

GENERAL SCIENCE

# Science Youth Program

## Schools and Home Lead In Motivating Students

By SHIRLEY MOORE

CERTAIN ATTITUDES and experiences encountered at school or in their homes are largely responsible for awakening the intense interest in science shown by hundreds of promising young people.

The catalysts that make a young person want to spend his life being a scientist have been difficult to pin down, but continued experience and accumulative records are yielding new and informative clues to the development of scientific interest and ability.

For example, when they were asked to describe what or who sparked their first real interest in science and at what age, finalists in the National Science Fair-International, coordinated by Science Service, have responded with a great variety of individual answers. When tabulated, the answers fall into a clear pattern.

Of nearly 1,000 teen-age finalists who answered the questions, 33 1/3% said that their schools and teachers started their enthusiastic response to the challenge of science. Typical answers were: Fifth grade studies of animal and plant life; a teacher's comment on achievements in experimental embryology; an experiment with electromagnets in science class at ten years of age; a biology teacher who encouraged projects; a ninth grade algebra teacher; field trips and lab classes in sixth and seventh grade.

More than a fourth, or 26%, of these talented boys and girls paid tribute to the stimulating influence of their homes and parents and of other family members in such phrases as: A relative who taught me how to extract square roots when I was eight years old; family interest in wildlife; my father, who always asked me "why"; at four, a gift of binoculars and my mother's reading about stars and bacteria; pre-school, from my father's work.

The next largest group, just over 12%, apparently were born-scientists or self-starters who described their progress in terms of: Six or seven years old when I found some brachiopods in the yard and

took them to a museum to find out what they were; from the time I could take the vacuum cleaner apart; cannot remember not being interested; "It's just grown"; at eight, wanted to find out how a light bulb worked; just curiosity.

A chance to "fool around" with scientific equipment such as microscopes, chemistry sets, and radio kits inspired the initial interest of 9.3% of the finalists. Such equipment has run the gamut from very elementary apparatus and kits received as gifts or accessible at home to the instrumentation in a professional laboratory.

Books, magazines and other scientific literature show a steadily increasing influence each year, and have been an important factor in the development of 8.7% of the young people.

Science clubs and science fairs have caught the interest of 6.6%; and assorted influences such as trips to museums, National Parks, planetaria and laboratories, television science productions, community activities, etc., started slightly over 4%.

These hopeful young scientists estimated that their interest originally was captured at ages varying from 2 to 17, with the greatest number of beginners concentrated between 8 and 14.

Some unidentified characteristics of the age of ten, or fifth grade, may exert a special magic, for nearly 12% of the total group discovered the fascinations of science at that point. More than 60% had been bitten by the science bug *before* they reached junior high school (considered here as seventh, eighth and ninth grade).

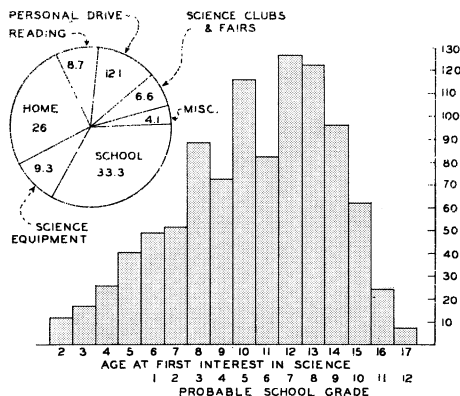
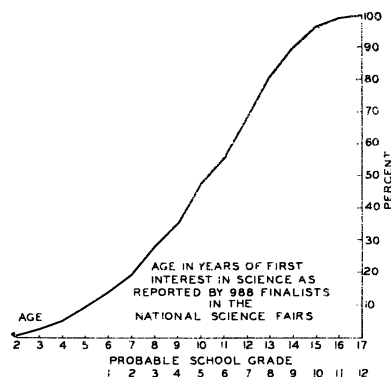
An additional 35% joined the community of potential scientists during junior high school, with the ages of 12 and 13 (usually seventh and eighth grade) showing the highest peaks in the entire graph and accounting for 25% of the beginning of science-mindedness.

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## School Population Grows Twice as Fast as National

America's school-age population is growing more than twice as fast as the population of the nation and has reached an all-time high of 43,900,000 students.



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The number of children from five to 17 years of age increased by 3.6% during the year preceding the opening of school in October 1959, while the total population of the United States increased only 1.7% during the same period.

Although school facilities have not increased at the same rate, the sixth annual survey of the U. S. Office of Education, "Fall 1959 Statistics on Enrollment, Teachers, and Schoolhousing in Full-Time Public Elementary and Secondary Day Schools," reports that encouraging improvement has been shown in classroom and general teacher shortage conditions.

Yet a 10.4% decrease is reported on scheduled completion of classrooms for the coming year. Also, for the year 1959-60, there are 5,900 more teachers with less than standard certificates. Many of these teachers seem to have been employed because of the shortage of those who are fully qualified. This shortage is now estimated at 195,000.

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## New Awards at the National Science Fair

Two national societies have added their names to the growing list of organizations presenting awards at the National Science Fair-International.

At the 11th National Science Fair, to be held at Indianapolis, Ind., May 11-14, the American Chemical Society will award inscribed plaques plus \$100 for the purchase of books and/or scientific equipment, and a subscription to the Journal of Chemical Education to the top boy and girl winners for best exhibits in chemistry. A boy and a girl alternate will receive plaques and subscriptions to the Journal.

Also, awards of \$125 and \$75 will be presented by the Society of American Bacteriologists at the national fair. These awards are to be used by the students for their scientific advancement. In addition, the winners and their schools will receive engraved plaques, and certificates of merit will be given to the winners and their teacher sponsors.

Summer job opportunities are being made available to young scientists through participation in fairs affiliated with the National Science Fair. The National Committee for Careers in Medical Technology has requested all pathologist directors and teaching supervisors of 702 AMA-Approved Hospital Schools of Medical Technology to cooperate where possible in offering summer laboratory jobs as awards for outstanding science fair projects in chemistry and biology and for exhibits related to clinical medicine.

Of the recently announced Honors Group of the 19th Science Talent Search for the Westinghouse Science Scholarships and Awards, 88% has been active in science fairs at the local, regional or national level, amassing a total of some 600 awards, 22 of them as finalists at the National Science Fair-International.

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