



# Math Learning in the Home



# Number

*Number* involves knowing what numbers are and understanding that they represent quantity:

- Using number words
- Counting things
- Identifying numbers (numerals) and beginning to write them
- Comparing quantities of things (more, fewer, same)
- Using one-to-one matching to compare the quantities

## Activity for Adults

Count how many

- Feet are under your table
- Rings people at your table are wearing
- Buttons are on people's tops

# Geometry

*Geometry* is learning about shapes and spatial relationships (relationships involving the positions and locations of objects):

- Naming and describe shapes
- Finding shapes in the environment
- Creating shapes
- Using position, direction, and distance words
- Creating and solving spatial problems (e.g., completing puzzles, building block structures)

## **Activity for Adults**

Go on a shape hunt and find all the shapes on your handout. Return to the room in 5 minutes.

# Measurement

*Measurement* is identifying the measurable attributes (characteristics) of things and using them as a basis for comparing objects:

- Comparing things by height, length, width, volume, time, and other characteristics (like brightness)
- Understanding and using general measurement terms (e.g., *same, different; more, less; longer, shorter; louder, softer*)
- Estimating approximate quantities (not actual quantities)
- Using things to begin to measure (conventional things like rulers or measuring cups, unconventional things like a shoe or a block)

## Activity for Adults

Line yourselves up by

- Height
- Shade of your pants/skirts
- Roughness of the soles of your shoes

## Notes

## Strategies for Scaffolding Math Learning in the Home

### Number

- ◆ **Count things!** Preschoolers love to count everything and anything — so count place settings, steps to the sink to brush teeth, or the number of mosquito bites on their ankles. Point to and/or move each object as you count and say the number out loud. This not only helps children keep track but also conveys the important idea that each number refers to one and only one object or action.
- ◆ **Sing counting songs, read counting books.** Songs and chants such as “One, Two, Buckle My Shoe” and “Five Little Monkeys Jumping on the Bed” make learning to count — forward and backward — fun for young children. There are many wonderful counting books that not only help children become familiar with written numerals, but also convey the idea that numbers correspond to quantities.
- ◆ **Find numbers (numerals) around your home and neighborhood.** Go on a “number hunt.” Point out numbers on the microwave, telephone, or keyboard. Look for and circle numbers in newspapers, magazines, and catalogs. Search for numbers on street signs, buildings, and supermarket shelves. Keep count of how many of each number you see. Share children’s excitement when they find a number, especially in places that you didn’t think to look — like the size label in their clothes!

### Geometry

- ◆ **Label shapes and sizes.** When you play with children or carry out the day’s routine, use words related to shape or size. For example, ask a child to drop an ice *cube* in the glass or say *Can you please hand me the largest box of cereal from the shelf?* Talk about what makes a shape a shape. You might show a child a big triangle and a small triangle and say, *They are both triangles because they both have three sides and three corners.* Point out everyday

objects that are common shapes; for example, a can of soup is a cylinder, a book is a rectangle.

- ◆ **Find shapes in the environment.** Play I spy, looking for shapes around the house, at the store, and in your neighborhood. For example, say *I spy something on the floor that is a rectangle. What do you think it is?* or *I spy two things on the table shaped like a circle, can you find them?* Go on a shape hunt.
- ◆ **Encourage children to climb in, out, under, over, and around things to develop a sense of space.** Save large cartons (such as those used to ship appliances) for children to crawl in and out of. Let the children create caves, tents, and tunnels by draping sheets over furniture, making rows of chairs, or using sofa cushions. Visit the school playground or a nearby park and encourage the children to use the climbing equipment.
- ◆ **Build structures with blocks, boxes, and other clean and empty containers.** Allow the children to discover that putting the biggest block on the bottom makes a strong base. Let the children figure out that when there are no more big blocks, two or more smaller ones can substitute. Talk with children about how they stack and line up the boxes. Encourage children to work with different sizes and shapes and discover how they fit together.
- ◆ **Use words that describe position (*over, under, next to, between, above, behind*) direction (*forward, backward, up, down*), and distance (*near, close, far, way over there*).** For example, hide a toy and give children clues to find it: *Look higher; Check under the couch; It's behind me;* or *I hid it near the bookshelf.* Use position, direction, and distance terms during everyday conversations, such as *It's not far, it won't take us long to get there; Let's walk around the puddle so our shoes stay dry; Do you want to wear the barrette in the back or on the side of your hair?* or *Did you look under your coat?*



## Measurement

- ◆ **Organize and compare your household items.** Encourage children to help you with household chores (like folding laundry, putting away canned goods). Children can line them up in order and compare them by attributes such as length (shortest to longest socks), weight (lightest to heaviest cans), color intensity (palest to darkest towels), and so on.
- ◆ **Use conventional and unconventional units to measure things.** For example, use a ruler and a shoe to measure the length of an area rug. Begin with unconventional units (such as a shoe or a wooden spoon) and gradually introduce conventional tools (such as a ruler). Count and compare the number of units: for example, use a child-sized shoe and an adult-sized shoe to measure the same distance. Count how many songs are played on a CD until you finish clean-up. Use different-sized measuring spoons and cups to fill a bucket with sand or water.
- ◆ **Include children in activities that involve measuring.** Child love to help, and many routines and special projects provide measurement opportunities. For example, children can set the oven timer or help measure ingredients in a recipe, the length of boards for a bookshelf, or the distance between rows in a vegetable garden.
- ◆ **Estimate everything!** Estimation is a fun guessing game and also provides an opportunity to measure how close your estimate comes to the real number. For example, estimate the number of steps from the bus stop to the corner or how many carrots are in a bowl. Count and compare the actual number to the estimate (*Is it the same? Is it higher or lower? By how many?*) .



## Planning to Support Math: Open-Ended Materials

<b>Number</b>			
<b>Countable Items</b>	<b>Items With Numbers on Them</b>	<b>Items for One-to-One Matching</b>	<b>Counting Books</b>

## Geometry

Variety of Shapes	Fit-Together/Take-Apart Items	Materials to Create Shapes	Shape Books

## Measurement

<b>Unconventional Measuring Tools</b>	<b>Conventional Measuring Tools</b>	<b>Things that Vary by One or More Attribute</b>	<b>Books That Include Describing, Predicting, Guessing</b>

**Activity Times**  
**Using Children's Interests and Math Concepts**

Interests	Number	Geometry	Measurement
Like to play basketball			
Make block houses for cats and dogs			
Make collages with pieces of paper			
Make small cars go fast			

## My Ideas for Supporting Math Learning

- ◆ Look over the handouts and your notes.
- ◆ Circle the ideas you are most interested in doing.
- ◆ Write down three things you want to do first:

1.

2.

3.