

A Math Workshop for Teachers of Young Children

Math in Minutes



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- ✓ Number and Number Sense
- ✓ Computation and Estimation
- ✓ Measurement, Money, and Time
- ✓ Geometry and Spatial Sense

- ✓ Graphing, Statistics, and Probability
- ✓ Patterns and Relationships
- ✓ Problem Solving and Reasoning

A number is a symbol for a unit of one of more things.

Number sense is awareness that numbers help us organize our lives.

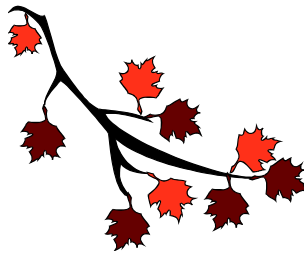
Numeration is a big word for counting.

- 1) *Leaves are Falling* song and chart

Leaves are Falling

By Sharon MacDonald and on *Watermelon Pie and Other Tunes!* CD

Leaves are falling
One, Two, Three;
From the tree
Four, Five, Six;

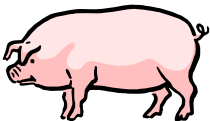


Falling to the ground
Seven, Eight, Nine;
Ten leaves falling down,
Covering the ground.

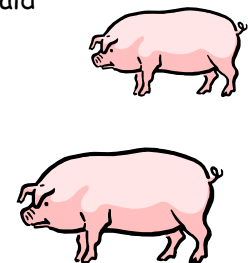
- 2) Balloon Launch
- 3) "Ely and the Five Little Piglets" poem

Ely and the Five Little Piglets

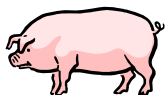
From: *Unglue It and Other Sticky Songs* CD by Sharon MacDonald



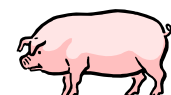
Down in the farm yard, playing around
Five little piglets rooting in the ground.
The first little pig said, "I want lunch."
The second pig asked for "Carrots...in a bunch?"



The third one said, "I don't want those."
The fourth one snorted, "I'll smell 'em with my nose (snort)."
The fifth one said, "Mama's calling us!
Pig four suggested that they all ride to Mama's...on the bus?"



Pig three sighed, "A bus is, silly."
Pig two agreed, "Yeah, silly, really!"



Pig one yelled, "Let's race to the sty."
"No," said Ely, "and I'll tell you why--"

You could arrive at the sty from the sky, on the sly...if you learned to fly"

Who is this guy Ely?
Ely's the guy who lives near the sty
Who says that pigs can learn to fly.
Yeah, Ely is the guy who lives near the sty
Who thinks that pigs can fly, when they try.

Now you know Ely.

He is the you-could-arrive-at-the-sty-from-the-sky, on-the-sly...if-you-learned to-fly" guy.

Numerical Inclusion refers to the total number in a group; like a group of five children, rather than the fifth child.

Computation and Estimation

Computation means going through the process of getting answers using the rules of addition and subtraction. With young children, computation starts with counting concrete objects and connecting them to numerals.

- 1) PVC Pipe Bead Adding
- 2) Playing Cards for Adding and Subtracting
- 3) *Five Round Pumpkins* song

Five Round Pumpkins

by Sharon MacDonald and on *Jingle in My Pocket* CD

Five round pumpkins in a roadside store
One became a jack-o-lantern; then there were four.
Four round pumpkins as orange as can be
One became a pumpkin pie; then there were three.

Three round pumpkins with nothing fun to do
One was cooked as pumpkin bread; then there were two.
Two round pumpkins sitting in the sun
One was cooked as pancakes; then there was one.

One round pumpkin, one job was left undone
He was kept to make new seeds; then there were none.
One round pumpkin, one job was left undone
He was kept to make new seeds; then there were none.

Estimation is an approximation, or a rough guess, based upon limited information.

- 4) Crayon Jar Estimation
- 5) Pom Pom Grab
- 6) Take home Estimation Jar

Measurement, Money, and Time

Measurement is finding out the amount of something and giving it a number.

- 1) Thermometer

Money is how we pay for the things we want.

Jingle in My Pocket

By Sharon MacDonald and on *Jingle in My Pocket* CD

Five pennies make a nickel
Two nickels make a dime
I can trade ten pennies for 2 nickels or a dime.
Jingle in my pocket, a dollar and a dime,
A penny and a nickel make me jingle all the time.

Two dimes and a nickel
Make a quarter every time
I can trade a quarter for three nickels and a dime.
Jingle in my pocket, a dollar and a dime,
A penny and a nickel make me jingle all the time.

Four quarters make a dollar
Makes a dollar every time
I can trade four quarters for a dollar any time.
Jingle in my pocket, a dollar and a dime,
penny and a nickel make me jingle all the time.
A penny and a nickel make me jingle all the time.
A penny and a nickel make me jingle all the time.

- 2) Jingle in My pocket Pop Up Coin Bags and Pop Up Cards

Time is told in units that measure one moment to another.

- 3) Minute List: how long it takes to tie your shoes, zip a jacket, eat a carrot, etc.

Math Transition Words

Time-Order Transitions:

First Second Next Then last Finally Before Afterward
Soon Meanwhile

- 4) Announcement clock
- 5) Timer

Geometry and Spatial Sense

Geometry is study of shapes, like the square or triangle. Shapes define our environment and therefore they help describe our physical world. Three dimensional (3-D) shapes, like a ball, bounce.

Spatial Sense is awareness of one's relationship to other things in terms of position, direction and distance.

- 1) Shape Bag
- 2) Neighborhood Photograph Shape Walk

Location Transitions

Above Amid Among Beneath Below There Beyond High
Low Beside Front of Here Next to Nearby Off On
In Out Up Down Back Forth

Graphing, Probability and Statistics

- ✓ Graphing is a way of organizing data so the information can be compared quantitatively.
- ✓ Graphing skills will lead the children into problem solving, logical thinking and functional relationships.
- ✓ A graph can be used to ask: opinions; organize predictions, hypotheses and/or estimations; record results; or categorize sorted information.

Levels of Difficulty in Graphing

- actual object graph
- more than 2 items graph with actual object (usually bar graph)
- bar graph using (1st) pictures (2nd) abstract representational
 - vertical graph with abstract representation of objects
- X Y graph - (1st) concrete objects (2nd) pictorial (3rd) abstract representational

1) Graphing Bag

Patterns and Functions

Patterns are sequences that repeat. The simplest patterns are ABAB. The world is made up of patterns, like numbers. Patterns tell us what happens next.

A function is a symbolic statement of one thing expressed in terms of another; for example, $c = a + b$ (or, \$ = quart of milk + loaf of bread)

- 1) Paper bag patterns
- 2) *Rainbow* song and Book (on my website under *Tying Shoes* archives)

Levels of Developing Patterning Skills

1. recognize
2. describe
3. match
4. complete
5. extend
6. create

Problem Solving

- 1) Measure the Plant. How?

Put it Together with Pizza (fractions, too)

Five Round Pizzas song

Dramatize song with 5 small pretend pizzas on a cookie sheet, 6 dollar bills, chef hat, and apron.

Five Round Pizzas

By Sharon MacDonald

Five round pizzas in the pizza shop
Big and round with melted cheese on the top
Along came _____ with a \$1 one day
He bought a pizza pie and took it on his way.

Four round pizzas in the pizza shop

Big and round with melted cheese on the top
Along came _____ with a \$1 one day
He bought a pizza pie and took it on his way.

Three round pizzas in the pizza shop
Big and round with melted cheese on the top
Along came _____ with a \$1 one day
He bought a pizza pie and took it on his way.

Two round pizzas in the pizza shop
Big and round with melted cheese on the top
Along came _____ with a \$1 one day
He bought a pizza pie and took it on his way.

One round pizza in the pizza shop
Big and round with melted cheese on the top
Along came _____ with a \$1 one day
He bought a pizza pie and took it on his way.

No round pizzas in the pizza shop
Big and round with melted cheese on the top
Along came _____ with a \$1 one day.
No pizza pie for you today.

- 1) Pizza Math (part/whole)
- 2) Pizza Math (counting)
- 3) (3) Pizza Money with Menus
- (4) Pizza topping Pie Graph
- (5) Pizza Books



For more Math Center Activities go to my website, SharonMacDonald.com and see "Center Activities" April through July. Go to *Unglue It* banner for more Pizza fun.