

MATH OPTIONS
A MATH AND SCIENCE EQUITY PROGRAM FOR YOUNG WOMEN
THE PAST, THE PRESENT, AND THE FUTURE

Janice M. Margle
Penn State Abington-Ogontz
Abington, Pennsylvania

Patricia VanLeuvan
Penn State Delaware County
Media, Pennsylvania

Introduction

Since the Math Options program was first introduced to the Women in Engineering Professional Advocates Network in June of 1994 in Washington, DC, the program has experienced an increase in demand and the need for further expansion. The program, which is a gender equity program for young women, has been able to grow and move forward through the sustained help and support of individuals in both industry and academia.

Background
(The Past)

The Math Options program began in 1990. It started with the inspiration of two women who were members of the Philadelphia chapter of Women and Mathematics (WAM). These women saw a need to encourage young girls to opt for careers that were otherwise unattainable once the girls reached college age. As these women viewed it, the problem was caused by the girls not taking appropriate mathematics courses in high school. One of the women, an Instructor of Mathematics at the Penn State Abington-Ogontz campus, and the other, an accountant in private industry, brought their ideas to a female colleague in Continuing Education, and so, Math Options was born.

Math Options
(The Present)

Math Options is a program for 7th, 8th, and 9th grade girls. It is a gender equity program that presents young girls with career options in mathematics, science, and engineering, i.e. careers which share mathematics as a foundation stone for success. Career options are presented in a sequence of programs consisting of a Career Day, a Panel Discussion and Social, and a Summer Institute.

Career Day

The Career Day is a one-day Math Options program. This program is held on a local Penn State campus and is for girls who are completing 7th grade. During this one-day program, the girls are exposed to women in various mathematics related professions.

As the girls arrive with their teachers and/or counselors, they are assigned to a group. The purpose of the group is to allow the girls to meet and interact with girls from other schools. Separation from friends and classmates is ensured to allow the girls' attention to be focused on the many activities they are about to experience. Each group is assigned a female mentor who remains with the group throughout the day. The mentor may be a Penn State student or faculty member or a former Career Day participant.

The first activity the girls experience is a tower building contest. It is a group activity which "breaks the ice" and enables the girls to have fun and coalesce as a group. It requires the group to build the tallest tower of straws given a box of plastic drinking straws, a roll of scotch tape, and a lid from a xerox box which serves as the base.

The second activity consists of separate hands-on sessions with female presenters from industry or academia. The sessions begin with the presenter relaying pertinent information about her educational background and personal life. She then follows suit by involving the girls in an activity which is in some way related to her profession. Each group of girls will experience a total of three of these different sessions during the course of the day.

The third activity during the Career Day is an open forum called the Panel Discussion. Here a group of women panelists, usually no more than four, are asked to talk about their personal and professional lives and address questions posed by the audience of 7th grade girls, their teachers, and counselors.

The fourth, and final, activity of the day is the Career Fair. Here the girls are encouraged to chat with women whose careers may be of direct interest to them. This is a time when the girls have the opportunity to speak with whomever they choose on a close and personal basis.

Panel Discussion and Social

Currently, this program, which targets 8th grade girls, is held during the course of one evening and is for previous Career Day participants and their parents. Parents are

specifically invited to this program in order to provide them with information to support the future career plans and aspirations of their daughters.

The panelists who participate in the Panel Discussion and Social are corporate representatives to the Math Options Advisory Committee on campus. They will not have served as panelists for Career Day and, as such, offer fresh, new anecdotes for the girls and their parents.

Summer Institute

The Summer Institute is a one-week Math Options program. It is held on a local Penn State campus and is for 8th and 9th grade girls. It is open primarily to girls who have attended the Math Options Career Day, however others are encouraged to apply.

The intent of the Summer Institute is to provide the girls with a more in depth interaction with women in the sciences and engineering. Each girl is placed in a group headed by a student mentor. The mentor acts as a resource and provides guidance and cohesiveness for her group. Group activities include on-campus laboratory and field projects, trips to sponsoring corporations, and daily journal writing exercises. The latter, which stimulates interaction and bonding between the girls, also serves as an informal means to assess the girls' level of interest in the day's activities.

Mentoring Program and Longitudinal Assessment (The Future)

The newest component of Math Options program is the one-on-one Mentoring Program. It is a program for alumnae of the Summer Institute and selected Career Day participants. The purpose of this newest venture is to put young women in touch with professional women in career fields of their choice.

Another new component is the longitudinal assessment study. This study is being undertaken to determine the influence of Math Options on the girls persistence in mathematics and science as well as to track the girls in their future career goals. Data has been collected for the Career Day which has been in existence since 1991 and similar data has been collected for the Summer Institute which begins its third year this summer.

Update

Early in 1995, a regional Director was hired to coordinate all Math Options activities and assist in the development of future programs. This position is housed under Continuing Education and is supported solely by external funding.



