

Guidelines for Accessible Math

Creating math content that is accessible presents unique challenges. Currently, [MathML](#) is the programming language that is used to write math equations that are accessible. Equations that are written without using MathML will not be read correctly by screen readers. [MathType](#) is a plugin that can be used in Word to write equations and to then export the content as a webpage. On this page are guidelines for accessible math and pages 2–4 will explore MathML in more detail.

- Allow all expressions to be enlarged on screen.
- Ensure that users with visual impairments can read scientific and mathematical expressions and that users with visual impairments and with physical impairments can write expressions.
- Use MathML to provide access to scientific and mathematical expressions.
- Use [LaTeX](#) to provide access to scientific and mathematical expressions.
- Use prerecorded audio to read static scientific and mathematical expressions.
- Use concatenated speech strings for simple scientific and mathematical expressions.
- Create scientific and mathematical expressions scripts using guidelines for spoken mathematics.

National Center for Accessible Media. (2009). Accessible Digital Media Guidelines. Retrieved November 13, 2018, from http://ncam.wgbh.org/invent_build/web_multimedia/accessible-digital-media-guide/guideline-g-math

Math on the Web

Putting math on the web means many things to many people—publishing research articles, posting quizzes and reviews for students, web applications for workflows of many kinds, online content in accessible format. For more than a decade, Design Science has been at the forefront, developing tools and technologies for making the web more useful for math and science communication.

MathPage: From Word to the Web

[MathType](#) includes [MathPage™ technology](#) that easily converts Microsoft Word documents to web pages, properly handling mathematical symbols and equations, viewable in any modern Windows, Macintosh, Unix and Linux browser.

Working With Websites and Applications

Most websites and applications represent equations in one of a few standard formats such as [MathML](#) and TeX, but there are many subtle variations. MathType has sophisticated input and output translation capabilities that let you ignore the technicalities. MathType lets you copy and paste between hundreds of popular websites such as Wikipedia. You can also use MathType to paste MathML, TeX, or equation images in learning management systems, blogs and wikis. Find out more in the [MathType Works With... pages](#), or if you are technically inclined, find out about writing your own input and output translators using the [MathType SDK](#).

Web Publishing

Publishing math and science content to the web is technically challenging because of the difficulty of displaying high-quality math notation in a browser-independent

way. MathML has enjoyed impressive success as a format for representing and exchanging mathematical notation, but browser support remains idiosyncratic. In Internet Explorer, our MathPlayer add-on has long been the best means of displaying math notation. However, to address a wider range of browsers, Design Science formed a partnership with the American Mathematical Society and the Society for Industrial and Applied Mathematics to sponsor an exciting initiative called [MathJax](#). MathJax brings high-quality MathML rendering to any JavaScript and CSS capable browser.

Math-enabled Web Applications

Wikis, blogs, course management systems, and many other [kinds of web application](#) must be able to handle math notation when used in math and science contexts. Such applications not only need to display math, but to provide users a way to edit math as well. [MathFlow Components](#) provides developers and system integrators with the editing and display functionality needed to create math-enabled web applications. To find out more about MathFlow Components and the MathFlow SDK, please [contact us](#).

Making Math on the Web Accessible

Accessibility for individuals with print disabilities such as low vision, dyslexia and blindness has made great strides over the last decade. Formats such as the [DAISY-NISO](#) standard for Digital Talking Books, and regulations such as [Individuals with Disabilities Education Act](#) have profoundly changed the accessibility landscape for math and science. In part because of Design Science's technical leadership, these formats and standards directly incorporate support for mathematics notation. Our [MathPlayer](#) display engine

for Internet Explorer interoperates with leading screen readers and offers state-of-the-art math accessibility functionality. Our [MathDaisy](#) tool works in conjunction with leading DAISY book authoring tools to create accessible math and science content. To learn more about Design Science's advocacy and technology for math accessibility, consult our [Solutions for the Accessibility Community](#) pages.

Learning More About MathML

MathML is the standard way of encoding mathematics notation using XML. Since its introduction in 1998, it has been incorporated into many other formats, and is now supported to some degree by most math-related software packages including browsers, editors, computer algebra programs, and publishing software. MathML technology is deeply incorporated into Design Science products, and the staff of Design Science has played a leading role in developing this important new technology. Consult [About MathML](#) for more information and related resources.

Math On the Web Status Report Archives

Beginning in 2001 and continuing for several years, Design Science published a semi-annual [Math on the web status report](#) with a special focus and an objective report on the state of Math on the web software. Consult the [Math on the web: A Status Report](#) archives for a historical view of math on the web. For up-to-date on Math on the web news and information, [join our Math on the web mailing list](#).