AMSER QUARTERLY
NEWSLETTER OF THE APPLIED MATH AND SCIENCE EDUCATION REPOSITORY

Summer 2008

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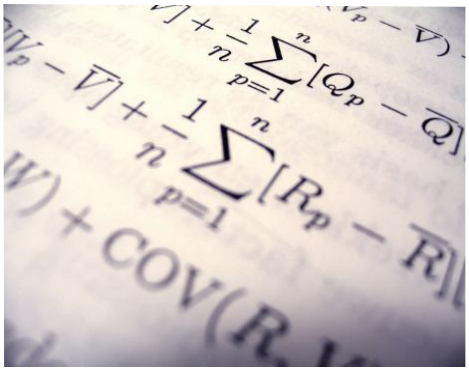
AMSER Spotlight: American Mathematical Association of Two-Year Colleges

AMSER periodically teams up with other digital collections so that we can bring the excellent materials from these collections to AMSER users. In each issue of our quarterly, we highlight a collection we have integrated into AMSER. Recently we have partnered with AMATYC (American Mathematical Association of Two-Year Colleges). AMATYC was founded in 1974 and "is the only organization exclusively devoted to providing a national forum for the improvement of mathematics instruction in the first two years of college."

The organization has a number of praiseworthy goals, and one of them is to provide free, high quality resources for mathematics instructors. They have begun to accomplish this by creating MAC3, Mathematics Across the Community College Curriculum.

The goal of MAC3 "is to create a mathematically literate society that ensures a workforce equipped to compete in a technologically advanced global economy." The resources in MAC3 help train math and non-math faculty across the disciplines to create, evaluate, and modify projects which incorporate mathematics. By incorporating mathematics into non-math courses, students can strengthen and reinforce the mathematical concepts learned in their previous math classes, apply these concepts in context, and understand



the greater importance and application of math in their lives and future careers. The courses and projects found in MAC3 were submitted to AMATYC by professors and instructors from colleges around the country and then evaluated by AMATYC and its partner institutions. Many AMSER users study or teach in fields outside mathematics, but integrating math into their curriculum could prove extremely useful in the classroom as students seek to use their community or technical college education in the real world.

AMSER has carefully reviewed and selected resources from MAC3, and integrated these high-quality materials into our own library for our community to utilize and enjoy. Some examples from this superb collection include:

Pharmacology and Math Calculation in Nursing

http://amser.org/SPT--FullRecord.php?ResourceId=6735

Prapapis Pitayapisut, Pavlov Rameau, and Suzanne Austin of Miami Dade College created this curriculum for nursing students to better their knowledge of mathematical conversions. The web site contains an enriched compilation of resources in topics such as pharmacology and calculating drug dosages, as well as links to web sites with drug information. The course contains a list of teaching topics for nursing students and a quiz on dosage calculations. This is a great resource for teachers looking to focus their syllabus or to find useful web sites. Students could also use this web site as a homework resource or for extra practice on the math skills needed as a nurse.

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Chemistry with Math Activation

http://amser.org/SPT--FullRecord.php?ResourceId=6890

Jadwiga Weyant and Sara Selfe of Edmonds Community College created this course to integrate math and chemistry. Students are provided the opportunity to directly connect

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chemistry to topics such as equivalent fractions, proportional reasoning, logarithms, solving linear equations, and direct and inverse proportions. Five worksheets are available from this web site to give students practice with these mathematical functions. This would be a good resource for educators looking to introduce mathematical concepts to non-major chemistry students. This would also be a great place for students to look who are seeking supplemental practice.

Algebra, Geology and Economics

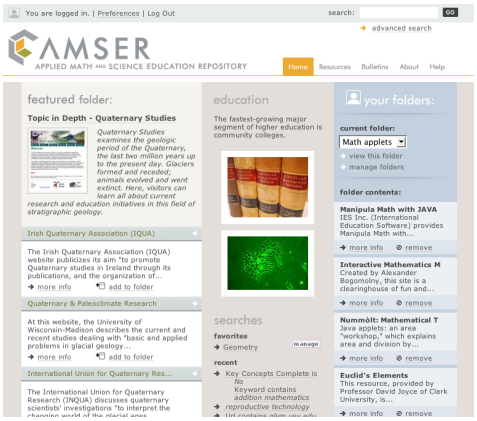
http://amser.org/SPT--FullRecord.php?ResourceId=6553

In this particular resource, concepts from algebra, geology, and economics are intertwined to create two dynamic activities for students. The projects, created by Mary Dowse, Tom Gruszka, and George Muncrief of Western New Mexico University, include both general learning objectives and subject specific objectives for what students will learn through the completion of the activities. The first activity focuses on the mathematics of economics, and the second activity focuses on geology and graphing. These activities can be easily adapted for use in the classroom, and are also useful for students looking for extra practice with these concepts.

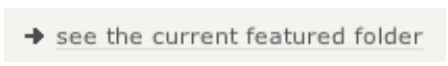
Do you know about a great collection of resources that you'd like to see us integrate into AMSER? Do you have a learning object or a handout that you know really works to help students truly understand a specific concept? If you have resources that you would like to see featured in AMSER, please e-mail us at resources@amser.org, *or follow the link at the bottom of the AMSER home page to submit a resource suggestion.*

New on AMSER: Featured Folders

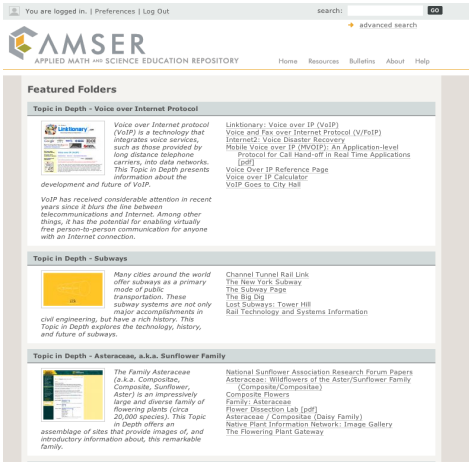
AMSER has created a collection of Featured Folders, called Topics in Depth, which are sets of resources aimed at illustrating a given topic by combining six to eight resources in a single shared folder. The Featured Folders take full advantage of AMSER's innovative foldering system, developed to let users organize and share resources within AMSER. The individual resources in each folder were selected from AMSER's extensive collection and were chosen because each resource helps to demonstrate various aspects of the specific folder's topic. These Topics in Depth were designed by the AMSER staff to add meaning and context to applied math and science topics, from Aerodynamics to Weather Instruments, as well as to assist educators in the classroom. AMSER's Topics in Depth - Featured Folders have many possible uses; they could be used as introductory material for students, supplementary material for lectures, and as convenient take home activities or assignments, to name only a few.



Visitors can easily find these folders each time they visit the AMSER home page. If the Featured Folder is not displayed, go to the bottom of the page and on the left hand side click on "see current featured folder."



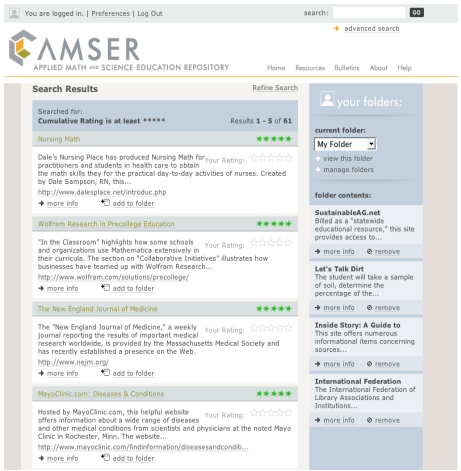
The Featured Folder will then appear on the home page with the current Topic in Depth highlighted. There is a brief description, an image of a resource in that folder followed by the individual, supplemental resources which address the different aspects of that topic. From the home page, user's can choose to click on the title (i.e. Topic in Depth - Aerodynamics) to be taken to the folder in its entirety or they can click on an individual resource that interests them. If you are interested in seeing all of the various topics covered by the Featured Folders, just find the link under the Featured Folder's resources that says "see more featured folders" to take you to a list of all of the Topics in Depth in AMSER's collection.



By using AMSER's printer-friendly feature, the Topics in Depth can also be printed for a ready-made homework assignment or in-class activity. AMSER users are also encouraged to submit their own collections of resources to share. Just log in to AMSER and create your own folder in your chosen specialty or subject area, share that folder, and then send us the URL. Your folder may become a Featured Folder and help other faculty, staff, and student users in the AMSER community.

AMSER User's Corner

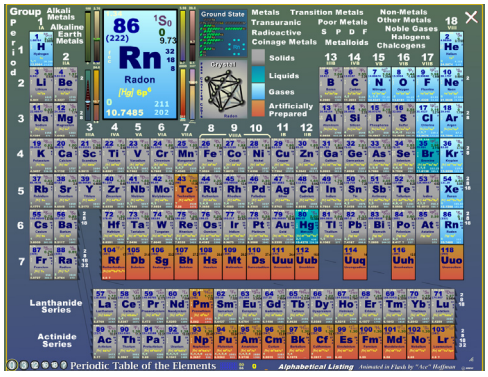
In each issue of the AMSER Quarterly we feature resources that our users have found particularly useful. In previous issues we have had individual contributors from the fields of Biology, Chemistry, and Mathematics share some of their favorite resources from AMSER. In this issue we thought we would instead highlight some of the resources that our users have rated highly by using the AMSER rating system. Upon creating a login for AMSER, users gain many additional privileges on the AMSER site. One of these privileges is the ability to rate a resource that was particularly useful (or not) so that other users can benefit from your experience. There are two ways to rate a resource in AMSER. Resources may be rated directly from the AMSER front page or by searching or browsing for the resource record. After locating the record, display the full record by clicking "More Info" and you will find the ratings section at the bottom of the screen. After rating the resource you must click the rate button in order to save your rating. The more users that provide ratings, the more valuable the AMSER portal becomes for the user community. If you would like to see all of the resources rated highly in AMSER, just go to the "Advanced Search" (found at the top of any page)



and click on "Show Limits". From here, find the drop down menu labeled "Minimum Rating" and click on how many stars you prefer. You can further limit this search by entering in a specific keyword. If you find resources that you particularly enjoy or find useful, we encourage you to rate the resource yourself so that other AMSER users can benefit from your feedback. Below you will find a small sampling of some of the resources that AMSER users have given the coveted five star rating.

Animated Periodic Table of the Elements

http://www.animatedsoftware.com/elearning/Periodic%20Table/AnimatedPeriodicTable.swf



The odds are that most chemistry students and teachers have never seen such a highly animated version of the periodic table of the elements as this, well, rather highly animated table of the elements. Upon entering the site, visitors can browse through the alkali metals, the alkaline earth metals, and both the lanthanide and actinide series. As users move their mouse across the table they can learn each element's boiling point, its oxidation states, its atomic weight, and its density. One of the other nice features of the site is that visitors can also look at each element's bonding structure. It's a very well-designed site, but if visitors find themselves confused, they can also click on the question mark for help and general assistance.

National Budget Simulation

http://www.econedlink.org/lessons/index.cfm?lesson=em306

EconEdLink is a set of resources provided by the National Council on Economic Education. Here they present this useful lesson on the National Budget. The lesson provides students with a budget crisis scenario and then provides a National Budget Simulator for students to utilize as they make cuts in order to balance the budget. The lesson encourages students to consider why they have chosen to make the cuts to certain programs and also provides worksheets and assessments to encourage students to further reflect on their choices. All worksheets, simulators and lessons are available to print as well. Overall, this is a fun site that could be used in a classroom setting or as a homework assignment to provide real world examples for students of math, political science, economics, and more.

Nursing Math

http://www.dalesplace.net/introduc.php

Dale's Nursing Place has produced Nursing Math for practitioners and students in health care to obtain the math skills they for the practical day-to-day activities of nurses. Created by Dale Sampson, RN, this resource guides visitors through six categories of math as it applies to nursing: Factor-Label, Basics, Oral Meds, Injections, IV Drips, and IV Complex. Each area of the site provides practical examples of each math problem in the course of regular nursing duties. The Nursing Math site

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also provides a calculator to help determine patients' BSA (body surface area), other calculators to convert between English and metric height and weight measurements, as well as one to convert between Fahrenheit and centigrade temperatures. This site, and its tools, would be helpful to all students and practitioners in health care, including home health care aides.

Physics Applets

http://jersey.uoregon.edu/vlab/

Multimedia instructional tools for the physical sciences are rather in vogue these days, and a number of universities and colleges have developed creative resources in this area. One such set of resources happens to be the Physics Applets collection, created by staff members at the University of Oregon's physics department. The interactive applets are divided into four sections, including mechanics, thermodynamics, astrophysics, and energy & environment. In total, there are over thirty different applets, and they include those that illustrate the concepts of potential energy, Kepler's Third Law, and atomic emission. The site also includes a listing of credits, a help section, and information about this initiative.

See the resources featured here in our 5-star rating folder at *http://amser.org/amserquarterly/5starrating*.

Would you like to be featured in a future AMSER Quarterly? We'd love to hear from you and learn about your favorite AMSER resources and how you've been using them in an educational setting. Please e-mail us at *amser@amser.org* for details.

Calendar of AMSER Events

Where in the world is AMSER?

We'll be at various conferences and meetings this year and we'd love to talk to you about what you're doing with digital resources and how we can make AMSER more useful to you and your students. Here's where we'll be and when:

July

MathFest 2008
July 31-Aug 2, 2008
Madison, Wisconsin

August

Distance Teaching & Learning
Aug 5-8, 2008
Madison, Wisconsin

Course, Curriculum, and Laboratory Improvement (CCLI)
Aug 13-15, 2008
Washington, DC

September

National Science Digital Library (NSDL) Annual Meeting
Sept 30-Oct 2, 2008
Washington, DC

October

Conference on Information Technology (CIT)
October 19-22, 2008
Salt Lake City, Utah

Advanced Technological Education (ATE)
October 28-31, 2008
Washington, DC

For more AMSER events and links go to *http://www.amser.org/events*

Contact Information

Have a question? Want to share information about how you're using AMSER or other digital materials in your classroom? Please contact us!

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This material is developed under funding from National Science Foundation grant #0435310.