

PARENT INVOLVEMENT

In order to gain parent's full support and understanding of your program, they need to be informed about and involved in their child's education. Frequent communication between school and home is essential.

Parents often have preconceived views of what school should be. In many instances, these views are formed from their own personal school experience. If their child's curriculum doesn't fit these ideas, they often express concern. Parents may question the value of using manipulatives and other experiences taking place in the Mathematics Their Way curriculum. They sometimes question why their children are not bringing home lots of paper work. Their concerns are valid and need to be dealt with early in the school year.



It is helpful to realize when parents show concern, they usually are not attacking the teacher (even though they may appear to be) when they question the math curriculum. Rather, they are in great need of reassurance that their child is receiving the best education possible. Well-informed parents tend to be supportive parents.

It's difficult for children to answer a general question asked by their parents, like, "What did you do in school today?" Their responses are vague, "I played." "I don't know." "Nothing." Or perhaps the child tries to describe an activity the parents don't understand. Let's say a child tells his or her parent that he or she worked at the tubing stations. What do you suppose an uninformed parent would think tubing is? Parents often are prematurely upset about what's going on in their child's classroom because of these vague responses.

If parents know more about their child's daily schedule, the kinds of activities going on each day, any upcoming special events, and the other children in their child's class, they could ask more specific questions like, "What stations did you work at during tubing today?" "What kind of patterns did you build?" "Did you work with Kyle and Aaron again at the stations today?" "What are you going to do tomorrow at the stations?" "Who was the calendar leader today?" "What pattern is on your monthly calendar?" "Does anyone in your class have a birthday this month?"

Some form of communication should go home regularly throughout the year. Four ways to keep parents abreast of their child's education are:

- ❑ Periodic newsletters telling what's going on in the classroom. (see Sample Letters to Parents MTW, pp. 397-398).
- ❑ Parent meetings when parents can see and experience some of the activities first-hand.
- ❑ Classroom visitations.
- ❑ Family homework assignments.

CLASS NEWSLETTER

Newsletters keep parents updated on the class activities and provide information about their child's school. Many of the ideas from the Sample Letters in *Mathematics Their Way*, p. 397 can be incorporated. The many areas of the children's work and play can be discussed. Some newsletters might include photos of the children working together at various activities.



Mischa uses Unifix cubes to build a "Snap and Clap" pattern.



Isaac copies and extends the pattern from a Dot Pattern card onto a little dot chart.



Nathan builds a winding pattern block wall.

Newsletters are a good way for children to share school activities with a parent who may not live in the same home.

How to produce a newsletter with photographs:

For best results, use a 35 mm camera and 400 ASA black and white film (no flash required). Some teachers have had good luck with their simple cameras and even color film. It really depends on the clarity of the original picture and the sophistication of the photocopy machine used to reproduce the newsletter.

The shutter speed should be set at 125. This gives prints with good contrast, which in turn reproduce with good clarity for the photo newsletter. The photographer will need to experiment with the particular light conditions in the classroom to find an appropriate shutter speed for the camera. If the classroom lighting is fluorescent, the camera may need a special filter.

The film should be developed and made into glossy prints. The pictures are then organized and mounted. Captions describing the activity can be written under each photograph. The master copy is then photocopied for each child's parents.

VIDEO TAPES

Some teachers videotape portions of the school day periodically throughout the year. Children who have video machines at home can share the tapes with their family. Videos could also be shown at parent meetings. A letter with a brief outline listing the activities and a brief description of each activity should accompany the video.

PARENT MEETINGS

INITIAL MEETING



The goal of the initial parent meeting is to give parents a sense of their child's math curriculum. It's a time to put parents at ease and assure them about their child's math education. Schedule approximately an hour to an hour and a half for the meeting.

Before the parents arrive: Display the materials the children use during math time. The children could build samples with the manipulatives for the display the day of the meeting before they go home. It's also helpful to hang quotes about learning and children which support the educational philosophy demonstrated in the classroom.

1. Introduction: Begin the first parent meeting by explaining *Mathematics Their Way's* philosophy and goals. Give the parents a copy of the for them to take with them to read at home. Explain that your goal is for children to understand and apply mathematical concepts in the real world, rather than memorize isolated rules to fill in workbook pages.

Display the year's plan on an overhead projector. Parents often relax when they can see the overview of the year's math curriculum.

Discuss the kinds of paperwork their children will be bringing home and show examples. Parents should be told frankly not to expect a lot of dittoed paper work.

2. *Demonstration*: Follow the introduction with a demonstration lesson. Pennies in the Pocket activity (see NL, pp. 2.5-2.7) is a great activity for the initial meeting for kindergarten through second grade. The activity models how concepts are developed. Some of the concepts experienced are: estimation, counting, addition, subtraction, place value, problem-solving, making predictions, cooperative learning, and graphing (real and symbolic).
3. *Slides or Video (Optional)*: If possible, show slides (or a video) of the children participating in mathematics activities (e.g., Opening, stations, graph etc.).
4. *Discussion*: Allow time at the end of the meeting for an open discussion and questions.

BACK TO SCHOOL NIGHT

Some teachers plan a "Math Night" for their students and parents later in the school year. Some schools plan a school-wide math night. A "Math Night" provides parents an opportunity to learn more about their child's math curriculum. It's also a chance for them to gain insight into how much their child understands and how he or she functions in the classroom environment.

Decide which math activities to demonstrate. Involve the children in preparing for the event. It's helpful to publicize this "special event" well in advance.

SUGGESTED ACTIVITIES FOR PARENT MEETINGS

PENNIES IN THE POCKET LESSON

Materials: graph chart; 2" square paper; glue stick; portion cups; margarine bowls; large place value board



Estimate the pennies in your pocket or purse.

Post the illustrated graph on a wall. Give each parent a 2" square of paper. Say something like, "In your pocket or purse you probably have some pennies. I want you to write down the number of pennies you think you might have with you. It's just a guess! If you don't think you have any, be sure to write a zero!"

Ask the parents to bring their paper squares with them and stand around the chart. Call the columns in order by number. Dab a bit of glue from a glue stick directly onto the graph. You can collect the guesses very quickly this way.

Discuss the graph of estimates.

When the predictions are all entered on the graph, ask questions such as the following to focus on the mathematics involved. Point out that you ask the children similar questions when such a graph is made in the classroom.

"What is the most common guess?"

"The next most common guess?"

"Did more people predict (5) pennies or (8) pennies?"

"Did fewer people predict (4) pennies or (11) pennies?"

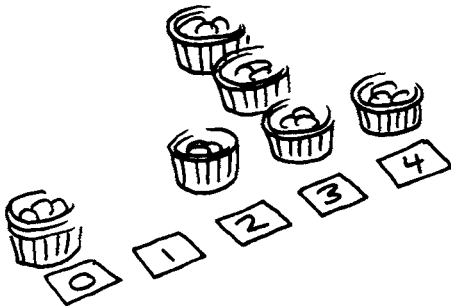
"Are there any numbers no one guessed?"

"Which is more common, (5) or less pennies or (6) or more?"

"How many fewer people predict they have (7) than predict (3)?"

"Does this graph tell us the truth?"

"How could we check our predictions?"

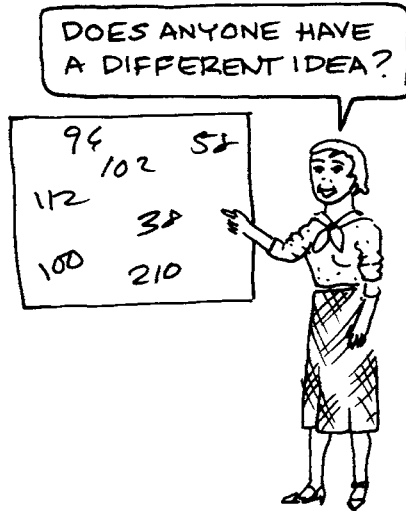


Make a real graph of the pennies in the pockets or purses.

Now ask the parents to get out their pennies and count them. Give each person a counting cup (MTW, p. 360) for their pennies. Put out numbers written on tagboard in a row. Ask them to place their cup of pennies above the appropriate number. Discuss the results and the relation between the predictions on the graph and the data before them.

Estimate the total number of pennies.

Explain to the parents that the next task is to find out how many pennies there are altogether. Ask them to mentally note the number of pennies they have in their cup because you want them to be able to retrieve them at the end. Explain how difficult it is to tell quickly and



accurately how many pennies there are just by looking at the graph. The method you will use will make this easy.

Ask the parents to guess, without counting, how many pennies there would be altogether if they were dumped out of their cups into one bowl. Stand at the chalkboard and ask people to call out their guesses. Quickly say, "Who has a different idea?" after each guess. Doing this over and over makes people feel comfortable continuing to offer a guess after several have been made. Be very careful never to indicate in words or expression whether you think a guess is a good one or perhaps way off. Explain that with the children, you would accept a guess of 8 million as calmly as a guess of 134!

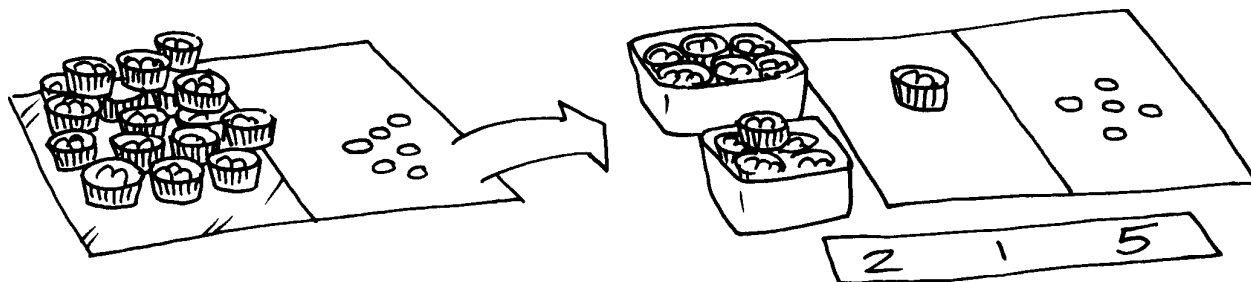
Group the pennies into cups of ten.

Ask each person to get a cup of pennies that is not his or her own. When everyone has a cup of pennies, ask them to work together to combine ten pennies in each cup. Tell them to bring the cups with ten to you. Some people will give their pennies away and others will add other people's pennies to theirs. Ask when they finish how they went about this task and how they felt giving pennies away. Point out how interesting it is to watch an activity like this in the classroom to see who won't give any pennies away and who spontaneously walks around saying, "I have three. Who wants three?"



Place all the cups with ten pennies on the blue side of the place value board. (Empty cups are placed by the number "zero"). Everyone should keep working until all the pennies have been grouped by ten's. Any pennies left over are put on the white side of the place value board. Now count the groups of ten's: "Ten, twenty, thirty. . ." placing each group of 100 in a bowl. Set the bowl of a hundred pennies to the left of the place value board. Put a piece of paper below the place value board and record the total number of pennies asking:

- "How many groups of 100 do we have?"
- "How many groups of ten?"
- "How many loose pennies?"
- "Let's read the number together."



Discussion: Discuss the predictions written earlier on the chalkboard and the kinds of skills children might learn from such a real-world math experience. Not only is this activity rich with a variety of mathematical experiences, but also: social interaction skills, scientific method (predicting, experimenting, comparing, graphing data, etc.), and all this occurs without the use of the almighty copy machine! Talk about how many more of the children's senses are involved in an experience of this type and how similar experiences give children opportunities to understand and apply mathematics in a meaningful way.

Similar Lessons

Counting Objects (see MTW, p. 310; NL, pp. 7.12-7.15)

Peas in the Pod (MTW, pp. 311-312)

EXAMPLES OF MEANINGFUL PAPER WORK

Parents, and consequently their children, often place a great deal of value on workbook experiences. It might be helpful to share the following first grade teacher's story of an incident in her classroom early in the school year:

The teacher was trying to straighten up the classroom the day before Thanksgiving so she could go home right after school. The children were not cooperating. They had been pleading with the teacher for their math books. So, in a weakened state, the teacher passed the books out. The teacher became uneasy with the silence in the room as the children filled in the boxes on the pages. She interrupted the children and asked, "What do you like better, this math book or the kind of activities like... (she proceeded to list five or six Math Their Way activities the children had done like sorting buttons, etc.) The children replied, "The book... we love the book." Wanting to quit teaching, the teacher asked the children why they liked the book better. From three different places in the classroom came the answer, "Because we don't have to THINK!"

The main purpose of the following Math Their Way recording sheets is to provide a framework for children to create and record equations using manipulatives. Choose a Math Their Way recording activity to model for the parents. Point out the difference between the Math Their Way activity and a typical (nonthinking) workbook page which requires the student to only fill answers in the blank spaces.

Number

Summary Newsletter

Number Books	p. 10.19
Equation Dice Toss	p. 10.11
Rebuilding at the Number Stations	p.
10.20	
Addition with Unifix cubes	p. 10.12

Place Value

Summary Newsletter

Bob's Ditto	p. 11.18
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MATH NIGHT ACTIVITIES

Some of the activities the class might choose to demonstrate to the parents are:

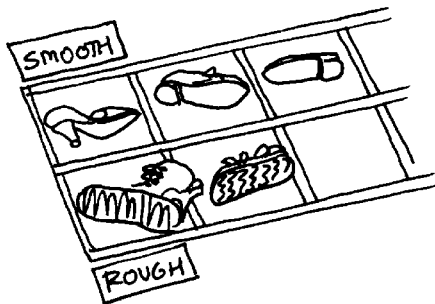
Opening

The students model the activities exactly the way they are done in class each day. Parents can quickly see how much math is incorporated into this relatively small time slot.

Real Graph

It is helpful to choose a graph that the children have previously experienced. If there's time, graph the same material two different ways. By doing two similar graphs, the children and parents can compare the results of the two graphs and possibly draw conclusions from the information.

Shoe Graph Procedure: All the parents take off one shoe. The children decide how to sort the shoes and build a "real" shoe graph. The parents place their shoes in the correct category. The children ask the parents questions about the graph. Or the children could give information about the graph. The parents may be amazed with the children's astute observations about the finished graph. If there's time, choose another way to sort and graph the shoes.



Stations

The children place the stations at the appropriate spots in the classroom. (The stations are whatever the children are presently working on during the day). The children act as their parents' teachers as they work at the stations together. This is a good time for the teacher to observe how the parents and children interact.

CLASSROOM VISITATION

Some teachers extend an invitation to their parents to visit during math time. They ask the parents to call and schedule a day that is convenient for them. This provides parents an opportunity to see first-hand how math is being taught. The parents should understand in advance that this is a visitation, not a conference. Perhaps the teacher could schedule a separate time before and/or after the parent visitation to answer any questions or concerns. Parents should be encouraged to participate in the activities with the children.

HOMEWORK

The purpose of homework assignments is to help students connect the mathematics activities they experience in school with real-world experiences. It's also a way to involve parents in their child's learning process.

The children (and their parents) should have a clear understanding of the assignment. Be sure to give the parents sufficient notice before the assignment is due. Children should not be punished if their parents refuse to participate. The teacher could possibly make alternative arrangements in this case, so every child can feel included.

HOMEWORK ASSIGNMENTS

- ❑ One kind of assignment might be to reinforce and extend the concepts being taught in the classroom. Here's one teacher's homework assignment after a pattern walk at school.

Dear Parents,

We're patterning up a storm in the classroom this week. The children have been searching for patterns in the classroom. Some of the patterns we found were: lined writing paper, the American flag, the windows in the room, and patterns in our clothes. We discussed the different patterns and converted the patterns to A-B-C... patterns. For instance, the lines on the writing paper had an A-B pattern because it was line (A), space (B), line (A), space (B)... The pattern of the windows in the room is big (A) big (A) small (B), big (A) big (A) small (B) which translates to an A-A-B pattern.

Your child's homework assignment is related to pattern. The assignment has two parts:

1. Accompany your child on a pattern walk around your house. Together, find and discuss at least 5 patterns. Describe each pattern in words, then translate into "A-B form". For instance, your bedspread may be striped: yellow, orange, red, yellow, orange, red. The yellow, orange, red pattern would translate into an A-B-C pattern.
2. Select one pattern to record and illustrate below. Return the homework to school by Wednesday. We will share and compare the home patterns Wednesday morning.

Thank you for your cooperation,
Ms. Smith

- Another assignment might be gathering information from home to add to a class graph, or perhaps the children would be asked to bring something from home for an activity (e.g., sorting). This type of assignment can be very enjoyable as well as informational.

One teacher assigns graphs as homework to his second graders. During a meeting to familiarize the parents with the graphing techniques used in the classroom, he models several graphs as he explains the importance of developing graphing concepts. Then he asks the parents to sign up for a week during the year (this is optional) when the parents and their child will prepare a graph for the class. They decide what information they want to graph and how they want to organize the graph. Sometimes parents provide the necessary materials for the graph; other times they use existing classroom materials.

- Some teachers prepare a lending library of some of the Math Their Way activities from the classroom for the children to use at home. A written description of the activity accompanies each packet. The child can teach the parent the activity.

One first grade teacher relates an experience: A parent came to her before Christmas one year and said, "My son wants this game for Christmas and no one has heard of it. I've been to Kiddie World, Toys-R-Us and I've called several other places. I thought you might be able to help. The name of the game is "Stack, Tell, Spin, and Win". The teacher sent the activity home in a zippered bag for the Christmas vacation. The mother was relieved; her son was happy; and the teacher delighted to be of help.

- Family Vacation: Sometimes family vacations are scheduled during the school session. Children often learn more from the vacation experience itself than if they were in the classroom. If it's necessary to send homework assignments from school, they should be related to the vacation experience.

One teacher felt her student needed to continue his work at the symbolic level of number. She gave her student a blank equation book to take on a trip to Hawaii. The assignment was for the child to collect small objects (e.g., shells or pebbles) on the beach. She suggested that he place the number of shells he was working on (let's say six) in a cup, shake and toss them, and observe how they fell right side up or another way. He was to then write an equation based on how the shells fell.