

A Family Note on **Finding the Math**

Young children begin to develop math concepts and skills very early in the first year of life. Family members play a special role in helping children learn about math. Throughout the day, as families talk, play, or carry out routines, children are learning. *Family Notes* show ways that families can use everyday experiences to help their young children learn math.

Families can use the ideas presented here to identify math learning opportunities in their own daily interactions with their children. Home visitors and family service staff can share this information with families to help them support children's math learning.

Some important things to consider:

- Math experiences should provide for fun, shared times between families and their children. Children will build a positive attitude toward math learning and toward learning in general.
- Children need experiences handling and working with things. They need to look at, hold, count, stack, and explore the characteristics of things. While children are actively exploring, adults can “mathematize” children’s play. By introducing mathematical words and talking about the experience, family members help children understand the meaning of numbers, shapes, and other math concepts. For example, while children are playing with blocks, adults can describe blocks by using words such as **curved**, **straight**, **longer**, and **shorter**. Children hear new math vocabulary and deepen their understanding about characteristics of blocks at the same time.
- Children need repeated experiences. Just as children enjoy hearing the same books over and over, they need to handle materials and do things again and again. Over time, children need to practice these experiences again, so they recall what they have learned. In this way, they deepen their understanding and develop new concepts.
- Family involvement in children’s learning is extremely important. It especially helps children’s learning when adult family members use the language they speak best. When adults speak in their home language, they are more likely to have deep, meaningful conversations and use rich, descriptive words. This type of language helps children to deepen their understanding of ideas and concepts.

- Families can observe their children's interests and use those interests to build an understanding of math. For example, if a child goes to a slide in a park, adults can talk about position words like **behind** and **on top of** the slide. Children's interest in the outdoors helps them learn about math! Children learn best when they are engaged in activities that interest them. Adults can support math learning by encouraging children to notice mathematical relationships, use math language, and practice math skills as they play.
- It is important that adults talk with children about what they are seeing, hearing, and doing. Families can support math learning by commenting on or asking children questions about math experiences. Give children time to respond. Wait at least five seconds before expecting young children to respond so they have time to think about their responses. Children are practicing math and vocabulary when they talk with adults or other children about their math experiences.



Here are some ideas to help children learn math during everyday home routines.

Getting dressed



"**How many** buttons do you have on your shirt? Let's count them as I button you up."

Number—counting

"Here's a sock for this foot. That's **one** foot. Here's a sock for the other foot. That's **two** feet!"

Number—counting, using one-to-one correspondence

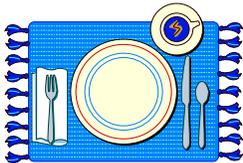
"Look, the stripes on your socks make a **pattern** – blue, white, green, blue, white, green!"

Repeating patterns

"Do you want to wear your **short** pants or your **long** pants?"

Measurement—comparing sizes

Setting the table



"Will you help me? **Each person** gets **one** fork, **one** spoon, and **one** napkin."

Number—using one-to-one correspondence

Point out the **repeating pattern** in the way your family sets the table. For example, "The fork goes on this side, then the plate, and then the spoon. We do it **the same way every time!**"

Repeating patterns

"**How many** spoons do we need? Let's **count**."

Number—counting, solving problems

"Give the **big** cup to daddy. I would like to have a **little** cup."

Measurement—comparing sizes

Eating a meal



"Your sandwich looks like a **square**. If I cut it this way (corner to corner), what shapes will it make?"

Geometry—recognizing shapes

"**How many** pieces of cheese do you want?" "Do you want **one** or **two**?" "Let's count **how many** raisins you have."

Number—counting

"You have **more** pieces of apple than I do."

Number—comparing number of objects

Picking up toys



"Let's put your cars **on** the shelf and the balls **in** the box."

Spatial Sense—recognizing positions of objects

"Can you put your **three** trucks here?" "There should be **six** dinosaurs. Will you **count** them and make sure they are all there?"

Number—counting

"You can put away the **square** pieces. Your brother will put away the **round** ones."

Geometry—recognizing shapes



Here are some ideas to help children learn math when at the grocery store.

Making the shopping list



“**How many** apples do we need so each person in the family gets **one**?” Encourage your child to use fingers to show **how many** people in the family (and **how many** apples to buy).

Number—counting, solving problems

Involve your child in making **tally marks** or writing **numerals** (written numbers) next to items on the list to indicate “**how many**.” Encourage your child to make his own grocery list too.

Number—recording “how many”

Shopping at the store



Point out the **numerals** that you see at the store, for example, “**2** for \$**1**” or aisle numbers. Encourage your children to find more **numerals** as you shop.

Number—recognizing numerals

Count apples, oranges, carrots, peppers, and other items with your child as you put them into bags or the shopping cart.

Number—counting

Talk with your child about **sizes** of items, such as cereal boxes or cartons of milk.

Measurement—comparing sizes

Look for **shapes** (e.g., circles, rectangles, or triangles) as you go through the store. Play a game with your child. Find a **shape**, such as the **rectangle** on the front of a cereal box, and then look for other items with the same **shape**.

Geometry—recognizing shapes

At the checkout counter



"We should have **five** cans of soup. Let's **count** and make sure."

Number—counting, solving problems

Point out the **numerals** on the cash register display and talk about what they mean (shows how much each thing costs).

Number—recognizing numerals

Explain that the routine of going to the grocery store is a **repeating pattern**. "We go to the store, we pick out the food, we pay at the counter, and we go home and eat the food. Next week we will do the same thing."

Patterns—recognizing repeating patterns



Here are some ideas to help children learn math when at the park.

Going to the park



"There's a squirrel **on** the branch of the tree."

Spatial Sense—recognizing positions of objects

"Let's look for written **numbers** as we go to the park. What **numbers** do you see?"

Number—recognizing numerals

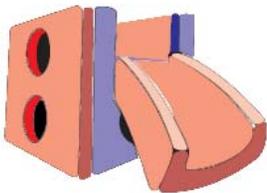
Encourage children to notice patterns in nature – for example, the **symmetrical patterns** in leaves or the petals on a flower. Look for **repeating patterns** – for example, the ridges and grooves of the bark on some trees. At the park, or coming or going, help children collect natural materials such as leaves, small sticks, or pebbles to use in making their own **repeating or symmetrical** patterns.

Patterns—recognizing and creating patterns

"First we go past Tina's house. Next, we turn right at the corner by the library. The park is **close** to the library."

Spatial Sense—learning about direction and location

On the play structure



Encourage your child to climb **on** play equipment, jump **off** a small step, walk **backwards**, or crawl **through** a tunnel.

Spatial Sense—recognizing position and direction

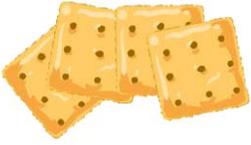
"Let's **count** the children on the swings. **One, two, three, four!**"

Number—counting

"The play structure has a **round** window. It looks like a **circle**. Do you see any other **circles**? Let's look around." "Let's make the same **shape** in the sand."

Geometry—recognizing shapes

Having a snack



Ask your child to pass out the snack. "Will you pass out the snack? **Each person** gets **a box** of raisins."

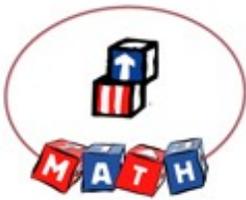
Number—using one-to-one correspondence

Count the food items as they eat them. "I have **four** carrots. **How many** do you have? Do you have **more** than four carrots or **fewer** than four carrots?"

Number—counting and comparison

"What **shape** do you think the cracker is? It has four **straight sides**."

Geometry—identifying shapes



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Things to remember:

- Family members play a special role in helping children learn about math. Children learn when adults support their talk, play, and routines.
- Math experiences should be fun, shared times between adults and children. These build children's positive attitude toward math and learning.
- Children need experiences handling and using toys and other objects and exploring their characteristics. Adults "mathematize" children's play by introducing mathematical words about what they are doing. This helps children learn new math vocabulary and deepen their math concepts.
- Children need repeated experiences. Handling materials and doing things again and again helps children develop new concepts and deepen understanding.
- It especially helps children's learning when adult family members speak to young children using the language they are most comfortable with and when they use rich, descriptive words.
- Children learn best when they are engaged in activities that interest them. Families support learning when they observe children's interests and use them to help children build their math concepts and skills.
- It is important that adults engage children in conversations about what they see, hear, and do by commenting on or asking children questions about math experiences. Don't forget to wait at least 5 seconds before expecting children to answer!