

MAXIMIZING MATH MOMENTS: THEY HAPPEN EVERY DAY

Grade Level: First Grade
Presented by: Ellen Zainea, Knapp Charter Academy, Grand Rapids, Michigan
Length of Unit: Daily Lessons for 16 Days; Thereafter Ongoing Throughout the Year

I. ABSTRACT

This yearlong unit provides a daily, structured framework of hands on, meaningful activities, which enable students to practice and master important concepts and skills included in the *Core Knowledge Sequence* for First Grade Math. The central focus is based on various linear and sequential calendars, a number line, a one to one hundred number chart and various manipulatives for counting. Links to topics in language arts, social studies, and science are included. Because a different child leads the activities each day, they provide an opportunity for 1:1 authentic assessment by the teacher. Feedback is immediate.

II. OVERVIEW

- A. Concept Objectives:
1. Students will develop an understanding of whole numbers
 2. Students will develop an understanding of place value: ones, tens, and hundreds.
 3. Students will know the days of the week and the months of the year both in order and out of sequence.
 4. Students will learn orientation in time: today, yesterday, tomorrow; morning, afternoon, evening, night; this morning vs. yesterday morning, etc.
- B. Content covered from *Core Knowledge Sequence*
1. Recognize and write numbers 0-100.
 2. Count from 0 to 100 by ones; twos; fives; tens.
 3. Count forward and backward
 4. Use tallies
 5. Identifying and counting more and less;
 6. Recognize place value: ones, tens, hundreds
 7. Know the days of the week and the months of the year, both in order and out of sequence.
 8. Orientation in time: today, yesterday, tomorrow; morning, afternoon evening, night; this morning vs. yesterday morning, etc.
- C. Skills
1. The student will count and write 0 to 100, by ones, twos, fives, and tens;
 2. The student will count up and down a number line and chart by ones, twos, fives, and tens.
 3. The student will count to a given number, which is a number more, or less than the given number.
 4. The student will, in a three-digit number, identify and write the numeral in the ones, tens, and hundreds place
 5. The student will make a representational model of base ten numbers through the hundreds place using various manipulatives.
 6. The student will name the days of the week and months of the year through the use of the calendar and learn orientation in time.

III. BACKGROUND KNOWLEDGE

- A. For Teachers:
1. Bennett, A. B., Jr., & Nelson, L. T. *Mathematics An Informal Approach*. Boston, MA: Allyn and Bacon, 1985. 0-205-08305-6.

2. Lorton, M. B. *Mathematics Their Way*. Menlo Park, CA: Addison-Wesley, 1976. 0-201-00494-1.
 3. Zainea, E. "Making the Most of Everyday Mathematics Time." *Teacherlink*. Chicago, IL: Everyday Learning, 1997.
- B. For Students:
1. The student will have a basic understanding of: counting forward by ones and recognizing numerals from 1 to 31; counting backward from 10; counting by fives and tens to 50; sequencing events; orientation in time; days of the week and months of the year.

IV. RESOURCES

- A. Bang, Molly. *Ten, Nine, Eight*.
- B. Carle, Eric. *A House for Hermit Crab*.
- C. Carle, Eric. *1, 2, 3, To the Zoo*.
- D. Carle, Eric. *Rooster's Off to See the World*.
- E. Carle, Eric. *Today is Monday*.
- F. Franco, Betsy. *Counting Caterpillars and Other Math Poems*.
- G. Haber, Jon. *1, 2, 3, Under the Sea..*
- H. Hutchings, Amy & Richard. *The Gummy Candy Counting Book*.
- I. McGrath, Barbara Barbieri. *The Cheerios Counting Book*.
- J. Liatsos, Sandra. *Poems to Count On*.
- K. Maccarone, Grace. *Monster Math*.
- L. Miranda, Anne. *Monster Math*.
- M. Powell, Polly. *Monster Math*.
- N. O'Leary, John. *Ten on a Train*.
- O. Philpot, Lorna & Graham. *Amazing Anthony Ant*.
- P. Pinzes, Elinor. *One Hundred Hungry Ants*.
- Q. Sendak, Maurice. *Chicken Soup With Rice*.
- R. Slater, Teddy. *Ready or Not, Here I Come!*

V. LESSONS

Lesson One: Count on Me

- A. *Daily Objectives*
 1. Concept Objective:
 - a. Students will develop an understanding of whole numbers
 2. Lesson Content
 - a. Recognize and write numbers 0 to 100
 - b. Count from 0 to 100 by ones; twos; fives; tens
 - c. Count backward
 - d. Use tallies
 - e. Identify and count more or less
 3. Skills
 - a. The student will count and write 0 to 100 by ones, twos, fives and tens.
 - b. The student will count up and down a number line and chart by ones, twos, fives and tens.
 - c. The student will count to a given number, which is a number more, or less than the given number.
- B. *Materials*
 1. *Ten, Nine, Eight* by Molly Bang
 2. *A House for Hermit Crab* by Eric Carle
 3. *1, 2, 3, To the Zoo* by Eric Carle
 4. *Rooster's Off to See the World* by Eric Carle

5. *1, 2, 3, Under the Sea* by Jon Haber.
 6. *The Gummy Candy Counting Book* by Amy and Richard Hutchings
 7. *The Cheerios Counting Book* by Amy and Richard Hutchings
 8. *Monster Math* by Grace Maccarone.
 9. *Monster Math* by Polly Powell
 9. *Ten on a Train* by John O'Leary
 10. *Amazing Anthony Ant* by Lorna and Graham Philpot
 11. *One Hundred Hungry Ants* by Elinor Pinzes
 12. *Ready or Not, Here I Come!* by Teddy Slater
 13. Appendix A
 14. Display size 1 to 100 number chart
 15. Pointer stick
 16. Wicky Stix
 17. 3x5 index cards (for assessment and $<$ and $>$ cards) (See Appendix A)
 18. Playing cards
 19. Yarn
 20. Manipulatives for extension activities (See Appendix A)
- C. *Key Vocabulary*
1. Numbers-symbols that tell us how many of something there are
 2. Counting- naming numbers in order to tell how many
 3. Counting forward- saying numbers in order so that the number that comes after a number is always more
 4. Counting backward- saying numbers in order so that the number that comes after a number is always less
 5. Greater than- numbers that come after when counting forward
 6. Less than- numbers that come before in counting
 7. $>$ - the symbol for greater than
 8. $<$ - the symbol for less than
 9. Between- when an object has something on either side of it, it is between them.
 10. Before- when something comes ahead of another
 11. After- later or following
 12. Month- used to measure time. A month lasts 30 or 31 days
- D. *Procedures/Activities*
- Days One Through Five
1. Teacher reads a book such as *The Gummy Candy Counting Book*.
 2. Teacher introduces hundreds chart and explains it will be used each day to practice counting.
 3. Teacher models counting up to thirty by ones on the number chart with pointer and then repeats the procedure two more times with the students counting along.
 4. Teacher models counting down from thirty by ones on the number chart with pointer, and then repeats the procedure two more times with the students counting.
 5. Repeat this procedure daily beginning with teacher reading counting books such as: *Rooster's Off to See the World; 1, 2, 3 To the Zoo; Ten on a Train; Ready or Not, Here I Come; Ten, Nine, Eight*.
- Day Six
6. Teacher reads *One Hundred Hungry Ants*.
 7. Child who is helper of the day, with guidance as needed from the teacher, leads the counting procedure modeled on Days One through Five one time. This procedure now becomes part of the daily routine throughout the year. (Making a helper schedule with the 3x5" cards arranged in order by first names provides an opportunity for teaching alphabetical order. See Appendix A.)

8. Teacher models counting by tens to one hundred on the number chart with pointer and then repeats the procedure two more times with the students counting.

Day Seven Through Ten

9. Repeat this procedure daily beginning with teacher reading counting books such as *The Cheerios Counting Book*; *Amazing Anthony Ant*; *Monster Math*..(Two books are entitled *Monster Math*)

Day Eleven

10. Child who is helper of the day, with guidance as needed by the teacher, now leads the counting by ones and tens one time. This procedure now becomes part of the daily routine throughout the year.
11. Teacher models counting by fives to one hundred in a clap hop pattern. For each number ending in five, teacher hops. For numbers ending in 0, teacher hops. (Appendix A)
12. Teacher and students repeat this procedure two more times.

Days Twelve Through Fifteen

13. Procedure for Day 11 is repeated.

Day Sixteen

14. Child who is helper of the day, with guidance as needed by the teacher, now leads the counting by ones, tens, and fives one time. This procedure now becomes part of the daily routine throughout the year.
15. Teacher models counting by twos up to twenty, pointing to the number chart and saying “Two, four, six, eight, ten. That’s so fun I’ll do it again. twelve, fourteen, sixteen, eighteen, twenty—You want numbers? We’ve got plenty!”
16. Teacher and students repeat this procedure two more times.

Days Seventeen Through Twenty

17. Procedures for Days 16 are repeated.

Days Twenty Through Twenty-five

18. Child helper now leads entire daily counting procedure. Gradually increase counting by twos with modeling and assistance as needed.
19. Teacher or child names a number and decides to count up or down to a certain number from the chosen number. Circle each number with Wicky Stix and count up or down the number chart to find the difference of how many more or less. Measuring this is always a high interest activity. (Appendix A).

Days Twenty-five through Thirty

20. Following counting, the *More or Less Game* (See Appendix A) is constructed by children.
21. Teacher demonstrates how the game is played. This game should be played weekly throughout the year.

Days Thirty-one and Throughout the School Year

22. Continue counting forward procedure but also count on from thirty so that the forward counting goes as far as the number of days in school.
23. From time to time, choose higher numbers and count backward from them. A 101 to 200 number chart may be used if desired.
24. Throughout the year, along with this activity, children participate in Counting Activities to practice and reinforce these skills. (Appendix A).

E. Evaluation/Assessment

1. Students will correctly follow the procedures learned in this lesson. (This assessment is easily accomplished through direct observation during these lesson procedures. Note the results on the 3x 5 index cards.)

Lesson Two: Terrific Tens

A. *Daily Objective*

1. Concept Objective:
 - a. Students will develop an understanding of place value: ones, tens and hundreds.
2. Lesson Content
 - a. Recognizing place value: ones, tens and hundreds.
3. Skill Objective
 - a. The student will, in a three-digit number, identify and write the numeral in the ones, tens and hundreds place.
 - b. The student will make a representational model of base ten numbers through the hundreds place using manipulatives of colored craft sticks and containers representing place value.

B. *Materials*

1. Appendix B
2. Three ½ pint milk cartons covered with contact paper marked Ones, Tens, and Hundreds.
3. Assortment of colored craft sticks (A different color for each month)
4. Rubber bands
5. Poster putty or magnets to attach milk cartons to dry erase board display area
6. Dry erase markers
7. *Marvelous Marker Matt* (Various sizes; See Appendix B for pattern)
8. Materials listed in Appendix B for extension activities

C. *Key Vocabulary*

1. Place value- the position of a number that shows how much it is worth.

D. *Procedures/Activities*

Day One

1. Teacher explains that for each day of school, a craft stick will be placed in one of the milk cartons. Each month will have its special color stick.
2. Teacher places a stick in the “Ones” carton and writes the numeral 1 above it.

Days Two Through Nine

3. Teacher directs helper child to place a stick in the Ones carton. The total number of sticks is counted and appropriate numeral is written above carton.

Day Ten

4. After the tenth stick is placed in the “Ones” carton, the teacher explains that groups of ten are only allowed to live in the “Tens” carton. The sticks are bundled with a rubber band and moved to new housing in the “Tens” carton.
5. Teacher directs student to write the numeral 1 on top of the Tens carton and the numeral 0 on top of the “Ones” carton.
6. Teacher leads a silent cheer for the numeral zero, explaining that without that numeral there would be no way to tell the difference between one and ten.

Days Eleven Through Day Ninety Nine

7. Each successive day a stick is added to the “Ones” carton. Number writing and banding groups of tens continues.

Day One Hundred

8. The ten bundles of ten are banded together and placed in the “Hundreds” carton.

Day One Hundred One Through Close of School

9. The procedure continues.

E. *Evaluation/Assessment*

1. Students will correctly follow the procedures learned in this lesson. (This assessment is easily accomplished through direct observation during these lesson procedures. Note the results on the 3x 5 index cards.)

Lesson Three: People in Places

A. Daily Objectives:

1. Concept Objective
 - a. The student will develop an understanding of base place value: ones, tens, and hundreds
2. Lesson Content
 - a. Recognize place value: ones, tens and hundreds.
3. Skill Objectives
 - a. The student will, in a three-digit number, identify the number in the ones, tens and hundreds place

B. Materials

1. Appendix C
2. Three sets of *Digit Cards* to be worn around the neck
3. Yarn
4. Outside area or gym
5. Playing cards

C. Key Vocabulary

1. Place value: the position of a number that shows how much it is worth.

D. Procedures/Activities

1. Teacher directs students in a game of *People in Places* (Appendix C)

E. Evaluation/Assessment

1. Teacher observation, recorded on a 3x5 index card, of the children when they are assigned a place to go and stand in the activity. If they have mastered the objective they should go to the right place value spot. For observers, they are asked to give the place of a classmate. For example, I might ask a student "What place is Johnny in?"

Lesson Four: It's About Time

A. Daily Objectives

1. Concept Objectives
 - a. Students will know the days of the week and the months of the year both in order and out of sequence.
 - b. Students will learn orientation in time: today, yesterday, tomorrow; morning, afternoon, evening, night; this morning vs. yesterday morning, etc.
2. Lesson Content
 - a. Knowing the days of the week and months of the year, both in order and out of sequence
 - b. Orientation in time: today, yesterday, tomorrow; morning, afternoon, evening, night; this morning vs. yesterday morning, etc.
3. Skill Objectives
 - a. The student will name the days of the week and months of the year through the use of the calendar and learn orientation in time.

B. Materials

1. Appendix D
2. *Today is Monday* by Eric Carle
3. *A House for Hermit Crab* by Eric Carle
4. *Chicken Soup With Rice* by Maurice Sendak
5. A supply of 3½ x2" construction paper cards with a different color for each month (These must be the same color as the numeral cards for the calendar and for the craft sticks used in *Terrific Tens*.)
6. One 9x12" construction paper card for each month (These must be the same color as craft sticks and cards used that month.)

7. Dry erase board and markers
8. Poster putty
9. An *Old Days Box* (A shoebox labeled “Old Days: Yesterdays...Gone, But Not Forgotten”)
10. Cards with names of the days of the week and months of the year
11. Card labeled “Days of the Week Waiting Room” This is posted over the curtain
12. A “curtain” (Piece of material which covers the names of the days of the week which have not yet occurred)
13. A supply of materials for drawing, painting and writing
14. Spiral notebook for each student to use as journal
15. Spiral notebook for class journal

C. *Key Vocabulary*

1. Month- a measurement of time lasting 30 or 31 days
2. Calendar-used to measure time and shows the order of days and months.
3. Today- the present day
4. Tomorrow- the day after today
5. Yesterday- the day before today
6. Morning- the time from midnight to noon
7. Afternoon- the part of the day between noon and sunset
8. Evening- the later part of the day and the early part of the night
9. Night- the time of the day when no light of the sun can be seen

D. *Procedures/Activities*

Day One (First Day of School)

1. Teacher defines month and calendar and explains that the class will be recording each date of the month during the school year and counting each day of school.
2. The following steps are also shown in Appendix D.
3. Teacher writes across the board: *(Month's name) Days in School.*
4. On the first day of school the teacher writes the numeral 1 on a small card and places it under this heading.
5. Teacher also writes appropriate day of the month on a numeral card and places it in the correct place on the calendar.
6. Teacher reads the date on the pull off calendar saying *Today is: (Day of the Week)_ (Month) (Date)_ (Year).* (Appendix D).
7. Teacher mentions an event that will be taking place that day. For example, “Today we will have a special assembly.” This is written on the board and students also record it in their daily journals.
8. Teacher sings the Days of the Week song one time and then invites children to sing along with her one time. (Appendix D)

Day Two

9. Teacher repeats the procedure of Day One adding the appropriate number on both the calendar and on the number line (*Days in School*).
10. Teacher counts days of school and days of the month. Teacher invites children to count along repeating the procedure two more times.
11. Teacher reads the date on the pull off calendar and then points out that it doesn't match the display calendar. What should be done? This date is the old day called yesterday.
12. Teacher mentions an event that happened yesterday. The old date is torn off and placed in the *Old Days: Yesterdays* box. Teacher mentions an event that took place the day before (yesterday) and one that will be taking place that day. These are recorded on the board.

Days Three Through Five

13. Teacher reads each of these books on a different day: *Chicken Soup With Rice, A House for Hermit Crab, Today is Monday.*

14. Procedure described for Day One and Day Two is repeated.
15. After the old day is placed in the box, teacher tells children they can look a day ahead into the future and shows the date underneath the current day's date. This looking ahead now becomes part of the daily routine. Teacher mentions an event that will be taking place the next day called tomorrow.
16. This is recorded along with the information about today and yesterday.

Days Six Through the End of the First Month of School

17. Helper child now leads the activity with teacher assisting child as needed.

Final Day of the Month.

18. At the close of this activity, which is now, routine, teacher solicits statements about events that have occurred in the month and writes them on the 8x8" square with the corresponding color for the month.
19. The 8x8" square is placed on the wall near the ceiling and the individual days of school numbers are removed from the board and lined up horizontally as in a number line next to it.
20. Teacher sings the "Months of the Year" song one time and then invites students to sing along a second time with her. This song now becomes part of the daily routine.

Through the End of the Calendar Year

21. Procedure continues daily so that at the end of the year a number line equal to the total number of days in school circles has been constructed. It is a history lesson, time line and story of what has happened in the course of the year.

January Through the End of the School Year

22. The terms morning, afternoon, evening and night can be added to further define events of yesterday, today and tomorrow.

E. Assessment/Evaluation

1. Students will correctly follow the procedures learned in Lessons 1, 2 and 4. (This assessment is easily accomplished through direct observation during these lesson procedures. Note the results on the 3x 5 index cards.)
2. Students will find their correct places in the game *People and Places* (Appendix C)

VI. CULMINATING ACTIVITIES

- A. Children will illustrate number poems. Models are provided in Betsy Franco's *Counting Caterpillars and Other Math Poems* and Sandro Liatsos' *Poems to Count On*. However, the poems need not be confined to these lists.
- B. Using books with familiar text as examples, children will illustrate books with time concepts. Some examples of these books are Eric Carle's *Today is Monday* and Maurice Sendak's *Chicken Soup With Rice*.
- C. Students complete a weekly calendar drawing a picture of an activity for each day. (Appendix D)
- D. Students will sing or say the names of the days of the week and months of the year.
- E. Students will make a yearly calendar with a different picture for each month. (These make wonderful holiday gifts.)
- F. Students will illustrate various concepts of time in diptychs and triptychs: Yesterday, Today, Tomorrow; Morning, Afternoon, Evening. (Appendix D)

VII. HANDOUTS/WORKSHEETS

Appendices A-D

VIII. BIBLIOGRAPHY

- A. Bang, Molly. *Ten, Nine, Eight*. New York: Scholastic, 1983, ISBN 0-590-42663-X.
- B. Bennett, A. B., Jr., & Nelson, L. T. *Mathematics an Informal Approach*. Boston, MA: Allen and Bacon, 1985. 0-205-08305-6.

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- D. Carle, Eric. *1, 2, 3, To the Zoo*. New York: Scholastic, 1968, ISBN 0-590-16212-8.
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- F. Carle, Eric. *Today is Monday*. New York: Scholastic, 1993, ISBN 0-590-45908-2.
- G. Franco, Betsy. *Counting Caterpillars and Other Math Poems*. Jefferson City, MO: Scholastic Professional Books, 1998, ISBN 0-590-64210-3.
- H. Haber, Jon. *1, 2, 3, Under the Sea..* New York: Disney Press, 1995, ISBN 0-7868-3035-2.
- I. Hutchings, Amy & Richard. *The Gummy Candy Counting Book*. New York: Scholastic, 1997, ISBN 0-590-34127-8.
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- M. Miranda, Anne. *Monster Math..* New York: Scholastic, 1999, ISBN 0-439-20859-9.
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- P. Pinzes, Elinor. *One Hundred Hungry Ants*.
- Q. Sendak, Maurice. *Chicken Soup With Rice*. New York: Scholastic, 1962, ISBN 00644-3253-X
- R. Slater, Teddy. *Ready or Not, Here I Come!* New York: Scholastic, 1999, ISBN 0-590-12009-3
- S. Zainea, E. "Making the Most of Eveyrday Mathematics Time." *Teacherlink*. Chicago, IL: Everyday Learning, 1997.

Appendix A – Maximizing Math Moments

COUNTING ACTIVITIES

- Child helper leads counting using pointer and number chart.
- Use the group counting method. Each child points and counts on a personal number chart.
- Make an overhead transparency of a number chart and count together.
- Have counting contests with different groups of individuals. For example, have boys and girls count alternate decades.
- Count using body movements as patterns. For example, count to ten sitting, then stand to count on to twenty, sit to count on to thirty, etc. Keep the pattern going.
- Count to 100 with pennies. (Using money teaches coin value and identification.)
- Make a *Toothpick Tally* to practice counting by fives.
- For an edible version, make a *Pretzel Tally*
- Make a *Nifty Nickel Tally* to practice counting by fives. (Glue twenty nickels on poster board and write corresponding numerals underneath.)
- Count by fives, adding movement. A sure favorite is a clap, hop pattern.



T.

Appendix A, con't.

- Make a *Delightful Dime Tally*. (Glue ten dimes on poster board and write corresponding numerals underneath.)
- Practice counting by twos on a personal number chart. Each child colors numbers that are multiples of two. Do the same with multiples of fives and tens. This will present some interesting patterns and visual cues.
- *Count It Wrong!* The transitions between decades are difficult for some children. For example, when they reach thirty-nine they aren't exactly sure where to go. Some might say "thirty ten" instead of forty. From time to time make this mistake in group counting and see how quickly they can catch the teacher's error!
- The *Teenage Numbers*. Young children are familiar with the concept of teenagers. Tell them the teenage numbers always start with the numeral one. This can be expanded to teach higher numbers. For example, the thirties always have the three first.
- Using *Wikky Stix*, count up and down a number chart or calendar to find the answer to questions such as:
 - How many days until my birthday?
 - How many days until vacation?
 - How many days until the field trip?
 - How many days until the *Rugrats in Paris* opens at the theater?
 - How many days old is the new baby?
 - How long ago was the first day of school?
 - How long ago was the fire drill?
 - How many days did it take our butterfly to change from caterpillar to chrysalis? From chrysalis to butterfly?

Place a circle of *Wicky Stix* on the current date and another on the anticipated date. Count to find the difference. See below.

March 2001

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Appendix A, con't.

- *Picture This.* Children illustrate number poems and finger plays. An excellent source is Betsy Franco's *Counting Caterpillars and Other Math Poems* or Sandra Liatsos' *Poems to Count On*.
- *More(>) or Less (>).* Children prepare the game parts by constructing *More Than/Less Than Cards*. Gluing four-inch pieces of yarn to a 3x5 card makes these. One is made into the < sign and a second into the > sign. Also needed is a deck of cards. Aces count as one, and the queen as zero. Discard the kings and jacks.

Next, decide if the game will be played with the < or > symbol.

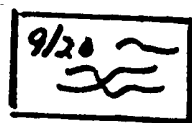
Cards are then shuffled and then the top two cards are turned over and placed in the correct place. For example, if the child decides to play with the < symbol, and draws a 7 and a 2, he would place the 2 on the left side of the < symbol and the 7 on the right side.

This game can be played alone or with partners taking turns drawing cards and checking for accuracy. Substitute plastic numbers drawn from a container for variety.

Materials for Appendix A Activities:

1 to 100 number chart
Small 1 to 100 number chart
100 pennies
20 nickels
10 dimes
100 toothpicks
Glue

Personal size number chart
3x5 index cards
Yarn
Playing cards
Plastic numerals and container
Overhead projector



Index cards bound with a book ring can be used to record authentic assessments. As child leads the activities, note his progress and competency on the back of the card.

For a language arts line, arrange the cards alphabetically by first names of the children. Have them take turns accordingly to learn the alphabetical sequence of the first letter of their names.

Appendix A-

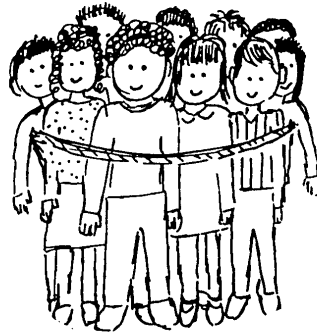
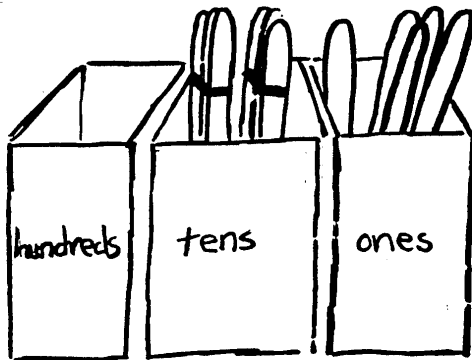
This number chart belongs to _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Appendix B - Maximizing Math Moments

GROUPING IN BASE TEN ACTIVITIES

- Using a place value *Marvelous Marker Mat* (made by dividing a 12x18" piece of construction paper into three sections marked HUNDREDS, TENS AND ONES), children count ten items on to the ONES place. When the tenth item is entered, the objects in the ONES section are banded together and moved to the TENS place. When ten groups of ten are on the TENS place, they need to be banded, boxed, or tied together and moved to the HUNDREDS place. What to use? Drinking straws, pretzels, licorice strips, pencils, crayons, base ten blocks, toothpicks, linking and unifix cubes, buttons, money, play money bills, pattern blocks, small plastic figures produced by McDonalds or purchased at the Dollar Store, or whatever you have to lend variety and add interest.
 - As you can see, there are lots of manipulatives to make this work. Groups, which can't be easily tied together with rubber bands or yarn, can be placed in zip lock plastic bags.
- Draw a *Marvelous Marker Matt* on the board. Children can decide what simple objects to draw. When a group of ten is in the ONES place, it's time to erase the objects and draw them bound together in the TENS place. Continue on to the HUNDREDS place if interest is held.
- Join forces with other classes to form a *Live Marvelous Marker Mat!* Yes, group kids as tens and then invite the principal or special guest to tie the group together. Watch how the bound groups of tens travel together to the HUNDREDS place. (Outside makes the best venue for this challenge!)



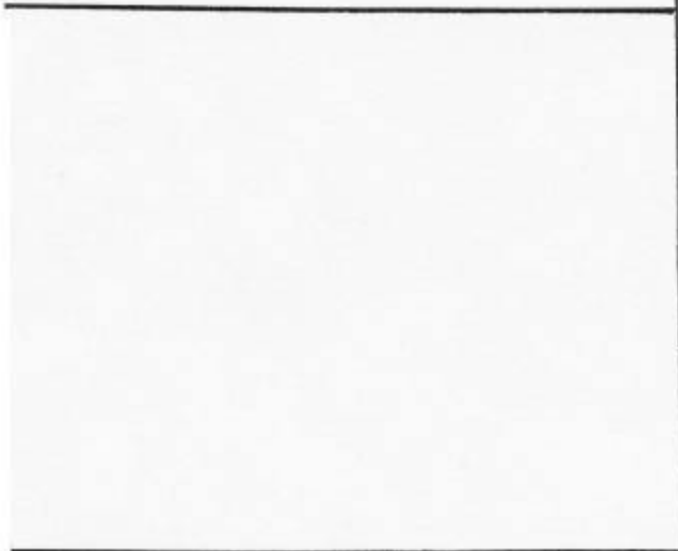
Appendix B, con't.

HUNDREDS

TENS

ONES

Sample Marvelous Marker Mat



Appendix C - Maximizing Math Moments

PEOPLE IN PLACES GAME

Materials:

- Three sets of *Digit Cards*. For each numeral card you will need yarn and a 8 ½ x11” piece of cardboard. Number each set of cards from zero to nine. Punch two holes at the top of each card and string with yarn so the cards can be worn around the neck.
- A *Marvelous Marker Mat* drawn on the board (See Appendix B)

How to Play:

- Begin the game with this warm up poem recited together:
Just ten digits are all you need.
Each of these numbers does mighty deeds!
- Shuffle the cards in each pile.
- Select three players and give them a set of *Digit Cards*. Each player takes a card from the top of the pile and puts that card around his neck
- Next have class members direct each player to a designated place. For example, a child wearing the numeral eight could be instructed to stand in the TENS place, another with the numeral six could be instructed to stand in the HUNDREDS place, A third player with numeral two would then be instructed to go the ONES place. After all players are in their correct spots, class says the number formed by the people in places. In this example that's 682.

A Personal Version:

- Children use the small *Marvelous Marker Mats* and a deck of cards divided into three piles. Ace counts as one and the queen's Q is transformed into a zero. Discard jacks and kings. Players take turns placing cards on the mats and saying the place of each number. For example, a child drawing a four could say, "I will put my card in the Tens place." After each child has placed three cards on his mat partner says the number.

Move on to the Thousands Place when the children have mastered the first three places.



Appendix D-Maximizing Math Moments

It's About Time

Sample Monthly Math Board

March Days in School 121 122 123 124 125	Months of the Year
Today we will have a special assembly	January February March April May June July August September October November December
Yesterday we learned about ballet.	
Tomorrow we will practice the dance in gym.	
Days of the Week	Days of the Week Waiting Room
Sunday Monday Tuesday Wednesday Thursday Friday	
	Saturday March 3 2001

A diptych is a picture or series of pictures painted on two hinged tablets.

A triptych is a picture or carving in three panels side by side.

Children can design their own diptychs and triptychs to illustrate concepts of time.



Appendix D, con't.

NAME _____

Directions: Write the names of the days of the week in order above each box.
Draw a picture of what you might do on each day of the week.

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Appendix D, con't.

Days of the Week

To the tune of
My Darling Clementine

Sunday, Monday,
Tuesday, Wednesday,
Thursday, Friday,
Saturday,

Sunday, Monday,
Tuesday, Wednesday,
Thursday, Friday,
Saturday

There are seven days,
There are seven days,
There are seven days in a week,

Sunday, Monday,
Tuesday, Wednesday,
Thursday, Friday,
Saturday

Months of the Year

To the Tune of
When Johnny Comes Marching Home

Twelve months go circling 'round the year,
Around, Around,

Twelve months go Circling 'round the year,
Around, Around,

Sing this song and you will know,
The months that in a circle go,
And they'll all go circling
Around, around and around...

January, February, March and April,
May and June, July and August,
September, October.

This leaves only two more to remember,
Eleven November, and twelve December

And then they all go circling
Again, again and again...

Repeat...for as long as you wish...or until the teacher tires!