



# The Math Images Project

mathforum.org/mathimages

Collaborative project: The Math Forum @ Drexel and Swarthmore College

Gene Klotz

## Recent History

This summer's CCLI Phase I project:

- 7 undergraduates interested in math and 7 interested in computer science began constructing the Math Images site.
- Our expectation: by writing about mathematics relatively young students could learn more advanced math and also explain it well. So we used rising sophomores with a few upperclassmen for mentors.
- Very successful: we may have developed a worthy companion to REUs, suitable for broadening and strengthening the skills of students not likely to get into the research projects.
- CS students worked with the math students, creating supplementary software to help explain the math. Also very successful, and even produced some good standalone learning tools.

## Digital Library goals and strategies

Interest the public in higher math and technology's contribution

*\* Aesthetically compelling and mathematically interesting images in an unthreatening environment that rewards exploration*

*\* Provide a "screensaver" mode that increases usage.*

Establish a self-sustaining digital library

*\* Wiki software to encourage user involvement in the development and improvement*

*\* Library content developed by undergraduates in both summer workshops and in course projects.*

Contribute to the improvement of math education

*\* Involve math and CS students in creative collaborations through which they learn math, software design, and effective mathematical communication*

*\* For pre-service and in-service teachers offer workshops, professional development, and courses involving them in the mathematics and use of technology.*

Above, a screen shot of the Math Images Project home page.

## New directions

Enable school teachers to use the site by making classroom activities such as lesson plans available

*\* pre- and in-service teachers would profit from constructing such activities.*

Enable site visitors to request more material about the math behind an image

*\* this also gives focus and impetus to those adding to the site.*

CS students started making pages on the mathematics of computer graphics and computer vision.

We will construct a screensaver of many striking images, candidates for the Math Image pages. When clicked upon gives brief information about the image and link to the Math Images site (or some other Math Forum site—or other NSDL site, say!)

Below is an example of an applet that was created by a Drexel student that allows users to design their own hypotrochoid.

## An Image Page

## A new kind of book for digital libraries

We use the same software as Wikipedia.

Students strive for good math clearly presented.

Their work is open to improvement, e.g. we encourage others to strengthen and add to — more learning.

Please take a look and send us your comments!

[mathforum.org/mathimages](http://mathforum.org/mathimages)

## The future of the Math Images Project

We're submitting a CCLI Phase II proposal to

- implement our new directions
- involve more institutions
- build critical mass of image pages so that we can become self-sustaining.