

Math+Science Connection

Beginning Edition

Building excitement and success for young children

September 2009

John Paul II Catholic School

TOOLS & TIDBITS



Use your head!

Encourage your child to do simple math problems in her head. For instance, say, "Aunt Chris and Uncle Larry are coming over. How many people will be here?" She might think, "There are four of us. My aunt and uncle are two more. That makes six." Doing mental calculations will prepare her for math she'll do at school and home.

Outdoor science

Nature programs are a great way to get your youngster interested in the outdoors. Check with your local nature center or parks and recreation department for free or low-cost options. They might have story hours about reptiles, puppet shows about birds, or ranger-led family hikes.

Book picks

▣ In *One Hundred Hungry Ants* (Elinor J. Pinczes), ants march across the pages in different-sized groups. The pictures and rhyming words give youngsters a fun lesson in sets and an introduction to multiplication.

▣ For a calming bedtime ritual, gaze at the moon with your child and then read *Long Night Moon* by Cynthia Rylant. The book teaches about seasons as it describes the moon through each month of the year.

Worth quoting

"Never be afraid to sit awhile and think." *Lorraine Hansberry*

Just for fun

Q: Why do fish live in saltwater?

A: Because pepper makes them sneeze.



Pattern play

What do striped shirts, flowered wallpaper, and spider webs have in common? They all have patterns!

Recognizing and understanding patterns will help your child make predictions based on his observations.


Working with patterns also will get him ready for algebra. Here are fun ways to play with patterns at home.

Act out motions. Start by explaining to your youngster that a pattern is something that repeats. Create a pattern with movements (clap, stomp, clap, stomp), and ask him to continue it. Then, have him make up a pattern with motions for you to follow.

Solve the mystery. Line up a pattern with small objects like toy bugs or different-colored buttons. Cover one item with a small cup. Can your child figure out what's under the cup? Reverse roles, and let him make a pattern for you with one item covered up.




Practice addition. Suggest that your youngster create a pattern with two rubber stamps (apple, pear, apple, pear). He can make a "growing pattern" by adding a third stamp (apple, pear, grapes), repeating the pattern, and then adding a fourth stamp (apple, pear, grapes, banana). He'll learn to increase by one.

Use numbers. Finally, write down a number pattern like 1, 3, 5, 1, 3, 5. Ask your child to copy the pattern and continue it two more times. Then, have him come up with his own number patterns. 

Animal sort

Help your child see how animals are alike and different with this activity. She'll practice the sorting and classifying skills that scientists use.

Ask her to list 10 favorite animals (monkey, whale, frog, and so on). On separate index cards, she can draw a picture of each animal and write its name. Then, draw three circles on a sheet of poster board and label them: "Lives on land," "Lives in water," "Lives on land and in water." Let your youngster put each index card onto the right section. *Tip:* If she's not sure, help her look up the animal in a book or online.

Can your child think of other ways to sort animals? *Examples:* fur, feathers, or scales; two legs, four legs, or no legs; farm animals, pets, or wild animals. 

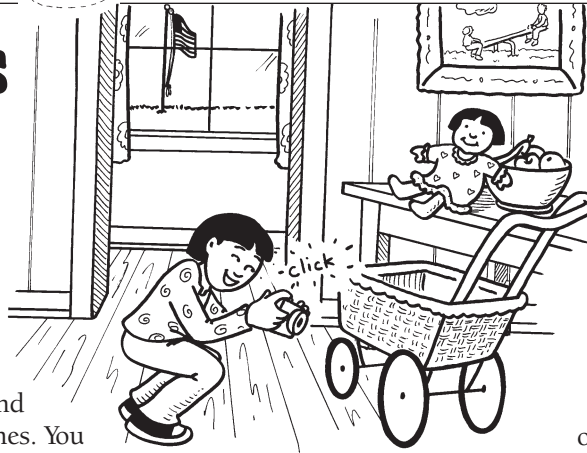


Simple machines

Children love to find out how things work. With these ideas, your youngster can learn about “simple machines” and how they make work easier to do. For instance, a wheel and axle allows a stroller to move. Other simple machines include a ramp, lever, pulley, wedge, and screw.

Go on a hunt

Take a walk through your house and around your neighborhood to identify simple machines. You might point out scissors (a lever) or a flagpole (a pulley). Your child could notice a toy car (a wheel and axle) or a sliding board (a ramp). Bring along a camera, and have her take a



picture of each one. Let her put them into a photo album to make a “Simple Machines Book.”

Make your own

Set out materials like blocks, toy trucks, cardboard tubes, rulers, marbles, pens, and tape. What simple machines can your youngster make? She might create a ramp out of a triangle-shaped block and roll a marble down it. Or she could make a seesaw (a lever) by taping a pen to a table and balancing a ruler on the pen. To make her lever work, have her put an object on one end of the ruler and press on the other end to lift up the item.

SCIENCE LAB Splash down

Do heavier objects fall to the ground faster than lighter objects? Your youngster will find out with this experiment about gravity.

You'll need: large plastic bowl, water, newspaper, 2 marbles, 1 orange

Here's how: Help your child fill the bowl with water and place it on a flat sidewalk or kitchen floor (on top of a newspaper). Have him hold a marble in each hand at the same level over the bowl and drop them into the water at the same time. Then, let him try again using a marble and an orange.



What happens? In both cases, the objects hit the water at about the same time.

Why? Gravity pulls objects to the Earth at the same speed, no matter how much they weigh—except for objects that are so light (a leaf or a sheet of paper) that air resistance slows them down.

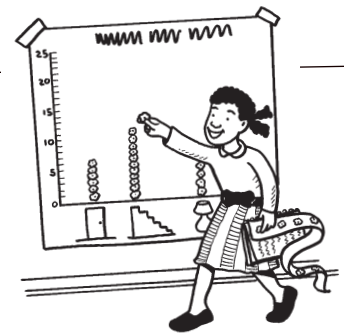
MATH CORNER How many doors?

Your home is the perfect place to practice math. Encourage your child to count and graph with this activity.

In a notebook, help her write down things to count. *Examples:* windows, steps, doors, tables, chairs, beds, lamps. Have her go from room to room and make a tally mark for each item. When she finishes, ask her to count the total for each category.

Then she can turn her results into a graph. On a poster board, have her draw a picture of each item across the bottom and write the numbers 0 to 25 up the left side. She should add a sticker to represent each item (6 stickers for 6 doors, 12 stickers for 12 steps).

Let her use the graph to tell you about her findings: “We have fewer doors than windows.” “We have four more chairs than tables.” Discussing the results will help her think about numbers and how they relate to each other.



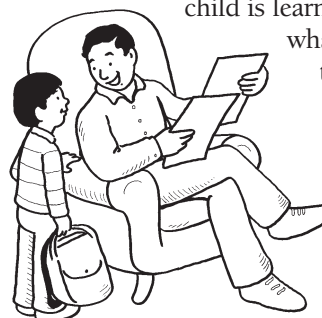
Q & A Support learning

Q: School is starting, and I'm looking for ways to help my son do well in math this year. What do you suggest?

A: Find lots of opportunities to use math around the house. For example, you can build math into your youngster's chores. Have him set the table, and ask him to count aloud as he puts out the plates, napkins, forks, and spoons. At laundry

time, let him match the socks. Invite him to cook with you, and have him measure ingredients.

Also, try to get involved in what your child is learning at school. You can ask what he did at math time and, together, look over the worksheets he brings home. Be sure to provide supplies (pencils, rulers, paper) that he needs for doing math homework, and check to see that he completes his work.



OUR PURPOSE

To provide busy parents with practical ways to promote their children's math and science skills.
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