



EDUCATION

A Kinder Cut

Visitors to the flashy Web site Froguts can dissect a frog without catching even a whiff of formaldehyde. Ten easy-to-follow explorations meld computer graphics and photos of real dissections to simulate the disassembly of an amphibian. Students wield virtual scalpels and scissors to slice open the frog's abdomen, bisect the heart to track blood flow through the three chambers, and expose the lobes of the animal's puny brain.

The lessons explore external anatomy and all of the major organ systems, and animations amplify the content, demonstrating processes such as the frog's four-step breathing mechanism. Although geared for high school students, the material might also be useful for introductory college courses. Richard Hill, a graduate student at the University of South Florida in Tampa, created the site to provide an anatomy lesson for schools that can't afford a dissection lab and to reduce the number of frogs slain for science.

www.froguts.com



RESOURCES

Windows on Arctic Climate

The tiny, glass-encased algae known as diatoms are windows on past climate. These organisms are highly sensitive to changes in temperature and other conditions, so the presence of particular species serves as an ideal environmental indicator. The National Diatom Database will allow researchers to track climatic variation in the Canadian Arctic using diatom collections. Compiled by the Geological Survey of Canada, this storehouse lets you unearth data on sampling locales throughout the country (see map), including each site's exact geographical coordinates and the age of its sediments. The database will eventually expand to hold details of some 5000 fossil and recent collections and include a synopsis of the environmental requisites of some 1500 diatom species.

sts.gsc.nrcan.gc.ca/clf/geoserv_diatom.asp

GUIDE

Do-It-Yourself Journals

So you're fed up with the high price of journals and want to start your own affordable online alternative. These days, a rebel needs a business plan more than a manifesto. This primer will lead you step by step through planning and launching a nonprofit electronic journal or database. It explains a skill alien to most scientists: how to craft a compelling business plan that will win over funders, administrators, and potential contributors. The guide is the work of the Scholarly Publishing and Academic Resources Coalition, whose goal is to "put scientists and scholars back in control of their intellectual property while simultaneously lowering the cost of publishing and distributing their work."

www.arl.org/sparc/GI

LINKS

See Here

Want to brush up on your lens formulae? Looking for a good reference book on fiber optics? Need to know if someone has already come up with your idea for a great new light-manipulating device? Then stop by OpticsNotes.com, an index of more than 2000 optics references and resources. The site links to an eclectic variety of materials, ranging from researchers' home pages to lecture notes to a database of optics patents. Web master Bruce Nichols, an optical engineer from Columbia, Maryland, says he casts his net widely when looking for links. "Basically, the criterion is, 'Is it instructive?'" he says. Links are segregated into useful categories, such as Fundamentals, Design, and Applications, and the site's search engine can help you find just what you're after.

www.opticsnotes.com

DATABASE

Poisons in the Wild

Need to know the lethal dose of dioxin for bullfrog tadpoles? Want to find out how selenium fouls up the growth and development of ducklings? Track down the harsh consequences of these and many other pollutants at ECOTOX, a storehouse of ecological toxicity information assembled by the Environmental Protection Agency. Drawing on papers, theses, and unpublished reports dating back to 1926, the database records the effects on aquatic and terrestrial creatures of thousands of toxic substances, from actinomycin to zinc. Search by species or chemical to obtain a summary of each study's protocol—including such variables as dosage and duration—a breakdown of the findings, and the original citation.



www.epa.gov/ecotox

Send great Web site suggestions to netwatch@aaas.org