(s):
 - ▶ Key graphical elements and icons (non-text), such as data lines, pie slices, and bar colors: **3:1**
 - ▶ Regular text: **4.5:1**
 - ▶ Color contrast can be checked using [WebAIM: Color contrast checker](#)

Revised accessible version:



Write Short Alt Text for Figures

- ▶ **1–2 sentences** about the figure, describing the type of image and a short summary of the **key points**.
- ▶ Include a **concise reference indicating where** within the content the reader can obtain **further information** about the figure (i.e., in the body text, figure title, and/or figure caption).
- ▶ The recommended character limit for these sentences is 150 characters.
- ▶ Do not simply repeat text verbatim that is in the figure title and/or caption.
- ▶ Write out symbols and abbreviations to ensure accurate pronunciation by a range of screen readers.



Short Alt Text Example

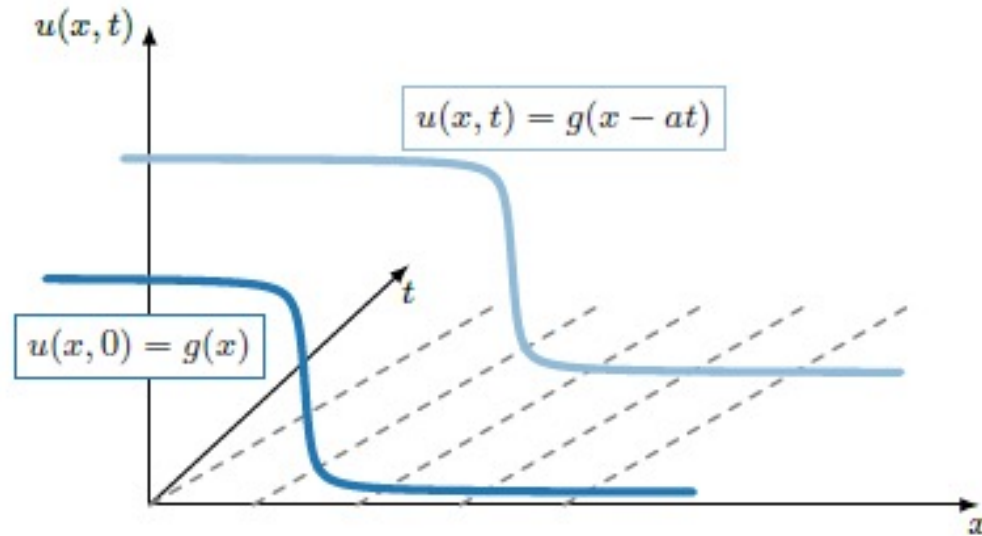


Figure 1.2.1. Linear advection in 1D. The dotted lines are characteristic curves in the $x-t$ plane, with slope a . The initial profile $g(x)$ is advected with speed a . The solution $u(x, t)$ is constant along the characteristics $x(t) = x_0 + a t$.

- ▶ **Short alt text:**
- ▶ Wave propagation graph showing u of $x t$ equals g of x minus $a t$ and u of $x 0$ equals g of x . For further information, see the caption and the paragraph beginning "Hence, the linear advection solution..." in Section 1.2.2.



Alt Text Examples in Guidelines

▶ The joint *Author Guidelines for Preparing Accessible Mathematics Content* include short alt text examples for

- ▶ Flowchart
- ▶ Graph
- ▶ 3D plot
- ▶ Geometric shapes and lines
- ▶ Multiple graphs



Alt text for equations

- ▶ Each society publisher will use the equation's LaTeX code and/or MathJax speech-text ([MathJax Speech Converter](#)) for the equation as alt text
- ▶ Authors therefore do not need to take any action for equations but should be aware of this



Guidelines include ‘Further reading and useful resources’

- [W3C WAI: Complex images](#)
- [W3C WAI: Images tutorial](#)
- [Accessibility Developer Guide: Knowledge about accessibility](#)
- [Accessibility Developer Guide: Colour is not enough](#)
- [GBH: Effective practices for description of science content—Digital talking books](#) (NSF-funded project from WGBH's National Center for Accessible Media [NCAM])
- [DIAGRAM Center: General image description guidelines](#)
- [ACM DIS2023: Creating accessible figures and tables](#)
- [Chartability: The Chartability workbook](#)
- [ACM SIGACCESS: Describing figures](#)
- [Observable: What is high contrast for data visualization? \(with examples\)](#)
- [WebAIM: Contrast and color accessibility](#)
- [WebAIM: Contrast checker](#)
- [Accessible Web: WCAG color contrast checker](#)
- [whocanuse: Who can use this color combination?](#)
- [Colblindor: Coblis—Color blindness simulator](#)
- [arXiv: Accessibility at arXiv](#)
- [arXiv: LaTeX markup best practices for successful HTML papers](#)



Faculty, Students, Librarians, and Publishers – We need you!

- ▶ Please share the guidelines with your peers and colleagues - https://epubs.siam.org/pb-assets/author_guidelines_accessible_mathematics.pdf
- ▶ Send us any feedback you receive – publicationsaccessibility@siam.org
- ▶ The math societies will continue to refine the guidelines over time based on feedback

**Working together, authors, librarians, and publishers can create
an accessible-first culture!**



Questions & Discussion

