

By LOUIS E. GARNER, Jr.



## BEST BUYS IN EL-ED KITS

*Combine your Christmas giving with  
Electronic kits that EDucate*

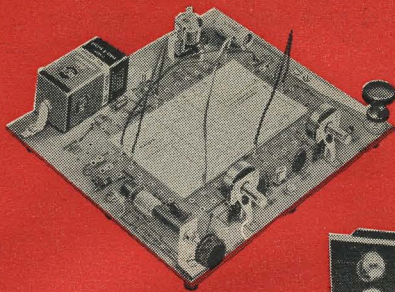
AMERICA'S "secret weapon" in the "war" for scientific supremacy may well turn out to be a group of cleverly designed toys. On this "battlefront," our "shock troops" are our scientists and research workers. Our "line troops" are our engineers and technicians. And our "ready reserves" are our active science and engineering students. All are backed by a reservoir of youngsters and adults who are keenly interested in science and technology and who could pitch in and work as technicians if the Cold War should ever become "hot."

Unfortunately, the study of science has never been overly popular—at least in the past—since most people, adults and children alike, seem to feel that it requires too much "work." On the other hand, if we think of science education as "fun"—as an "adventure" or a "game," it has a lot more appeal. Science projects can effectively challenge other and more pointless "games" for a youngster's time and, at a more advanced level, they can form the basis for a wide range of adult hobbies.

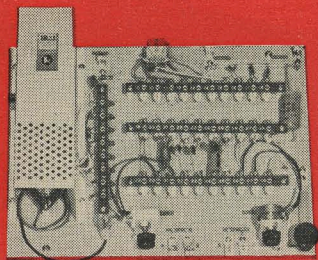
Recognizing the importance of science-

oriented individuals to our nation's future survival, a number of progressive manufacturers have introduced toys, construction kits, and hobby items that offer much more than just a "scientific flavor." In addition to having high "play" and amusement value, these new items can do much to develop interest in science and to lay a sturdy foundation for future education and training. Some of them have been on the market for a year or two, but a high percentage are brand-new and are being presented to the public for the first time this holiday season.

Currently available toy and hobby items in the science field may be divided into three broad groups: (1) those which emphasize "play" value and, therefore, may be classed as *toy kits* even though they are valuable in establishing initial interest; (2) those which apply about equal emphasis to "play" and educational values and might be called *experimenter's kits*; and (3) those which emphasize the educational aspect (*educational kits*) and, although fun to work with, can be used for quite serious train-

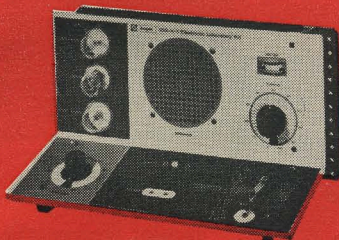


Knight-Kit 12-in-1  
Electronic Lab (\$15.95)



Knight-Kit 100-in-1  
Electronic Lab (\$29.95)

Knight-Kit 10-Circuit  
Transistor Lab (\$14.95)



ing. Let's take a look at some of the current electronic items in each of these three groups.

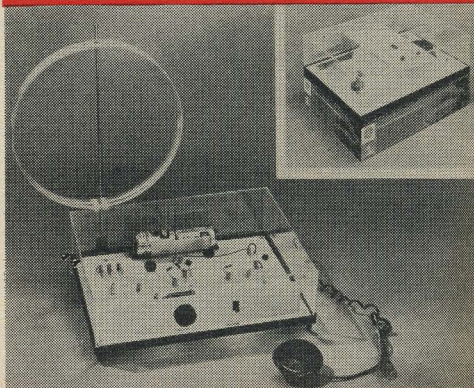
**"Toy" Kits.** As a general rule, the "toy" kits are characterized by the fact that they primarily consist of a single project; educational experiments with the completed project may or may not be outlined. Only simple tools (which are frequently included in the kits) and limited skills are needed for assembly. Nonetheless, these kits help teach the builder how to recognize components and symbols and provide some background in circuit operation.

The *Heath Company* is offering several kits of this type, including an intercom, three different transistor and diode radio kits, a simple two-way "walkie-talkie," several wireless microphones or "radio broadcasters," and an electricity kit suit-

able for assembling a simple battery-operated motor. Dubbed the "Heathkit Jr. Science Explorer Series," these kits retail from \$2.95 to \$29.95.

Well known as a manufacturer of

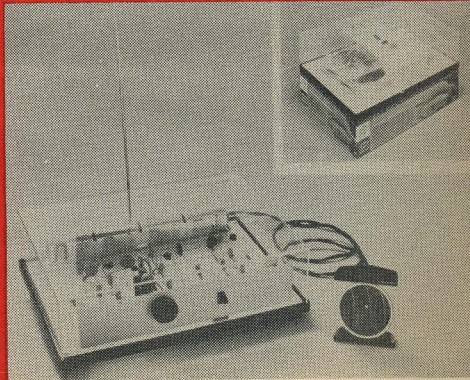
General Electric EF-110 Transistor Radio (\$17.95)

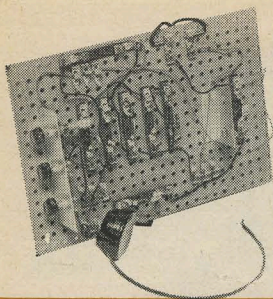


General Electric EF-140 Analog Computer (\$29.95)



General Electric EF-120 Transmitter (\$19.95)





Radio Shack 30-in-1  
Transistor Experimenter Kit (\$18.95)



Lionel Mark IV Electronics Lab (\$25.00)

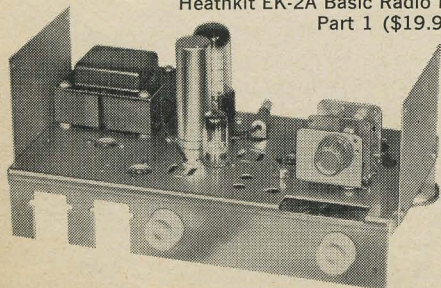
Lionel Bell  
Telephone (\$9.95)



Heathkit R-120 Electronic Experimenter's  
Lab No. 1 (\$12.95)



Heathkit EK-2A Basic Radio Kit  
Part 1 (\$19.95)

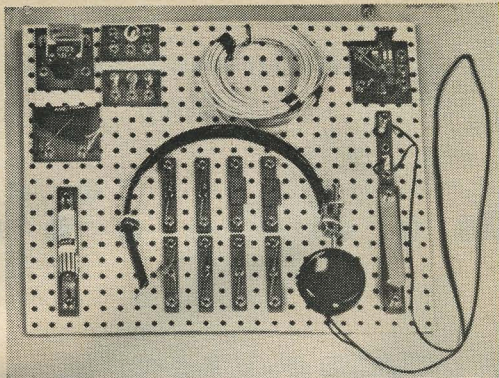


model trains, the *Lionel Corporation* recently introduced a number of toys called the "Famous Inventors Series." Listing at \$9.95 each, these sets permit the recreation of working models of such famous inventions as Edison's electric light, Morse's telegraph, and Bell's telephone. A display bust of the inventor is included with each set.

A newcomer to the science toy field, *General Electric Company* has developed an extensive line of single-project kits. Offered through regular retail outlets, they include a transistor radio at \$17.95, a radio transmitter at \$19.95, and an intercom at \$24.95. All use standard electronic components and are designed for low-voltage battery operation to prevent accidental shock.

Several firms, including *Remco Industries, Inc.*, and *Stuart Manufacturing Company*, are offering low-cost (\$1.00, typically) pre-packaged science sets for counter and rack distribution. And a number of manufacturers have introduced true electronic toys which are valuable for stimulating interest in science but which are not educational items in themselves: *Emenee Industries, Inc.* manufactures a transistorized audio amplifier/speaker system dubbed the "Powermeg;" *Bell Products Company* produces several electronic items, including the "Futura" transistorized tape recorder which retails at \$29.95; *Infrared Industries, Inc.* is distributing a two-way communications device called the "Astro-Phone," which permits conversations over invisible beams of infrared light.

**Experimenter's Kits.** Most of the "experimenter's kits" are called either



Superex Electronics Lab (\$19.95)

“workshops” or “laboratories” and permit the user to conduct a variety of experiments or to assemble a number of different projects. Their educational value is quite high, since the worker becomes familiar with many different circuits. Standard electronic components are used, although circuit interconnections are generally made with short lengths of hookup wire and spring- or clip-type connectors to avoid use of a soldering iron.

Depending on the manufacturer, the kit parts may be assembled on a peg-board “chassis” or in a fancy plastic cabinet. Typical projects include audio amplifiers, radio receivers, wireless microphones, limited-range transmitters, light-controlled relays, timers, burglar alarms, code practice oscillators, and various types of test instruments. Prices range from under \$10.00 to approximately \$40.00.

Three experimenter’s labs are offered in Heath’s “Science Explorer Series,” ranging from a 6-project kit at \$12.95 to a 20-project workshop at \$49.95.

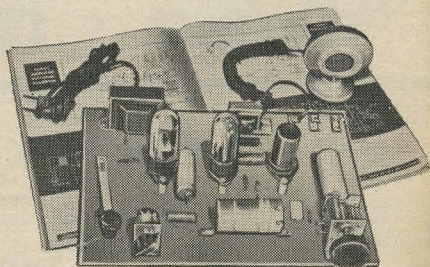
Lionel’s “Electronics-Lab” line-up includes four sets, ranging in price from \$9.95 for the 25-experiment “Mark I” to \$25.00 for the “Mark IV.” All feature attractive plastic cabinets and clear plastic covers.

The A. C. Gilbert Company, another famous name in the toy field, is responsible for six electrical and electronic sets, including two “electrical engineering” sets for motor, light, and telegraph experiments; three transistor kits; and an electron tube kit. The Gilbert electronic

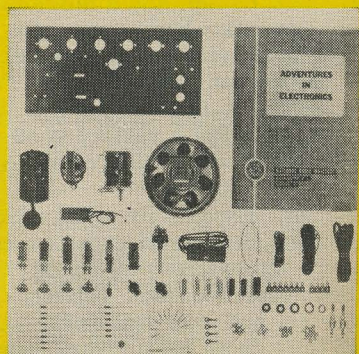
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Science Materials Center Analog Computer (\$16.95)



Lafayette 10-in-1 Lab (\$15.50)



National Radio Institute “Adventures in Electronics” Kit (\$18.50)



NRI Code Practice Oscillator  
(made from above kit)