

# Geological Education: Youth Science Foundation and You

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[See table of contents](#)

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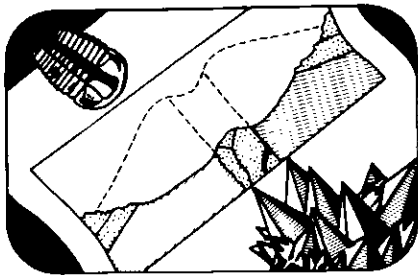
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# Features



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## Geological Education

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### Youth Science Foundation and You

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When the term 'science education' is used, the initial reaction is to think of the laboratories and classrooms of our educational institutions. However a little investigation will reveal that there is a great deal going on outside the normal curricular routine. Some of this education is planned and monitored but too much is indirect, diffuse and uninformed. All of us must be concerned with giving our young people a balanced perspective on science and a chance to develop an appreciation for science through involvement in carefully planned activities.

The Youth Science Foundation attempts to coordinate and encourage extra-curricular science activities for and with young people. The Foundation exists because many individuals in government, corporate and scientific circles are concerned with the opportunities available to young people in science. This is not only a concern

for providing experiences and additional training that will help young people find work. Nor is the concern just with encouraging young people to stay in or take up scientific careers by providing recognition for excellence. On the broader scene, we wish to complement the work of present educational institutions, in preparing all students for the critical decisions ahead as they deal with the thorny dilemmas created by our rapidly expanding technology

Eighteen professional scientific associations, including the Geological Association of Canada, banded together in 1959 to create a national organization that had as its major priority, the support of Science Fairs. The Science Fair program and the Canada-Wide Science Fair remain the cornerstone of the Youth Science Foundation activities. From the Canada-Wide Fair of 1962, held in Ottawa with 45 student exhibitors, growth has been steady, both in numbers of participants and in the quality of the exhibits. The University of Western Ontario was the site of the 1979 Fair which brought together 171 exhibits from 51 regional science fairs in eight provinces. The scope and impact of the science fair movement is considerable since each region has several schools which send their best projects from the local school fair. Over 30,000 young people start on the path that culminates in that week of final judging for around 220 of Canada's best young scientists. Many thousands more, students and parents, view the finished work and can marvel at the ingenuity and dedication shown. Still there is much potential for growth, but there is resistance from teachers and parents. The opposition is largely due to a reaction against the competitive

aspects which seem to limit participation and create questionable attitudes in the students. The science fair program is designed to encourage and reward excellence among students by providing an outlet for creativity and individuality that may be stifled in the regular classroom settings. One recent example concerned a student who was given a failing mark in his Grade 8 science course, but in the same year won a top prize for his project in the Canada-Wide Science Fair. Needless to say there were some embarrassing questions asked in that particular city school system.

In a science fair, the gifted and conscientious students are able to further develop their interests and skills through interaction with members of the scientific community, who act as judges and advisors, as well as with other scientifically inclined students. By showcasing the work of our scientists of the future, we also reach thousands of average citizens in a unique educational and informational program.

The lack of teacher support may also be blamed on a reluctance to give the time and commitment involved in such personalized, extra-curricular projects. Add to this fact, the clear preference for teacher support in the more visible sports and artistic activities and you have a major gap in the total scientific educational process.

A further complication is the reaction among the general population against science as being something dangerous and uncontrolled. Peer pressure among the young people discourages the pursuit of excellence in academic areas and an understanding of the role of science is too often based on ill-informed, sensationalized media coverage. The quality of science reporting in Canada is not high and the

priority for improving that level is not visible yet.

In light of these concerns, the traditional programs of YSF are being reviewed and changed, as must the educational programs of our professional scientific associations. We must put more emphasis on programs that reach the average student, whether or not he or she is interested in science, while we improve the quality of those current programs which still prove relevant.

There are probably two major areas of concern; those programs that inform without very much involvement and those that involve the young person directly in a growing, learning experience. Our Youth Science News has been updated with a new format, an expanded circulation and more issues per year, with copies going to all high schools in Canada. This publication will be our major vehicle for sharing information, with current Canadian scientific news, with balanced reporting on contentious issues, with lots of scope for differing viewpoints, with student reaction and comment as well as with up to date information on the programs of YSF. Along with our magazine Science Affairs we shall try to provide a meaningful resource for students and teachers involved in science, at the grade 7 level and up.

Along with Science Fairs, we are supporting a new effort, started by science students themselves, to involve students at the local level in science clubs, seminars, exchanges and conferences. The National Student's Science Council (NSSC) will work hand in hand with our Regional Science Fairs and out of that partnership may rise regional organizations that will expand activities far beyond just organizing science fairs. A science fair should be the culmination of a series of scientific events, involving all types of professional scientists with our young people.

During 1980 we plan to restart our Summer Science Program which brings together 30 to 40 recommended senior high school students from every province for a four-week, cross cultural, scientific immersion program. The emphasis is not so much on acquiring knowledge but on exposing the

students to ideas and concepts that will encourage investigation and discovery, based on independent thought and logical sequence. For students at lower grade levels, we are exploring the possibility of summer science camps, as a further move to involve our youth.

But what of the role of such bodies as the Geological Association of Canada and their memberships? If you share similar concerns and interests to those expressed in this article, one phrase spells out your role - *Personal Involvement*. The Youth Science Foundation cannot do its job without the support of interested people at the local level, where the needs are. *There is a concern for example that the interest shown in earth sciences in science fairs is rather low*. I wonder how many of you have every tried to sit down with a group of young people and communicated to them, not the nuts and bolts information about geology, but some of the wonder and enthusiasm you feel for your field of interest. The best teachers are not those who know their subject but are those who can motivate young people to find out for themselves. Each of us can offer our services in the local elementary or high school, to visit and talk with science classes, arrange special demonstrations and set up tours. Most teachers would welcome such help especially when it ties in directly with the curriculum. As you come face to face with young people in small groups, you have the opportunity perhaps to change someone's life, through your example and knowledge. There are the local programs of YSF that could use you, as a judge at the science fair, an advisor to a science club, a resource person for science projects or an organizer on a committee. Nationally, we are always grateful to receive material for our newspaper in the way of letters, articles, photographs, puzzles and cartoons. Beyond lies the whole field of involvement in public affairs. The scientific community as a whole must be prepared to speak out on scientific issues, even to go as far as political involvement. Perhaps we should have more scientists and fewer lawyers as MPs, to make the decisions required for the future well being of Canada.

I hesitate to mention financial support because it is too easy to save the conscience and feel you have played your role by becoming a member of the Youth Science Foundation with a ten dollar cheque. The youth of our country need you, as a person, to become directly involved with them, as people of worth and potential. As our population ages, the emphasis may change but among today's young people are the decision-makers of your children's and grand-children's generations. As such they deserve your full consideration and support as we work together to meet a technological future that is both frightening and inviting.

Editor's Note: Although a recent issue of YSF Science Affairs has a scanning electron microscope picture of a tiger beetle on the cover, all 11 articles are on geoscience subjects. They include the Geological Survey of Canada by D. J. McLaren, Canada Drifts Westward by E. R. W. Neale, Geoscientists Take to the Air by P.J. Hood and Career Opportunities in Geology by E. Hall.

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