NAVAJO NATION MATH CIRCLES PROJECT

Project Summary

The goal of this project is to develop and demonstrate the math circle concept in the Native American community, simultaneously creating a mentor network for community members. Together these two components will recruit more Native Americans in mathematics and STEM fields. This initiative has been met with enthusiastic local support.

Mathematical Circles (MC) are a form of educational enrichment that brings mathematicians and mathematical scientists into direct contact with the community. Groups gather to explore challenging mathematical questions in a supporting environment. Trying to implement this familiar model on the Navajo Nation territory meets with specific challenges. There are simply no local mathematicians or mathematical scientists in close proximity to intended math circles - the closest universities, NAU in Flagstaff and UNM in Albuquerque are about 180 and 170 miles away, respectively. Thus we envision the emergence of a new math circle model.

During the fall semester of 2012, an experienced math circle leader used her sabbatical leave to start and run five math circles in four high and middle schools on the reservation, simultaneously training teachers in those schools to continue running the circles on their own. In addition, a half-day workshop for math teachers interested in starting math circles in their schools was held in Tsaile. It was attended by ten teachers from four different schools, and each team left the workshop planning to start and run their own math circle. Thus we expect that in 2013 there will be at least eight math circles at various schools on the Navajo Nation which will be run by school teachers without direct involvement from local mathematicians. Certainly, the teachers will need help in the form of detailed scripts for each session prepared and sent to them by experienced MC leaders; in addition, they would need these experienced leaders to visit their schools periodically and to lead a session. To further help these teachers to strengthen their skills as MC leaders and to train new leaders, we plan to run one half-day workshop per semester at an accessible location for them. Furthermore, there will be math circle-style sessions offered as a part of pre-service teacher training at the Dine College in Tsaile.

In addition to the math circle operating during school year, NNMCP seeks to establish and run a math summer camp. As a pilot program, we plan to run a two week non-residential camp for 10 to 15 students in the summer of 2013.

The project needs your help!

There are three ways you can help:

1. Write scripts for math circle sessions.
2. Visit Navajo Nation math circles and run MC session(s) in person.
3. Help raise funds to support the NNMCP.

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