M.Ed. in Education – TCM concentration
Comprehensive Requirement
Spring 2007

Three-Session Parent/Family Plan

Background of Topic:

The theme of activities is "Mommy and Me Math" at home with Young Children. These three-day workshops consist of numerous at home activities that involve both the young children in my classroom and their families at home. My students' family members will be required to engage in different mathematical activities with their children. The purpose of these mathematical activities is to enhance both the young students and parent/family involvement in the student's learning and strengthen the students' mathematical thinking and reasoning skills for the future. In addition the three-day workshops will make the students enjoy mathematics and reassure the families that they can help their children and enjoy it at the same time.

I choose this theme because I have observed that many parents/families work with young children at home in reading and spelling and tend to do very little mathematics. Many parents/guardians think that mathematics at home for young children is just counting numbers and number recognition. However, there is so much more that can be done with children and mathematics that can be beneficial to all involved. I thought it would be helpful for parents/guardians to have some educational mathematical activities that would focus on understanding numbers, visual representation, geometry, numeral recognition, one-to-one correspondence, comparing weights, measurement, and writing numerals to do at home with their young children.

William Paterson M.Ed. program for Teaching Children Mathematics has been a wonderful experience because I learned a great deal of information and fun activities that I could apply in the classroom daily. I learned how important it is for young children to develop a number sense, with an understanding of cardinality and subitizing that will be needed as they enter preschool and kindergarten to keep up with the mathematics being taught there. I learned how important it is for the students' parents/families to be actively involved in their children's lives not only at a young age but throughout their education. I also learned how important it is for parents/families and teachers to connect what is taught in the classroom to what is done at home to make it both educational and fun so the children will be intrigued and want to learn more and do the activities planned. This is why I decided to do a three-session parent/family plan that will encourage parents to be actively involved in their children's' lives now as they are young and continue to do so as they get older. I strongly believe that children will strive to do better knowing that their parents support what they do in school. It is also very encouraging to the children to know their parents are there to support them if they need help.

There are 5 articles and a brief summary for each that supports how beneficial it is for parents/families to be involved in mathematics for their young children at an early age.

The article *Mathematics in the Preschool* describes why mathematical knowledge is important for young children. Children first have mathematical experiences through play and common interest, the most learning these young children do is often incidental and informal. Preschool teachers build on the children's mathematical knowledge by incorporating their cultural background, languages and mathematical ideas and strategies into the classroom. In a preschool classroom pre-mathematical and mathematical knowledge needs to be taught throughout the day. Young children do not often separate subjects into different sections of the day or by sitting down in a group lesson. Mathematics needs to be planned in activities that simultaneously promote intellectual, social, emotional and physical development for each child. By doing this the mathematical content area being taught will become more meaningful for young children and develop positive belief about mathematics and themselves.

The article *What Children's Play Tells Us about Teaching Mathematics* describes how young children's play offers a great opportunity to develop informal mathematical understanding. Young children learn through interacting with peers, manipulating objects and exploring the world around them. Using manipulatives does not only mean using what on the market to teach mathematics such as pattern blocks, counters and number towers. Young children can learn mathematics through manipulatives that are not necessarily in the market for that such as a doll house and all the pieces that can be found in it. A dollhouse can be used by having the children count the numbers of rooms, sorting the dolls by size and where to place the furniture. Any object can be used as a mathematical manipulative if it is used to apply mathematical ideas to the children. Thorough observing children at play one can see how they use mathematics in more than just counting or saying number words, they compare, estimate, patterns, symmetry and spatial relationships. When teachers follow up by engaging the children in reflecting on and representing the mathematical ideas it forms as a basic foundation of mathematical skills.

The article *American and Chinese Parental Involvement in Young Children's Mathematics Learning* describes the involvement of American and Chinese mothers in their child's elementary age mathematics learning. The article explored if American parents contributions and instructional techniques to their children's mathematics learning are more effective than Chinese parents' contributions and instructional techniques to their children's mathematics learning since Chinese children seem to tremendously exceed American children's mathematical achievement even in the early grades. The article concluded that there were no differences in the instructional techniques used by American and Chinese mothers. Yet, even though their methods may have been similar, the Chinese mothers may have presented mathematical knowledge in a more effective way than the American mothers did. The article also concluded that it was the nature of the involvement and not the amount of time that parents spend with their children's mathematical learning that mattered.

The article *Doing Mathematics with Your Child* describes the resources that help parents develop their children's abilities to do mathematics and encourage more positive attitudes towards mathematics. Parents have the opportunity for physical, emotional and intellectual nurturing of their children. Parents read stories to their children and instill a live for literature, yet they often do not know how to instill a love of appreciation for mathematics. Mathematics can be instilled into the lives of children through games and

activities that engage mathematics thinking and problem solving, and build self-confidence and appreciation for mathematics all at the same time. Parents who show an interest and enthusiasm at home for mathematics will more likely have children that show the more interest and enthusiasm for mathematics.

There are many opportunities for parents and teachers to work together in enriching children's experience with mathematics. Extending mathematical concepts form the classroom to the home will establish the idea that mathematics is not just a subject done in the classroom but everyday everywhere. Programs such as Family Math and Family Computers help parents teach their children mathematics, build awareness of problem-solving skills and the ability to talk about mathematics.

The article *Large-Scale Family Math Nights: a Primer for Collaboration* describes the preparation involved to have a successful parent involvement in the school. The article describes how to invite parents to become partners in the mathematics education for their children through Family Math. The NCTM wants to encourage families to turn daily mathematics in the classroom into mathematical events at home. Family Math primary goal is to provide a friendly, non-threatening environment for teachers in the school to initiate a dialogue on mathematics learning, mathematics sharing and having fun with mathematics. Family Math is one a year for an hour and includes the parents and children. Half hour of the time is held in the cafeteria and is called "math carnival", which they participate in a variety of data collection activities that are posted on posters and Venn diagrams. The other half hour takes place in regular classrooms were 5-6 hands-on mathematic activities takes place. Family Math encourages parents to do the activities at home with their children by receiving a sample package of activities and an award certificate of participation.

The significance of the theme supports our schools concern for more parental involvement in mathematics with all students across the grade levels. This is an additional step to involve parents in the children's lives to the traditional parent-teacher conference that are held twice throughout the school year.

Community and Parents/Families Whom You Hope to Get to Participate:

I would like to see 5-10 mothers of the young children I work with to participate in the three-session "Mommy and Me" math workshop. I work in a large urban district were most parents/guardians graduated high school and work in different vocations; some of the parents attended college and graduated. The parents range from low and upper middle class socio-economic status. Some of the parents do have a language barrier.

Learning Goals:

The goals for this workshop are to make parents aware of a variety of opportunities that exist in their daily lives in which their children can develop mathematical skills and to provide parents with specific activities that are designed to develop number sense, one-one correspondence, number recognition, understanding the order of numbers, spatial relationships, visual representation and experiment with comparing weights. I am hoping that the parents become more involved in their children's' mathematical class work, homework, activities, and become supporters of their children's mathematical capabilities, whether there are weak or strong.

Preparations to set up Workshop:

I will send each family a letter to invite them to the three-session "Mommy and Me" Math workshop. The letter will be brief and describe the importance for the mothers to attend the workshop, and how I understand time is of the essence. I will follow up with a phone call a few days before the workshop to confirm that they will attend the "Mommy and Me" Math workshop. I will express how happy I will be that they are taking the time out of their busy schedule to come. The workshop will be held when the mothers/guardian comes to pick up their child. The workshop will be ninety minutes so they can fit it in their busy schedule.

I will have all the materials photocopied and ready for each family member that is attending. I will have to have the classroom available for ninety every Wednesday afternoon for three-weeks in a row. I will have the computer ready with the websites and power point presentations accessible for the workshop. I will provide refreshments such as coffee, water, soda, crackers, cheese and cookies for the mothers/guardians to enjoy before and after the workshop sessions.

Structure of Activities:

Session I- For mothers/guardians only, will include a discussion of everyday opportunities and games that they share with their children in which mathematics can be recognized and used for skill development. We will go over each activity that the parents will be working on with their children at home. Then answer any questions they may have regarding the activities.

Session II- The mothers/guardians will discuss how their math activities went the following week. Then we will have time for any questions or comments that the parents would like to discuss. We will continue to proceed to the new activities that they can do at home with their children.

Session III- In this session we will also discuss how the activities went the week before and go over any questions or concerns the parents may have. We will go over a booklet and mathematic websites, that the parents will take home, that can be done at any time with the children. Before the session is over the parents will fill out an evaluation on the workshop. After, the parents will all be thanked for taking the time out of their busy schedule to attend the workshops.

Session I of Mommy and Me Math Workshop

The mothers/guardians will be welcomed and thanked for taking the time to attend this workshop. First a discussion in collaboration of a power point presentation will be held about the importance of parental involvement in a young child's educational success.

The information will contain the following:

Most parents are aware of the many benefits of reading to their child on a daily basis, as well as pointing out letters, reciting the alphabet, enrolling their children in programs conducted by the public library, and other activities which promote literacy. Literacy is

all around and so is mathematics. Mathematics can also e integrated into young children's lives on a daily basis. Young children use math naturally throughout their day in their play. The following suggestions will be discussed, printed out for the parents and included in the take-home packet.

- Counting (books, crayons, steps, toys, doors, number of times a ball is bounced or thrown back and forth)
- Build with blocks
- Look for geometric shapes in the environment (squares in flooring, rectangles in cabinets, circles in food)
- Create patterns (using colored blocks, toys, clapping)
- Talk about up, down, next to, behind

Mothers/guardians will also be given a simple form to complete with their child to be returned at the next session. The form will be on a neon colored, half a sheet of paper, with decorated borders, and a sentence to be completed by the parent and child: This is the math we did (a space will be provided for the response). Please bring this paper to the next meeting on the following date). It will be suggested that the form be posted on the refrigerator or another place of prominence to serve as a reminder to complete it and a reminder of the date of the next math meeting. The message can be written by the parent and/or illustrated by the child.

In an effort to allow children to feel comfortable in a mathematical world, activities have been developed that are entertaining as well as educational. These activities are found in *The Best of Mailbox Math Magazine* and Arnold's *Everyday Math, Units 1 and 2*. The directions for each activity will be explained and supplies for each will be included in a packet that the parent will take home and share with his/her child. For this session 3 activities are from Mailbox Magazine and 1 activity is from Everyday Math.

Activity 1- **Swimmy**, p.57, *Mailbox Math Preschool/Kindergarten*

Why: To understand numbers

Tools: counting objects, paper, fishy pattern in packet, pencil/pen

How:

- Cut out 10 fish, using the fish pattern.
- Make 3 dots on each fish
- Set small objects out- gold fish, buttons, beans or etc.
- Ask your child to count out 3 objects for each fish, placing the objects on the dots while saying "1, 2, 3, 4."
- Practices with these sheets for several days, then ask your child to place 3 objects onto the blank side of the fish. When your child can do this accurately move to four objects. Starting again at the beginning.

- This repetition and concentration on one number at a time is important in building a child's inner sense of the reality of each number. (Don't rush to go on to the next number).

Activity 2- **Where's the Bear?**, Arnold, Unit 1, p. 9

Why: To develop visual representation, movement, discussion, numeral recognition

Tools: 10- 3 oz. paper cups, one counting bear (if you do not have bears, you can use any small objects that fit under the cups)

How:

- Number each cup 1-10
- Child hides bear under one of the cups
- Parent guesses the cup
- Repeat procedure with the parent hiding the bear, and the child guessing its location

Activity 3- **Beans**, p. 29, *Mailbox Math Preschool/Kindergarten*

Why: To gain experience with numbers and one-to-one correspondence

Tools: Egg carton, 21 beans, marker or pencil, scissors

How:

- Label the sections of an egg carton with the numbers 1 through 6.
- Give your child 21 beans (or other small objects) and ask him/her to count them into the sections of the carton, according to the numbers. There should be one bean in the section marked "1," two beans in the section marked "2," and so on.
- If the counting is accurate, the child will use exactly 21beans. Can you explain why?

Ask parents to use these activities with their children before the next meeting which would be scheduled one week later. Ask if the parents have any questions/comments. Then proceed to snack area.

Session II of Mommy and Me Math Workshop

The mothers/guardians are welcomed to the day's workshop. This will begin with asking the mothers/guardians to share the math activity they wrote about on their

reminder sheet that was sent home after the first mommy and me math session. They will be asked if they have questions or comments about the activities that were sent home. Each mother will name their favorite activity. Three new activities will be introduced during this workshop. The first two activities are from Arnold's Math is Everywhere Units 1 and 2. Activity three is from *Mailbox Math Preschool/Kindergarten*.

Activity 1- **Mystery Pounds**, p. 24, *Mailbox Math Preschool/Kindergarten*

Why: To experiment with comparing weights

Tools: 4 paper lunch bags, 10 cotton balls, 20 pennies, 1 apple, 5 pencils

How:

- Fill each bag with each of the items listed above.
- Display the mystery bags on a table.
- Have your child lift and shake each bag without opening it up.
- Then have your child guess which bag is the heaviest and the lightest.
- Then have your child proceed to lift 2 bags and tell you which one is heavier and what they think is in each bag.
- Then repeat this with the remaining 2 bags.
- Then reveal the contents of each bag for your child to see.

Activity 2- **Measuring with Children's Feet,** p.10, Arnold, Unit 1

Why: To develop the skills of counting, quantity to number words, and measurement

Tools: Paper, (8 1/2 X 11) pencils or crayons, reporting sheet

How:

- Parents trace their child's foot. The task: How many feet long or wide or tall is this or that object?
- Demonstrate how to measure using a foot tracing, showing the parents and children how to count each time they move the foot a "step."
- The teams report the length of various items in the room on a two-column record sheet, one labeled item, and the other labeled measurement (in kid feet).
- After the teams complete the activity, the facilitator will complete a similar record on a chalkboard or poster paper.
- A discussion will follow about how the same things could have different measurements because the feet are different sizes.

Activity 3-**Ice Cream Cone Book,** p.1, Arnold, Unit 2

Why: To develop the skill of matching quantity to numerals, recognizing numbers, one-one correspondences, counting, writing numerals

Tools: Construction paper (one sheet for each parent/child team and extra to offer choice of color), copy paper (8 ½ X 11), crayons, pencils, hole punch and yarn, or stapler (to make books)

How:

- Parent/child will trace 10 patterns of ice cream cones, and 10 patterns of scoops of ice cream. The parents will cut out the shapes (three at a time, to save time)
- The team will write a number on the cone representing the number of scoops they have. For the first scoop on the cone, write the number 1, on the second scoop the number 2, etc.
- Place stamps, stickers, or draw pictures, etc. on each scoop that corresponds to the written number.
    - Ask: Who has the most scoops on their cone?
      Which number is the biggest?
      Which has the most stickers?

Ask parents to use these activities with their children before the next meeting which would be scheduled one week later. Ask if the parents have any questions/comments. Then proceed to snack area.

Session III of Mommy and Me Math Workshop

The mothers/guardians are welcomed to the last day's workshop. This workshop will begin with asking the mothers to share the math activity they wrote about on their reminder sheet that was sent home after the second Mommy and Me Math session. They will be asked if they have questions or comments about the activities that were sent home. Each family will name their favorite activity. One new activity will be introduced during this workshop from *Mailbox Math Preschool/Kindergarten* and some websites that can be done at home with the children. After the activity is completed the parents will be able to ask any questions regarding the activities or workshop. They will be thanked for taking the time out of their schedule to attend the mommy and me math workshops. After, the mothers/guardians will proceed to fill out an evaluation on the workshop.

Activity 1- **The Button Box**, p. 53 *Mailbox Math Preschool/Kindergarten*

Why: To develop the ability to observe similarities and differences and to practice language skills relating abstract ideas to the real world

Tools: Book –*The Button Box* by: Margarette S. Reid, buttons of different sizes and color

How:

- Read the book to your child

- Discuss what happened in the book
- Give your child a collection of buttons to sort.
- After the objects have been sorted, ask the child to explain their rules for sorting the buttons. Put out some more buttons to be sorted according to those rules.
- Children may choose a great variety of rules, such as red buttons, blue buttons, round buttons, square buttons, buttons with two holes, or four holes, and so on.
- Have the children discuss whether there is another way to sort such as by large and small buttons, or gold buttons and not gold buttons.
- Then place the book in the center of the table for your child to see and ask them to sort the buttons in specific orders, such as all the large buttons in this section, all the small buttons and etc that can be related to the story.

More Ideas:

Two computer mathematics websites will be reviewed briefly with the parents that can be done at home. The websites will be a great way to motivate young children to learn and enjoy mathematics.

Websites are:

*****PBS Math Site for Parents of Young Children - The website has math activities and information for parents to do with their infants and toddlers. As well as activities, information and online games for parents and teachers to do with Pre-k, kindergarten, 1st and 2nd grade children.
URL:
http://www.pbs.org/parents/earlymath/about.html

*****edhelper- This website offers math manipulatives, themes, lesson plans, and worksheets. You can easily print out any worksheet to work on numbers, shapes, colors and more to use at home with your child.
URL:
http://www.edhelper.com/?gclid=CImu6MiapYQCFTk5GgodF3N0kA

"**Bonus" booklet**

Prepare a booklet with the activities completed at each workshop and a list of mathematical websites for young children. Inform the parents that more activities will be sent home if requested.

Outcomes:

I hope that the parents will find each session informative and feel that the atmosphere is comfortable for them to ask questions and participate freely. I expect for the parents to understand the activities that are presented during each session and to try them with their children at home. I expect that they will all have one positive comment to make regarding the math activities. I will expect some changes in the children mathematical behaviors such as:

An increase in interest in mathematical activities
An increase in the comfort level in working with mathematical activities
An increase in understanding cardinality of numbers
An increase in working with pennies as currency
An increased understanding of weights, balances, and equivalency
An increase of awareness of details/attributes to help classify objects
An increase in the ability to communicate mathematical ideas.

It is hoped, that after this workshop the children will feel more comfortable when working with mathematics. This will enable them to feel free and confident in attempting to solve developmentally appropriate problems.

Bibliography

Arnold. Math is everywhere, Units 1 and 2.

Clements, D. H. (2001). Mathematics in the preschool. *Teaching Children Mathematics,* 270-275.

Gammons, Jayne and Griswell, Kim T. *Mailbox-Math preschool/Kindergarten.* (1998).

Hartog, M. D. & Brosnan, P.B. (1998). Doing mathematics with your child. Teaching Children Mathematics, 4 (6), 326-330.

Pan, Y., Gauvain, M., Liu, Z., and Cheng, L. (2006). American and Chinese parental involvement in young children's mathematics learning. *Cognitive Development,* 21 (1), 17-35.

Seo, K. H. (2003). What children's play tells us about teaching mathematics. *Young Children,* 28-34

Schussheim, J. Y. (2004). *Large-scale family math nights: a primer for collaboration.* Teaching Children Mathematics, 254-257.

Mommy and Me Math Workshop Evaluation:

Please answer the following questions so that we may improve our program for future classes.

Did you feel comfortable participating in the class with other "students"?

Did you find the activities interesting for you and your child to do at home?

Did you and/or your child have a favorite activity?

Is there something you would change about the program? If so, please explain.

Were you able to complete the activities at home? If not, why not?

Please write any suggestions you may have for the program or activities.

Overall, how would you rate you and your child's experience in this program:

_____ Very helpful
_____ Somewhat helpful
_____ Not necessary

Mommy and Me Math Workshop Recruitment Letter

Dear Mother/Guardian:

I would like to invite you to a three-day Mommy and Me Math Workshop. The workshop is important in developing mathematical skills in your young child's lives. The workshop will provide you with specific fun activities that are designed to develop number sense, one-one correspondence, number recognition, understanding the order of numbers, spatial relationships, visual representation and experiment with comparing weights.

I know your schedule is busy but we as parents and educators have a duty and responsibility to help our children excel in life and I would like to start now. One way to do this is to attend my Mommy and Me Math Workshop. I am asking that you take the time out of your busy schedule for your children. The workshop will be held Wednesday afternoon when you normally come pick up you child. It will only be ninety minutes long with refreshments for you. The workshop will be beneficial for your child's mathematical development. Your participation will be greatly appreciated.

I will be following up with a phone call to confirm your presence in this very important workshop.

Sincerely,

Ms. …….

Critical Assessment 7:

Comprehensive Requirement – Staff or Parent Development Plan Scoring Sheet

Name of Candidate: Student

Name of Instructor (Rater): Rochelle Goldberg Kaplan

Date/Semester Completed: Spring 2007

Score on Assessment: ***9 - Acceptable***

	1 point- unacceptable	2 points- acceptable	3 points - target	**Total Score**
Background Knowledge and Rationale		2		2
Learning Goals and Plan Preparation		2		2
Method, Format, and Materials		2		2
Prediction of Expected Outcomes	1			1
Supporting Materials Used for the Program		2		2
Total				**9**

Scoring Criteria

5 components are described. A score of 1, 2, or 3 may be given for each component. This would result in an overall score of 5-15 points. A total score of 13-15 is considered Target; a score between 9 - 12 is considered Acceptable; and a score of 8 or below is considered Unacceptable.

13 - 15 points = Target 9 – 12 points = Acceptable < 9 points = Unacceptable

Comments:

This was an acceptable plan for providing parents of young children with a variety of activities that would broaden their ability and stimulate their interest in working with

their children in mathematics at home. The take-home materials were excellent and the activities were varied and doable. The bibliography was solid. However, some aspects of the plan were incomplete or weakly executed.

1 – The candidate did not completely proof the narrative for errors and there were a few grammatical mistakes left in the final draft. In addition, the format for citations did not follow APA format and although this is not required for the product, it did demonstrate a lack of connection in learning from one TCM experience to another.

2 – There was no provision made for caring for the children while their mothers engaged in a 90-minute after-school training session. This was a glaring omission.

3- There was no documentation for the “reminder sheet” to be used by parents in home follow-up activities and the outcomes, while reasonable, did not make any provision for follow-up or assessment.