

The Weekly Newsmagazine of Science

# SCIENCE NEWS

September 20, 1997  
Vol. 152, No. 12  
Pages 177-192



## Digging Into Sand

FEET

# Science Comes Alive

IN THIS UNIQUE COLLECTION OF SCIENTIFIC, EDUCATIONAL AND OPTICAL PRODUCTS FOR EDUCATORS, STUDENTS AND INVENTORS.

**FOCUS YOUR AUDIENCE'S ATTENTION WITH THE NEW BULLET SHAPED KEYCHAIN**

## LASER POINTER



Lightweight, measures only 3.2" long. **Ideal for lecturers, educators, instructors, for sales meetings, slide show and graphic presentations.**

Small enough (only 3.2" long) to carry with your keys in your pocket. **Projects a brilliant red dot as far as 500 yards to focus attention on presentation graphics, charts and any opaque surface.** Compact bullet shape design with a handsome brushed surface makes this an ideal gift for the holidays. Class IIIa Laser Diode comes with momentary on/off switch. 2 hours of continuous operation, includes 2 LR44 batteries. Dimensions: 0.5" dia. x 3.2" long Weight: 2.3 oz. Beam Diameter: 3mm x 2mm Output: 5mW at 650nm.



CAUTION: Laser light, avoid direct eye exposure. **NEW! Spectra Bullet Laser Pointer Key Chain now only \$59.95 P181,189**

## OPTICS · ASTRONOMY · BIOLOGY · CHEMISTRY · PHYSICS · MICROSCOPES MAGNETS · MOTORS · TELESCOPES · MAGNIFIERS · BINOCULARS · ROBOTS

**Create Dazzling Lighting Effects Used By Technical Directors With Mirror Balls.**

Available in 4 diameters:  
 8" P181,149 ..... \$29.95  
 12" P181,150 ..... \$49.95  
 16" P181,151 ..... \$89.95  
 20" P181,152 ..... \$169.95  
 AC Motor, for Spinning Effects P181,153 ..... \$19.95  
 Now you can project enchanting glitter lighting effects with light specks that dance and revolve on walls and ceiling. These moving rays of light are the same as are seen in discos, theaters, auditoriums. Mirror balls are made of highly reflective glass mirror squares hand applied to the ball surface. A loop bushing is fitted to the top of the ball which can be hooked to a 3 RPM motor.

**US Navy Specification Military 7x50 Binoculars.**

Waterproof nitrogen-filled Fujinon binoculars are made in the USA. These are the same binoculars supplied to the US Navy for demanding sea duty. Brand new 7x50 binoculars meet or exceed military requirements for strength, performance and quality. For maximum light transmission and image brightness, all optical surfaces are coated with magnesium fluoride. The lenses and Bak-4 prisms are sealed with light alloy housings from which all air, moisture and contaminants have been purged by dry nitrogen. The eyepieces are O-ring sealed, 100% waterproof and impervious to temperature extremes from -20°C to +70°C. The 7x50 BIF series is designed for use anywhere on earth. For a comfortable grip and added protection against impact, the binocular housing is covered with a durable rubber coating. The eyepieces provide a focusing adj. range of +4 diopters with 1-diopter calibration. Neck strap & lens cover incl. Field of View: 380 ft. Wt. 2.9 lbs. P153,459 \$229.

**Affordable Robot Kit Teaches The Basic Principles Of Robotic Sensing And Locomotion.**

**SAVE \$5**  
 • Built-in Electronic Control Sound Sensor.  
 • Easy-To-Follow Step-By-Step Instructions.  
 • A Spunky Little Robot For Ages 10 and Up.

Hyper Peppy is an intelligent robot that responds to sound and obstacles in its path. When the sound/touch sensor (in front) detects an obstacle or hears a loud noise, such as a hand clap, Hyper Peppy will automatically reverse, then turns left before embarking on a new course. Kit incorporates the basic principles of robotic sensing and locomotion, and guarantees an adventure that's exciting, challenging, educational and fun. Comes complete with pre-assembled PC board, condenser microphone and easy to assemble mechanical drive system. Powered by 2 1.5V "AA" batteries, (not included). Reg. \$29.95 **ON SALE! P152,864 \$24.99**

**Detect And Measure Electromagnetic Fields With DR. GAUSS™ - The EMF Detective!**

Dr. Gauss™ is an accurate, easy-to-use and affordable Gaussmeter developed to allow you to perform your own EMF home or school survey. It detects and measures EMF's (electromagnetic fields) produced by electrical currents found in and around the home, or in the work place. Features: Easy to read scale with built-in audio signal and auto shut off. Requires one 9 volt battery (not included). Measures emissions of: Cellular Phones, Power Lines, Computers, Electric Blankets and more. **EMF Gaussmeter P152,778 \$36.95**

**Moon-Blob, It Crawls Out Of Containers And Looks Alive As It Creeps Uphill.**

Moon-Blob has unbelievable properties and is fun to play with...it acts alive and looks like a living protoplasm as it defies gravity by crawling up and out of its container. It's dehydrated plastic—just add water to activate it. Safe, harmless. Pkg. of 2 P138,440 \$11.95 Pkg. of 6 P153,530 \$32.95

**Authentic Russian KGB Micro Binoculars.**

Originally designed as KGB restricted issue micro binoculars by the Lytcorino Optical Factory (the former Soviet Union's most secretive military optics factory). These 2.5 power micro binoculars feature 17.5mm coated objective lens and individual focusing eyepieces. Lightweight, compact folding design weighs only 2 1/2 oz. **P153,014 \$24.95**

**Our Six Most Popular Science Toys That Teach.**

Save \$5.30 on our famous favorites! **A \$28.25 Value!**  
**SPECIAL PRICE \$22.95 P152,380**  
 Classic science demonstrations have amazed and intrigued young minds for generations. You'll have fun learning from science.  
 • Amazing Flying Bird • Fickle Foam • Whirling Gyroscope • Sun Powered Radiometer • Rainbow Maker • Space Pet

## HANDS-ON SCIENCE FUN!

**Illuminating 30X Magnifier-Microscope For Examining Stamps, Coins, etc.**

Our new design improves this popular model. Carry it with you everywhere, measures only 5 1/4" x 1 1/4" x 1/4". Ideal for critical inspections. Has a built-in light source and optics to let you examine objects 30 times actual size. Features a center focus wheel for precise one-hand operation. Ideal for industrial inspections and hobby applications. Uses 2 "AA" batteries (not incl.). **P135,001 \$9.95 3 or More \$7.95 Each**

**Build Your Own Model Airplane And Harness The Sun With A Solar Panel That Spins The Propeller.**

Our solar airplane kit is fun to build and demonstrates the basic principle of solar energy and the free power that's available from the sun. Kit includes complete instructions, pre-cut balsa wood, DC motor, motor pulley, solar panel with wire leads and bonding agent. The solar motor spins the propeller from power generated by the 3x1 1/2" solar panel. For ages 8 and up. Wood pieces can be painted (paint not included). **Sponsored by Bill Nye, the Science Guy. P137,425 \$24.95**

**Perform Experiments With Equilateral Prisms Discovered By Sir Isaac Newton.**

Prism discovery optics have three equal 60° angles, ideal for classroom demonstrations. Turn sunshine into rainbows, bend light, even make a periscope. You can perform Newton's basic dispersion of white light into the spectrum experiments. All prism faces are 25mm. **SAVE \$4.40 on Set of 5 Acrylic Prisms! P152,885 \$26.95**  
 Equilateral Acrylic Prisms  
 75mm, P131,797 \$5.95  
 100mm, P131,798 \$6.95  
 150mm, P131,799 \$8.00

**Add Spectacular Color To Your Home With A Rainbow Light Display.**

Our equilateral prism mounted in an attractive high tech positioning base catches the sunlight from your window and projects the ever-changing rainbow patterns over your walls, ceiling and floor. It's almost like being inside a multi-faceted diamond. Glass equilateral prism is 2" (50mm) long with 1" (25mm) faces. Black plastic mount is 3" x 1 1/2" x 1 1/2". **P138,400 \$8.95**

**Our Amazing Happy Bird Never Stops Drinking!**

Yes, I'm Back At ES! Fascinating to watch the Drinking Bird, it never stops drinking. Simply dunk the bird's head and release it, the Drinking Bird will bob back and forth while periodically taking a drink. May be used as a relative humidity indicator. **Ideal Science Project Aid.** Learn the science behind it! Drinking Bird's body is a glass vial filled with Freon -11 and red dye. May stain if broken. Leg supports and hat are plastic. **Package of Two P153,617 \$7.95**

**Build Your Own 2000° Solar Furnace With This Fresnel Lens And Harness The Sun's Rays!**

Use this precision lens as a solar cooker for heating food, as a kiln for pottery - and even to melt metal or for other solar experiments. Lens has 50 lines per inch and measures 11" x 11" x 1/4" thick. Unmounted lens comes with instructions on how to build the 360° stand and frame depicted (frame not included). **Caution: Adult supervision recommended. P152,833 \$22.95**

**Ideal First Telescope For Your Entire Family... The Astroscan™ 2001.**

**SAVE \$70** Reach out and explore the great night sky! You'll be in awe at the vast caters of the moon, the brilliant planets, Saturn's Rings, Jupiter's many moons, comets, eclipses, meteors and the wonder of the Milky Way. Our award winning compact design allows you to cradle it in your arms or glide it smoothly in its table-top base. Spectacular extra wide field and its superb light-gathering ability with large 4 1/4" clear aperture Newtonian RICH-FIELD reflector that provides a breathtaking 3" (or six full moons) field that literally makes this precision instrument an open window to the universe. Optional image erector adapts scope to view land objects. System is sealed to protect against dust and moisture and is permanently collimated at the factory. **Astroscan™ 2001 includes:** telescope, base, 28mm RKE eyepiece, open sight target finder, dust cap, adjustable shoulder strap, 36 page user's manual, Star & Planet Locator and 40 page "Sky Guide" booklet. **5 Year ES Limited Warranty.** Reg. \$399. **Factory Direct SAVE \$70 P12001 \$329.** **Astroscan™ Telescope with Image Erector (for Earth Viewing) SAVE \$44 P12008 \$409.**

## GREAT HOLIDAY GIFT IDEAS!

**Emergency Key Ring Features 5 Tools In 1!**

Super tough 5 function multi tool folds in to a miniature compact size (1 1/4" x 1 1/4" x 1/4") that locks snugly in any key chain. Made of hardened tempered steel and protectively coated with a black oxide finish. A great emergency gift for everyone. **Self Locking Mode**  
 Key Ring Features 5 Tools in 1:  
 1. Phillips Head Screw Driver  
 2. Regular Screw Driver  
 3. Shears  
 4. Wire Cutter  
 5. Precision Pliers  
**P181,222 \$19.95 3 or more \$18.50 Each**

**Build A Working V-8 Engine That's Visible.**

What better way to learn how an internal combustion engine works than to be able to see all of the parts move! As you turn the crank at your own speed, each of the parts move - just like the real thing. You can actually watch the crank shaft rotate; valves open and close and the rods and pistons move up and down. This 1/4 scale realistic model is powered by a hand crank - no batteries required. V-8 engine rests on a black stand, which may be painted. **Model skill level 3 (Glue not included). P152,854 \$46.95**

**Gravity Free SPACEPEN, Writes Anywhere... Anytime... Used By NASA!**

SPACEPEN can write upside down, in freezing cold (-50°F), in extreme heat (+250°F) and even underwater with its unique pressurized ink cartridge design. Used by NASA for manned space flights, it is known for its ability to perform under weightless conditions and in a vacuum. **Each pen is sealed to prevent leakage, evaporation and wasted ink. Comes in an attractive gift presentation case.**  
 Chrome Finish P181,217 \$41.95  
 Matte Black Finish P181,218 \$41.95

**Build A Working Replica Of A Famous American Steam Engine From The 1800's.**

Steam engines, the workhorses of the 19th century, powered machinery, farm equipment, the Stanley Steamer and trains that crossed the country. The simplest was the single stroke piston engine - power occurring when the piston moved in one direction. Kit has everything needed to recreate a working replica in solid brass - from crank shafts, cylinder, piston, boiler parts, to a working whistle. Use the steam engine to power generators, erector set models, etc. 4 dry fuel pellets incl. All metal parts, assemblies easily in 1-2 hrs. Illustrated instr. (7 1/4" Sq. x 8 1/4" H) **P12,202 \$110.00 P142,324 \$6.95**

## IT'S EASY TO ORDER WITH OUR FRIENDLY SERVICE

**BY PHONE: 1-800-728-6999**  
 Mon.-Fri. 8AM-8PM; Sat. 9AM-4PM (EST)  
**BY FAX: 1-609-547-3292**  
**BY E-MAIL: D97IC915@edsci.com**  
 24 HOURS A DAY, 7 DAYS A WEEK  
**BY MAIL: enclose check or by credit card**

**WE ACCEPT CREDIT CARDS**  
 Visa, MasterCard, American Express, Optima, Discover, Diners Club or Carte Blanche accepted  
 Be sure to indicate the credit card being used, card number and expiration date (with MasterCard please include bank name and ID number).  
**ALL ORDERS SHIPPED POSTPAID**  
 NJ Residents add 6% sales tax

**Edmund Scientific Co.**  
 CONSUMER SCIENCE DIVISION  
 Dept. D97I, C915 Edscorp Bldg., Barrington, NJ 08007

## FREE CATALOG

Explore a fascinating world of science with over 5,000 scientific, educational and optical products that can be adapted for science fair projects in our new, 116 page 'SCIENTIFICS' color catalog. **Write, call, fax or e-mail today for your FREE catalog.**

**Money Back Guarantee - You Must Be Pleased!**  
 If you are not completely satisfied with your purchase, return the merchandise in its original package and we will cheerfully refund your money in full.

**We Back Our Products!** Our 45 day unconditional guarantee means you take no risk on any product you buy from us.

**VISIT OUR WEB SITE**  
[www.edsci.com](http://www.edsci.com)



# 57th Westinghouse Science Talent Search

**\$205,000 in scholarships will be awarded to high school seniors in the 57th Westinghouse Science Talent Search for research projects in science, mathematics and engineering**

One	\$40,000 scholarship	(\$10,000 per year for 4 years)
One	\$30,000 scholarship	(\$7,500 per year for 4 years)
One	\$20,000 scholarship	(\$5,000 per year for 4 years)
Three	\$15,000 scholarships	(\$3,750 per year for 4 years)
Four	\$10,000 scholarships	(\$2,500 per year for 4 years)
Thirty	\$1,000 scholarships	(payable upon matriculation)

**Basic Requirements**—Entrants must be high school seniors during the 1997-98 school year. Primary emphasis is placed on a written report of an independent research project in the physical sciences, behavioral and social sciences, engineering, mathematics, or biological sciences (excluding live vertebrate experimentation). The research project must be the work of a single individual. Group projects are not eligible. An Entry Form, designed to elicit evidence of creativity and interest in science, is also required, along with an official high school transcript, available standardized test scores, and statements and recommendations from teachers and/or supervising scientists.

**Important Note**—Sons and daughters of Science Service employees or Science Talent Search evaluators and judges are not eligible for competition.

**Winners Selection**—Three hundred Semifinalists are selected from entries received (usually about 1,800) after careful evaluation by a team of 40 evaluators and judges specializing in a variety of scientific disciplines. Forty Finalists are then selected from the Semifinalists and invited to Washington, DC in March 1998, for final judging by a board of 10 distinguished scientists.

**The Rewards**—The 300 Semifinalists benefit in the following ways: (1) recommendations to colleges and universities for admission and financial assistance, (2) certificates of achievement for students and teachers, (3) a sense of accomplishment and a measure of self-esteem that comes from finishing a difficult assignment. The 40 Finalists, selected from the Semifinalists, are also awarded a trip to Washington, DC, for the six-day, all-expense-paid Science Talent Institute for final judging and a chance to share \$205,000 in scholarships.

**Sponsors**—Since its inception in 1942, the Science Talent Search has been funded by Westinghouse Electric Corporation and administered by Science Service, a Washington, DC-based nonprofit organization.

## Deadline—

**November 24, 1997**

Entries for the 57th Westinghouse Science Talent Search (1997-98 school year)

Entries must be received by 6:00 p.m. on Monday, November 24, 1997, at Science Service, 1719 N Street, NW Washington, DC 20036. Late entries will be accepted ONLY if the judging process has not been completed and if (1) entries were metered in a U.S. Post Office by November 11, 1997, or (2) entries were sent by a carrier that guaranteed delivery in writing by the deadline. Entries may NOT be sent by telefax or E-mail.

We strongly recommend early entries to avoid delivery delays. NOTE: The U.S. Postal Service's Registered or Certified Mail is for tracking purposes only, and is NOT the same as Express Mail, which delivers overnight. Priority mail DOES NOT GUARANTEE IN WRITING delivery in two days.

NOW AVAILABLE

**SEEKING—and Finding —  
SCIENCE TALENT**

**A 50-Year History of the  
Westinghouse Science Talent Search**

Author Tom K. Phares provides a comprehensive history of the Westinghouse Science Talent Search from its inception in 1942. Entertaining prose leads you from the meeting of the two founders of the STS at the World's Fair in 1939 to the accomplishments of past winners—five of whom have gone on to become Nobel Laureates; to the dedicated individuals behind the winners; through the arduous judging and evaluation process; to the educational opportunities that open up to STS finalists. Also included as appendices in this informative review are a list of the finalists' names from 1942 to 1990, lists of major honors received by former winners, and a list of the 32 high schools that have produced the most winners. (Published by Westinghouse Electric Corporation, 1990; paperback; 122pp.)

To obtain a copy, send \$3 (to cover postage and handling) to STS History, Science Service, 1719 N Street, NW, Washington, DC 20036.

WRITE OR CALL FOR MORE INFORMATION, OFFICIAL RULES, AND ENTRY FORM

WESTINGHOUSE SCIENCE TALENT SEARCH, c/o SCIENCE SERVICE, DEPT. STS, 1719 N STREET, NW, WASHINGTON, DC 20036  
(TELEPHONE: 202/785-2255) E-MAIL: sciedu@sciserv.org

HOME PAGE, WESTINGHOUSE: <http://www.westinghouse.com> SCIENCE SERVICE: <http://www.sciserv.org>