

MathType 5 DELIVERS WEB Magic

Barry Simon

Even if you have never heard of the \$129 MathType or its maker, Design Science, you've probably got a baby version of MathType on your computer: Microsoft Office's Equation Editor is a licensed subset of MathType. While the core functionality of MathType is the ability to enter mathematical equations into any Windows program that accepts OLE embedded objects, the program has for a long time offered much more. The new version 5.0 focuses on some web capabilities that provide what is, for now, the smoothest and most elegant way to display mathematics on the web.

Placing mathematical symbols on the web has long been a painful process. Lacking intrinsic support in browsers, the standard procedure has been to place equations as GIFs. This has been problematic in terms of designing the page and producing the GIFs, but even once those issues have been addressed, the intrinsic problems with fixed resolution GIFs remain. While Web browsers are built to display text in a resolution appropriate to the output device, a simple GIF has a fixed resolution. This means that math equation GIFs may appear less sharp than the surrounding text on a high-resolution monitor but is more extreme if you print a page where text is always sharpened but GIFs cannot be. Moreover, while Word will save embedded equations made with MathType or Equation Editor as GIFs, it normally fouls up alignment of inline text with the baseline.

It is these problems that are addressed

in the new version of MathType, which adds an "Export to MathPage" command to Word. This takes a Word document with equations and saves multiple resolution GIFs. It also embeds Java code in the web page that uses a very high resolution GIF when you print, and which allows you to click on any equation and have it pop up in a larger size! And while it's at it, MathType also solves Word's problem of not preserving equation baselines properly. In our tests, this feature worked flawlessly and makes this program a

MATH ML

But what about MathML? Recall that MathML is an XML language that is intended for presenting mathematics on the web. It not only allows display of mathematics but also its context (for example, to distinguish a sigma intended as a sum, and as an abstract symbol). The major vendors of scientific tools and the W3C have rallied around this spec which, alas, has not reached full maturity and acceptance.

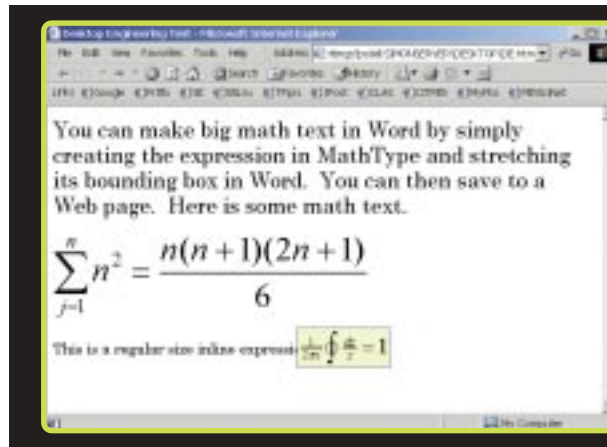


Figure 1: Web pages made with MathType's Math Page technology show mathematics, even at large size, flawlessly. Thanks to supplied JavaScript, you can click on an expression and see it magnified, as illustrated here.

must for anyone producing web pages with mathematical formulae in them (see Figure 1, above). One limitation is that you must use Word to create and edit MathPage files. For example, if you bring a MathPage file into FrontPage editor, make a change, and save, you'll lose all the MathPage features (although you can use FrontPage's site management features on a site made up in part or entirely of MathPage pages).

It is important to note that MathML is not directly supported by Internet Explorer. What this means is that the overwhelming bulk of users who are accessing a site with MathML will not be able to read the site, at least not without first downloading some kind of add-in. There are attempts to jumpstart the process (including IBM's TechExplorer IE add-in, and MathML support in the Mozilla browser). Design Science, the

maker of MathType, is a major player in this process, with the expected release shortly of a MathML add-in for IE called MathPlayer, and the availability of a suite of Java/MathML tools called WebEQ.

But the MathML situation is still murky with incompatibilities between the various MathML readers and some MathML creation tools, and MathML is far from being universally available. Design Science has wisely chosen to provide tools to allow elegant publication with GIFs for now, but MathType also allows you to save individual equations and Word files in MathML format, providing both the ability to experiment, and the possibility of easily transitioning, if and when MathML delivers on its considerable promise. You can choose to save in either MathML 1.0 or MathML 2.0 specification.

OTHER FEATURES

Both Equation Editor (see Figure 2, above, right), and MathType provide symbols and templates—that is, a symbol with placeholders like the limits of integral. Where Equation Editor only has drop-downs, MathType provides toolbars where you can store frequently used symbols for single click entry—you can even store complex equations. MathType also provides a few more symbols, for example diagonal arrows as well as horizontal and vertical.

But it provides a lot more. For some users the killer application is that you

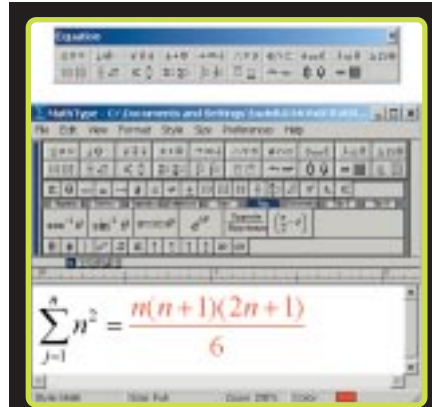


Figure 2: MathType's window, page 2, has a lot more than Microsoft Office's Equation Editor (above), although the common pedigree is obvious.

can export an equation made in MathType's WYSIWYG (what you see if what you get) environment to TeX as easily as selecting the equation in MathType's window and dragging it into your TeX editor.

You can also add color to all or part of your equations. (This is a feature that is especially useful if you are using Power Point). The prior version of MathType supported equation numbering in Word in such a way that when you added a new numbered equation, MathType automatically renumbered equations and equation references. The new version of MathType allows left and right side equation numbering and also allows

numbering to restart (on either side) after a chapter break.

New to version 5.0 of MathType are unlimited undo, mouse wheel support, and the ability to add or delete rows and columns in a matrix.

For some scientists and engineers, TeX is the only approach needed or wanted for dealing with placing mathematical expressions in technical documents and, for such users, MathType's utility is limited to WYSIWYG equation creation followed by drag and drop. For anyone else, especially those creating mathematical documents in Word or producing mathematically rich web pages, MathType is an essential tool.

Contributing Editor **Barry Simon** is a professor of mathematics and theoretical physics and chair of the mathematics department at the California Institute of Technology. He is the author of numerous books, including **The Mother of All Windows 98 Books** (Addison-Wesley). You can contact him through e-mail at bsimon@bigfoot.com.

COMPANY INFORMATION

MathType 5.0
Design Science Inc.
 Long Beach, CA
 800-827-0685
www.mathtype.com

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