

Family Literacy Guided Lesson

For Cincuenta en la cebra/Fifty On a Zebra

NY State Learning Standards

Related to Learning Standard 3.3 for

Mathematics, Science, and Technology:

Students use number sense and numeration to develop an understanding of the multiple uses of numbers in the real world to communicate mathematically, and the use of numbers in the development of mathematical ideas.

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About the Book

Cincuenta en la cebra/Fifty

On a Zebra

Nancy María Grande Tabor, Author

An assortment of colorful animals slither, hop, jump, fly, run, and swim through the book as they guide the reader to think about numbers from zero to 100. Each page features a new animal, a new number, and a new set of questions that petition the reader to explore mathematical solutions to problems. From counting, *How many horns does the unicorn have?*, to comparisons, *How many deer have long antlers?*, to shapes, *How many decagons (shapes with ten sides) can you find?*, to thoughtful probes, *What would you do with the treasure?* the reader is challenged to explore the uses of math in everyday life. Written in Spanish with an English translation, this book is an inviting introduction to math.

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The Language/Literacy Connection

Patterns: A Foundation of Math

The bold black and white stripes of the cut-paper zebra against the mauve background on the cover of Tabor's book illustrates the role of patterns in nature and shout volumes about the importance of patterns in math. Although Tabor does not use the word pattern, it is clear from the illustrations in her book that perceiving patterns is essential to understanding math. Early childhood educator and mathematician Douglas Clements described mathematics as the study of patterns (*Douglas H. Clements on Music, Math and More*, Scholastic Early Childhood Today, January 2001, p 46).

Put on nightclothes, brush teeth, listen to a story, turn out the light, and go to sleep. Such routines, when followed night after night, become patterns and, as such, help children anticipate bedtime in an orderly and predictable manner. But more than establishing habitual behavior, routines lay the foundation for mathematical thinking. Regular patterns help children predict what will happen next and think about the relationship between one event and another, two important mathematical concepts.

Family life and home environments provide children with many opportunities to observe patterns. The design in the kitchen linoleum, the arrangement of figures on the living room curtains, the swirls in the bedroom wallpaper give children visual representations of patterns. The beat and rhythm of music played or sung gives children patterns for listening and moving. When parents help children compare magazine illustrations, *how is that zebra like that striped shirt?*, or read a story with a predictable phrase, *Brown bear, brown bear, what do you see?*, they help children gain a sense of patterns in printed material.

Early Childhood Education-Infant/Toddler Level

A Rhyme is a Pattern Expressed in Words

PLS-4 Skills

Auditory Comprehension

- 11. Anticipates what will happen next

Expressive Communication

- 18. Initiates a turn-taking game or social routine

Before the Visit

Gather Needed Materials

- ♦ A book of nursery rhymes

Prepare Lesson Props

- ♦ Select nursery rhymes appropriate for infants and toddlers. Think about the patterns in the rhymes and any explicit connections that they have to number sense.

During the Visit

- ♦ With the parent and infant sitting together, look at the cover of *Cincuenta en la cebra contando con los animales / Fifty on a Zebra Counting with the Animals*. Say to the parent: *This book was written for children much older than (child's name), but he/she may enjoy looking at the zebra on the front cover. Babies like to look at bold, contrasting colors. Say to the child: Look at the zebra. Isn't it an interesting animal? How do you like his black and white stripes?* Pause to give the child a chance to respond. Depending on the child's age, there may not be a verbal reply.
- ♦ Say to the parent: *Infants and toddlers have limited ability to express their thoughts in words, but they listen carefully to the adults around them. Gradually they make sense of the sounds they hear and put those sounds together to make words. Infants are also learning the art of conversation; that one person listens while the other talks and then the first speaker gives a verbal reply. That's why I asked (child's name) a question and waited a little while for an answer. He/she is learning the basic pattern of interactive conversation.*

Patterns

- ♦ Say to the parent: *We often think of math for young children as the skill of counting, but a fundamental part of math is learning about patterns and that is a concept that children begin to learn at a very early age. You help (child's name) learn about patterns through routines that you do each day. Rocking or singing at naptime, a nightly "tubbie", special mealtime activities are common routines for families. They are patterns that help children make sense of their world and build a foundation for understanding math.*

Nursery Rhymes

- ♦ Say: *Another way to teach children about patterns is through nursery rhymes and fingerplays. These little word games, with their rhythmic flow of rhyming words expose children to patterns in language and, as a bonus, teach math concepts. Do you have favorite rhymes that you say to (child's name)?* Encourage the parent to share a few favorite nursery rhymes, songs and fingerplays with you and the infant.
- ♦ Say: *I brought a book that we can look through to find a few new rhymes. All rhymes are about patterns.*

Whoops, Johnny

- ♦ With the toddler's fingers stretched wide, touch the tip of each finger, beginning with the little finger. As each finger is touched say, "Johnny." At the index finger say, "Whoops, Johnny" and slide down the finger and up the thumb. Then, quickly repeat the process in reverse.
- ♦ Instead of Johnny, say the child's name.
- ♦ By saying one word as you touch each finger you lay a foundation for understanding the concept of one-to-one interaction.

Early Childhood Education-Preschool/ School Age Levels

Patterned Clothes for a Paper Gingerbread Doll

Before the Visit

PLS-4 Skills

Auditory Comprehension

- 43. Understands qualitative concepts; shapes
- 51. Understands quantity concepts three and five

Expressive Communication

- 39. Uses quantity concepts
- 59. Counts items and gives correct number

Gather Needed Materials

- ♦ Gingerbread pattern
- ♦ Brown felt for gingerbread doll
- ♦ Wallpaper samples or gift wrap paper
- ♦ Scissors
- ♦ Cardboard
- ♦ Glue

Prepare Lesson Props

- ♦ Make a gingerbread doll and a few articles of clothing to use as a model. From wallpaper samples or gift wrap, cut out clothing that can be matched, i.e., shirt and pants that have the same pattern.

During the Visit

- ♦ With the parent and child sitting together, look at the book's front cover. Say: *Isn't this an interesting animal? Do you know what it's called? (Pause for a response.) This is a zebra. Its stripes make an interesting pattern. What color are the stripes? (Pause for a response.) How many black stripes are on the zebra's back? Help me count.* Guide the child to touch each black stripe as he/she counts.

Gingerbread Doll

- ♦ Say: *Today we're going to make a gingerbread doll and cut some special paper clothes to fit it. The clothes will be special because each outfit will be cut from wallpaper with matching patterns.*

Animal Patterns

- ♦ Say: *The zebra's stripes are a pattern. All zebras have the same special pattern. This book has pictures of other animals with patterns. Let's find some.* Look through the book with the parent and child to find other examples of patterns. Examples might include the pages that show: six grasshoppers, thirteen turtles, sixteen dolphin fish, forty snails, and eighty caterpillars.

Directions

- ♦ Look at the model gingerbread doll and its clothes with the parent and child.
- ♦ Glue the felt onto the cardboard. Then place the cardboard/felt on the workspace with the cardboard side up.
- ♦ Hold the pattern on the cardboard and trace around the edge.
- ♦ Cut out the gingerbread doll.
- ♦ Look through the wallpaper samples and pick out a few patterns.
- ♦ Create clothing from wallpaper samples or gift wrap by tracing around the gingerbread doll, measuring with a ruler, tracing the sample clothes, or drawing clothing patterns.
- ♦ Dress the gingerbread doll in outfits that match using the clothing that you made.

Parenting Education Activity

A World of Patterns at Your Finger Tips

Understanding math helps children solve problems, see how one thing is related to another, and figure out what is likely to happen next. Homes are filled with opportunities for children to learn about math, and the knowledge they learn at home supports the skills they learn at school. A basic math concept, and an idea that is also important for reading, is the idea of patterns; that certain things happen in a particular manner because they follow a pattern.

Patterns Around the House

- ◆ Place two or three swatches of patterned material in front of the parent. Say: *A pattern is an arrangement of objects or designs that recur in a regular sequence. A blouse made from material that has a design in it is an example. In fact, we sometimes ask, "Do you like the pattern in this blouse?" Look at these material swatches. Do you notice the pattern in each of them? (Pause for a response.) Say: Each is covered with a particular design. If we had bigger pieces we would see that the designs recur in the same sequence again and again. Homes are full of examples of patterns. Helping (child's name) recognize patterns will help him/her develop a beginning sense of math.*
- ◆ Look around the room to spot an example of a pattern and point it out to the parent. Possibilities include designs in wallpaper, linoleum, curtains, dishes, furniture covering, tablecloth, clothing, or on appliances such as crockpots. Say: *Look at your crockpot (or whatever you spot in the home that is an illustration of a pattern). Do you see how the design of vegetables around the center follow a regular arrangement? First there is a carrot, then a pepper, then an onion, and then the sequence starts again. That's a pattern. Can you spot another pattern? When you spot one call it out and I will write it on this paper.*
- ◆ Make a list of about 10 patterns. At first parents may have a difficult time recognizing patterns, but as they become sensitive to recurring themes around the house, an endless number of patterns become obvious. Say: *We have quite a long list and we've just begun. We haven't looked in (name rooms of the house – bedroom, bathroom, etc.). That's something that you and (child's name) can do together.*

Patterns In the Neighborhood

Say: *Hunt for patterns in other places. It's a great way to entertain children and it builds their capacity to understand math!*

- ◆ While riding in the car, ask children to look for things that are repeating stripes like a line of telephone poles, a group of trees beside the road, the clapboards on a house, a wooden fence.
- ◆ Check out patterns in nature. What patterns can you see in a flock of geese, a herd of Holstein cows, leaves on a tree, or pine cones?
- ◆ At the grocery store, look for patterns in the soup aisle, the cereal aisle, the dairy department.
- ◆ At the mall, notice people wearing stripes or dots or dresses with flowers.

Interactive Literacy Between Parents and Their Children

Stories and Math - What's the Connection?

Telling stories may not seem like a lesson in mathematics, but children love stories and telling one that involves numbers can make math meaningful. Some stories that do not even mention numbers help children develop a sensitivity to math. For example, a story with a predictable theme – a line or idea that repeats over and over is an excellent way to help children understand patterns. And patterns are basic to understanding math.

What Do You See?

♦ *Brown Bear, Brown Bear, What Do You See* is a popular children's book written by Bill Martin, Jr. and Eric Carle. Two lines, *Brown bear, brown bear, what do you see, and I see a ___ looking at me*, are repeated throughout the book. Use that idea to help your children notice patterns in your home. Begin by repeating the

child's name twice and then ask, "What do you see?" That's your child's cue to answer with the line, "I see (name a pattern) in front of me."

*Isabella, Isabella
What do you see?
I see stripes
In front of me.*

♦ Go to the library and borrow Eric Carle's book. Your children will enjoy seeing the connection between your game and a story in a book.

Button, Button! Who Has a Story for This Button?

♦ Almost every home has a button box and buttons are a source of endless fascination for children. Using the idea of a repeating story line create a series of one-line

stories that are tied together by a repeating phrase. The phrase could be "*I remember when ...*," or "*This button belonged to ...*" or something else that you decide on together.

Lay a handful of buttons on the table where the whole family can see them. Take turns selecting a button and telling a one-line story that starts with the phrase.

"I remember when this button fell off my coat on the coldest day of the winter."

"I remember when Aunt Mildred gave me that orange blouse with all of these red buttons."

"I remember the day I bought this button at the flea market because I thought it was so beautiful."

Another Button Game

♦ Glue buttons in patterns – one green, one red, one green – onto strips of cardboard. Let your children search through the button box to find a button that completes the pattern. Try a variety of patterns – big and small, round and square. Make more challenging patterns for older children – two green, a red, two green, a yellow, two green, what's next?

Imagination and a Repeating Theme Is a Winning Combination for a Story

♦ Challenge older children to make up stories with a repeating theme. Choose a line to repeat throughout the story like: "and then along came the big bad wolf," or

"that's when the ice cream truck arrived," or "Daddy had a surprise." Then make up a patterned story that repeats the line again and again. Here is an example.

That's When the Ice Cream Truck Arrived

It was a hot summer day and we decided to go on a picnic. We packed our lunch but had nothing for dessert. That's when the ice cream truck arrived. Mom bought a cone for each of us and we ate them right away. Then,

we walked to the lake, and ate our picnic lunch. When lunch was over we realized that we still had no dessert. That's when the ice cream truck arrived. We bought more ice cream! Mmm. Mmm. Good! Just as we finished

our second cone it started to rain. We knew we would be soaked before we reached home. But that's when the ice cream truck arrived. What do you think happened next?

Adult Literacy - ABE Level

Patterns in Daily Routines

Putting things in order is a way to begin writing a paragraph. This lesson includes a list of activities that many people do every day. Before the lesson, write each activity on an index card and number the cards from 1 to 10. Use the cards to help the student organize a list of his/her typical daily activities.

Directions for Teaching Lesson

Materials Needed

- ♦ Index cards
- ♦ Magazine pictures that illustrate routine daily activities for learners with very low reading skills
- ♦ Fine point marker

List of Sample Routine Activities for Index Cards

1. Drink a cup of coffee.
2. Watch television.
3. Help the kids with homework.
4. Make the beds.
5. Put the kids on the school bus.
6. Eat breakfast.
7. Dress the baby.
8. Take a shower.
9. Cook dinner.
10. Do the housework.

♦ Place the index cards in a column on the workspace. Say: *This is a list of routine activities that a person might do every day. I have copied the activities onto index cards. Look at the cards as I read the list. If the activity is something that you ordinarily do each day, put the card in one pile. If the activity is something that you never do or seldom do, put it in a second pile. I will start with number one. Card number one says, "drink a cup of coffee." Do you see that card? It has a number one on it. Is that something that you ordinarily do? If it is, put it in a pile for things you usually do every day. Now look at card number two. It says watch television. Which pile does that card belong in?*

- ♦ After you and the student have divided the cards into two piles say: *Are there some things that you do every day that are not on our list? Make index cards for those activities. Make as many additional cards as are needed.*
- ♦ Say: *Put the cards that list the things you ordinarily do each day in the order that you usually do them. What do you usually do first in the day? Put that card at the top of the table. What do you do next? Put that card below the first card. What do you do next?*
- ♦ Say: *Number the cards in order that you do them in your day.*

- ♦ Say: *This is a story of your daily routine. It lists the activities that you usually do every day. It is the pattern that you usually follow from morning to night.*
- ♦ When all the cards are in order, read the list with the student.

Modifications

Students with limited reading abilities may require visual cues to support the written message on the index cards. For those students, prepare cards with magazine pictures that illustrate the text or ask the students to sketch a figure that will remind them of what the print says.

Adult Literacy - GED Level

Activity Sheet

Gaining Information From an Essay

NOTES:

• Read the essay below and answer the following questions.

- What is the main idea in the essay?
- How does the reader feel about routines for children?
- What are the benefits that the writer believes children gain from routines?
- What would be a good title for the essay?

Routines are important to children. Their regular nature enables them to predict what is likely to happen next. Knowing that morning play is followed by lunch, that older siblings return from school after the afternoon nap, and that bedtime comes after a bath and a story helps children see patterns in their daily activities. Daily routines give children a sense of control in their life - *I know what to do next* – and the confidence they need to thrive. Further, the fundamental awareness to patterns that begins with daily routines helps children attend to patterns in other areas of development like what comes next in a story, the correct grammatical format for speaking, and the sequence of numbers. These are important skills for success in school and in life. Life with children is full of routines, and routines are essential to children’s emotional and intellectual well being.

Use this space to write an essay about a daily routine that you and your children follow.

Adult Literacy - ELL Level

Coins and Currency

Just as patterns are basic to understanding math, money words are basic to functioning in the economic arena of society.

Introduce Vocabulary

Vocabulary

Dollar
Quarter
Dime
Nickel
Penny

- ◆ Place the dollar bill and one of each of the coins on the workspace. Point to the dollar. Say: *This is a dollar. What is this? It is a dollar.* Ask again: What is this? Motion to the learner to repeat:

- This is a dollar.*
- ◆ Use the same procedure to introduce *quarter, dime, nickel* and *penny*.
- ◆ Repeat procedure three times to reinforce learning the vocabulary.

Lesson Props

- ◆ 1 dollar bill
- ◆ 4 quarters
- ◆ 10 dimes
- ◆ 20 nickels
- ◆ 5 pennies
- ◆ Purse
- ◆ Sale signs: **\$1.25, 10¢, 25¢, \$1.00,** etc.
- ◆ Garage Sale sign
- ◆ Several small items that might be found in a garage sale, i.e., small toys, shirts, books, jewelry

Reinforce Vocabulary

- ◆ Put all of the money in the purse. Scoop several coins and bills, at random, from the purse. Place the money on the workspace and separate into groups – pennies in one group, nickels in a group, etc. Describe the groups. Say: *I have (number) pennies, (number) nickels, etc.*

- ◆ Put the coins back in the purse. Motion to the learner to scoop money from the purse and separate it into groups. Say: *What do I have? I have (number) dollars, (number) quarters.* Motion to the learner to repeat: *I have*
- ◆ Continue activity to practice vocabulary.

Extension

Sale Signs

- ◆ Place a sale sign, perhaps \$1.25, on the workspace. Say: *I need a dollar and a quarter.* Place a dollar and a quarter on the workspace. Say: *This is a dollar and a quarter. How much is this? This is a dollar and a quarter.* Ask again: *How much is this?* Motion for the learner to repeat: *This is a dollar and a quarter.*
- ◆ Continue to practice reading sale signs for

- amounts equal to the value of the coins in the lesson or the value of dollar plus the coins, i.e., 10¢, 25¢, \$1.00, \$1.05.
- ◆ Reverse roles. Motion to the learner to point to a sale sign and say: *I need (value printed on the sign).* After saying the amount needed, motion for the learner to remove the correct amount from the purse.

No Sale Signs Posted

- ◆ Place the "Garage Sale" sign and the small items for the sale on the workspace. Pick up one item. Say: *How much for this?* Give the item to the learner. Motion for the learner to repeat: *How much for this?* Say: *A quarter.* Motion for the learner to take a quarter from the purse

- and give it to you.
- ◆ Motion for the learner to pick up another item and ask: *How much for this?* Answer with different amounts. Each time, motion for the learner to give you the amount stated from the purse.