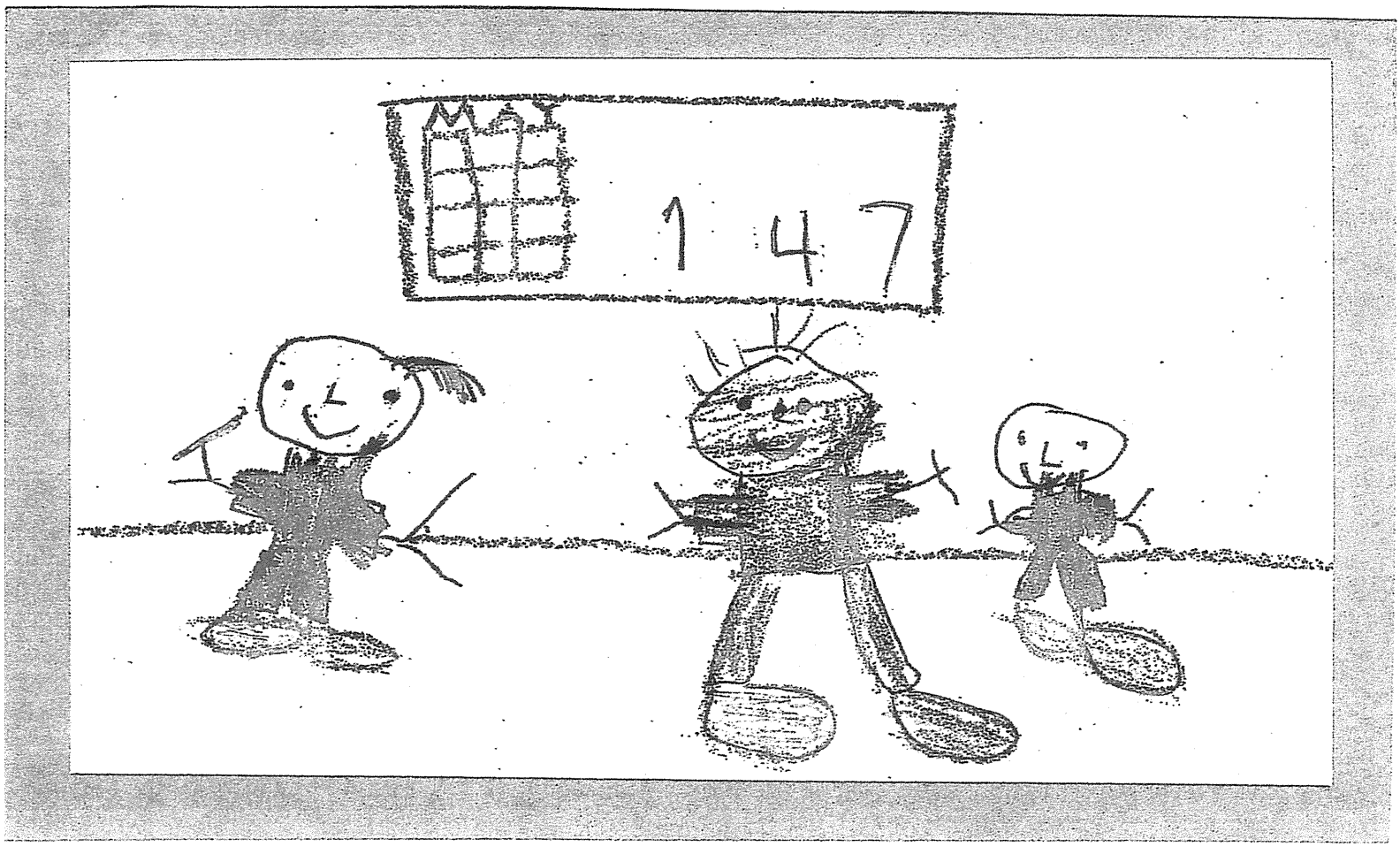
TOTALLY MATH!

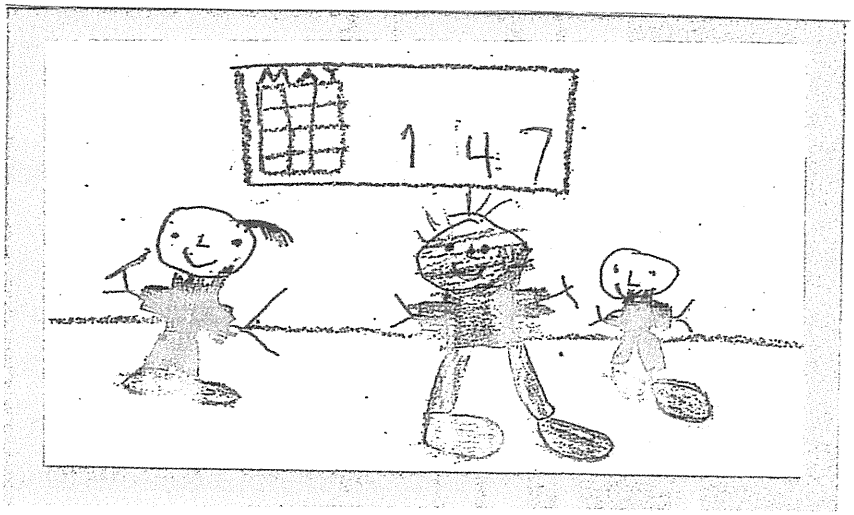
Dr. Jean Feldman



MARVELOUS MATH!

Your students will catch "math fever" with these exciting hands-on activities and songs. They will think they are playing, but they will actually be developing these skills set forth by the National Council of Teachers of Mathematics.

Number & Operations
- One-to-one correspondence
- Counting forwards and backwards
- Skip counting
- Sets and numeral recognition
- Writing numerals
- Spelling number words
- Ordinals
- Fractions
- Money
- Addition and subtraction
- Word problems
- Estimating
- Place value



Algebra
- Sorting
- Patterning
- Symbols
- Missing addend

Geometry
- Recognizing shapes
- Drawing shapes
- Position and direction

Measurement
- Comparisons (seriate)
- Measure (standard unit, ruler, scale)
- Time (clock, calendar)
- Temperature

Data Analysis & Probability
- Graphs
- Glyphs

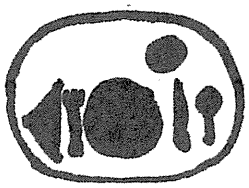
One-to-One Correspondence

Give children experiences in one-to-one correspondence every day by asking them to pass out snacks, put pegs in holes, or match puzzle pieces.

Let children match one-to-one by putting tennis balls in a muffin pan or cotton balls in an ice cube tray.

Make matching books where children match blocks, toys, cereal, and other objects one-to-one.

Teach children how to set the table with a place setting where they match real objects to outlines.



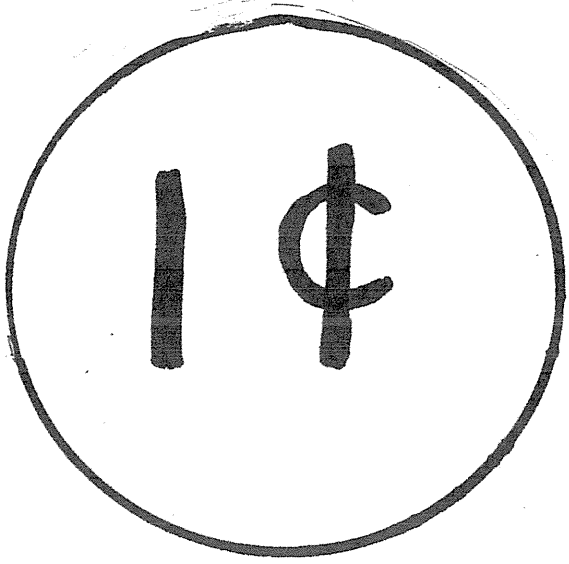
<u>Five Little Cupcakes</u> (Tune: "Five Little Ducks")

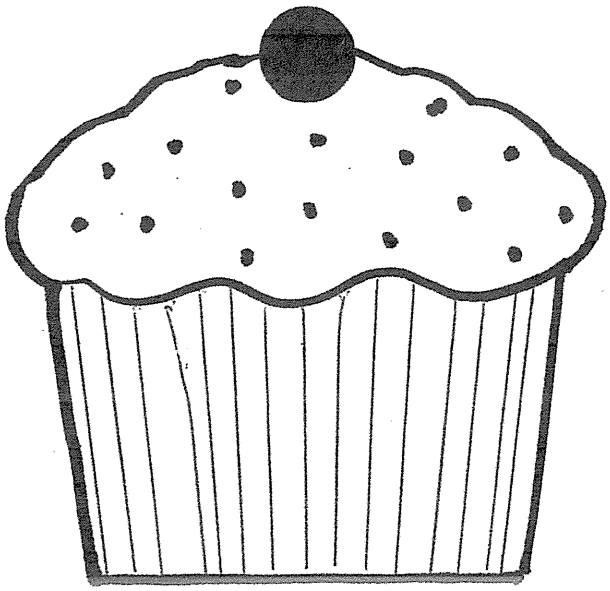
Down around the corner at the bakery shop, (Hold up 5 fingers.)
Five little cupcakes with sprinkles on top.
Along came (child's name) with a penny one day.
He/she bought a cupcake and took it away. (Put down 1 finger.)
Four...three...two...one

Make paper cupcakes and choose five children to hold them. Pass out pennies to five other children. As their name is sung in the song, children give a penny in exchange for the cupcake.

*Change the words of this song for different seasonal objects. You can also change the amount of objects and the money used. For example:

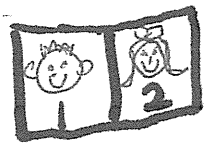
Down at the pumpkin patch what did I see?
Ten little pumpkins orange as can be.
Along came (child's name) with a dollar one day.
She bought a big one and she took it away.





Counting Forwards and Backwards

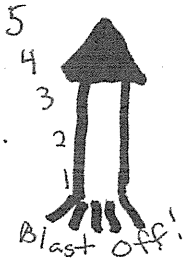
Macarena Math - Practice counting as you dance the "Macarena." You can also practice skip counting as you dance.



Counting Books – Let children draw pictures of themselves and use these to make a counting book. Number pages 1, 2, 3...etc. Read the book counting forwards and then backwards.
*Make a "High Five" book with children's fingers. Trace around each child's hand and let him decorate it. Attach pages with tape to make an accordion book. Number pages 5, 10, 15, 20...etc.

*Make a "Piggie Book" by tracing around children's feet. Practice counting by ten's with this book.

A Counting We Will Go – Count as a transition activity throughout your day. Count the number of steps it takes to get to the lunchroom, the number of trees on the playground, the number of seconds it takes to get quiet, and so forth.



Blast Off – Practice counting backwards by having the children stand and pretend to be rockets. As you count 10 – 9 – 8 – 7 – 6 – 5 – 4 – 3 – 2 – 1, children slowly stoop to the ground. After zero say "lift off" and children slowly count from 1-10 as they stand back up.

Zero the Hero – Stand like a super hero with feet out and hands on hips. Point to numbers on a chart or hold up fingers as you count.
*Have children form a "Conga" line and dance around the room as they sing and count.
*Don't forget about ZERONA the heroine!

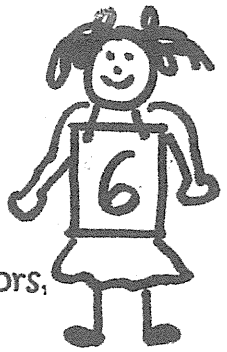
Body Counting – Use different body parts for counting to 100. Touch head as you count 1-10. Touch shoulders as you count from 11-20. Touch knees as you count from 21-30, and so forth.

Skip Counting – Patty cake or cross and tap as you practice skip counting.

Odd and Even - Slap thighs on odd numbers and clap hands on even numbers.

Expanded Notation Have children listen as you snap for tens and clap the ones. For example: "Snap, snap, snap, clap" = 31. Add hundreds by stomping your feet, thousands by jumping, and so on.

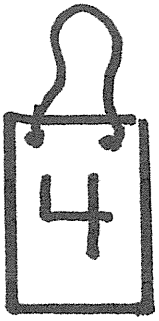
Number Vests



Why? number recognition; counting; comparisons; math facts

What? large copies of numerals and math signs, clear sheet protectors, hole punch, string

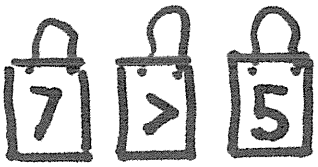
How? Write numerals and math signs on paper and insert in the clear sheet protectors. Punch holes at the top and tie on string so they can easily fit over the children's heads.



Counting - Have children get in numerical order according to the number they are wearing.

Songs - Wear number vests as you sing "Five Little Monkeys," "I Know An Old Lady Who Swallowed a One," and other songs.

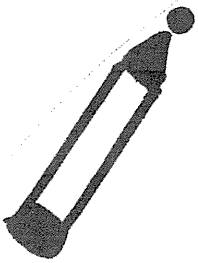
Inequalities - Put up two numbers and have children choose "<" or ">" to go between them.



Addition and Subtraction - Have children make number sentences using the numbers and signs on the vests.

Fact Families – Move numbers around to demonstrate different fact families.

Word Problems – Use number vests to engage children in solving word problems.



Dot to Dot - Make a giant pencil by covering a paper towel roll with yellow paper. Wrap orange paper around the bottom for the "eraser" and insert a black cone in the other end for the "point." Pass out numbers and have children scatter around the room. One child takes the pencil and goes from "0" through "10" by "connecting the dots."

Number Words – Write number words on the back of the numerals.

*Adapt the number of vests to the level of your students.

Writing Numerals

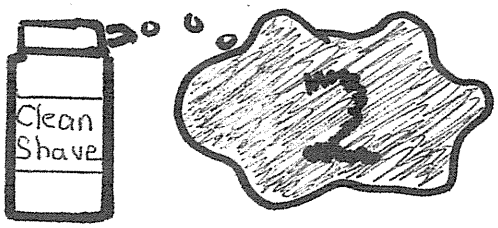
Chant and Write
(Children echo each line.)

Zero is where it all begins- (Slap thighs to the beat.)
Curve down around and up again.
Number one is so much fun—
Pull straight down and you've got a one.
Number two is easy to do—
Up around down and across makes two.
Number three is simple to see—
Draw two humps sideways and that's a three.
Number four I do adore—
Go down, across, then down some more.
We've reached five, now let's not stop—
Pull down, circle round, put a hat on top.
Number six is easy to fix—
Big curve, small loop will give you six.
Number seven is really sizzlin'—
Straight across, slant down, and that's a seven.
Number eight isn't very straight—
Make "S" then back up for an eight.
Number nine I think you're fine—
A loop on top of a long straight line.
Number ten we've reached the end—
Put a one by a zero and count again:
1-2-3-4-5-6-7-8-9-10!

Write numerals in the air as you chant.

Make dot numerals with a marker. Put drops of glue on top. When they dry, children can trace the numerals as they say the chant.

Give children a squirt of shaving cream to use like finger paint on their desks. As they sing the song, children can make the numerals in the shaving cream.

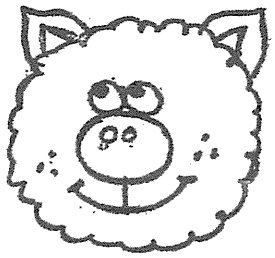


Ordinals

Line Up – Tap children as you say their position when they line up. For example, "first," "second," "third," "fourth," etc.

Toy Talk – Line up classroom toys and then orally say their position. Next, ask children to bring you toys by calling the ordinal position. For example, "Who can bring me the fourth toy?"

Piggy Sticks – Make piggy sticks by gluing pigs similar to the one shown on craft sticks. Retell "This Little Pig" using ordinals.

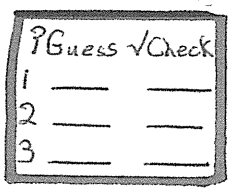


The first little pig went to the market.
The second little pig stayed home.
The third little pig had roast beef.
The fourth little pig had none.
The fifth little pig cried, "Wee wee wee" all the way home.

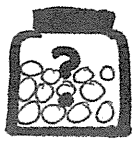
The sixth little pig ate some pizza.
The seventh little pig ate a pear.
The eighth little pig had spaghetti.
The ninth little pig's plate was bare.
The tenth little pig cried, "Wee wee wee, I will share!"

Estimation

Guess and Check - Give each child a zip bag to take home and fill with objects. (Give them parameters for this, such as 1-10 or 1-25.) Number each of their bags. Classmates write down the number of the bag and then write down their estimation ("guess") of how many objects are in the bag. Next, they open the bags, count, and write down the correct amount ("check").

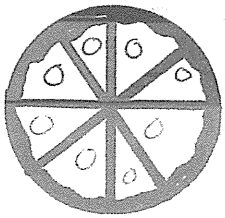


Estimation Center -Fill a plastic bottle or jar with different objects each day. Place small pieces of paper and a pencil by the "estimation jar." Sometime during the day ask students to write their name and estimation on a piece of paper. At the end of the day, empty the container and count. Who guessed the closest amount? Who guessed more? Who guessed less?



Fractions

Fraction Pizza (Tune: "He's Got the Whole World in His Hands")



I've got a whole pizza in my hands. (Extend arms in a circle.)
I've got a whole pizza in my hands.
I've got a whole pizza in my hands.
And now I'll eat some up.

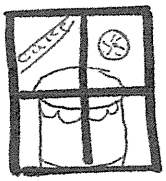
I've got half a pizza...I've got ¼ of a pizza...I've got 1/8 of a pizza...

I've got no pizza in my hands...
It's just an empty pan.

Cut a red sheet of paper into a circle and then cut into fractions. Hold up the pieces as you sing the song.

Eating Fractions - Order a large pizza for your class and sing the song as you cut it into enough pieces to share. (You might need two pizzas if you have a large class!)

*Give children a large graham cracker. Can they break it in half? Can they eat half? Can they break it in fourths? Can they eat one fourth? Can they break it in eighths? Can they eat one eighth?

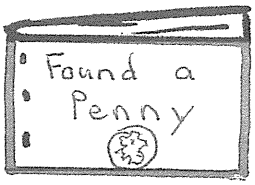


Fractions Puzzles – Have children bring in food boxes from home. Cut the fronts off the boxes and use them to make fraction puzzles.

Problem Solving – You can use blocks, crayons, or other classroom objects for problem solving. For example, invite four children to come to the front of the room. Take twelve blocks and ask the other students how you could share the blocks with those four friends.

Bring in 12 packages of crackers. Count together. "What can we do? There are 24 people in our classroom and only 12 packs of crackers."

Money



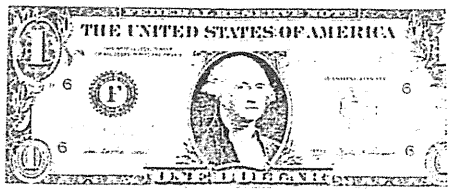
Found a Penny (Tune: "Found a Peanut")
(Hold up real coins or cut outs as you sing.)

Found a penny, found a penny, found a penny just now.
It is round and brown and shinny
Found a penny just now.
I see Lincoln, I see Lincoln, our sixteenth president,
On the back is his Memorial
Penny, penny's worth one cent.
Found a nickel, found a nickel, found a nickel just now.
It is round and fat and silver
Found a nickel just now.

I see Jefferson, I see Jefferson, our third president
On the back his Monticello
Nickel, nickel's worth five cents.
Found a dime, found a dime, found a dime just now.
It is thin and small and silver,
Found a dime just now.
I see Roosevelt, I see Roosevelt, our thirty-second president
On the back is a torch.

One dime is worth ten cents.
Found a quarter, found a quarter, found a quarter just now.
It's the largest of all the coins,
Found a quarter just now.

I see Washington, I see Washington, our first president
On the back the bald eagle;
Quarter's worth twenty-five cents.
Found a dollar, found a dollar, found a dollar just now.
It has a picture of George Washington
And it's worth one hundred cents.
Five pennies equal a nickel; ten pennies equal a dime.
Twenty-five pennies in a quarter,
Two nickels equal a dime.
Five nickels in a quarter, or a nickel and two dimes;
Four quarters in a dollar
And a dollar equals ten dimes.



Download a book to go with the song on June/July, 2006.

Rubbings - Have children do rubbings of coins. Place each coin under a sheet of paper and rub with the side of a crayon. Who do they see? What's it worth? Let children examine coins with a magnifying glass. Encourage them to discuss details. How old is the coin?

Time

Hickory Dickory Dock (Traditional Tune)

Hickory dickory dock.	(Fold hands and tick tock back and forth.)
The mouse ran up the clock.	(Run fingers up in the air over head.)
The clock struck one,	(Clap one time.)
The mouse ran down.	(Run fingers down.)
Hickory dickory dock.	

Two – "Yahoo!"
Three – "Whopee!"
Four – "Do more!"
Five – "Let's jive!"
Six – "Fiddlesticks!"
Seven – "Oh, heavens!"
Eight – "Life's great!"
Nine – "So fine!"
Ten – "We're near the end."
Eleven – "We're sizzlin'."
Twelve – "I'm proud of myself."

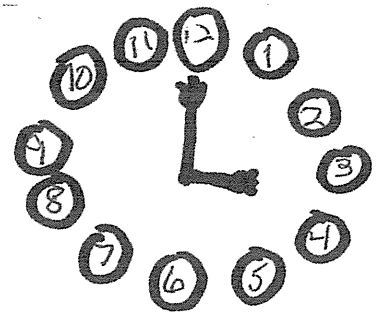
(Continue doing the movements above, clapping the appropriate number of times.)

Have children make paper plate clocks and use as they sing this song.

Use your arms like the hands on a clock. Extend both arms over your head. On "one," bring right arm down to the position of "one" on a clock. On "two," bring right arm down to position of "two," and so forth as you sing.

Digital Time - Place a digital clock by the wall clock in your classroom so children can associate both ways of telling time.

Giant Clock - Write the numerals 1-12 on paper plates. Arrange these on the floor to resemble a clock. Cut out 2 hands from construction paper. Attach one to the end of a ruler (hour hand) and one to the end of a yardstick (minute hand). Children arrange the hands on the floor to simulate the hands on a clock.



Measurement

Bean Counters - You will need clear packaging tape and large dry lima beans to make a bean counter. Place ten lima beans end to end in the middle of the tape as shown. Fold the top of the tape down, the bottom up, and seal. Trim off the ends. Children take the bean counter and place it on the end of the object to be measured. How many beans long is the object?

Have children record their measurements.

Ask children to find something in the room that is 2 beans long. Can they find something 5 beans? 10 beans? etc.

Put bean counters together and measure the length of the room, playground, and other large areas.

Seriate Snakes

Cut the yarn into 5 graduating pieces from 2" – 10". Ask the children to put them in order from shortest to longest. Next, ask them to roll snakes" from play dough. Can they arrange them in order? Which one is longest? Shortest? Can they make two snakes that are the same length?

Use straws, cardboard rollers, or sticks to make similar games.

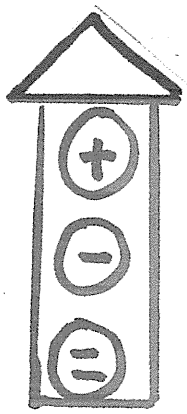
Have children order rocks, shells, books, and classmates from small to large.

Addition and Subtraction

Addition Pokey (Tune: "Hokey Pokey")

Put 1 finger in.	(Hold up finger on right hand.)
Put 1 finger more.	(Hold up 1 finger on left hand.)
Shake them altogether	(Roll around.)
And then lay them on the floor.	(Place on floor or table.)
Add them both together,	(Bring hands together.)
And you don't want to stall.	
Now you have 2 in all.	

2 fingers...3 fingers...4 fingers...5 fingers



*Do "Addition Pokey" with other facts.

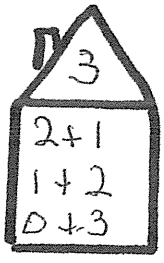
Signs for Math - Introduce sign language for equal (fingers straight and bring tips together), addition (open fingers and then bring tips together), and subtraction (pretend to take something out of palm and throw it down). Put fingertips together for "more," and pretend to push down with one palm on the other for "less."

Fact Families (Tune: "BINGO")

There's a math family you should know and two is its name-o
1+1, 2+0, 0+2 all equal two you know.

Three...2+1, 1+2, 3+0 all equal three you know.
Four...3+1, 2+2, 4+0 all equal four you know.
Five...2+3, 4+1, 5+0 all equal five you know.
Six...3+3, 5+1, 4+2 all equal six you know.
Seven... 4+3, 5+2, 6+1, and 7+0
Eight... 4+4, 3+5, 6+2, and 7+1
Nine... 4+5, 6+3, 7+2, and 8+1
Ten... 5+5, 6+4, 7+3, 8+2, and 9+1

Cut houses out of construction paper and write fact families on them. Put houses together to make a book.



Patterning

Everybody Do a Pattern with Me (Tune: "Everybody Do This")

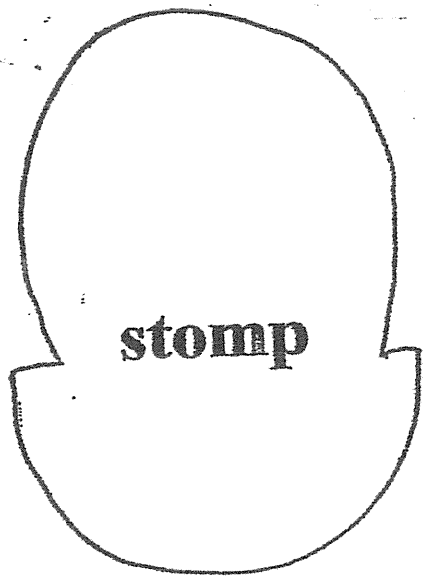
Everybody do this do this do this
Repeat the A B pattern with me.
Clap, stomp, clap, stomp,
X_, X_, X_, X_

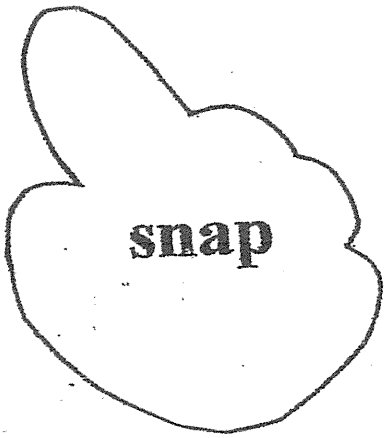
Continue clapping out other patterns: AAB, ABB, AABB, ABC, etc.

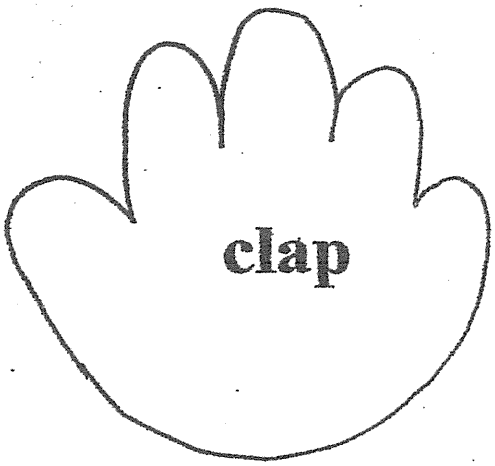
Use the symbols below to make a book to go along with this song.

Pattern Cards - Use the symbols below to make pattern cards. Pass these out and ask children to make up a movement to go with the pattern.

Table Toys - Ask children to make patterns with pegboards, unifix cubes, beads, and other classroom objects.







Comparisons

Great Graphs - Draw off a grid on poster board and use it for some of these graphing activities:

eye color, hair, etc.
letters in name
birthday month
favorite pet

favorite game
favorite song, rhyme
transportation to school
weather
type of shoe

brothers and sisters
books read
favorite flavor of ice cream

favorite book, author
favorite sports team
teeth lost

favorite center
color of jelly beans in a bag

relate to a unit of study

Expose children to line graphs, picture graphs, bar graphs, pie graphs, and other visual representations.

People Graphs - You can also do "people" graphs where children sort into groups based on a particular attribute. For example: if you like chocolate ice cream stand in this corner...strawberry...vanilla...chocolate chip.

Photo Graphs - Mount photographs of children on 4" x 4" squares. Have children use their pictures for graphing activities.

Data Collectors – Let children collect data from friends and family using a T-chart. You could tie it in with a unit (Do you like dogs or cats?), sports events (Who will win March Madness?), favorite food (Do you like cheese pizza or pepperoni?), and so on. Let children tally their results on the board when they bring their data back to school.

Tilly Tally – Children can use pretzel sticks to tally as they sing this song to the tune of "Little Red Wagon":

Put down a tally mark in a row.
Put down a tally mark in a row.
Tally, tally in a row,
Then put one across.

RESOURCES

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Website:

nctm.org (National Council for the Teachers of Mathematics)