

Math Fair

Ted Lewis (University of Alberta),
Tiina Hohn (Grant MacEwan College)

June 25, 2007

1 Overview of the Field

This was the fourth BIRS math fair workshop, which is becoming a popular annual event. The participants came from elementary schools, junior-high and high schools, from independent organizations, and from universities and colleges. The thirty-six participants at this year's workshop were educators of all types, from teachers to grad students to expert puzzle and game creators.

The purpose of the workshop was to bring together educators who are interested in using our particular type of math fair, called a SNAP math fair, to enhance the mathematics curriculum. (The name SNAP is an acronym for the guiding principles of this unconventional type of math fair: It is student-centered, non-competitive, all-inclusive, and problem-based.) The projects at a SNAP math fair are problems that the students present to the visitors. In preparation, the students will have solved chosen problems, rewritten them in their own words, and created hands-on models for the visitors. At a SNAP math fair, all the students participate, and the students are the facilitators who help the visitors solve the problems. This process of involving students in fun, rich mathematics is the underlying vision that makes the SNAP program so unique and effective. No first prize! No arguments about judging! Everyone is a winner!"

At the BIRS workshop, the participants learn about and try math-based puzzles and games that they can use in the classroom. They have a chance to see how other teachers have organized math fairs at their schools, how the SNAP math fair fits the curriculum, and what some schools have done for follow-ups. And then they go back to their schools and change the culture of mathematics in their class-room.

Two of the presenters gave an interesting contrast that displayed exactly how versatile the SNAP math fair is. One of them had a math fair that was spread over four days, and which was integrated with many other cultural activities. Another teacher explained how she overcame the problems of no budget and no space in which to hold the math fair. She figured out a way to make small inexpensive backboards to display the problems and utilized existing manipulatives. The whole affair cost her about \$ 60.00 and was held in her own classroom.

2 Outcome of the Meeting

The concept of the SNAP math fair originated in Edmonton with Andy Liu and Mike Dumanski, and it has proved so successful that it led to the formation of a non-profit organization, the SNAP mathematics foundation, which has helped promote mathematics in schools around the world. As well as the SNAP foundation, the Calgary-based Galileo Education Network Association (GENA) helps schools organize math fairs, and provides valuable lesson-study follow-ups.

The BIRS math fair workshops have contributed greatly to the proliferation and popularization of the SNAP math fair. In some places, the use of a SNAP math fair to change children's attitudes about mathematics has almost become a "grass-roots" movement, and so it is difficult to pin down exactly how many schools are now doing them. We have a fair idea about the numbers in Edmonton and Calgary - for example over 60 percent of the elementary schools in the Edmonton catholic system now hold regular math fairs, and as far as we can gauge, the numbers are high in the public system as well. GENA reports similar figures for the Calgary area.

SNAP and CMS are also providing some support for the launch of a similar math fair workshop in the Fields institute in Toronto, and PIMs is providing math fair booklets for the participants. The Fields workshop is being organized by Tanya Thompson who has been a valuable participant at past BIRS workshops. Altogether, the BIRS math fair workshops are having a noticeable impact on mathematics education.