

Family Math Nights
Planning for the Future
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Meet the participants

Children + Parents + Future Teachers = Success!

The Future Teachers

Many future teachers:

- Lack positive math experiences
- Crave connections between the math they teach and math taught in school
- Believe that they only need to know basic arithmetic
- View mathematics as a disjoint collection of algorithms and facts

The Parents

Parents inadvertently pass their math attitudes onto their children

What are those attitudes?

- Party talk
- Set of rules and regulations

Parents and children should get a taste of the creative thinking mathematicians engage in every day!

The Children

Picture a room full of tables, many little faces looking at you... eager to do mathematics. They wait, with anticipation, to see what you will offer.

What do you do?

Changes in the schools

The focus of school mathematics is changing:

- Major shifts in classrooms towards:
 - Classrooms as mathematical communities
 - Mathematical evidence and logic as verification
 - Mathematical Reasoning
 - Conjecturing, inventing, problem solving
 - Connecting math, its ideas and applications

From NCTM's Professional Standards for Math.

We basically want them to engage in the work of mathematicians

Dr. Derek Holton (1995-96 Erdos award winner):

- Find an interesting problem
- Experiment, collect data
- Create conjectures and hypotheses
- Prove the conjectures or find counterexamples
- Extend or generalize the results
- Publish and go to step 1

Family Math Nights to the rescue: Parents and Children working together

Goals of Family Math Night (for the future teachers)

Making some connections between math in elementary school and math teachers should know
Realizing the need for a deeper understanding of mathematics
Dispelling the idea that children won't enjoy math
Working with elementary school children and their parents
Creating positive math experiences
Developing rich mathematical activities

Goals of Family Math Night (for the families)

Providing positive math experiences
Engaging children and their families in mathematical thinking
Giving children an opportunity to see that their parents value mathematics
Viewing math as more than a set of isolated algorithms
Providing resources

Future Teacher Tasks before the event:

Develop a worthwhile mathematical task:
 Accessible to everyone at the start
 There are generalizations
 Involves students speculating, explaining, justifying, etc.
 Encourages collaboration
 Is engaging

Future Teacher Tasks during the event:

Presenting the activity to several families
Families spend 20-30 minutes at each activity
Teachers provide handouts so families can remember, continue, and extend activities at home

Future Teacher Tasks after the event:

Turn in a reflection report including:
 Experiences at Math Family Night
 A detailed description of the activity for Family Math Night
 Specific goals for the children and parents
 Connections to the math learned in class.
 Reflection:-What was successful?-What would you modify next time?
 Suggestions for our next Math Family Night.

Logistics

Enlist help of student leaders in the class
Community Service Learning Office
Talk to the elementary school to schedule the family night
Find parent volunteers
Send a notice to parents w/ RSVP (to know how many and what ages)
Send reminder notices to parents
Describe the assignment to students and provide reminders
Secure money for refreshments and dinner for the students (internal grant)—keep a low budget
Get door prizes donated (Costco, Microsoft, KPBS, Scholastic)
Organize tables
Organize room and set up refreshments

Experiences at Math Night

Was the experience what you expected?

How did the activity work?

What goals were achieved?

Was the activity appropriate for children and their families?

Were all the members of the family engaged?

Did your activity promote discussion, originality and invention?

Was it challenging?

Was it a "why" activity, or just a "how" activity?

Comments from Future Teachers

“I liked watching the children think.”

“...some parents are involved. Their children stay involved. Some parents would give up on the problem and their children did too. Attitude makes a big difference.”

“The kids persevered with or without the help of a parent --with little help they worked through the frustration and success was gained!...And oh the looks on their faces upon realizing they had succeeded!!”

“It was like magic before my eyes watching the generations collaborate. It seemed more like an educational game than a drab math exercise.”

“It was amazing to see the concentration on the children's faces and their joy of doing math, for the pure fun of it. No reward other than accomplishment was necessary”

Family Math Night is here to stay!

Win-win situation for all participants!

If you want to set up a Math Family Night and you'd like some advice, contact me: pmyers@sandiego.edu