



BIOSCIENCE NEWSLETTER

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JANUARY - 2008

NEWS / KNOWLEDGE UPDATES

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The newsletter offers latest updates on Internet covering news / articles related to genetics and physiology of living organisms and of the relationship of living organisms to one another as well as the physical environment.

If you have material you would like to contribute to News Letter - You are welcome at [NETJIST](#) .

(For any queries / suggestions mail to : netjist@gmail.com)

POONAM SHARMA - EDITOR

"Searching scientific and patent information on STN"

» [Method For Assigning Probabilities To Human Protein Interactions Devised By Stowers Proteomics Center](#)

Chennai, Mumbai - Feb 2008

The Stowers Institute's Proteomics Center has published a novel method of using normalized spectral counts derived from a series of affinity purifications analyzed by mass spectrometry (APMS) to generate a probabilistic measure of the preference.

International Conference on Biotechnology 2008

» [Computers Used By Biologists To Study Bacterial Cell Division](#)

A group of computational biologists at Virginia Tech have created a mathematical model of the process that regulates cell division in a common bacterium, confirming hypotheses, providing new insights, identifying gaps in what is understood ..

UPCOMING CONFERENCES

ENERGY BIOSCIENCES INSTITUTE

Thistle Bioscience Forum 2008

» [Whale Experts Oppose Bush's Navy Exemption](#)
Emediawire (press release), WA - 17 hours ago
But many environmental education groups and marine mammal experts like Yvonne Miles of Scanning Ocean Sectors think this move could be a very dangerous

RSC - CONFERENCES AND EVENTS

OBN events listings

EurekaAlert (press release), DC -NATIONAL ACADEMY OF SCIENCES AWARD IN MOLECULAR BIOLOGY A a medal and a prize of \$25000 awarded annually for a recent notable discovery in molecular biology ... ::

THE PAUL FOUNDATION SCHOLARSHIPS 2008

The Dr Manmohan Singh Scholarships 2008

» [USGS Genetics Research Sheds Light on Viral Hemorrhagic Septicemia ...](#)

DIA EDM
February 05-07, 2008
Philadelphia, PA, USA

WebWire (press release), GA -For information on how to detect and confirm VHS virus, see Fisheries: Aquatic and Endangered Resources Program. <http://biology.usgs.gov/faer/> ::

» [Talk by world-renowned marine geologist set Feb. 1](#)

University of Delaware, DE -A His research has had a major impact on coastal and marine geosciences.A The lecture is sponsored by UD's College of Marine and Earth Studies (CMES) and the ... ::

Visit the conference website.

VALA 2008
February 05-07, 2008
Melbourne, Australia

Visit the conference website.

NETJIST

American Council on Education (ACE)
February 09-12, 2008
San Diego, CA, USA

[Visit the conference website.](#)

Gpha Annual Meeting
February 11-13, 2008
Boca Raton, LA, USA

[Visit the conference website.](#)

Licensing Executives Society (LES) Winter
Meeting

February 21-23, 2008
San Francisco, CA, USA

[Visit the conference website.](#)

IIR - The Life Cycle Management of the
eCTD

February 25-28, 2008
Amsterdam, Netherlands

[Visit the conference website.](#)

AUTM Annual Meeting
February 28 - March 01, 2008
San Diego, CA, USA

[Visit the conference website.](#)

NEXXUS EVENTS

Student Essay Competition 2008

GOOD RESOURCES

- [Biographical Sketches of Indian scientists](#)
- [Eric's Treasure Trove of Scientific Biography](#)
- [Dictionary of Cell Biology](#)
- [Biotech Dictionary](#)
- [ISA Directory](#)
- [Britannica Online](#)
- [Global Encyclopedia](#)
- [Encyberpedia](#)
- [Encyclopaedia of the](#)

» [The tryptophan pathway genes of the Sargasso Sea metagenome: new operon structures and the prevalence of non-operon organization](#)

Background: The enormous database of microbial DNA generated from the Sargasso Sea metagenome provides a unique opportunity to locate genes participating in different biosynthetic pathways and to attempt to understand the relationship and e..

» [Cell regeneration brings hope for diabetics](#)

The blood and heart are known to be supplied with new cells by adult stem cells capable of generating a fresh stock. If such regenerative stem cells existed in the pancreas, they could perhaps be harnessed to restock the supply of pancreat..

» [Breakthrough research turns the tide on water-borne pathogen](#)

Cryptosporidium parvum is a tiny yet insidious waterborne parasite that wreaks havoc worldwide. This parasite is a major cause of diarrhea and malnutrition in small children in developing countries, and causes severe disease in AIDS and ot..

» [Design, Production Of Extremely Novel Drugs Enabled By New Method](#)

A new chemical synthesis method based on a catalyst worth many times the price of gold and providing a far more efficient and economical method than traditional ones for designing and manufacturing extremely novel pharmaceutical compounds ..

» [Common human viruses threaten endangered great apes](#)

Common human viruses are responsible for outbreaks of respiratory disease that have led to the decline of endangered chimpanzees in the wild, according to a study reported online on January 24th in Current Biology, a publication of Cell Pr..

» [Human Infertility May Be Explained By Evolutionary Phenomenon In Mice](#)

Scientists at the University of Liverpool have found that field mice have evolved a unique way of ensuring faster fertilisation, a phenomenon which could explain some cases of infertility in humans. The team, in collaboration with Charles Un..

» [Turning on adult stem cells may help repair bone](#)

The use of a drug to activate stem cells that differentiate into bone appears to cause regeneration of bone tissue and be may be a potential treatment strategy for osteoporosis, according to a report in the February 2008 Journal of Clinica..

» [Nanochannels Impose Order By Capillary Action](#)

Carbon nanotubes are attractive candidates for use as the active elements in the next generation of electronic devices. However, it has proven incredibly difficult to align nanotubes within device architectures. Most of the approaches for l..

» [Evolutionary 'battle scars' identify enhanced anti-viral activity](#)

Rapid evolution of a protein produced by an immunity gene is associated with increased antiviral activity in humans, a finding that suggests evolutionary

[Orient](#)

[Virtual Community Of Tomorrow : The Funk & Wagnalls Multimedia Encyclopedia](#)
Requires Shockwave Flash

[MicroReference : Internet Encyclopedia](#)

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Requires Shockwave Flash

[MicroReference : Internet Encyclopedia](#)

[Glossary of Microbiology](#)

[The Merck Manual](#)

[TOP](#)

biology and virology together can accelerate the discovery of viral-defense mechanism..

» [Texas Chemist Wins 2008 Wolf Prize In Chemistry For Creating New Field Of Science](#)

Dr. Allen Bard, professor of chemistry and biochemistry at The University of Texas at Austin, was awarded the 2008 Wolf Prize in Chemistry jointly with Professor William Moerner of Stanford University. The award, announced by Israel's minist..

» [Study Of Adaptive Functional Evolution Of Leptin In Cold-Adaptive Pika Family Shows Potential To Treat Human Diseases](#)

Researchers at the Northwest Institute of Plateau Biology, Chinese Academy of Sciences have put forward the viewpoint for the first time that adaptive functional evolution may occur in the leptin protein of the pika (Ochotona) family, a typ..

» [Academy Honors 13 For Major Contributions To Science](#)

The National Academy of Sciences (NAS) will honor 13 individuals with awards recognizing extraordinary scientific achievements in the areas of biology, chemistry, solar physics, ecology, mathematics, oceanography, paleontology, social scie..

» [Chopped Up Proteins Trigger Autoimmunity](#)

Dutch biochemist Geurt Schilders has mapped several proteins that can regulate the activity of the human exosome and which play a role in the degradation of RNA molecules. He has also discovered that PM/Sci-75, one of the components fro..

» [Polymer Gel Prevents Skin Grafts From Shrinking](#)

A gel that could prevent the painful and disfiguring contractions of skin grafts used to treat burns has been developed by British scientists. When skin is irreparably damaged by burns, skin taken from other areas of the patient's body or c..

» [New Research Could Help Reverse The Biological Clock For Dementia Patients](#)

26/01/08 08:00 from [Biology/Biochemistry News From Medical News Today](#)
Medical experts in the North-East of England believe they could have found the key to turning back the brain's biological clock and reverse the effects of dementia and memory loss. Pioneering research at the University of Sunderland has..

» [Is This The Beginnings Of Artificial Life?](#)

26/01/08 08:00 from [Biology/Biochemistry News From Medical News Today](#)
In what many believe to be a case of creating artificial life, American scientists have found a way of replication a bacterium's 582,970 base pair genome which should allow for the creation of biofuel-manufacturing bacteria - in oth..

» [Protein Prevents the Spread of HIV](#)

26/01/08 06:00 from [About Biology](#)
Scientists have identified a protein that prevents HIV from spreading to other cells in the body. The protein, tetherin, works by causing HIV particles to clump together on the cell's surface....

» **Biologists use computers to study bacterial cell division**

A group of computational biologists at Virginia Tech have created a mathematical model of the process that regulates cell division in a common bacterium, confirming hypotheses, providing new insights, identifying gaps in what is understood..

» **New MIT tool probes brain circuits**

Researchers at the Picower Institute for Learning and Memory at MIT report in the Jan. 24 online edition of Science that they have created a way to see, for the first time, the effect of blocking and unblocking a single neural circuit in a..

» **Deep genetic divergences among Indo-Pacific populations of the coral reef sponge *Leucetta chagosensis* (Leucettidae): founder effects, vicariance, or both?**

Background: An increasing number of studies demonstrate that genetic differentiation and speciation in the sea occur over much smaller spatial scales than previously appreciated given the wide distribution range of many morphologically defi..

» **Amphibian Skin May Offer New Therapy Against Bacterial Infections**

Researchers from Italy found that a naturally occurring agent in frog skin may inhibit multi-drug resistant bacterial strains associated with hospital-acquired infections. They report their findings in the January 2008 journal Antimicrobia..

» **What is Photosynthesis?**

Organisms need energy to survive. Some organisms are capable of absorbing energy from sunlight and using it to produce sugar and other organic compounds such as lipids and proteins. This...

» **Elusive pancreatic stem cells found in adult mice**

Just as many scientists had given up the search, researchers have discovered that the pancreas does indeed harbor stem cells with the capacity to generate new insulin-producing beta cells. If the finding made in adult mice holds for humans..

» **'Telepathic' genes recognize similarities in each other**

Genes have the ability to recognise similarities in each other from a distance, without any proteins or other biological molecules aiding the process, according to new research published this week in the Journal of Physical Chemistry B. Th..

» **Peripheral Vascular Disease Treated With Adult Stem Cells**

Multipotent adult progenitor stem cells extracted from bone marrow, and known as MAPCs, have proved to be effective in the regeneration of blood vessel tissue and also in muscle tissue when treating peripheral vascular disease.

» **The Many Uses For The New Electron Microscope Include Medical Research Into Liver Disease**

A unique electron microscope, the first of its kind in the world, was unveiled yesterday at the STFC Daresbury Laboratory in Warrington. It will enable scientists to study atoms within materials in a way that has never before been possible ..

» [J. Craig Venter Institute Scientists Create Gene Map for Synthetic Life](#)

WASHINGTON (Reuters) - Researchers have assembled the entire genome of a living organism -- a bacterium -- in what they hope is an important step to creating artificial life.

» [Protein Discovered That Prevents HIV From Spreading](#)

In a study that could open up the field of virology to an entirely new suite of possibilities and that paves the way for future drug research, scientists at Rockefeller University and the Aaron Diamond AIDS Research Center have pinned down ..

» ['The Handbook Of Proteins'](#)

Wiley-Blackwell, the scientific, technical, medical and scholarly publishing business of John Wiley & Sons, Inc., published a comprehensive resource for students and researchers studying protein structure and function. Proteins are e..

» [Studies Of Cell Division Hint At Future Cancer Therapy](#)

When a cell's assets get divided between daughter cells, Dr. Quansheng Du wants to make sure both offspring do well. He's dissecting the complex, continuous and amazing process that enables one cell to become two. When all goes well, cell div..

» [DNA Sensors Found To Be An Effective Artificial Nose](#)

In designing artificial noses modeled after biological olfaction, the challenge has been to generate a similarly large sensor repertoire with the requisite combinatorial complexity to detect odors in the real world. A further requirement i..

» [Exercise Sharply Cuts Older Men's Death Rate: Study](#)

Older men who were classified as "highly fit" died at half the rate of those who were not fit in a major long-term study, U.S. researchers said on Tuesday.

» [Towards defining the nuclear proteome](#)

Background: The nucleus is a complex cellular organelle and accurately defining its protein content is essential before any systematic characterisation can be considered. Results: Here, we report direct evidence for 2568 mammalian proteins ..

» [75 Genes Specifically Involved In Silica Bioprocessing In The Diatom](#)

Denizens of oceans, lakes and even wet soil, diatoms are unicellular algae that encase themselves in intricately patterned, glass-like shells. Curiously, these tiny phytoplankton could be harboring the next big breakthrough in computer ..

» [Controlling Schistosomiasis: Buffalo Or Snails?](#)

A parasitic infection common in China and Southeast Asia could be effectively reduced by controlling snail populations, according to research published in PLoS Medicine. Infection with schistosomes of various species affects some 200 millio..

» [Coffee Linked To Lower Ovarian Cancer Risk](#)

Drinking three or more cups of coffee per day may reduce the risk of ovarian

cancer by over 20 per cent, according to a new study. The benefits of coffee consumption appeared to be related to the caffeine content of the beverages, with no b..

» **[Gel "To Speed Up Wound Healing"](#)**

A gel to speed up wound healing and reduce scarring is being developed by UK scientists. It works by suppressing a key gene, boosting blood supply, and altering the way new tissue is laid down. The researchers say it may aid not just surfac..

» **[\[Primer\] Biological invasions](#)**

By Jonathan M. Levine. Biological invasions pose a leading threat to biodiversity world-wide. Through competition, predation, and habitat alteration, invaders can radically change both the species composition and functioning...

» **[Green light for hybrid research](#)**

Regulators have given scientists the green light to create human-animal embryos for research. The Human Fertilisation and Embryology Authority granted permission after a consultation showed the public were "at ease" with the idea. More on ..

» **[What is the Aorta?](#)**

The aorta is the largest artery in the body. Arteries are vessels that carry blood away from the heart. The aorta carries and distributes oxygen rich blood to all arteries. With...

» **[Know Your Cell Anatomy](#)**

Can you identify the following cell structure? Nucleus Golgi Complex Ribosome Mitochondrion © Dennis Kunkel Need a hint? These cellular organelles are the cell's power producers. They convert energy...

» **[Bringing Dead Hearts Back to Life](#)**

Scientists have developed a method for using dead tissue to create live, beating hearts. Although the research was conducted with animals, it is hoped that information from this study can be...

» **[HIV Peptide's Possible Pathway Into The Cell Revealed By Researchers](#)**

Two theoretical physicists at Rensselaer Polytechnic Institute have uncovered what they believe is the long-sought-after pathway that an HIV peptide takes to enter healthy cells. The theorists analyzed two years of biocomputation an..

» **[News From The Journal Of Clinical Investigation](#)**

Engineered mice provide insight into Alzheimer diseaseOne factor that determines how at risk an individual is of developing late-onset Alzheimer disease (AD) is the version of the APOE gene that they carry - those carrying the gene ..

» **[Siemens Introduces New Diagnostic Tests For Most Common Forms Of Anemia](#)**

Siemens Healthcare Diagnostics introduced its new tests to diagnose and monitor anemia using its LOCI advanced chemiluminescence technology.

» **[Contact Lenses With Circuits, Lights A Possible Platform For Superhuman Vision](#)**

Movie characters from the Terminator to the Bionic Woman use bionic eyes to zoom in on far-off scenes, have useful facts pop into their field of view, or create virtual crosshairs. Off the screen, virtual displays have been proposed for mor..

» **Economical Way To Boost Vitamin A Content Of Corn Found**

A team of plant geneticists and crop scientists has pioneered an economical approach to the selective breeding of maize that can boost levels of provitamin A, the precursors that are converted to vitamin A upon consumption. This innovation ..



CHEMICAL SCIENCES NEWSLETTER

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POONAM SHARMA - EDITOR

Public lecture by Professor Uppsala on Friday 8th February 2008

CHEMISTRY CONFERENCES

CHEMISTRY FOR NON-CHEMISTS

Book now for the Forces and Motion Show!

Tuesday 26 February - Friday 29 February 2008

The 2nd Nature Chemical Biology Symposium: Chemical Neurobiology

ECIS 2008 Conference

Evolution Essay Contest 2007

Meetings/Workshops on Organic Chemistry and Polymers in India

ORGANIC CHEMISTRY PORTAL

[TOP](#)

» Vasopressin

Recently I watched a medical mystery show on the Discovery Health channel. I joined late, so I did not catch the name of the program. The story I happened upon grabbed my attention because of its bizarre nature. It had me perplexed. After ..

» Catalysis probed with MRI

A new technique can see gas reactions as they happen inside microreactors

» Polymer gel could prevent skin grafts shrinking

Loading with an enzyme-inhibiting drug could reduce painful contraction of grafts

» Sulfuric Acid and Water and Coral Snakes

There are coral snakes in South Carolina. There are also non-venomous snakes with the red, yellow, and black colors associated with the potentially-deadly coral snake. If you see a colorful...

» How to Write a Lab Report

I tried to think of an amusing anecdote to relate to you about lab reports, but mainly I associated writing them with staying up until 3 am (procrastination is one...

» Printable Periodic Table

The Periodic Table of the Elements is one of your best tools for working chemistry problems and making predictions about the properties of the elements. Most of the time, I...

» Quantum Monte Carlo for 3d Transition-Metal Atoms

A. Sarsa, E. Buendía, F. J. Gálvez, and P. Maldonado Web Release Date: Sat, 26 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp0776107

» Absolute Rate Coefficient Determination and Reaction Mechanism Investigation for the Reaction of Cl Atoms with CH₂I₂ and the Oxidation Mechanism of CH₂I Radicals

Vassileios G. Stefanopoulos, Vassileios C. Papadimitriou, Yannis G. Lazarou, and Panos Papagiannakopoulos Web Release Date: Sat, 26 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp7096789

» Theoretical Studies for Lewis Acid-Base Interactions and C-H...O Weak Hydrogen Bonding in Various CO₂ Complexes

Kyung Hyun Kim and Yongho Kim Web Release Date: Sat, 26 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp709648q

» [**Synthesis of Weinreb Amides via Pd-Catalyzed Aminocarbonylation of Heterocyclic-Derived Triflates**](#)

A. Deagostino, Paolo Larini, Ernesto G. Occhiato, Lorena Pizzuto, Cristina Prandi, and Paolo Venturello Web Release Date: Sat, 26 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jo7024898

» [**Conversion Worksheets**](#)

Sometimes it's helpful to be able to print out problems and solutions to test your command of a subject. Here are some worksheets that you can use to practice conversions....

» [**Electron-Transfer and Acid-Base Properties of a Two-Electron Oxidized Form of Quaterpyrrole that Acts as Both an Electron Donor and an Acceptor**](#)

Min Zhang, Wenbo E, Kei Ohkubo, David Sanchez-Garcia, Dae-Wi Yoon, Jonathan L. Sessler, Shunichi Fukuzumi, and Karl M. Kadish Web Release Date: Fri, 25 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp0766306

» [**Bond Dissociation and Conformational Energetics of Tetrasulfur: A Quantum Monte Carlo Study**](#)

John A. W. Harkless and Joseph S. Francisco Web Release Date: Fri, 25 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp076376h

» [**Triclocarban**](#)

Endocrine disrupters interfere with the actions of hormones in the body. Most either act like estrogen, block the action of estrogen, or block the action of testosterone. The disrupters are an environmental contaminant, and pollution has a..

» [**Colorful humidity sensitive photonic crystal hydrogel**](#)

A visible humidity sensitive photonic crystal hydrogel was facilely prepared. As-prepared samples exhibited reversible humidity sensitivity shown by a distinct color change, and would be promising as an economical humidity sensing material.

» [**Ethylene removal by sorption from polymeric crystalline frameworks**](#)

The [δ]-nanoporous crystalline phase of s-PS presents a high ethylene uptake, due to the formation of a co-crystalline phase, where ethylene molecules are oriented nearly perpendicular to the crystalline polymer helices.

» [**Reaction Rates and Dissolution Mechanisms of Quartz as a Function of pH**](#)

Shikha Nangia and Barbara J. Garrison Web Release Date: Wed, 23 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp076243w

» [**Rotational Structure of Water in a Hydrophobic Environment: Carbon Tetrachloride**](#)

Margaret Kuo, Noelani Kamelamela, and Mary Jane Shultz Web Release Date: Wed, 23 Jan 2008 00:00:00 EST (Article) DOI: 10.1021/jp7097284

» [**Endocrine Disrupters**](#)

In 1959, a 40-year old male chef in a New York City restaurant developed breasts, stopped growing facial hair, and gained fat on his body where women gain fat. Also his voice became higher, much like a female voice. Chickens are often sold..

» [**Next step of photochromic switches?**](#)

Some recent developments of photochromic bisthiénylenes derivatives with large TPA or excellent TPEF for potential application in 3D optical data storage media are highlighted.

» [**Going for green**](#)

An easy and environmentally friendly route to a supported palladium catalyst for highly selective partial hydrogenations has been achieved by European researchers.

» [**Taking iron measures**](#)

A more accurate method to measure iron in clinical samples is proving ahead of its time, say researchers in Spain.

» [**Liquid lenses**](#)

Liquid lenses that can fit in a microchip are now possible, say researchers in the US.

» [**TEAM 0.5: The World's Most Powerful Microscope**](#)

Debut of TEAM 0.5, the World's Best Microscope . 'TEAM 0.5, the world's most powerful transmission electron microscope — capable of producing images with half-angstrom resolution (half a ten-billionth of a meter), less than the d..

» [**Laws of Chemistry**](#)

Can you state Avogadro's Law, Boyle's Law, Charles' Law and the other big laws of chemistry? You probably know the laws, but not necessarily by name. That's understandable, because the...

» [**Marijuana and Tobacco Smoke**](#)

I enjoy listening to stand-up comedy. Some comedians, like Lewis Black and George Carlin, sprinkle their routines with political commentary. I do not mind a comedian taking advantage of the stage to espouse their beliefs, but I do get irri..

» [**Metamagnetic shape memory effect in NiMn-based Heusler-type alloys**](#)

In the NiCoMnIn Heusler-type alloys, a martensitic transformation from a ferromagnetic to an antiferromagnetic-like phase has been found and the magnetic field-induced strain, namely, "metamagnetic shape memory effect", has been confirmed.

» [**On the Road to an Antitumor Vaccine**](#)

Polymeric Nanoparticles for Tumor Vaccines . 'The quest for an effective antitumor vaccine has received a boost from the results of work aimed at developing a nanoparticle that delivers tumor antigens to the immune system cells that ..

» [**Soap ingredient disrupts testosterone activity**](#)

Common antibacterial agent triclocarban found to amplify the hormone s effect in rats and human cells

» [**Immunoassays put pay to foal play**](#)

French scientists have designed tests to catch cheats who use prohibited drugs to dope racehorses.

» [**Genetic testing in a shoe-box**](#)

Canadian scientists have succeeded in building the least expensive portable device for rapid genetic testing ever made

» [**-Hydrogenase-Catalyzed H₂ Production in a Photoelectrochemical Biofuel Cell**](#)

» [**Effects of Macromolecular Crowding on Glycoprotein Processing Enzymes**](#)

» [**Synthesis, Characterization, and Reactivity of a Uranyl ?-Diketimate Complex**](#)

» [**Development of an Efficient Photocatalytic System for CO₂ Reduction Using Rhenium\(I\) Complexes Based on Mechanistic Studies**](#)

» [**Carbon-Carbon Bond Activation of 2,2,6,6-Tetramethyl-piperidine-1-oxyl by a Rh\(I\) Metalloradical: A Combined Experimental and Theoretical Study**](#)

» [**Supramolecular Building Blocks \(SBBs\) for the Design and Synthesis of Highly Porous Metal-Organic Frameworks**](#)

» [**Total Synthesis and Stereochemistry of Mycolactone F**](#)

» [**Structure and Activity of Largazole, a Potent Antiproliferative Agent from the Floridian Marine Cyanobacterium Symploca sp.**](#)

» [**Discovery of Incednine as a Potent Modulator of the Anti-apoptotic Function of Bcl-xL from Microbial Origin**](#)

» [Tailoring Electronic Structures of Carbon Nanotubes by Solvent with Electron-Donating and -Withdrawing Groups](#)

» [Photosensitized Heterogeneous Chemistry of Ozone on Organic Films](#)

» [Energetics and Mechanism of the Decomposition of Trifluoromethanol](#)

» [Stereoselective and Efficient Total Synthesis of Optically Active Tetrodotoxin from D-Glucose](#)

» [What Is Life?](#)

» [Vaccines and Autism](#)

The November/December issue of the Skeptical Inquirer, which touts itself as the magazine for science and reason (www.csicop.org), has an article by Steven Novella that discusses the vaccines and autism controversy. As the 1990s progressed..

» [Nanomachines to treat cancer](#)

Investment firm backs UCLA scientists plans to commercialise nanoparticle-based cancer therapy - fast

» [New Algorithms for Optimizing and Linking Conical Intersection Points](#)

» [Water at Hydrophobic Surfaces: When Weaker Is Better](#)

» [Amperometric Gas Sensors-A Review](#)

» [Element Atomic Weights](#)

Every so often you need to know the atomic weight of an element... like just about every time you do most chemical calculations. I'm sure you've noticed that the values...

» [Electrodeposition of ordered mesoporous cobalt hydroxide film from lyotropic liquid crystal media for electrochemical capacitors](#)

A novel hexagonal nanoporous $\text{Co}(\text{OH})_2$ film with specific capacitance as high as 1084 F ga^{-1} has been firstly electrodeposited from the lyotropic liquid crystal template of Brij 56 and it could be identified as a promising electrode material..

» [Synthesis of 1,2,3-triazole and 1,2,3,4-tetrazole-fused glycosides and nucleosides by an intramolecular 1,3-dipolar cycloaddition reaction](#)

Various 1,2,3-triazole and 1,2,3,4-tetrazole fused multi-cyclic glycosides and nucleosides were synthesized exploiting intramolecular 1,3-dipolar cycloaddition reactions between xylofuranosyl derived azido-alkyne and azido-cyanide, respecti..

» [Activity and selectivity of W110A secondary alcohol dehydrogenase from Thermoanaerobacter ethanolicus in organic solvents and ionic liquids: mono- and biphasic media](#)

The manuscript describes the asymmetric reduction of hydrophobic ketones and the enantiospecific kinetic resolution of the corresponding racemic alcohols catalyzed by Thermoanaerobacter ethanolicus W110A secondary alcohol dehydrogenase in d..

» [Alloxazine as a ligand for selective binding to adenine opposite AP sites in DNA duplexes and analysis of single-nucleotide polymorphisms](#)

Alloxazine can bind to adenine selectively over other nucleobases opposite an abasic site in DNA duplexes (5[prime or minute]-TCC AGX GCA AC-3[prime or minute]/3[prime or minute]-AGG TCN CGT TG-5[prime or minute], X = AP site, N = A, T, C, ..

» [Get set](#)

Researchers from the US have discovered that soy bean oil could be used as a renewable feedstock for gels and resins.

» [Molecular daisy chains](#)

A molecular daisy chain that threads itself together could have future uses in molecular electronic devices, say scientists in Taiwan

» [**Aminimides as Potential CNS Acting Agents. II Design, Synthesis, and Receptor Binding of 4'-Arylalkyl Aminimide Analogues of Clozapine as Prospective Novel Antipsychotics**](#)

Ben Capuano, Ian T. Crosby, Edward J. Lloyd, Juliette E. Neve, David A. Taylor - Volume 61(1)

» [**The Complex Roles of 4N and 4N + 2 Rings in Determining Hückel-Level Kinetic Stabilities of Even Alternant Hydrocarbons**](#)

Richard F. Langler - Volume 61(1)

» [**Facilitating Kinetic Stability Estimates for Classical 2m Alternant Hydrocarbons**](#)

Richard F. Langler - Volume 61(1)

» [**Synthesis of Carbon Nanotubes, and the Effect on Thermal Stability in High-Impact Polystyrene**](#)

Qinghong Kong, Junhao Zhang - Volume 61(1)

» [**Microwave-Assisted Direct Amination: Rapid Access to Multi-Functionalized N6-Substituted Adenosines**](#)

Trent D. Ashton, Peter J. Scammells - Volume 61(1)

» [**Problems Growing Sugar Crystals**](#)

Sugar crystals or rock candy are among the safest crystals to grow (you can eat them!), but they aren't always the easiest crystals to grow. If you live in a...

» [**Chemical reaction of uranium opens up possibilities for developing ...**](#)

The Cheers, Estonia -According to Polly Arnold, a better understanding of uranium chemistry is fundamental to waste-disposal techniques. "Everything that challenges our ... ::

» [**Chemical reaction of uranium opens up possibilities for developing ...Thaindian.com, Thailand - 4 hours agoAccording to Polly Arnold, a better understanding of uranium chemistry is fundamental to waste-disposal techniques. Everything tha**](#)

National Post, Canada -Until her appointment to the nuclear commission, Ms. Keen had no previous experience in atomic energy. She earned an undergraduate degree in chemistry and a

» [**British scientists force uranium into chemical reactionXinhua, China - 37 minutes agoA better understanding of uranium chemistry is fundamental to waste-disposal techniques. The chemical achievements will not yet allow researchers to cle**](#)

Times Colonist, Canada -Until her appointment to the nuclear commission, Keen had no previous experience in atomic energy. She earned an undergraduate degree in chemistry and a ... ::

» [**Higher-Order Chemical Sensing**](#)

» [**Chemists tame the uranyl ion**](#)

A new uranium compound sheds lights on how to make the element more manageable in future



EARTHSCIENCES NEWSLETTER

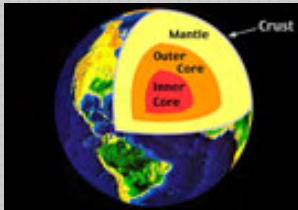
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JANUARY - 2008

NEWS / KNOWLEDGE UPDATES

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The newsletter offers latest updates on Internet covering news / articles related to physical properties of the earth's crust and the characteristics of its soil, landforms, climate, hydrosphere and atmosphere.

If you have material you would like to contribute to News Letter - You are welcome at [NETJIST](#) .

(For any queries / suggestions mail to : netjist@gmail.com)

POONAM SHARMA - EDITOR

UNESCO - CALENDER



[International Conference of the Social-Ecological Research Programme. 22-23 February 2008.](#)



[LUNAN AND PLANETARY INSTITUTE](#)

[2008 International Young Eco Hero Awards](#)

TOP

» [Mercalli Earthquake Intensity Scale](#)

The modified Mercalli intensity scale rates the impact of quakes from I to XII.

» [About the San Andreas Fault](#)

Home page for everything about the San Andreas fault.

» [The Diamond Zone: Into the Mantle 2](#)

Diamonds are actual pieces of the mantle that you can wear on your hand or ear.

» [Siltstone](#)

Siltstone, in the gallery of sedimentary rocks.

» [Report Spans A Range Of Timescales And Content Relating To ...](#)

PR-Inside.com (Pressemitteilung), Austria -Joseph H. Kravitz spent many years as a program director of Marine Geology and Geophysics at the US Office of Naval Research, and is now associated with the ... ::

» [As a river runs through it, a Death Valley stream offers insights into flooding and climate change](#)

Death Valley's Furnace Creek Wash, diverted in 1941 to protect a village from flooding, has carved through the sandy hills and bedrock of Gower Gulch to reveal the forces original landscape and changing channel dynamics exert on the respons..

» [Oldest Horseshoe Crab Fossil Discovered](#)

Nearly a half a billion years ago, tiny horseshoe crabs crept along the shorelines much like today's larger versions do, new fossil evidence suggests. (LiveScience)

» [Dolomite](#)

Closeup of granular dolomite.

» [Quaternary Geologic Map of Illinois](#)

Quaternary geologic map of Illinois, courtesy of the state geological survey, with notes.

» [Epidote](#)

Epidote is the green mineral in this unakite sample.

» [Identify the Rock-Forming Minerals](#)

Quick identification table for the minerals that form the majority of rocks.

» [Crack Hammer](#)

Crack hammers are for hard-rock country

» [Mixed Mud Volcano](#)

Mud volcano of mixed origin from the Andaman Islands.

» [A lustrous gathering](#)

Keep collecting minerals, and after a while you start completing sets. I looked around my hoard not long ago and found examples of all the major mineral luster classes. So...

» [Professor's video series explains all facets of Earth](#)

Videos have been the bailiwick of rock stars at least since the days of Bob Dylan. But now they're spilling over into a new arena -- academia. Michael E. Wysession, PhD, associate professor of earth and planetary sciences in Arts & Sciences..

» [Microbes as climate engineers](#)

We might think we control the climate but unless we harness the powers of our microbial co-habitants on this planet we might be fighting a losing battle, according to an article in the February 2008 issue of Microbiology Today.

» [River plants may play major role in health of ocean coastal waters](#)

Recent research at MIT's Department of Civil and Environmental Engineering suggests how aquatic plants in rivers and streams may play a major role in the health of large areas of ocean coastal waters. The work describes the physics of water..

» [How to Read a Geologic Map, part 2 - Symbolizing Geology on Paper](#)

Reading geologic maps--the symbols and labels and lines.

» [How to Read a Geologic Map, part 3 - A Dispute Over Colors](#)

Reading geologic maps--the colors, and the hundred-year-old fight over them.

» [Paleogeographic Maps](#)

Mapping a world we've never seen, as opposed to the Earth of today, takes a lot of imaginative work.

» [Fossil Horse Tooth](#)

A fossil horse tooth from Miocene rocks in South Carolina.

» [New 2001 Tsunami Intensity Scale](#)

The 2001 Papadopoulos-Imamura intensity scale rates the impact of tsunamis from I to XII.

» [Barite](#)

Barite is not distinctive on its own except when it forms roses like these.

» [Apatite](#)

A blue-green specimen of this important phosphorus mineral.

» [Bad news for coastal ocean: less fish out, means more nitrogen in](#)

The study, the first to examine the world's 58 coastal regions, shows how failing to maintain ecosystems in a sustainable manner has wide-ranging consequences. Using data provided by the United Nations, the researchers found that commercial ..

» [AAAS/EurekAlert! build bridges with Middle Eastern science community through journalism fellowships](#)

EurekAlert!, the global science news service operated by AAAS, in cooperation with the National Association of Science Writers in the United States and the Arab Science Journalists Association, is happy to announce the recipients of the 200..

» [The Anthropocene revisited](#)

A few years ago I considered the proposal, by Nobel laureate Paul Crutzen, that we should declare ourselves in a new geologic age, the Anthropocene. I was skeptical: couldn't we...

» [A New Look into the Center of the Earth](#)

For years, scientists have known that continents float around on the Earth's surface like ice bergs on the ocean. But what happens deep beneath our feet? A new theory envisions graveyards for continents and a life cycle not unlike the weath..

» [Articles on Rocks and Minerals](#)

Features about rocks and their ingredients, from your About Geology Guide.

» [Mapping Deep Time](#)

How we learned to keep track of geologic time without using clocks or numbers.

» [Best 10x Magnifiers](#)

The best-performing 10x magnifiers reviewed by your About Geology Guide.

» [Venus Geology](#)

Introducing the mysterious cycles of Venus geology.

» [Coal in the Home](#)

Americans don't burn coal at home any more, but it still works for most of the world.

» [Geologic Tools of the Trade](#)

The humble tools adapted from tradesmen's equipment, plus the artist's eye and sketchpad, have served geologists well for centuries.

» [Climate change in the Baltic Sea basin -- past, present and future](#)

Titled Assessment of Climate Change for the Baltic Sea Basin, the book published by Springer-Verlag, presents the first comprehensive survey of past and possible future climate change in the region, which extends over 13 countries around th..

» [Economists help climate scientists to improve global warming forecasts](#)

Climate scientists are collaborating with experts in economic theory to improve their forecasting models and assess more accurately the impact of rising atmospheric carbon dioxide levels. Although there is broad consensus that there will be..

» [Antarctic volcanoes identified as a possible culprit in glacier melting](#)

In an article published Sunday on the Web site of the journal Nature Geoscience, Hugh Corr and David Vaughan of the British Antarctic Survey report the identification of a layer of volcanic ash and glass shards frozen within an ice sheet in..

» [Overcoming](#)

Like other sciences, geology is gradually becoming less a preserve of white men. I've written about the change from "men" (the influx of women) but not about the change from...

» [Tubeworm - Fossil Tubeworm](#)

A Cretaceous tubeworm fossil looks just like its modern counterpart--and attests to the same environment.

» [Volcanoes in a Nutshell](#)

Volcanoes are places where lava comes from the ground and builds a pile.

» [Environmental Instrumentation](#)

A forum on 28 February will bring together those with interests in environmental monitoring, audit and research to explore issues that prevent development of environmental instrumentation.

» [Potassium-Argon Dating Methods](#)

Potassium-argon isotopic dating is especially useful for determining the age of lavas.

» [Chrysocolla](#)

Soft green chrysocolla is found on the edges of copper deposits.

» [Major Volcanic Eruption in Colombia Forces Thousands to Evacuate](#)

A volcano erupted violently in southwestern Colombia Thursday, spewing ash miles into the sky and prompting the evacuation of several thousand people living nearby. (AP)

» [UD announces William S. Carlson International Polar Year events](#)

The American Geographical Society's Fliers' and Explorers' Globe has been signed by more than 75 of the planet's most-celebrated explorers, and now the historic globe is coming to the University of Delaware for signing, as one of the premie..

» [Recovering from a mass extinction](#)

The full recovery of ecological systems, following the most devastating extinction event of all time, took at least 30 million years, according to new research from the University of Bristol. Previous work indicates that life bounced back q..

» [Paired microbes eliminate methane using sulfur pathway](#)

Anaerobic microbes in the Earth's oceans consume 90 percent of the methane produced by methane hydrates -- methane trapped in ice -- preventing large amounts of methane from reaching the atmosphere. Researchers now have evidence that the tw..

» [Scientists to preview new climate change research](#)

NCAR scientists at next week's American Meteorological Society meeting in New Orleans will present their latest findings on weather and climate topics, including connections between hurricanes and climate, the influence of climate change on..

» [Deep-ocean researchers target tsunami zone near Japan](#)

Rice University Earth scientist Dale Sawyer and colleagues have reported the discovery of a strong variation in the tectonic stresses in a region of the Pacific Ocean notorious for generating devastating earthquakes and tsunamis in southeas..

» [Scientists: environmental protection, development not always at odds](#)

Mangroves in coastal Thailand are the main protection against deadly flooding from tsunamis, so it might seem wise to protect them at all costs. However, ripping out a few mangroves and replacing them with shrimp farms, an important local i..

» [The nonlinear Fano effect](#)

The Fano effect is ubiquitous in the spectroscopy of, for instance, atoms, bulk solids and semiconductor heterostructures. It arises when quantum interference takes place between two competing optical pathways, one connecting the energy gro..

» [Reduction and selective oxo group silylation of the uranyl dication](#)

Uranium occurs in the environment predominantly as the uranyl dication [UO₂]²⁺. Its solubility renders this species a problematic contaminant which is, moreover, chemically

extraordinarily robust owing to strongly covalent U–O..

» [Programming biomolecular self-assembly pathways](#)

In nature, self-assembling and disassembling complexes of proteins and nucleic acids bound to a variety of ligands perform intricate and diverse dynamic functions. In contrast, attempts to rationally encode structure and function into synth..

» [Net production of oxygen in the subtropical ocean](#)

The question of whether the plankton communities in low-nutrient regions of the ocean, comprising 80% of the global ocean surface area, are net producers or consumers of oxygen and fixed carbon is a key uncertainty in the global carbon cycl..

» [Identification of cells initiating human melanomas](#)

Tumour-initiating cells capable of self-renewal and differentiation, which are responsible for tumour growth, have been identified in human haematological malignancies and solid cancers. If such minority populations are associated with tumo..

» [Translational control of intron splicing in eukaryotes](#)

Most eukaryotic genes are interrupted by non-coding introns that must be accurately removed from pre-messenger RNAs to produce translatable mRNAs. Splicing is guided locally by short conserved sequences, but genes typically contain many pot..

» [Structural basis of microtubule severing by the hereditary spastic paraplegia protein spastin](#)

Spastin, the most common locus for mutations in hereditary spastic paraplegias, and katanin are related microtubule-severing AAA ATPases involved in constructing neuronal and non-centrosomal microtubule arrays and in segregating chromosomes..

» [About Mercury](#)

The strange and hazardous element mercury is still of scientific interest.

» [The Biggest Eruptions](#)

The biggest eruptions in history and prehistory

» [Drilling Volcanoes](#)

Drilling into active volcanoes is not as crazy as you think.



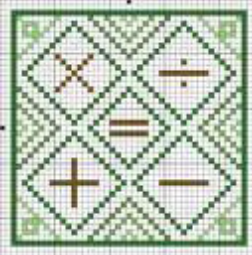
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POONAM SHARMA - EDITOR



[International Conference on Discrete Mathematics \(ICDM 2006\)](#)
[\(December 15 to December 18, 2006\)](#)

jointly organized by
Ramanujan Mathematical Society and Indian Institute of Science, Bangalore - INDIA

[Nonlinear Dynamical Systems and Turbulence \(2007-2008\)](#)

[AAECC-17 Symposium and IWAA workshop on Coding and Cryptography](#)
[December 16 - 20, 2007](#)

[National Olympiad](#)

» [Wibs and Wobs](#)

Let's say 26 zips weigh as much as 4 crids and 2 wobs. Also, 8 zips and 2 crids have the same weight as 2 wobs. How many zips have the weight of 1 wob?

» [Young Learners: When are they ready to learn subtraction?](#)

Subtraction like any other math concept requires the building blocks to be in place. Conservation of number is certainly one of them. In other words, does the child know that...

» [Notre Dame Mathematical Lectures](#)

The Notre Dame Mathematical Lectures series is now freely available online. It was a fairly small series of lecture notes on various topics. The most famous was probably Emil Artin's lectures on Galois Theory .

» [Should you use a math dictionary?](#)

When it comes to what is fashionable in homeschooling, these days lap books, notebooking, lapbooking , whatever term you use, are definitely "in". I haven't seen much anything for math, though. And no, I haven't made any lapbooks either! Bu..

» [Additional Puzzles Are Required](#)

What number should I put in for the question mark? 6 5 9 2 7 1 4 3 5 ? 8 0 2 8 1

» [Mystery Mathematician Week of 1-21-08 Revealed](#)

DON'T FORGET TO VOTE IN THE POLL. THE RESULTS ARE BEGINNING TO MULTIPLY... And, once again, the winner is Lynx Apparently, the clues I gave (RU, groups and simple) helped a bit. Being a Rutgers alumnus, I wanted to acknowledge one of its ..

» [Multiplication](#)

Apparently multiplication is the cool topic of the week for math bloggers. Dave over at Math Notations is holding a poll about how multiplication should be taught. And there is a cool new blog called Relearning Math where Math Learner is t..

» [The Joy of Mathematics, and Nerds](#)

Tony at Pencils Down muses: Why do these sometimes bespectacled bookworms play around with formulas and numbers and patterns, seemingly without purpose? Why do they

[Karnataka Regional Mathematical Olympiad \(KRMO\)](#) (will open in new window)

[Indian Institute of Science - List of Seminars](#)



[MATHEMATICS CALENDER](#)

[Scientific conference calendars on the Web](#)

TOP

care about things that don't relate to the "real world?" They ..

» [Four Color Theorem and Lie Algebras](#)

Thanks to Greg Muller , I'm looking at this paper by Dror Bar-Natan that reduces the Four Color Theorem to a plausible statement about Lie algebras . Now we just have to hope this new conjecture does not not require hundreds of pages of co..

» [43x27? Which Algorithm should be taught? A MathNotations survey will end the debate!](#)

Update: A poll has now been created in the sidebar! Please express your preference. (Thank you, Jonathan, for making this suggestion). As if the educational fate of our children could be determined by a poll of our readers... Hey, you neve..

» [Will More Rigorous Math Help Students to Become Globally Competitive?](#)

That is certainly the belief of Berkeley County school officials. They've mandated that all students who began high school after 2005 must earn at least four math credits in order...

» [25th Carnival of Mathematics](#)

The 25th Carnival of Mathematics is up at Walking Randomly .

» [New Math Mammoth books: Multiplication 2, Division 2, Place Value 4](#)

Some recent additions to Math Mammoth Blue Series books: Math mammoth Multiplication 2 This book concentrates on multi-digit multiplication, first explaining what it is based on (multiplying in parts), then practicing the algorithm. also in..

» [Math Can Be Fun](#)

Take your age and multiply it by 2. Add 5. Multiply this sum by 50. Subtract 365. Add the amount of loose pocket change, but do NOT count change totalling \$1 or over (i.e., must be less than \$1) Add 115 Notice anything special?

» [Why Do I Need Algebra?](#)

I was listening to a conversation yesterday while at work. A non-teaching staff member was telling us how well his son was doing in Algebra. He went on to say,...

» [Block preconditioning of real-valued iterative algorithms for complex linear systems](#)

We revisit real-valued preconditioned iterative methods for the solution of complex linear systems, with an emphasis on symmetric (non-Hermitian) problems. Different choices of the real equivalent formulation are discussed, as well as diff..

» [Why the Riemann Hypothesis?](#)

Way back when, I had a post about explaining the Riemann hypothesis in elementary terms. I thought I'd go into some more detail. The Riemann hypothesis is regarded as one of the outstanding open problems in mathematics. Part of the reason ..

» [Digit Discoveries and Algebra for Middle School - An Investigation](#)

The results below are well-known but, as usual, I am offering an investigation for the classroom that has many objectives: (1) Digit properties of multiples of 9 (and their 'proofs') (2) Review place-value and algebraic representation (3) ..

» [Access Control solutions for SMEs](#)

Security has always been a compromise between potential risk and the justification of cost. However the emphasis is starting to change from viewing what happened - CCTV - to preventing it happening Access Control. With Health and Safety ..

» [Biometrics industry needs to educate the public to stop to ill-informed speculation on biometric technology](#)

The recent press coverage of biometric technology in the wake of HMRC losing 25 million records has been negative to say the least. A US academic paper proving that it is possible to partially recreate a fingerprint from unencrypted data ha..

» [Numerical Effectiveness of Models and Methods of Integration of the Equations of Motion of a Car](#)

The paper presents models of car dynamics with varying complexity. Joint coordinates and homogenous transformations are used to model the motion of a car. Having formulated the models of the car, we discuss the influence of the complexity o..

» [A perturbation-based model for rectifier circuits](#)

A perturbation-theoretic analysis of rectifier circuits is presented. The governing differential equation of the half-wave rectifier with capacitor filter is analyzed by expanding the output voltage as a Taylor series with respect to an art..

» [Nonlinear elliptic problems with the method of finite volumes](#)

We present a finite volume discretization of the nonlinear elliptic problems. The discretization results in a nonlinear algebraic system of equations. A Newton-Krylov algorithm is also presented for solving the system of nonlinear algebraic..

» [On dynamics and stability of thin periodic cylindrical shells](#)

The object of considerations is a thin linear-elastic cylindrical shell having a periodic structure along one direction tangent to the shell midsurface. The aim of this paper is to propose a new averaged nonasymptotic model of such shells, ..

» [Modeling of multimass systems torsionally deformed with variable inertia](#)

Dynamic investigations of multimass discrete-continuous systems having variable moment of inertia are performed. The systems are torsionally deformed and consist of an arbitrary number of elastic elements connected by rigid bodies. The prob..

» [On internal constraints in continuum mechanics](#)

In classical particle mechanics, it is well understood that while working with nonholonomic and nonideal constraints, one cannot expect that the constraint be workless. It is curious that in continuum mechanics, however, the implications of..

» [Instability, nonexistence, and uniqueness in elasticity with porous dissipation](#)

This paper is devoted to the study of the elasticity with porous dissipation. In the context of the nonlinear problem, we prove instability and nonexistence of solutions. In the context of the linear problem, we obtain exponential growth. W..

» [Systems of differential equations](#)

Systems of differential equations The main teaching text of this unit is provided in the workbook below. The answers to the exercises that you'll find throughout the workbook are given in the answer book. You can access it by clicking on t..

» [Free Printable Math Worksheets](#)

My six-year-old often asks me to give him math worksheets to work on (for fun!) and there are many places on the Internet to find such things. But I will highlight two of my favorites. The Math Worksheet Site features generated worksheets ..

» [Classic math mistakes](#)

I found this link just today, via Mr. Barton's essential math freebies page . It is a collection of classic math mistakes, presented as posters with silly titles. You can post them on your wall and let students figure them out, because the ..

» [Imagining Ten Dimensions](#)

One question I occasionally get is "But what is the fourth dimension?" (The more physics

literate will say something like “ I know that time is the fourth dimension, but what would be the fifth dimension?”) I usually try to explain that higher dimensions are abstract concepts, and that we understand them through analogies.

» [Clock face problem](#)

Divide the face of the clock into three parts with two lines so that the sum of the numbers in the three parts are equal. Let's first understand the problem. We need to draw lines into the clock face. It doesn't say the lines need to end i..

» [A Much Harder Mental Math 'Trick'?? - Algebra May Not Be Optional!](#)

Target audience: Strong Algebra 1 or Algebra 2 students Ok, I hope you enjoyed challenging yourself or your students to describe a step-by-step procedure for squaring three-digit numbers with a middle digit of zero. I believe many middle s..

» [Prove this map is surjective \(hard\)](#)

Here's a challenging question: Let f . Show that the mapping given by f is onto. It came up during the course of my first CDS202 assignment (I both posed and solved it, on my way to proving something else). Give it a try, and if there's inter..

» [Solving the plus sign problem](#)

How many addition signs should be put between digits of the number 987654321 and where should we put them to get a total of 99? This is a fifth grade problem taken from Word Problems for Kids by Canada's SchoolNet. The first step, as always..

» [Math Gets Some Assistive Tech!](#)

Smart Pens that is. The new Smart Pens make it better than ever for a student with vision problems to do calculus, physics etc. It works by taking a picture...

» [9.6 Solving Rational Equations](#)

Today we looked at solving rational equations. This is BM 7.4. We had a lot of time to work on the assignment #5 WS 9.6B #1-20 all. Here are the notes and the handout .

» [Probability Fallacies](#)

So, I was teaching probability to my middle school group, using the Challenge Math chapter, and following up with some MATHCOUNTS problems I found here and here and here . (The latter, I discussed previously here .) We discussed the usual ..

» [Dice Puzzle](#)

I'm not sure how I came across the jaka-math blog , but it contains a lot of higher-level math problems. And a few that seem intriguingly easy, but turn out to be quite tricky, like this one in which the author claims there is another arra..

» [Two problems for YOU to solve](#)

I'd like for you to try solve these two 5th grade problems. They are from a very nice collection of word problems for kids by Canada's SchoolNet. I'd like to use them to illustrate problem solving. But before I do that and give you the solu..

» [Leonardo Pisano -- The Greatest Mathematician of his time? No 'Fibbin'!](#)

I didn't announce this week's Mystery Math Contest to see how that would play out. To be fair to those 200 or so subscribers to MathNotations who get a feed redirected through Feedburner, I guess I should mention it from now on, since the f..

» [What Happened to Borrowing and Carrying?](#)

Yes, when I went to school, we borrowed and we carried when referring to adding and subtracting. However, today the term that is most often used is 'Regrouping' Why? Well,...

» [Alexander Horned Sphere](#)

I thought, since for the next couple of days we'll probably have a broader audience than we usually do, that I would do posts on some more elementary topics than usual. I'm going to try to explain an odd example from topology in elementary..

» [24th Carnival of Mathematics](#)

Welcome to the 24th Carnival of Mathematics ! 24 dimensions is the home of the mysterious Leech lattice . The Leech lattice can be used to answer questions in 24 dimensions, such as the densest regular sphere packing or the kissing number ..

» [Timez Attack - A Review and a View from an 11-year old](#)

After doing my usual random search for web sites that might help my son learn his multiplication facts, I came across Timez Attack from Big Brainz . The company allows the user to download a free version which I did and I was immediately im..

» [Carnival Question](#)

A clerk in the butcher shop is 5' 10" tall. What does he weigh?

» [An Exceptional Math Contest Problem](#)

A very good friend of mine who runs one of the most successful math league contests in the US has given me permission to reprint the question below with the following attribution: "Copyright Mathematics Leagues Inc 2007. May not be reprod..

» [A Visualization for Factoring the Difference of Two Squares](#)

$M^2 - N^2 = (M+N)(M-N)$ Given that my difference of squares problem from yesterday may have been overly ambitious for middle schoolers (and I will have more to say about that in the comments section from that post), I thought it was worth r..

» [Submatrix location](#)

My officemate asked me a Matlab question that's worthy of consideration: what is a fast method for locating a submatrix within a matrix? In his case, we were dealing with two dimensional matrices, but to make it more challenging, attempt i..

» [Conference For Math Educators](#)

The National Council for Teachers of Mathematics (NCTM) will be having their Math conference: Becoming Certain About Uncertainty on April 9-12, 2008 in Salt Lake City, Utah. Registration is now...

» [Teaching problem solving](#)

I have written a more complete presentation on the topic of teaching problem solving — including what not to do. I posted it on my HomeschoolMath.net website: The do's and dont's of teaching problem solving in math I'd like your input..

» [Q: zero crossings and extrema of stationary Gaussian r.v.s](#)

Here's something new and exciting : let be a stationary Gaussian r.v.. Find the expected number of zero crossings in a unit interval. I'll give you a hint: it can be expressed in terms of the second and zeroth moments of the signal's spect..

» [Bases in Banach Spaces](#)

For a succinct introduction to bases in Banach spaces, Christopher Heil has provided A Basis Theory Primer . (The first 20 pages are a quick review of Banach space theory. The rest is devoted to bases in Banach spaces.)

» [Gifted Math Education: Teaching to Learn](#)

You do not really understand something unless you can explain it to your grandmother. — Albert Einstein Should Gifted Math Students Tutor Others? So let's start the new year with a little controversy. Many schools ask gifted kids to R..

» [What does topology have to do with computability?](#)

I've been playing with code for exact real arithmetic. Unfortunately I've been too busy to get it polished but I do have time to mention two interesting and counterintuitive facts about real arithmetic on computers. It's also a good opportu..

» [The final answer to the question "What is mathematics good for?"](#)

From the komplex plane: A mathematician, native Texan, once was asked in his class: "What is mathematics good for?" He replied: "This question makes me sick. Like when you show somebody the Grand Canyon for the first time..

» [Mystery Math Idol Week of 1-1-08 Revealed and a Proof!](#)

Believe it or not, there were actually two winners this week. This probably translates to a total of two individuals in the math blogosphere who actually enjoy this feature! I will continue this feature until we run out of mathematical icon..

» [Math Mammoth LightBlue series books as downloads](#)

Great news! The LightBlue Series books are now available as downloads. These are designed to be a complete curriculum for a given grade. They follow the lesson format of my Blue Series books: explanations, then problems (worktext). In fact,..

» [Leave it to the Mathematicians To Solve Traffic Jam Problems](#)

If you have ever driven in downtown traffic or commuted during rush hours, you know the traffic bottle necks all too well. So what do these have to do with...

» [Question of the Day](#)

If you take the category with Banach spaces as objects, and continuous linear maps that have a closed image as morphisms, then do you get an abelian category ?

» [Are You Smarter Than an Eighth-Grader?](#)

How about a really, really smart eighth-grader? Here's your chance to find out. We've built a game that allows users to go head to head on middle school level math problems. Here's the game . The problems are primarily contributed by ..

» [Fun with Supercooling](#)

Several months ago, I bought a pack of 700 mL Poland Spring sport cap water bottles. I put it into the freezer to get it really cold. When I went to get it after several hours, it wasn't frozen, but when I jostled the bottle, it froze righ..

» [Narrowing the Gender Gap](#)

Although a gap remains in the standardized test scores, the gap is narrowing between girls and boys. Girls are now taking more challenging math courses and greater achievement for girls...

» [An Introduction to the Mathematics of Bingo - Part I: An Investigation for Grades 7-12](#)

While you're celebrating New Year's Eve (meaning you're probably not reading this blog!), or thinking about your favorite math teacher (and probably keeping it to yourself), or considering clicking on the new subscriber chiclets in the sid..

» [Image processing papers](#)

One of the reasons I'm so fascinated with image processing is the fact that you easily get direct feedback about the usefulness of your analysis. Among other things, this means that papers in this area are fun for browsing: even if you can..

» [Middle Three Digits](#)

This question was Colombia State University's Problem of the Week on December 03, 2007. It was also, according to this list , the problem for which the lowest percentage of solutions

| | |
|--|--|
| | submitted was correct. (The second "most difficul.. |
| | |



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2008](#)

[Current Seminars](#)

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TOP

» [Physicists explain dance marathon of wispy feature in roiling fluids](#)

Theoretical physicists at the University of Chicago are suggesting how thin spouts of magma in the Earth's mantle can persist long enough to form hotspot volcanism of the type that might have created the Hawaiian Islands.

» [electricity help, calculating the current](#)

» [calculating masses of reactants&products in chemical reactions](#)

» [Finding the Zero-Field Point](#)

» [Sum of the square root of integers from 1 to n](#)

» [Tachyons and photons](#)

» [Speed of the pendulum bob?](#)

» [Pressure drops gradually...why??](#)

» [Why should a series motor always start with a load?](#)

» [Rising ocean temperatures boost hurricanes, says study](#)

» [Galaxy distortions shed light on cosmic acceleration](#)

» [Researchers Demonstrate Quantum Teleportation and Memory in Tandem](#)

In research that may be a key step toward real-life quantum communication the transmission of information using atoms, photons, or other quantum objects researchers created an experiment in which a quantum bit of information is transported..

» [Markets of biodiversity and equity in trade: An illusion?](#)

The Convention on Biological Diversity, adopted at the Rio de Janeiro Earth Summit of 1992, bore the objective of providing a legal and political framework for the conservation of biodiversity. In order to assess how these recommendations h..

» [Study paves way for development of macular degeneration cures](#)

A new study of age-related macular degeneration (AMD), a disease that affects more than nine million Americans, will pave the way for the biopharmaceutical industry to develop better treatments and cures, according to the Foundation Fighting..

» [**New process makes nanofibers in complex shapes and unlimited lengths**](#)

The continuous fabrication of complex, three-dimensional nanoscale structures and the ability to grow individual nanowires of unlimited length are now possible with a process developed by researchers at the University of Illinois.

» [**Explaining chemotherapy-associated nausea**](#)

A new study from the Monell Center increases understanding of the biological mechanisms responsible for the nausea and vomiting that often afflict patients undergoing chemotherapy. The findings could lead to the development of new approaches.

» [**Females decide whether ambitious males float or flounder**](#)

Aggression, testosterone and nepotism don't necessarily help one climb the social ladder, but the support of a good female can, according to new research on the social habits of an unusual African species of fish.

» [**Does any lattice shape have a periodic boundary condition?**](#)

» [**Nakanishi proves 2-d string theories inconsistent\(?\)**](#)

» [**Acoustic streaming**](#)

» [**Photon spin ?**](#)

» [**Digital Optical Video Transmitter and Receiver for public security applications**](#)

The Digital Optical Video Transmitter and Receivers are designed for public security applications, to send signals between the controlling computer and the cameras.

» [**Broad Spectrum Infrared Light Sources**](#)

Moritex - a leading global manufacturer of components for machine vision, has announced a new standard incandescent Infrared (IR) light source offering a broad light spectrum unachievable with LED's.

» [**Achromatic Lens \(Optical Glass\)**](#)

Lenses are broadly used in optical imaging systems. Z & Z provides different kinds of spherical lenses, cylinder lenses and achromatic lenses as per user's requirement.

» [**Opening up the world of physics for students - Hindu**](#)

Opening up the world of physics for students Hindu, India - 4 hours ago KOCHI: If seeing is believing, all one needs to do is walk into the physics laboratory at Aquinas College at Edakochi to experience it. ...

» [**Deep brain stimulation may improve memory**](#)

Deep brain stimulation (DBS) surgery, which is used to treat Parkinson's disease and other movement disorders, is now being studied for its potential to treat a variety of conditions. For example, DBS of the hypothalamus has been used to treat ...

» [**Why don't chimpanzees like to barter commodities?**](#)

For thousands of years, human beings have relied on commodity barter as an essential aspect of their lives. It is the behavior that allows specialized professions, as one individual gives up some of what he has reaped to exchange with another.

» [**Anna's hummingbird chirps with its tail during display dives**](#)

The beeps, chirps and whistles made by some hummingbirds and thought to be vocal are actually created by the birds' tail feathers, according to a study by two students at the University of California, Berkeley.

» [**Hot liquids release potentially harmful chemicals in polycarbonate plastic bottles**](#)

When it comes to Bisphenol A (BPA) exposure from polycarbonate plastic bottles, it's not whether the container is new or old but the liquid's temperature that has the most impact on how much BPA is released, according to University of Cincinnati.

» [**Magnetic Quantum no ?**](#)

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Thorlabs is a broad based optical technologies company which provides optical and opto-mechanical components, tables and vibration control, nanopositioning solutions to integrated test and measurement systems, and tunable laser sources. Inn..

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» [**New optical effect promises enhanced laser writing**](#)

Using a femtosecond laser to write patterns on a lithium niobate crystal has yielded the first evidence for a new optical phenomenon.

» [**Efficient white OLED emits clearly**](#)

High quality light has been produced by a white OLED using a novel three emission layer structure.

» [**What gives us fingertip dexterity?**](#)

Quickly moving your fingertips to tap or press a surface is essential for everyday life to, say, pick up small objects, use a BlackBerry or an iPhone. But researchers at the University of Southern California say that this seemingly trivial ..

» [**Researchers discover Maya mask splendor**](#)

Ancient Mayan temple builders discovered and used lustrous pigments to make their buildings dazzle in the daylight, a Queensland University of Technology researcher has discovered.

» [**Your personality type influences how much self-control you have**](#)

A new study from Northwestern introduces personality types used frequently in consumer research to the realm of self-improvement. People are motivated by one of two fundamental needs: they are either promotion-focused, seeking products ..

» [**Cross ownership has positive effect on local media coverage, researcher finds**](#)

The recent decision by the Federal Communications Commission (FCC) to loosen restrictions on cross ownership of newspapers and broadcast television stations in the same market has met with criticism from consumer advocates and members of Co..

» [**New Antarctic ice core to provide clearest climate record yet**](#)

After enduring months on the coldest, driest, and windiest continent on Earth, researchers today

closed out the inaugural season on an unprecedented, multi-year effort to retrieve the most detailed record of greenhouse gases in Earth's atmosphere.

» [**Genetic difference predicts antidepressant response**](#)

Researchers have identified subtle genetic variations that predict the efficacy of two widely used antidepressant drugs. They found that certain variants in the gene for a protective transporter protein that pumps drugs and other substances.

» [**Engineers use blood's hydrodynamics to manipulate stem, cancer cells**](#)

A tiny, implantable device has pulled adult stem cells out of a living rat with a far greater purity than any present technique. The test of the device designed by Michael R. King, associate professor of biomedical engineering at the University of Michigan.

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» [**Herbal remedy useful for heart failure, review finds**](#)

Adding another twist to the ongoing debate over the value of an herbal treatment for patients with heart failure, a new review of existing research suggests that hawthorn extract significantly improves symptoms.

» [**Cranberries might help prevent urinary infections in women**](#)

Evidence supports drinking cranberry juice—a familiar home remedy—to treat urinary tract infection (UTI), according to a new review from Scotland.

» [**OTC cough medicine: Not worthwhile for children or adults?**](#)

Alert parents know that small children should not take over-the-counter cough medications. Now researchers say the stuff might not help adults much, either.

» [**Early promising results in malaria vaccine trial in Mali**](#)

A small clinical trial conducted by an international team of researchers in Mali has found that a candidate malaria vaccine was safe and elicited strong immune responses in the 40 Malian adults who received it.

» [**Chip in mobile phones can survive fierce fires, says scientists**](#)

SIM cards in mobile phones can survive heat at up to 450 degrees Celsius (356 degrees Fahrenheit) and possibly beyond, a finding that should help probes into terror attacks and other crimes, scientists said on Wednesday.

» [**Problems in General Relativity**](#)

» [**Is information essential for life?**](#)

Even simple organisms may store data about their environment to help them exploit environmental resources, say researchers.

» [**NSAIDs are effective for short-term relief of low-back pain**](#)

Non-steroidal anti-inflammatory drugs (NSAIDs; such as aspirin and ibuprofen) can help reduce symptoms of low back pain that doesn't involve sciatica, a Cochrane Systematic Review has found.

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Symposium on physics education in Baltimore next week FirstScience, UK - 1 hour ago By American Institute of Physics Jan. 17, 2008 -- Is there a crisis in science education? If so, how serious is it? And, most importantly, how do..

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» [People not always needed to alleviate loneliness](#)

New research at the University of Chicago finds evidence for a clever way that people manage to alleviate the pain of loneliness: They create people in their surroundings to keep them company.

» [Will the vAMP replace the CD?](#)

While some people might argue that the CD has already been replaced by the MP3, music stores want to think otherwise. The digital device manufacturer MediaStreet has recently announced a product that it hopes will replace the CD and get mus..

» [Further breakthroughs for breast cancer patients](#)

Researchers at the Tenovus Centre for Cancer Research at Cardiff University have made a breakthrough in breast cancer treatment that could help save the lives of women who become resistant to breast cancer drugs such as tamoxifen.

» [Prostate cancer treatment draws fire](#)

U.S. medical tourists are headed to Latin American health clinics to receive a controversial prostate cancer treatment not approved in the United States.