

USING THE INTERNET TO CONDUCT RESEARCH IN THE HISTORY OF MATHEMATICS

ASSIGNMENT OVERVIEW: There are many good sources of information on the history of mathematics in both electronic and print format. Traditional mathematics courses like College Algebra and Differential Calculus have set content and similar approaches to presenting the material and one text is usually enough to learn the material. However, the history of mathematics involves so much material and so many different contexts to view that material that one text can't begin to provide all the information needed. Thus, it is important to be aware of the many good sources of information available both for the assignments in this course and for future study. Upon successful completion of this assignment, you will learn skills that will help you to become a better online researcher and will hopefully provide you ideas for your research paper for this course.

This assignment will be a scavenger hunt through many different types of sources to introduce you to the material available at that source. As you go from site to site, you should take notes on what kinds of information you can find at that site (a 3x5 card is a great organizational tool). This will be invaluable when starting your research project.

LEARNING OBJECTIVE:

- To become familiar with online resources for finding primary and secondary sources in the history of mathematics.

DIRECTIONS:

In this assignment, you will visit many different web sites with information pertinent to the history of mathematics. As you move to each site, you should

- Familiarize yourself with the types of information at the site
- Explore prompts called “From this site.” (They should help with the quiz).

After you've looked at each site, take the multiple-choice quiz on internet resources found in the assessment tab.

General History Sites:

Go to the site <http://www-gap.dcs.st-and.ac.uk/~history/>.

This website contains short biographies of LOTS of mathematicians and the contributions of many cultures. The references section can get you started on your search for primary and secondary sources.

FROM THIS SITE — **Find the cause of the death of Evariste Galois.**

- **According to the article “The number e ”, when is the first time the number e appears in its own right?**
- **Check out the “famous curves” link, especially anything that makes you think of Halloween.**

Go to the site: <http://www.dcs.warwick.ac.uk/bshm/resources.html>

The British Society for the History of Mathematics maintains a page created by June Barrow-Green that gives an organized set of internet links to sites on the history of mathematics. A great starting point for finding mathematics history information on the internet.

Go to the site: <http://www.agnesscott.edu/iriddle/women/women.htm>

This site contains biographies for women mathematicians through history.

Primary versus Secondary sources

Go to the site: <http://lib1.bmcc.cuny.edu/help/sources.html>

This website will help educate you about the difference between primary and secondary sources.

FROM THIS SITE — **Which of the following are primary sources: an article in the *American Journal of Mathematics* from 1889 about the history of ancient Egyptian mathematics or an article in *American Journal of Mathematics* in 1989 written by a mathematician explaining her new result?**

Finding Secondary Sources:

Go to the site: [MathSciNet](#)

This website database will search for articles from mathematics journals and books in all areas of mathematics, including the history of mathematics. Journals and books are “peer-reviewed” to verify their contents and the information they contain is usually more reliable than a random

website. If you click on the first blue arrow below the label “Search Terms”, you see you can conduct a search based on the author, title, or many other attributes. **IMPORTANT:** To search in the subject of history of mathematics, click on the blue arrow at the top and release on “MSC Primary”, then type 01 in the field. A subscription is required to use MathSciNet, and you need to go through your Hunter library’s site to access the search (if accessing off campus, you’ll need to enter your name and Banner ID).

Historia Mathematica: One of the main research journals in the history of mathematics is *Historia Mathematica*. Articles in this journal represent current research in the field and their bibliographies can be great resources for finding other sources of information. Western Carolina University has a subscription to the electronic version of the journal from 1995 to present.

Sites related to *Historia Mathematica:*

The site: <http://www.math.uu.nl/ichm/hm/hmtoc.html> also gives the tables of contents from volume 1 to volume 23 (2). You can get the table of contents in plain text, then do a keyword search using FIND in your browser.

The site: <http://faculty.bennington.edu/~gvanbrum/hmabstracts/> allows you to search the *Abstracts* section of *Historia Mathematica* by author, title, or keyword.

FROM THESE SITES —Search for articles written by Adrian Rice, the keynote speaker for SMURCHOM V

Finding Primary Sources:

Primary sources are direct writings of the mathematician in their own (or translated) words. These sources are the best way to see exactly what the mathematician said and the notation they used. In looking for primary references, the best place to start is the references section of your secondary articles.

Go to the site: <http://historical.library.cornell.edu/math/>
This site gives a bibliography of the collected works of mathematicians.

FROM THIS SITE —Look for the monograph by Descartes.

Go to the site: [WorldCat](#)

WorldCat can help you search the world's libraries for your primary sources. You can find out which libraries hold your item, information that may make your interlibrary loan folks very happy. (if accessing off campus, you'll need to enter your name and Banner ID)

Go to the site: http://www.mathematik.uni-bielefeld.de/~rehmann/DML/dml_links.html

The Digital Mathematics Library (DML) provides links to a stunning variety of digitized mathematical journals and books. It lists these links by repository, author, and title. Some of the repositories are included in the links below.

The site: <http://historical.library.cornell.edu/math/> is the Cornell University Library Historical Mathematics Monographs provides digitized copies of the mathematical books in the Cornell collection, especially the fragile ones.

Sites with specific primary and secondary source content:

The site: http://www.perseus.tufts.edu/Texts/chunk_TOC.html is the Perseus Project at Tufts University which provides originals and translations of several ancient Greek mathematical works.

The site: <http://www.hti.umich.edu/u/umhistmath/> is the University of Michigan Historical Mathematics Collection and contains digitized mathematical books from the 19th and 20th centuries.

The site: <http://aleph0.clarku.edu/~djoyce/java/elements/toc.html> contains the full text of Euclid's *Elements* with interactive capabilities.

The site: <http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html> provides excerpts from W.W. Rouse Ball's 1908 *Short Account of the History of Mathematics*

Finding Other Resources:

Go to the sites: <http://www-gap.dcs.st-and.ac.uk/~history/> and <http://www.agnesscott.edu/lriddle/women/women.htm>

Along with its biographies, the St. Andrews site and the Agnes Scott site contain a variety of pictures of the mathematicians they discuss.

Stamps:

Go to the site: <http://jeff560.tripod.com/stamps.html>

This site reproduces pictures of postage stamps that feature famous mathematicians.

FROM THIS SITE — **Check out the stamps for Leonard Euler.**

Symbols:

Go to the site: <http://jeff560.tripod.com/mathsym.html>

This site has references to the earliest known uses of mathematical symbols.

FROM THIS SITE — **Check out the earliest known use of the equals symbol**

Lesson plans, worksheets, etc. for the classroom:

Go to the site <http://mathisgoodforyou.com/>

This website “is dedicated to the students of mathematics between the ages of 11 and 18 and to teachers who would like to have some ready-to-use and downloadable resources in the history of mathematics.”

FROM THIS SITE — **Check out the worksheets, especially the one on big numbers.**

Convergence:

Go to the site <http://mathdl.maa.org/mathDL/46/>

This website is maintained by the Mathematical Association of America, and contains quotations, articles, and classroom modules on the history of mathematics.

FROM THIS SITE — **Check out the link to quotations.**

Other Sites You May Find Useful:

- <http://www.dcs.warwick.ac.uk/bshm/abs.html>

The BSHM writes abstracts on journal articles and books on the history of mathematics. You can find the abstracts, listed in alphabetical order by author, from 1992 to today at this site.

– (JSTOR)

This site provides access to digitized journals on mathematics and the history of science, among other topics. You may need to go through your university library’s site to get here, because subscription is required. (if accessing off campus, you’ll need to enter your name and Banner ID)
