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\$5.50 A YEAR

November 16, 1957

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SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Rocket Target?

See Page 310

A SCIENCE SERVICE PUBLICATION

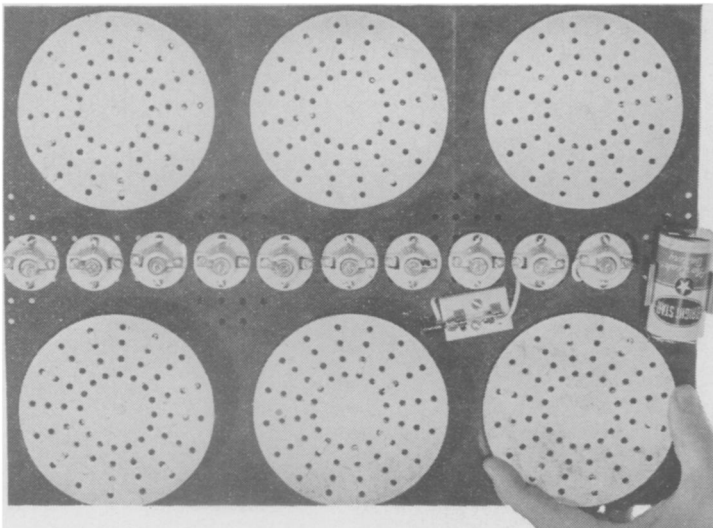
For Problem-Solving... Experimentation... Teaching... or Just Fun

BUILD YOUR OWN ELECTRIC BRAIN MACHINE

IN JUST A FEW HOURS!

Remarkable 400-Component Construction Kit Enables You To Create Any of 33 Brain Machines! Build LOGIC MACHINES That Compare, Reason, Test Intelligence; ARITHMETICAL MACHINES (Binary & Decimal); GAME-PLAYING MACHINES (Tic-Tac-Toe, Nim, etc.)

Teachers and Scientists: *Design Your Own Machines!*



1957 GENIAC KIT CONTAINS (1) a complete 100-page text, "Minds and Machines"—a basic introduction to computers. (2) "How to Construct Electrical Brains at Home"—a fully illustrated text book on basic computer design theory and circuits with specific instructions for building 33 circuits. (3) Wiring Diagram Manual. A special booklet with full scale diagrams. (4) Beginners' Manual—fifteen extra experiments to teach the basic symbols of electric circuits. (5) Over 400 components and parts.

GENIAC is the only kit and text combination that presents the basic ideas of cybernetics, boolean algebra, symbolic logic and computer circuitry for all levels of knowledge and intelligence. Sold to all customers on a one-week return guarantee; actually use it during that time, return it if you decide not to keep it.

WITH GENIAC you build any of 33 electric brain machines in a few hours by following the clear-cut, step-by-step directions in the basic text provided. Advanced students and scientists can design machines for special problems. No soldering required, and little wiring. Change design of your machines in minutes! Build Binary Adding Machine • Secret Coder & Decoder • Machine for Arithmetical Carrying • Comparing Machine • Reasoning Machine • General Combination Locks • Games Requiring Logic • Machine for a Space Ship's Airlock • Intelligence Tester • Burglar Alarm • Puzzle Solvers and many others.

OVER 400 COMPONENTS AND PARTS

Circuits operate on one flashlight battery, and use ingeniously designed parts. 1957 GENIAC Kit has been constructed by the original inventor to provide all the advantages of previous electrical brain construction kits plus what we have learned in answering the questions and examining the new designs created by hundreds of users.

SELF-CONTAINED COURSE IN COMPUTER DESIGN

Each GENIAC comes as a self-contained course in computer design. All instructions are so simple that we have records of intelligent twelve-year-olds designing factoring machines and puzzle-solving circuits—while hundreds of schools and industrial training programs have incorporated our kits in their curricula.

YOUR COST FOR GENIAC KIT: ONLY \$19.95 POSTPAID

The coupon will bring your GENIAC Electric Brain Construction Kit and Manuals for only \$19.95 postpaid. You may return the Kit within 7 days if you are not completely satisfied. For schools we offer bulk rates on extra texts and parts; for teachers, we offer 10% deduction on GENIAC if ordered for use in institutions. Send for your Kit today!

SCIENCE KITS, Dept. SL 117-C

Oliver Garfield Co., Inc., 126 Lexington Ave., New York 16, N. Y.

SOME INSTITUTIONS AND FIRMS NOW USING GENIAC		
Allis-Chalmers	Lafayette Radio	Los Angeles Public Schools
Remington-Rand	Rohr Aircraft Co.	
International Business Machines	Southwest Missouri State College	Jefferson Union High School
Wheeldex Mfg. Co.	Albert Einstein Medical College	Oklahoma A & M
Manuel Missionary College	Naval Research Laboratories	Kansas State University
Walter V. Clarke Associates	Board of Education, Tecumseh, Nebraska	Duke University
Barnard College	Marshfield Public Schools	Coral Gables Senior High School
Westinghouse Electric		Courtland Jr. High School
Phillips Laboratories		Bell Telephone Laboratories
General Insurance Co. of America		

ORDER GENIAC ON OUR MONEY BACK Guarantee!	SCIENCE KITS, Dept. SL 117-C
	Oliver Garfield Co., Inc., 126 Lexington Ave., N. Y. 16, N. Y.
	Please send me:
	1 GENIAC Electric Brain Construction Kit and Manuals.
	\$19.95 (East of Mississippi)
\$20.95 (Elsewhere in United States)	
\$21.95 (Outside the United States)	
Returnable in seven days for full refund if not satisfied. I enclose \$ in full payment.	
Name	
Address	
City Zone State	

How to extend Christmas THE WHOLE YEAR THROUGH

FOR THE MOST UNUSUAL PERSON
ON YOUR CHRISTMAS
LIST



Wouldn't he (or she) like a gift of twelve packages, one to arrive each month in 1958?

Twelve Surprises One each month for a year

IN EACH 1958 gift package, there will be several objects of science and, with each object, a museum-style legend card, which will tell at a glance what these THINGS of science are. Included will be sheets of explanation which give the interesting details of discovery, of development, of manufacture; and tell how to perform unusual experiments with the contents of the package.

Since late in 1940, packages like these have been going forward to members of the THINGS of science group. Glance over this list, then decide whether a membership, which brings monthly packages on subjects as widely varied as these, isn't just the thing for that most unusual person on your Christmas Gift list.

- | | | |
|--------------------|--------------------|----------------------|
| Carbon Black | Vegetable Dyes | Taste |
| Unusual Fabrics | Housing Materials | Food Packaging |
| Lodestone | Coffee By-Products | Urea Chemical |
| Rayon | Iron Ore | Fungicides |
| Coins | Modern Cotton | Sea Shell |
| Casein | Multi-Layer Wood | Color Vision |
| Rubber Plant | Fingerprint | Nails |
| Spices | Mineral Hardness | Paper Chromatography |
| Sweetness | Kidskin | Glass Properties |
| Steel | Humidity | Licorice |
| Coal By-Products | Polaroid | Fertilizer Chemicals |
| Nylon | Tea | Titanium |
| Vinyl Resin Fibers | Motion Picture | Pyrethrum |
| Insecticides | Highway Safety | Straight Line |
| Horology | Modern Electronics | Seed Germination |

You know the one who would thank you again and again for such a gift. And if you are not yourself a member, you could hint to someone that you'd like it as a gift yourself.

The 1958 THINGS of science will be unusual; every month's package will be a surprise. A Christmas Membership to THINGS of science will bring the 12 units of 1958. We will make out and mail a Christmas card with your name as donor, announcing your gift. Each membership is \$5 a year, postpaid. You will find a handy order coupon below.

Gift from

MY NAME.....

STREET ADDRESS

CITY & STATE.....

Mail this order to THINGS of science, 1719 N St., N.W., Washington 6, D. C., for the 12 units of 1958.

- I enclose \$5.00 for the following
 Please bill me after Christmas

Gift to

NAME.....

(Please Print)

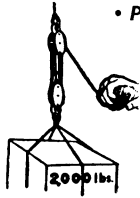
STREET ADDRESS

CITY & STATE.....

MAKE OUT Christmas Card
TO READ from.....

Special Tool Bargains-Save Up to 50%

AMAZING BLOCK & TACKLE



- PORTABLE . . . weighs only 13 ozs., fits in pocket!
- ONE HAND OPERATION . . .
- POWERFUL . . . lifts up to 1000 lbs.!

Amazing Work Saver for

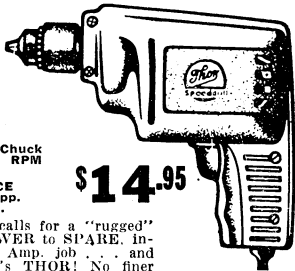
- Hunters • Handymen
- Farmers • Truck drivers
- Yachtsmen • Motorists

Here's an unusual tool, even for us! It's the tiny Midget Babe Block and Tackle. It weighs only 13 oz., yet is so powerful it lifts up to 1000 lbs. easily! Because of its great strength, small size, complete portability—this block and tackle has many uses. In your car for emergencies, for home, factory, farm . . . for loading heavy articles. For sportsmen: loading, deer, boats, etc. For anyone who has to do heavy lifting! Fine engineered throughout, best grade aluminum, steel axles, pre-lubricated for life. Hoists have two lifting slings, at top and bottom, with heavy welded steel rings. Slings can be doubled for extra strength. Complete with 70 ft. nylon cord, 5 to 1 ratio—1000 lb. test. Carrying bag. Instructions. . . . \$9.95

ALSO AVAILABLE—Tiny Babe—Lifts up to 2000 lbs. With 100 ft. nylon cord, y:1 ratio—2000 lb. test—15 oz. wgt. Twice as powerful as \$9.95 model—only \$12.95 ppd.

1 yr. guarantee on both models.

2½ AMP.
HEAVY
DUTY
¼" THOR
SPEEDRILL



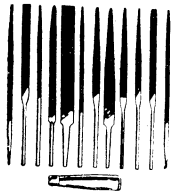
with Geared Chuck
AC-DC 2400 RPM
Reg. \$39.95

\$14.95

OUR PRICE plus 50¢ pp. and hdlg.

If your work calls for a "rugged" drill with POWER to SPARE, insist on a 2½ Amp. job . . . and make sure it's THOR! No finer drill made. Solid steel, heat-treated helical gears, thrust taken on hardened steel ball and plate; gears permanently packed and sealed in LIFETIME grease! Switch, trigger and lock assembly simplifies locking and releasing trigger. You'll be wise to buy 2 at this price. Supplies limited!

12 Pc. Needle & Warding FILE SET



ONLY \$2.49

(plus 25¢ hdlg.)

Made from the best quality tool steel, to fit the exacting requirements of mechanics, watch and jewelry craftsmen, hobbyists. Attractive set contains the following: 5½" long needle and warding files with high test cutting qualities: round, flat, knife, square, triangular. In all textures: fine, medium and medium coarse.

coarse. Comes with polished wood handle and new type steel grip chuck.

Bigger drills at low, low prices!

4 Pc HIGH CHROME SPEED SET



Reg. \$42.50

NOW \$9.95

plus 50¢ pp. & hdlg.

Another of Scott Mitchell's famous tool bargains! The original \$42.50 price is right on the package, but you pay only \$9.95! A wonderful buy for advanced hobbyists, carpenters, construction workers, factories, machine shops! Made of high quality, specially hardened steel, with turned down shanks to fit all ¼" electric drills. Zip through hardwoods, aluminum, iron, plastics, even the toughest steel! Sizes 5/8", ¾", 1", 1¼", 1½", 1¾", 2", 2½", 3", 3½", 4", 4½", 5", 5½", 6", 6½", 7", 7½", 8", 9", 10", 11", 12".

New! CALIBRATED LEVEL

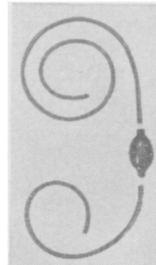
No Guesswork! \$2 ppd.



No bother with inexact "bubble-type" levels! Devil Level is calibrated for hairline accuracy. Needle points to exact degrees, inches anything is off level or plumb. Measures vert., horiz., all angles. Level pictures, shelves, tv antennas, etc. One side measures degrees off level, other, pitch or inch rise per ft. Fits in pocket. For hobbyists, handymen, housewives.

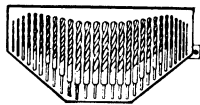
AUTOMATIC SIPHON PUMP

Now-siphon any liquid automatically, safely, without putting tube to mouth! Squeeze bulb of this all new type siphon, liquid starts to flow immediately! Transparent valves let you see liquid flowing! Siphons, pumps gasoline, water, any liquid. Even acids, corrosives! For cars, boats, power mowers; campers, plumbers, doctors, chemists, factories!



Acid resistant. Over 7 ft. long overall! Sold with a money back guarantee. Price \$1.98 postpaid.

Chrome Vanadium 29 Pc. DRILL SET



Clearly bite through hardwoods, plastics, aluminum, iron and toughest steels. Unconditionally guaranteed for thousands of drillings. Full jobber length. Sizes by 64th from 1/16" to 1/2". There are only a limited quantity of sets available at this low price, so hurry!

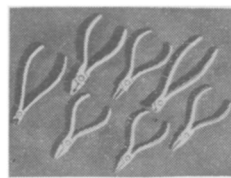
Also available with Turned Down Shanks to fit all ¼" drills. In individual pocket roll.

Specially made for speed drilling. In sturdy plastic tool roll. Finest alloy steel drills hardened and precision ground to the sharpest, longest lasting cutting edge obtainable; will easily and uniformly cut through iron and toughest steels. Unconditionally guaranteed for thousands of drillings. Full jobber length. Sizes by 64th from 1/16" to 1/2". There are only a limited quantity of sets available at this low price, so hurry!

Also available with Turned Down Shanks to fit all ¼" drills. In individual pocket roll.

\$6.49 ppd.

\$8.95 ppd.



FINEST QUALITY Imported Precision Pliers

Flat Nose, Round Nose, Diagonal, End Cutting Nippers, 1 Side Flat—1 Side Round, Snipe Combination for Jewelers, Optical Workers, Hobbyists. These European instruments are of deep-forged, heat-treated high quality tool steel, fabricated to most exacting specifications. All-over ground, polished to smooth hard surfaces. Smooth working joints with right tension. Jaws meet perfectly to securely hold the most delicate objects in hard-to-reach corners and angles. Each plier is 4" long.

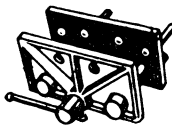
75¢ EACH, ALL 7 FOR \$5.00 ppd.

60 Pc. Set Wire Gauge CHROME VANADIUM DRILLS



Top quality high test Chrome Vanadium Drills designed for speed drilling through toughest steels, woods, plastic, iron and aluminum. Precision ground, long-lasting cutting edges.

Guaranteed to give years of satisfaction. A full 60 pc. set, Nos. 1 through 60. A \$14.95 value NOW ONLY \$5.40 plus 35¢ pp. & hdlg. Same set above with Huot Index Container—Only \$6.65 plus 35¢ pp. & hdlg. Also available 61-80 set of high quality drills in plastic kit with marked pocket for each drill—ONLY \$2.50 plus 35¢ pp. & hdlg.



Wood Working VISE

For home and shop . . . amateur or pro. A mechanically perfect, solidly constructed vise with full 3½" wide jaws that open to 5". Feature smooth-working polished steel bars that glide easily back and forth yet firmly and securely lock work for even the finest of precision crafting. Attractive red enamel body.

\$2.69

plus 25¢ pp & hdlg.

Prices SLASHED 50% on Polyethylene



PLASTIC ROLLS!
Mfd. by Koppers Co., Inc.
Use As STORM WINDOWS—Dust, Moisture-Proof Protection!

TACK IT, STAPLE IT, HEAT SEAL IT, TAPE IT! WATERPROOF, RESISTANT TO DUST, AIR, GREASE—UNAFFECTED BY HEAT, COLD.

Protects from dust, dirt, moisture, rust, moths, heat, cold, etc. Transparent! Stains wipe off! Lightweight, strong, inexpensive!

For HOME—Cover auto seats, furniture, mattresses, lamps, rugs, appliances, luggage, silver to prevent tarnish, air conditioners. Use as shower curtains, storm windows. Keep paint off furniture, floors, etc. Wrap food, mothproof wrap clothes.

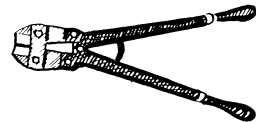
For OUTDOORS—Cover boats, sports and fishing equipment, tennis courts, cars. Make children's play tents.

For GARDENS—Protect outdoor furniture and equipment, shrubs, plants, newly seeded lawns. Build greenhouses. Cover lawn mowers.

For INDUSTRY—Cover equipment and machinery. Fumigation, oxygen tents. Painter's drop cloth. Floor covers for car trunks, trucks. Chases moisture vapor from crawl spaces, etc. Curing concrete. Keep rain away from outdoor work areas.

36"x100 ft.—.004 gauge—\$ 6.95
54"x100 ft.—.004 gauge—10.95
84"x100 ft.—.004 gauge—15.95
120"x100 ft.—.004 gauge—22.95

EXTRA SPECIAL!
50"x200 ft.—.002 gauge—\$ 9.95
100"x200 ft.—.002 gauge—\$19.95
Add 50¢ to all prices for pp. & hdlg.



BOLT CUTTERS

Easy working, positive action cutters to do the job intended. Made with black cast alloy steel handles; drop forged exchangeable cutters. Compound leverage makes a difficult job easy.

12" size—\$3.95 plus 25¢ pp. & hdlg.
18" size—\$5.75 plus 25¢ pp. & hdlg.
24" size—\$8.95 plus 35¢ pp. & hdlg.

Gov't Surplus WEBBED TOW CABLE



Originally made for U.S. Air Force. Never used. Test proven for towing trucks, cars, etc. 15 ft. long with extra heavy duty spring snap cable ¾" wide. Nylon reinforced cable is ¼" thick and 1¾" wide at ends. Useful at home or keep in car for emergencies.

\$1.95 plus 35¢ pp. & hdlg.

Revolving Leather Punches

\$1.59 plus 25¢ pp. hdlg.

- Housewives • Schools
- Hobbyists • Children
- Leather Workers



Makes clean, sharp holes—6 different sizes—in all qualities, thicknesses of leather. Use in the home for punching holes in belts, shoes, bag straps to tighten them. Repair baseball gloves. The kids will use it to make wallets, belts at home, in arts and crafts classes. At this low price, an ideal buy; 9" long, with polished knurled handles, strong spring, 6 standard tubes, brass anvil. New German import!

IMPORTANT! Order Today and Save. Minimum order \$1.00. Send Check or M.O. C.O.D. orders plus fee. Money Back Guarantee. Protects you against risk.

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