*CMC Parent Involvement and Awareness:*

# Ten for Dinner Equals Ten Math Activities

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**CONCEPTS** Number, Measurement, Statistics, Mathematical Reasoning

**SKILLS** Using numbers, counting, writing to explain mathematical thinking, linking mathematics to other areas

**MATERIALS** *Ten For Dinner*, Student Activity Sheet, writing and drawing materials, paper, colored construction paper, chart paper, scissors, butcher paper,

3" x 3" white paper squares, glue or glue sticks, string, jump ropes, paper plates, paper fasteners, sentence strips, individual chalkboards and chalk (optional), unifix cubes (optional)

**DESCRIPTION** In the book *Ten For Dinner*, written by Jo Ellen Bogart, Margo has invited ten friends to her birthday dinner. As the party progresses, the children have the opportunity to make choices about games, songs, food, and other birthday activities. This book invites teachers and children to review, learn, and extend mathematical concepts.

**DIRECTIONS**

## Combinations of 10

One of the most obvious mathematical connections in this story is to compare the many combinations of ten that are represented in the guests' choices. For instance, the combination of 1 + 4 + 4 + 1 = 10 depicts the children's preference for games. One guest wanted jump rope, four said tag, four requested to play hide and seek, and the last child wanted to play marbles. Each two-page spread shows different combinations of ten within the context of the story.

After the children have heard the story a few times, give each child a chalkboard or white board and writing utensils. Ask them, "How many different combinations of ten can you find in the story?" Direct them to record each combination as you reread the story to them.

## Time Measurement

The children arrived at different times for the party, even though the starting time was 5 P.M. Five children came right on time, two came at 5:20, two came at 5:15, and one arrived early—at a quarter to four.

Model how to make a paper plate clock by dividing the paper plate into quarters and writing the numbers 12, 3, 6, and 9 in the appropriate places. Use this information later to help them find the "quarter after" and a "quarter to" times. Then have them fill in the other numbers, approximating the distances between numbers. Precut the minute and hour hands. Use a paper fastener to attach them to the paper plate.

Use the clocks to find times listed in the story. With older children, set the clock hands on a quarter to four, and move them around to find a quarter after five. How much time elapsed between the arrival of the first guest and the last guest?

## T-shirts and Shorts Problem

Write the problem below on the board.

> *One guest wore green shorts and a green T-shirt, another had brown shorts and a red T-shirt, and a third guest wore a white T-shirt and orange shorts. If the three guests were to "mix and match" their shirts and shorts, how many different outfits could they make? Draw and write how you know your answer is correct.*

Use the "T-shirts and Shorts Problem" Student Activity Sheet (page 35) to help the children solve the problem. Children may also want to use unifix cubes when matching colors to represent the T-shirts and shorts, and build the various combinations.

Expect a variety of responses. Some children show divergent ways to access the answer and may surprise you with an answer that includes layering the shirts for a new look!

## Party Food

Pose the problem below for your children.

> *At the party Margo served macaroni and cheese, meatballs, carrot and raisin salad, celery sticks, and watermelon. Which of these foods would you choose if you were at Margo's party? You may choose more than one.*

Complete a class graph that shows which items each child chooses. (An easy way to do this is to write the food names on the chalkboard and have the children depict their preferences by writing their choices on sticky notes.)

After children have collected the data, have them summarize the results of this data collection by writing in a journal or in a letter to the principal. Ask them how this information might be useful to Margo if she were to ask our entire class to her next party.

## Party Hats

Margo gave her guests colored paper to make hats. Show the children the picture of the hats the guests made at Margo's party. Have colored paper, scissors, glue, and tape ready for your children to make hats. Before they make their hats, however, have them work in partners to measure the circumference of their heads with precut lengths of string. Using the string as their measurement guide, have children design a hat that will fit their head.

When all students have finished, have a hat parade. Then have the children sort and graph the hats in several different ways.

## Musical Math

Margo asked her guests what they would like to sing. One of the songs they chose was "This Old Man." Sing "This Old Man" with the children in your class. Then ask your children if they know any other songs with numbers in them. Some possible responses might be "The Ants Go Marching," "Ten in the Bed," "Five Green and Speckled Frogs," and "Six Little Ducks."

Sing the songs with the children. Use the original songs to make up variations and to act out the songs. For example, have ten children line up to role play "Ten in the Bed" as the rest of the class sings along. Instead of

having just one child fall out of bed, choose two or three children to fall out at a time. Now there are new subtraction problems for the children to sing about.

On another day, graph your children's favorite number song by using butcher paper to record the names of their favorites. Have your children write the name of their favorite number song on a 3" x 3" piece of paper and glue it onto the graph. Have the class summarize the results of the class graph as you write their insights on chart paper.

## Jump Rope Counting

When Margo asked her guests what they would like to play, one guest said "Jump rope." Jump rope rhymes often involve counting the number of jumps. There are several good books for jumping rope listed in the bibliography including *Anna Banana: 101 Jump Rope Rhymes, The Jump Rope Book*, and *Miss Mary Mack*. This is a great way to extend mathematics into physical education and recess.

For older children, consider having them start with higher numbers when they count, or counting by twos or fives instead of ones. "Double Dutch" involves counting by twos, also. Counting backwards is another way to encourage counting.

## How Many Wheels?

Another open-ended problem emerges naturally from this book. Write the problem below on the board.

> *When the party was over, five guests went home in cars, two rode home on bikes, and two walked. How many wheels took them home? Draw and tell how you found the answer.*

Clarify the problem with your children and expect them to come up with a wide variety of responses. For example, if the five children ride in one car and one of the bikes has training wheels, the answer could be 10 wheels. In the example shown here, J. J. found 16 wheels.


## Gift Sorting

In the story, Margo receives a variety of presents. Have your children draw their favorite birthday present on a piece of construction paper and label it with a black marker. When everyone has completed this task, ask the children to share their drawings.

Next, ask your children to generate attributes about their presents, so that you can sort the presents into *two* groups. As the children share attributes, make labels using sentence strips that will fit each category. For example, if a child describes his toy as "electronic," the teacher generates cards that say "Electronic" and "Not Electronic," and the children

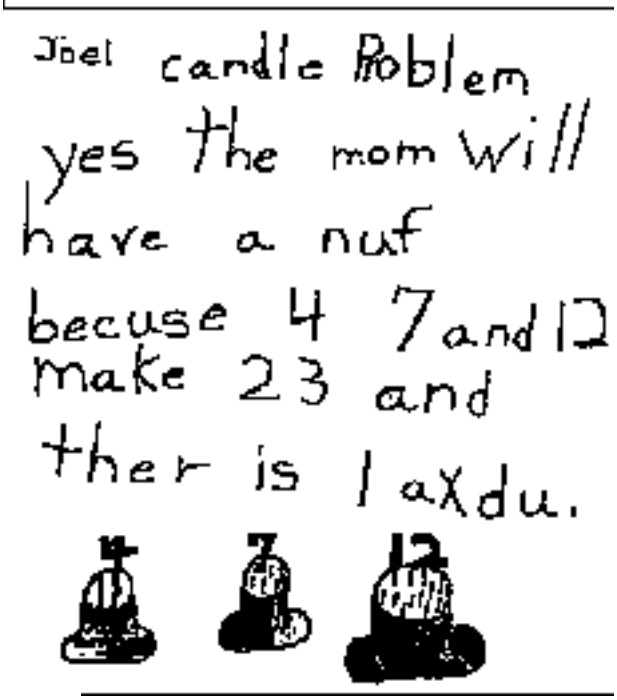
place their picture on the floor under the correct label. Sort the gifts in this manner in several different ways.

### What's Missing?

Ask your children, "What part of a birthday party is missing in this story?" Accept all possible answers. Hopefully the children will discover that Margo does not have a birthday cake. The lack of a cake generates this problem:

> *Last month Margo's mother bought a box of 24 birthday candles. She used 7 for Margo's little sister's birthday and 4 for Margo's little brother's birthday. Margo was 12 years old on her birthday. Did Mom have enough candles for Margo's cake? Show and tell how you found your answer.*

A typical child's response"




**REFERENCES**


Bogart, Jo Ellen. *Ten for Dinner*. New York: Scholastic, 1989.

Calmerson, Stephanie, et al. *Miss Mary Mack*. New York: William Morrow & Company, 1990.

Cole, Joanna. *Anna Banana: 101 Jump Rope Rhymes*. New York: William Morrow & Company, 1989.

Loredo, Elizabeth. *The Jump Rope Book*. New York: Workman Publishing Company, 1996.

Myren, Christina. *Posing Open-Ended Questions in the Primary Classroom*. San Diego: Teaching Resource Center, 1995.




**Student Activity Sheet follows . . .**

**Ten for Dinner Equals Ten Math Problems**
**T-shirts and Shorts Problem**

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