

About 3D-XplorMath Documentation

Updated January 2013 for Version 10.8

There are two components to the 3D-XplorMath Documentation: first there is the standard sort of documentation, explaining how to use various features and user interface elements. But since 3D-XplorMath is primarily concerned with mathematical content, accompanying the program there is also a substantial amount of mathematical documentation that is easily available while the program is running.

In fact, 3D-XplorMath has built into it the detailed information required to visualize over two hundred and fifty different interesting mathematical objects (with more constantly being added). But while a picture may be worth a great many words—and a good mathematical visualization can by itself convey a large amount of information—the full meaning of a visualization can usually best be grasped when it is viewed in the context of an explanation that tells what makes that particular object special, how it is defined, and the mathematical significance of various aspects of the graphic image. For this reason, each of the mathematical objects in the repertory of

3D-XplorMath has associated to it a piece of documentation that we shall refer to as its ATO (About This Object).

After you select an object from one of the menus of objects, you will almost immediately see a default visualization of that object, and if this is the first time you have selected this object, then the next thing you should do is select About This Object from the Documentation menu to learn a little about what it is that you are viewing. Some of the ATOs are still somewhat primitive, containing little more than formulas defining the objects they refer to. But gradually more objects are getting refined ATOs that contain further interesting mathematical details.

The various objects are grouped into a number of Categories, such as Surfaces, Plane Curves, Space Curves, Conformal Maps, etc., and each Category has associated to it a piece of documentation called its ATC (About This Category). If you are going to be spending some time looking at various objects from a given category, then it is a good idea to choose About This Category from the Documentation menu and read the panel that comes up.

As for the documentation for the program itself, a basic version can be found in the Quick Help submenu of the Documentation menu, and in particular we strongly recommend that you at least look at “Once Over Lightly” and the two “Getting Started” items there. There is in addition a much more extensive version of the program documentation that is formatted as hypertext (html) and that will open in your web browser if you select Local HTML Documentation in the Documentation menu. (These web pages come with the standard distribution of the 3D-XplorMath program in the folder called 3DFSdocs, and this is also the folder that contains the ATOs and ATCs in PDF format.)

Finally, we should mention that you can add your own documentation that will be available in the Documentation menu while the program is running. There is a folder called USERDocs in the 3D-XplorMath application folder, and the name of any file that you place in this folder will become an item of the User Topics submenu of the Documentation menu. When a user selects a filename from the User Topics menu, the corresponding file will be opened, just as if its icon had been double-clicked in the Finder. You are **not**

restricted to text files—this will work also for PDF files, JPEG (and other picture files), and even Quick-time movies. If you place files in a folder and drag that folder into the USERDocs menu, then the name of that folder will become the name of a submenu of the User Topics menu, and the files in that folder will be items of that submenu (and yes, since you asked, this does work recursively). You do not need to put an actual folder in the USERDocs folder—an alias to it is just as good (and you can give the alias any name that you want to appear as the submenu title). For example, you may find it convenient to put an alias to the Settings Folder in USERDocs folder.

While there are certainly many other ways to use this feature, our actual motivation for adding it was to make available a mechanism for an instructor using 3D-XplorMath as a teaching aid in a mathematics course to put various course-related resources in the Documentation menu.