

AMSER Spotlight: Geotechnical, Rock and Water Resources (GROW) Library

AMSER routinely teams up with other digital collections so 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. A collection we recently added is the Geotechnical, Rock, and Water Resource Library (GROW).



GROW was created in 2001 with support from the National Science Foundation by the University of Arizona's Department of Civil Engineering, Center for Campus Computing, University Library, and other contributors. GROW was the first development project towards the creation of a National Civil Engineering Resource Library (NCERL) and it is part of the National Science Digital Library (NSDL).

The GROW team's mission is to develop a digital library to meet the education needs of students, independent learners, and professionals. To realize its mission, GROW provides free, high-quality interactive digital learning objects to be used for self-study or for instruction. GROW also promotes the submission and contribution of resources on their site by subject experts and all material within the GROW digital library is reviewed for academic integrity and accuracy.



The GROW collection consists of resources harvested from the web and elsewhere as well as resources developed by GROW team members. Within the collection, users will find interactive, multimedia, educational resources that "emphasize active learning and provide a learning experience."

The AMSER staff has carefully reviewed and selected resources from GROW, and integrated these high-quality materials into our own digital library for our community of users to enjoy. Some examples from this fine collection include:

Mineral Information Institute: Mineral Photographs

<http://www.mii.org/mineralphotos.html>

The Mineral Information Institute (Mii) works with interested professional and scientific associations, and various government and education agencies, to help classroom teachers develop materials that are directly usable by teachers in a variety of subjects and a multitude of grade levels. One of their projects has been to develop this collection of pictures of different

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minerals. Provided along with each individual picture there is information on the background, name, uses, and substitutes and alternative sources. The list can be organized alphabetically and by type and should prove useful for instructors and students alike.



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Summer Research Program for Science Teachers: Lesson Plans

<http://www.scienceteacherprogram.org/lesson.htm>

This site, from the Columbia University Summer Research Program for science teachers, provides lesson plans developed by participants in the areas of astrophysics, biology, chemistry, earth science, environmental science, general science, and physics. Most of the lesson plans are research-inspired and reference science standards. Currently, there are over 300 lesson plans in the database. The site also provides a search engine to search by keywords for available lesson plans.

Virtual Geoengineer

<http://www.geoengineer.org/virtual.html>

The site presents specific topics in geoen지니어ing through photos, maps, diagrams and videos using accompanying texts. Materials found in the Virtual Geoengineer include: photos with details of projects, case histories, photos of different construction methods with explanations and equipment used in construction, and construction issues on specific projects. Topics covered include: geology, earthquake engineering, foundations, excavation, in-situ testing, dams, geosynthetics, landslides, and slope failures.

Do you know of a great collection of resources that you'd like to see integrated into AMSER? Do you have a learning object that helps students truly understand a specific concept? If so, 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 from AMSER: AMSER on Facebook

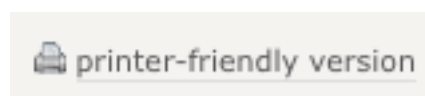
Social media is any online space where people can interact and social media tools are easy-to-use platforms that allow people to connect online. These tools allow groups like AMSER to connect with users on an individual basis at the place where their educational needs intersect with our services and tools. Therefore, it only makes sense that we would explore



these tools and join the conversations that are becoming an important part of daily life. By adopting social media, AMSER is making it easier for our users to talk to us. AMSER is always looking for new ways to connect with users and to provide services more effectively and efficiently. We have recently created an AMSER page on Facebook, a free-access social networking website where users can connect and interact with others. AMSER joins a growing list of other organizations using Facebook to stay connected such as NSDL, NSF, and the Smithsonian Institution. Use Facebook to keep up with new resources, events, and other exciting developments in AMSER. To find us on Facebook, search for AMSER or the Applied Math and Science Education Repository and become a fan.

New from AMSER: Printer-Friendly

Sometimes we need to print out pages we find or create online, and in an effort to make this easier for our users (and their printers), AMSER has added printer-friendly options to many of their pages. Printer-friendly is a term used to describe a version of a web page formatted especially for easier printing. These pages are designed to fit on an 8.5"x11" or A4 sheets and include only the content of the page, along with source information. The printer-friendly option can be found on any resource by clicking the "More Info" link as well as within the AMSER folder system.



This function has been designed to be used with other AMSER features,

like folders, to make using and sharing valuable resources more simple. Use this feature to create handouts for class, annotated bibliographies, assignments, or to accompany other classroom projects and activities.



Focus on AMSER Resources: Featured Folder - The Physics of Sports



Within the AMSER Collection, the AMSER staff has created series of Featured Folders, which are sets of resources aimed at illustrating a given topic by combining six to eight resources in a single shared folder. 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. For more details on how to use and find AMSER's Featured Folders, see the Summer 2008 issue of the AMSER Quarterly, which can be found in the About section of AMSER in the "AMSER Quarterly" tab.

Here we have highlighted one of over 50 Featured Folders within the AMSER collection, The Physics of Sports. This Featured Folder provides information about the relationship between physics and sports. From baseball to scuba diving, this folder will help AMSER users find out how concepts such as velocity, Newton's laws, and mass all factor into the science of sports. Resources within this Featured Folder include:

Sport Science

<http://www.exploratorium.edu/sports/>

This Exploratorium website provides creative educational materials for

introductory physics students and teachers. Users can learn about the science behind a home run, find out how the physics of balance helps enthusiasts surf the waves, and discover the physics behind many other popular sports. The site is equipped with interviews, enticing images, and enthralling descriptions. Visitors can find interesting articles covering sports topics such as fitness challenges for climbers and the way balls bounce. With these inventive tutorials, students are sure to become enthused about physics.



Physics and Acoustics of Baseball and Softball Bats

<http://www.gmi.edu/~drussell/bats.html>

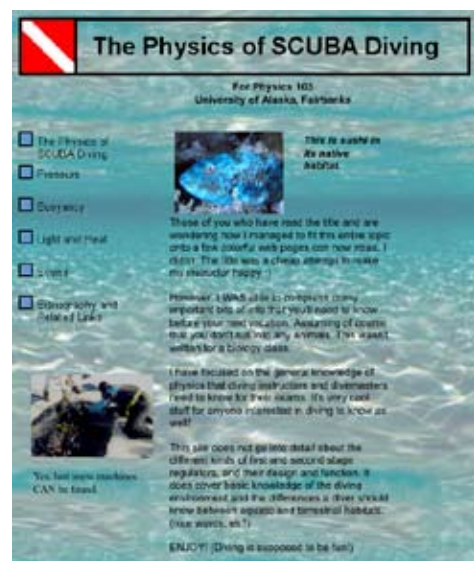
This website, created by Dr. Daniel A. Russell at Kettering University, addresses the general physics concepts concerning baseball and softball bats and bat vibrations. According to Dr. Russell, "There is a tremendous amount of physics and engineering that goes into the design of a baseball or softball bat, especially the new high-tech aluminum and composite bats which are currently dominating the market. There is also an amazing amount of physics involved in the bat-ball

collision, and in the performance and behavior of the bat itself." Dedicated to the physics of baseball and softball bats, Dr. Russell created this site in order to answer often asked questions concerning the physics of baseball bats. Students and educators can learn about ball-bat collisions with the many images, figures, and animations provided here. Topics include wood, aluminum and corked bats, the sweet spot, and the tightness of a player's grip. At the bottom of the page, visitors can find links to references, interviews, articles, and various student science projects inspired by this page.

The Physics of SCUBA Diving

http://ffden-2.phys.uaf.edu/103_fall2003.web.dir/Wally_Drumhiller/

Akiyo Kikuchi and Wally Drumhiller explore the physical aspects of scuba diving that people experience in the high pressure environment. Visitors can find out about pressure, buoyancy, sound, light, and thermal insulation and how they work in an underwater environment. Visitors will also find a helpful and extensive bibliography of print and online resources for further information about both physics and scuba diving.



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Focus on AMSER Resources

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Physics in Sports

http://archive.ncsa.uiuc.edu/Cyberia/VideoTestbed/Projects/NewPhysics/page_1.html

The University of Illinois at Urbana-Champaign investigates the notion that people use physics every time they participate in a sport. With the use of QuickTime videos, the website discusses Newton's first three laws and the concept of universal gravitation. Each section is concluded with a question about the video which illustrates the physics concept.



Welcome to the Cyber Sports Tour!



PHYSICS! YUCK!! If you don't know what it is, or if the name scares you, don't let it. You use physics everytime you participate in a sport. It helps you kick or hit a ball, make a catch, or jump the farthest....select one of the titles below to take a look at some athletes in action and how their bodies and physics work together! By the way, can you correctly identify the English scientist that lived in the mid 1600s whose ideas help explain the actions you just observed?

Find these and the rest of the resources in the Physics of Sports Featured Folder at <http://amser.org/amser/topicindepththephysicsofsports>.

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:

May

National Institute for Staff and Organizational Development (NISOD)

May 24-27, 2009
Austin, Texas

Visit us at booth #320 in the Exhibit Hall and don't miss our breakout session Monday, May 25th at 11:15am in Room 13B.

June

Joint Conference on Digital Libraries (JCDL)

June 15-19, 2009
Austin, Texas

July

High Impact Technology Exchange Conference (HI-TEC)

July 21-22, 2009
Scottsdale, Arizona

Visit us at booth #13E in the Exhibit Hall.

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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