Yes Senior High Mathematics Can Use the Library

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Traditionally there are several subject areas of the school program that do not typically use the school library. This does not mean, of course, that the teachers in these areas don't want to utilize the library but tradition doesn't permit them to do as social studies teachers might. Mathematics is a good example of a subject area that has found library utilization difficult. Considering the number of items usually found in the pure mathematics collection it is easy to see why these teachers have shied away from exploratory units of work. However, after searching the collection, we discovered that the general collection contains a great deal of material useful for projects in mathematics. Health sciences are useful for statistical work dealing with blood pressure, EEGs and ECGs. The automotives collection lends itself to studies of gear-ratios, firing orders and rates of speed. The literature collection is useful for looking at meter, Haiku and concrete poetry. The sports and games collection lends itself to studies of the measurement of human achievement, the permutation and combinations of chess maneuvers and the mechanics of muscle-building. Economics, statistics, and criminal patterns of behavior are also covered in this mathematical serendipity.

According to mathematics teachers at Dr. E.P. Scarlett High School, the library plays an important role for increasing the relevancy of mathematics for students keenly interested in the problems of today's world. Students may be encouraged to write mathematics reports on a wide variety of student-selected topics. The range of topics can be wide indeed. Following is a list of actual topics researched by the students: investments, taxation, consumer credit, business mathematics, banking services, types of insurance, probability, history of mathematicians or a certain aspect of mathematics, budgeting, mathematics in mechanics, mathematics in sports, mathematics in home economics, the slide rule, geometrical designs, mathematics in construction, mathematics in map-making, mathematics in engineering, mathematics in urban planning, the role of mathematics in an occupation or student interest area, structural designs, mathematics and psychology, mathematical designs, mathematical models, mathematics in everyday life, pure mathematics, relationship of mathematics to population study, computers, computer programming, mathematical experiments, mathematics in music, and a mathematics topic of your interest.

Such reports based upon library research in mathematics have encouraged, as well as demonstrated, the applicability of mathematics in various disciplines. The librarian and members of the English Department have provided necessary guidelines for researching, footnoting and providing bibliographical data for these reports. The librarian insured that students go beyond the traditional to the unusual for sources of information.

And not all of the "reports" were written - some were models of geodesic domes, urban renewal maps, and pictures of flood plain studies. One student interested in campanology showed how bell-ringing is formula-math!

The Mathematics Department and librarian should (and in this school do) cooperate in a two-way flow of information and idea exchange. In addition, there is no reason why the school librarian cannot be an active participant at departmental meetings in order to inform teachers about new reference books in mathematics; new materials related to mathematics; audio-visual equipment and services; professional reading; new ideas gleaned from other department meetings; innovative projects, such as videotape usage.

Librarians may wish to assess teachers' needs in the above areas and develop programs geared to professional needs - such as our Annual Media Workshop. Because of this, the library at Dr. E.P. Scarlett High School has, with the aid and example of the Mathematics Department, embarked upon an innovative project that will hopefully have implications for all Calgary schools. The Integrated Resources Project will catalog all school resources into one central card catalog indicating the location of all school-owned materials. Ordering procedures will be established to ensure the arrival of catalog information at approximately the same time as the material ordered. Hopefully, interdepartmental usage will increase and maximum utilization of resources will be effected. Duplication of exact and similar items between departments should be minimized.

The library has many and varied uses for mathematics education in a school. Improvement of the mathematics programs is possible through an appropriate and necessary relationship with school librarians who can utilize a variety of resources and be a generative source of ideas.

Mathematics teachers should run, not walk, to their school libraries. Who knows - a Mobius Strip could always be a new program for topless research!

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