

IT'S SCIENCE FAIR TIME

Do you need inspiration for a science exhibit? Do you want a suggestion for a project?

THOUSANDS OF SCIENCE PRO-JECTS is a collection of the answers given to these questions by thousands of boys and girls who participated in fairs leading to the International Science and Engineering Fair, or who competed in the Westinghouse Science Talent Search.

Each title represents a project completed by at least one student. Some projects are so basic that they have been done by thousands of young people. Some are largely original.

The titles have been classified by subject matter using the Library of Congress classification system so you can more easily find out what you want.

A ready source of ideas for students at all age levels.

PRICE: \$1.00 each postpaid.

Send check or money order to

THOUSANDS c/o Science Clubs of America 1719 N St., N.W. Washington, D. C. 20036





Math "Bug" You?
LEARN MATH AMDE ENJOY
IT! Impossible? Not with
MATHEMATICS FOR EVERYMAN, a self-teaching manual guaranteed to increase
your math know-how. From
Simple Numbers to the Calculus.

Simple Numbers to the Calculus.

"The author assumes no previous acquaintance with mathematics, and advances the reader... by patient, carefully-phrased exposition and by building the discussion step-by-step."—New Technical Books (of the New v).

York Public Library).

Learn math at home comfortably and at mini-

MATHEMATICS FOR EVERYMAN by Egmont Colerus. \$5.95, Plus 30¢ handling. ORDER NOW! 10-Day Money-Back Guarantee.

SOLVE THIS PUZZLE-



Jones, Brown, Smith, and Robinson were either a Driver, a Stoker, a Guard, or a Porter. Each wore either a red, blue, black or green shirt.

green shirt.

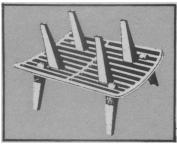
The Driver beat Brown at billiards and Smith and the Guard often played golf with the men in black and green shirts. Jones and the Porter disliked the man in the green shirt, but this was not the Stoker as he always wore a red shirt.—What was each person's occupation and color of shirt?

The correct answer to this and 100 MORE varied mind-stretching Problems are found in BRAIN PUZZLER'S DELIGHT by E. R. Emmet. Order Now: \$5.95, plus 25¢ handling.

10-Day Money-Back Guarantee
EMERSON BOOKS, Inc., Dept. 780-T
251 West 19 Street, New York, 10011

This NEW KIND FIREPLACE GRATE

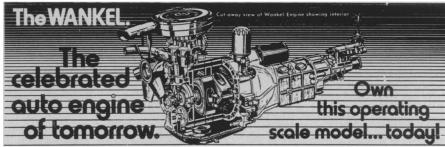
Improves fireplace performance 10 Different Ways. . . .



U.S. Patent #3,505,986

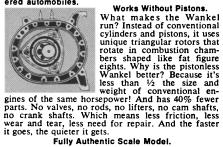
- cures most smoking problems
- makes fire starting and tending much easier
- cuts way down on firewood costs pays for itself over and over again
- sharply cuts air pollution, because better draft causes more complete combustion, greatly reduces smoldering and smoking
- makes any fireplace much safer
- permits easier ash removal
- protects andirons from harm
- creates beautiful flame patterns
- lets you have hot or "cool" fires
- adds a handsome touch to any fireplace

If you have a fireplace of any kind, please let us send you complete details about how this wonderful new kind of fireplace grate works. including prices. Not available anywhere else. Ask for FIREPLACE GRATE STORY. Write now to Garden Way Research, Dept. G-2811, Charlotte, Vermont 05445.



The first radical change in automobile power systems in half a century is here. And you can see exactly how it works, in this authentic operating scale model. Someday soon, your car will probably run on a Wankel. This is the engine you've been reading about in The Wall Street Journal, Time Magazine and The New York Times. Wankel-powered cars have been making headlines throughout the world. General Motors recently paid \$50 million for the rights to use the revolutionary Wankel Rotary Engine in its cars. And such noted manufacturers as Rolls-Royce, Mercedes-Benz, Alfa Romeo and Citroen are already developing Wankel-powered automobiles.

Works Without Pistons.



Fully Authentic Scale Model.

Fully Authentic Scale Model. We find the whole thing incredibly fascinating. So will you, with your own motorized see-through model of this automobile engine of the future. We have a kit that duplicates the amazing Wankel in authentic 1/5th scale right down to the very last plug, gear and oil cap. This fully detailed operating model has a transparent, heavy plastic housing. You can actually see the triangular rotors turning on

their shaft. You see the continual flash of igniting spark plugs. You see the rotating fan blades. You see the moving fan belt of real rubber. You hear the powerful deep-throated whir of the motor. All controlled by your own touch on the stick-shift on-off switch. off switch.

off switch.

The model that separates the men from the toys.
This is not a plaything for preschoolers. It is an intricate, fully operational scale model of a major automotive development. A "must" for hobbyists, auto buffs and guys of all ages who love to build things. An impressive attention-getter for your office or den. A significant visual teaching aid. A history-making forerunner of things to come!

Order No. 43140: Wankel Rotary Engine® Kit.

Comes with all pre-painted parts, motor, display stand and easy-to-follow instructions. Uses two inexpensive AA batteries (not incl.), obtainable everywhere. The price?

As amazing as the engine itself:

only \$7.50 complete, including postage and handling. Send check or money order. (N.Y. residents add sales tax.)

FREE gift catalog on request.

THE EVERYTHING GUARANTEE:

The GALLERY guarantees EVERYTHING: The quality, accuracy of description, availability, prompt delivery. If not delighted, return the Wankel Engine Kit within 3 weeks after you receive it (not the usual 10 days) for an instant refund of purchase price.

finer things of GALLERY by mail from MeGALLERY Dept. 3486, Amsterdam, N.Y. 12010

NEW PRODUCTS • NEW MATERIALS • NEW IDEAS

SCIENCE SOPTICS **ELECTRONICS**

RE-LIVE APOLLO 15 & ROVER RIDE



"FISH" WITH A MAGNET



Go treasure hunting on the bottom! Fascinating fun & sometimes profitable! Tie a line to our 5½-lb. Magnet—drop it overboard in bay, river, law or ocean. Troll it along bottom—your "treasured" haul can be outboard mottom—your "treasured" haul can be outboard mottom—nuch greater weights under water.

Type—Gov't. cost \$50. Lifts over 150 lbs. on land—nuch greater weights under water.

Stock No. 70.5710 5½ lbs. \$14.00 Ppd.
Stock No. 70.5700 3½ lbs. (40 lbs.) \$8.75 Ppd.
Stock No. 70.5700 3½ lbs. (40 lbs.) \$3.33.95 F.O.B.

1st LOW-COST VACUUM PUMP!



Nothing like it! Top-quality hand-held pump produces & maintains 25" of vacuum. Has instant release tab, 13" diam. stainless gauge (0-30"), 100's of uses—siphon moxious fluids, evacuate bell jars and castings. clean. retrieve, lift strength edit of the moximus fluids. evacuate hell jars and castings. clean. retrieve, lift termispheres hemispheres hemispheres hemispheres hemispheres \$12.00 Ppd.

Stock No. 71,301Q "T" lifter (2½" diam. cup). \$12.00 Ppd.

\$5.550 Ppd.

JUST PRESS . . . and colors bloom!



NEW! ELECTRONIC DIGITAL COMPUTER KIT!

NEW! ELECTRONIC DIGITAL COMPUTER KIT!

Solve problems, play games, predict weather with this actual working model of giant electronic brains. Amazing new fun way to learn all about computer programming . . logic, decimal. binary systems. Laus of Sets—even decimal. binary systems. Laus of Sets—even decimal. binary systems properties after completing simplified 116 page instructive booklet. Includes step-by-step assembly diagrams. Circuits easily changed. Readout from illuminated control panel. Req. 2 "D" batt. (not incl.). Best model we've seen—for home. school. industry.

No. 71,434Q (11" x 12/2" x 4")\$31.50 Ppd.



MAIL COUPON FOR GIANT FREE CATALOG

148 PAGES! MORE THAN 4,000 **UNUSUAL BARGAINS**

Enormous variety of telescopes, microscopes, binoculars, magnets, magnifers, photo components, lenese, prisms, optical instruments, parts, Science Fair kits, projects and accessories. Writer for Free Catalog "Q" Edmund Scientific Co., 300 Edscorp Building, Barrington, New Jersey 08007.



· · · · · · · · · · · · · · · · · · ·	 301303	00007.		
Name	 			
Address				
City		State	Zip	





craft of hand-grinding optical lenses. Doug is an amateur astronomer who believes in do-ityourself telescopes.

With a Master's Degree in Electrical Engineering, Doug Mark is a project engineer at the research laboratory of AC Spark Plug Division in Flint, Michigan.

At AC, he just completed work on a futuristic "Data Center Car" that needles and gauges.

The experimental car has remote control doorlocks, plus an advanced electronic system that provides braking and acceleration controls and also makes possible automatic service checks on the vehicle.

Doug has been an amateur stargazer since youth, but just recently became interested in making his own tele-

pects to purchase some finished parts, Doug says the most difficult task is "walking the barrel" to grind the lens.



finish the lens.

Doug Mark is typical of the diversity found at GM. We think he illustrates the point that it takes more than engi-

neers to make a corporation

It takes people with imagination.



General Motors Interesting people doing interesting things.

NOTE: This advertising is being sponsored by General Motors in several youth publications. It is hoped that the subjects featured will serve to increase teenager interest in scientific studies and can be used, perhaps, to show how the things your students are learning are utilized in actual industrial activities. Reprints of this ad are available upon request. Simply write to General Motors, Advertising & Merchandising Section, P. O. Box 5446, Detroit, Michigan 48211.